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report

Release Abatement Measure and Risk-Based Cleanup Plan

Building 105
Former Charlestown Navy Yard
Boston, Massachusetts
RTN 3-10627

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EXECUTIVE SUMMARY

Weston & Sampson, on behalf of Kavanagh Advisory Group, LLC (Kavanagh), has prepared this Release Abatement Measure (RAM) and Risk-Based Cleanup Plan for Building 105 located in the former Charlestown Navy Yard of Boston, Massachusetts (the *Site*). The purpose of this report is to outline plans and procedures for the remediation of interior building materials, the concrete floor slab, and soil beneath Building 105.

Objective

The primary objectives of this RAM and Risk-Based Cleanup Plan are the following:

- Summarize the nature and extent of contamination at Building 105 based on the site investigations completed to date;
- Perform a Method 3 site-specific risk characterization to evaluate the risk to human health, public welfare, safety and the environment from contamination at the Site;
- Evaluate and select a comprehensive remedial alternative to address contaminated materials at the Site; and
- Describe the proposed plans and procedures to be used during the implementation of selected remedy.

Background

For the purposes of this report, the Site consists of Building 105, an approximately 60,300 square foot (sf) former industrial building located at the intersection of First Avenue and Ninth Street in the former Charlestown Navy Yard in Boston, Massachusetts (see Figure 1 – Locus Map). Originally constructed between 1900 and1904, Building 105 historically was used by the United States Navy for the forging of anchor chain and related parts until 1974, when the former Charlestown Navy Yard was closed and declared surplus. Following the closure, ownership of Building 105 was transferred to the current property owner, the Boston Redevelopment Authority (BRA), while ownership of the former forging equipment and machinery was transferred to the National Parks Services (NPS). Currently, the building is unoccupied and the former forging equipment and machinery remains inside the building.

During the seventy years of use of Building 105 forging operations used materials and produced byproducts and wastes that contaminated the Building 105 structure, equipment, concrete floor slab, and soil and groundwater beneath the building. Contaminants detected at the Site include polychlorinated biphenyls (PCBs), total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and polychlorinated dibenzon-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs).

Previous Investigations & Response Actions

Beginning in the early 1990s, the United States Army Corp. of Engineers (USACOE) conducted several site investigations at Building 105 as part of the Department of Defense Environmental Restoration for Formerly Used Defense Sites. These investigations included the sampling and analysis of soil, concrete, groundwater, and porous and non-porous building materials/surfaces. The results indicated the presence of metals, TPH, PCBs, and PCDDs/PCDFs in various building materials throughout Building 105 and soil beneath the building. Specifically, PCBs were detected at numerous locations in the concrete floor slab and subsurface soil at concentrations exceeding the applicable cleanup standards under the Toxic Substances Control Act (TSCA), 40 CFR 761. In addition, PCBs, PCDDs/PCDFs, petroleum hydrocarbons, and

several other contaminants were detected in surface and subsurface soil at concentrations that exceeded applicable cleanup standards and Upper Concentrations Limits (UCLs) under the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000.

Based on the results of the historic site investigations, limited remediation of contaminated materials in a portion of the building was conducted by USACOE in 2000. The remediation included decontamination of existing equipment and selected other non-porous surfaces, limited abatement of asbestos-containing materials (ACM), disposal of residual oil from equipment and processing piping, general cleaning of equipment and building surfaces, and removal of miscellaneous debris. According to historic reports, the remediation also included removal of an unspecified volume of oil and water from a few trenches/vaults within the building and excavation and removal of the top ten inches of soil from areas of exposed soil floor around the former forging equipment and machinery.

Supplemental Site Investigation

Between September 2014 and March 2015, Weston & Sampson performed a supplemental site investigation at Building 105. The purpose of the investigation was further characterize the nature and extent of contamination and obtain additional information in support of the preparation of risk-based cleanup plan under TSCA, 40 CFR 761.61(c), for the Site. The investigation included additional sampling and analysis of soil, concrete, and various building materials, as well as an assessment of sub-slab soil gas of the building.

The results of the supplemental site investigation were consistent with previous investigations at Building 105. PCBs were detected in soil, concrete, and bulk building materials and on various surfaces throughout the building. Other site contaminants, including metals, petroleum, and PCDDs/PCDFs, were also identified in soil and concrete at several locations. In general, contaminant concentrations were significantly less than those identified during the previous investigation; however, the overall distribution and frequency of occurrence was similar. Several sample exceeded applicable TSCA and/or MCP cleanup standards.

Sub-slab soil gas conditions were assessed relative to the detection of several locations with significantly elevated TPH concentrations below the building. As part of the supplemental site investigation, sub-slab soil gas samples were collected, and the results indicated low concentrations of VOCs and petroleum hydrocarbons in soil gas below applicable DEP sub-slab screening values. Based on these results, residual petroleum contamination does not appear to be a significant source of sub-slab soil gas contamination.

Risk Characterization

Using the results of the historic and supplemental site investigations, Weston & Sampson performed a Method 3 risk characterization to evaluate the risk to health, public welfare, safety and the environment at the Site. The risk characterization concluded that significant risk exists at the Site. The risk was primarily due the presence of PCBs and PCDDs/PCDFs in various building materials, concrete and soil. Based on the findings of the risk characterization, additional response actions are required to remediate the Site.

Cleanup Plan

Weston & Sampson developed a comprehensive remedial alternative to address contaminated building materials, the concrete floor slab, and soil at Building 105. The plan was based on an

earlier Interim Evaluation of remedial alternatives prepared by Stone & Webster (S&W) in August 2002, and was presented to EPA during a meeting on October 28, 2014.

During the meeting to discuss Building 105, EPA agreed in concept with a cleanup plan that would remove porous PCB-impacted building materials, decontaminate porous and non-porous building materials and allow for soil below the building with PCB concentrations less than 50 mg/kg to remain on-site provided the Site was capped and clean utility corridors were provided. However, EPA requested two removal scenarios for concrete be evaluated.

As requested by EPA, Weston & Sampson evaluated the removal of concrete with PCB concentrations equal to or greater than 10 mg/kg and 50 mg/kg. In addition, Weston & Sampson performed pilot-testing to assess decontamination strategies for the concrete floor slab. The results of this work indicated removal of concrete with PCB concentrations greater than or equal to 10 mg/kg was not cost effective, while the pilot-testing demonstrated that decontamination was ineffective. Therefore, Weston & Sampson selected removal of concrete with PCB concentrations equal to or greater than 50 mg/kg as the preferred alternative.

Based on the nature and extent of contamination at the Site, the proposed cleanup plan presented to EPA in October 2014, and the additional evaluation of concrete removal alternatives, Weston & Sampson developed a cleanup and disposal plan for Building 105. The plan includes the following:

- Removal and off-site disposal of porous PCB-impacted building materials;
- Decontamination of non-porous PCB-impacted building materials by abrasive blasting using fine grit media;
- Decontamination and encapsulation of interior brick walls;
- Removal and off-site disposal of soil with PCB concentrations ≥ 50 mg/kg;
- Removal and off-site disposal of concrete with PCB concentrations ≥ 50 mg/kg;
- Removal of PCB-impacted soil and concrete to provide clean utility corridors with PCB concentrations < 1 mg/kg;
- Construction of 6-inch concrete cap over the entire building footprint; and
- Placement of a deed restriction, in the form of an Activity and Use Limitation (AUL), on the entire building/property.

In addition, based on the supplemental investigation results and the planned future use of the building as a hotel, the plan also includes the following:

- Targeted excavation and removal of soil with elevated TPH and PCDDs/PCDFs concentrations; and
- Installation of a vapor barrier beneath the proposed concrete cap to mitigate potential vapor intrusion impacts.

Kavanagh proposes to implement the proposed cleanup plan as part of the redevelopment of Building 105. The redevelopment will include renovating Building 105 for use as a hotel with a restaurant, meeting/conference rooms, and a historical museum exhibit space for some of the former forging equipment and machinery. At this time, final design of the proposed hotel development is incomplete; however, the hotel development team will be working to complete final design through 2015, with remediation as outlined herein expected to begin in 2016.

1.0 INTRODUCTION

Weston & Sampson, on behalf of Kavanagh Advisory Group, LLC (Kavanagh), has prepared this Release Abatement Measure (RAM) and Risk-Based Cleanup Plan for Building 105 located in the former Charlestown Navy Yard in Boston, Massachusetts (the *Site*). The purpose of the report is to outline proposed plans and procedures to be used to address the historical contamination as part of Site redevelopment. Historical contamination includes the presence of polychlorinated biphenyls (PCBs), polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs), metals, total petroleum hydrocarbons (TPH), and semi-volatile organic compounds (SVOCs) in various building materials, concrete, and soil and groundwater. The source of these contaminants is attributed to over seventy years of former industrial use of Building 105 for the forging of anchor chain and related parts.

The historic industrial activities at the Site has led to widespread contamination of the Building 105 structure, former forging equipment and machinery, concrete floor slab, and soil and groundwater beneath the building. Due to the presence of elevated concentrations of PCBs and other contaminants, the Site is regulated by both the U.S. Environmental Protection Agency (EPA), under the Toxic Substances Control Act (TSCA), 40 CFR 761, and the Massachusetts Department of Environmental Protection (DEP), under the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000. DEP has assigned Release Tracking Number (RTN) 3-10627 to the Site.

To date numerous site investigations and preliminary response actions have been completed to address the historical contamination at the Site. These activities have included characterization of contaminated materials, decontamination of existing forging equipment and machinery, general cleaning of interior buildings surfaces, and limited removal of contaminated soil, residual oil, and other miscellaneous hazardous materials. Although these activities resulted in reducing the level of contamination at the Site, significant residual contamination remains. Kavanagh, the developer, is proposing to remediate the Site as part of its redevelopment as a hotel.

Weston & Sampson has prepared this report in accordance with the requirements of 40 CFR 761.61(c) to provide notification and obtain approval from EPA for the risk-based cleanup and disposal of PCB contaminated materials at the Site. The report has also been prepared to address the requirements of the MCP for the release of contaminants to soil and groundwater. This report is subject to the limitations presented in Section 10. Copies of the public notification letters are provided in Appendix A.

1.1 Site Location and Description

The Site consists of Building 105, an approximately 60,300 square foot (sf) former industrial building located at the intersection of First Avenue and Ninth Street in the former Charlestown Navy Yard in Boston, Massachusetts. For the purposes of this report, the Site includes the existing Building 105 structure, the remaining building contents, most notably a large collection of former forging equipment and machinery, and the soil and groundwater beneath the building. Plans illustrating the Site location and significant Site features within the building are provided in Figure 1 – Locus Map and Figure 2 – Existing Conditions Plan.

Building 105 was constructed between 1900 and 1904 by the U.S. Navy for use a chain forge and foundry. As shown in Figure 2, Building 105 is comprised of two main sections that are connected by a small office and machine die storage area. The eastern section is the larger of the two sections and is known as the main forge shop. The western section is referred to as the

head house area and is further divided into two separate rooms called the blacksmith shop and roundhouse. The main forge shop is where the majority of the historic processing of materials and forging operations occurred. The head house area was initially used as a powerhouse that contained boilers, steam engines and generators but was later converted into an area for maintaining railroad locomotives and track-mounted cranes (roundhouse) and small forging operations (blacksmith shop).

In general, the Building 105 is a multi-story brick masonry building with an approximately 4 to 18 inch concrete floor slab. Presently, the majority of the existing concrete floor slab remains; however, portions of the slab have been removed. In areas where the slab has been removed the building has an exposed soil floor. Other features of the building include an extensive collection of the former forging equipment and machinery, as well as a network of trenches and vaults. Steel plates cover a portion of the trenches and vaults in the building. Based on visual observations, the trenches themselves are either empty or contain metal piping. Where the trenches are open, some contain standing water believed to be stormwater collected through leaks in the building's roof. The approximate location of the existing equipment, trenches, vaults, and areas of soil floor are shown in Figure 2.

Historically, access to the building was available through a number of metal roll-up doors located along the Second Avenue side of Building 105, large sliding doors at either end of the building on Ninth or Thirteenth Streets, or through several entrance doors on First Avenue. Currently access to the building is restricted. The doors and windows on all side of the building are either locked or boarded shut. Access along the Second Avenue pedestrian walkway is also restricted by chain link fence with locking gate.

1.2 Site Ownership and Use

As noted above, Building 105 was constructed between 1900 and 1904 by the United States Navy. The Navy utilized the building primarily for the forging of anchor chain and related components until 1974, when the Charlestown Navy Yard was closed and declared surplus. Following the closure, Building 105 was transferred to the Boston Redevelopment Authority (BRA), while ownership of the existing equipment within Building 105 was transferred to the National Parks Service (NPS). Since then the building has not been occupied.

1.3 Release History

Following the closure of the former Charlestown Navy Yard, the United States Army Corp of Engineers (USACOE) conducted several site investigations at Building 105. The investigations included the sampling and analysis of soil, concrete, groundwater and various porous and non-porous building materials and equipment within the building. The results of these investigations indicated the presence of PCBs, TPH, VOCs, SVOCs, metals, and PCDDs/PCDFs. These contaminants were detected on the brick walls and building materials (wood, glass, etc.), on the former forging equipment and machinery, within the concrete floor slab, and in soil and groundwater. In particular, PCBs were detected throughout the building, including concrete floor slab, surface and subsurface soil, and the former equipment at concentrations exceeding applicable cleanup standards under the TSCA. In addition, the concentrations of PCBs, PCDDs/PCDFs and several other contaminants also exceeded applicable cleanup standards under the MCP.

The presence of contamination at the Site is not attributed to a single release; but rather the historic forging operations conducted throughout the building. During its seventy years of use, forging operations used materials and produced byproducts and wastes that are believed to

have contaminated the building structure, equipment, concrete floor slab, and soil. Details into the historic investigations to determine the nature and extent of contamination of these materials are presented in Section 2.0.

Based on the results of the historic site investigations, limited remediation of contaminated materials building was conducted by the USACOE between 1992 and 2000. The remediation included decontamination of the existing equipment and selective non-porous structural steel (up to a height of eight feet) within the building, selective abatement of asbestos-containing materials (ACM), disposal of residual oil from equipment and processing piping, general cleaning of equipment and building surfaces, and removal of miscellaneous debris. According to historic reports, the remediation also included removal of an unspecified volume of oil and water from a few trenches/vaults and excavation and removal of the top ten inches of soil from areas of soil floor around the former forging equipment and machinery. Additional details regarding previously completed abatement/remediation of building materials is provided in Section 2.0.

1.4 Project Description

The proposed redevelopment of Building 105 will include renovating the existing Site building for use as a hotel with a restaurant. The proposed hotel will be a 5 level hotel development, approximately 180,000 sf in size, encompassing the entire current site structure and with the addition of a level on the Second Avenue side of building. The development will include approximately 230 hotel rooms, with an associated hotel lobby area, conference rooms, pool, fitness center, restaurant, and an exhibit area. The exhibit area will be located in the lobby atrium and will showcase the former industrial use of Building 105 by including 38 pieces of the historical forging machinery that visitors and guests of the hotel will be able to view. Conceptual plans of the proposed development are provided in Appendix B.

1.5 Surrounding Land Use and Area Receptors

As shown in Figure 2, Building 105 is bounded by Ninth Street to the south, Thirteenth Street to the north, Second Avenue pedestrian walkway to the west, and First Avenue to the east. The area surrounding the Site is made up of the former Charlestown Navy Yard and includes various commercial and residential uses. Properties located to the north and east of the Site are associated with various commercial activities, while residential properties are primarily located to the south and west.

Based on the Massachusetts Geographic Information Systems (MassGIS) data shown in Figure 3 – Area Receptors Map, the Site is not located in a current or potential drinking water sources area. The area surrounding the Site is serviced by municipal water, and there are no private wells located within 500 feet of the Site. As shown in Figure 3, the Site is not situated with an Interim Wellhead Protection Area (IWPA) or Zone II and does not overlie a potentially productive aquifer.

There are no areas of protective open space or other natural resource areas, such as areas of critical environmental concern, wetlands, certified vernal pools, outstanding resource waters or fish habitats or Natural Heritage & Endangered Species Program (NHESP) Estimated Habitats of rare wetland or wildlife areas, located within 500 feet of the Site. The closest surface water body to the Site is Boston Inner Harbor, located approximately 450 feet to the east.

1.6 MCP Soil and Groundwater Classifications

1.6.1 Soil

As described in Section 1.1, Building 105 is currently unoccupied and access is restricted. Soil within the building would be characterized as accessible in the areas of the exposed soil floor and potentially accessible or isolated in areas where the concrete floor slab is intact. Given that children are not present at the Site and access to the building is restricted, such that adults are present infrequently and their use is limited to passive activities that do not disturb soil, the soil category for current Site conditions is S-3.

The soil category following the proposed redevelopment will also be S-3. As described in Section 1.4, the redevelopment will encompass the existing footprint of the building with a new concrete floor slab for the construction of the new hotel lobby. In accordance with 310 CMR 40.0933(4) and (7), soil located below a building or other permanent structure that does not have earthen floors is considered to be “isolated”. By definition, soil considered to be “isolated” is classified as S-3 regardless of on-site receptor frequency and intensity of use.

1.6.2 Groundwater

Groundwater at the Site is categorized as GW-3. In accordance with 310 CMR 40.0932(2), the GW-3 is applicable because groundwater at all disposal site is considered a potential source of discharge to surface water, and therefore, at a minimum, is categorized as GW-3. The nearest surface water body to the Site is Boston’s Inner Harbor, located approximately 450 feet to the west.

Groundwater at the Site is not categorized as GW-1 because the Site does not lie within a current or potential drinking water source area. Currently, the groundwater is also not considered GW-2 because the Site/building is unoccupied. However, the proposed redevelopment plan includes reuse of the existing building as a hotel and restaurant. Under this future use scenario groundwater would be considered as GW-2 because groundwater at the Site is less than 15 feet below ground surface.

2.0 SUMMARY OF HISTORICAL INVESTIGATIONS & RESPONSE ACTIONS

Since the discovery of the release, several site investigations and preliminary response actions have been conducted to address the presence of elevated concentrations of PCBs and other contaminants at the Site. This section provides a brief summary of these historical site activities. For the purposes of this report, the historical site activities include those conducted prior to 2014. Details and the results of the supplemental site investigation completed by Weston & Sampson in 2014 and 2015 as part of redevelopment/remedial planning are presented in Sections 4.0 and 5.0.

2.1 Phase I Initial Site Investigations – 1992 to 1995

In the early 1990s the USACOE conducted several investigations at the Site as part of the Defense Environmental Restoration Program for formerly used defense sites. The first two investigations were completed by the USACOE Environmental Laboratory in Hubbardston, Massachusetts and the third was completed by Metcalf & Eddy, Inc. (M&E). The results of these investigations were documented in various reports prepared by the USACOE and M&E between 1992 and 1995, and were summarized in a Phase I Initial Site Investigation and Tier Classification Report prepared by M&E for RTN 3-10627 in May 1995. The scope of each investigation and a summary of the results are provided in the following sections.

2.1.1 January 1992 Investigation

The first USACOE investigation was conducted during a three-day period between January 10 and 14, 1992. The investigation included the collection of samples from various media inside the building, including surficial soil (i.e., 0 to 3 feet), oil, aqueous trench liquids, ash, and surficial wipes/paint scrapings from porous and non-porous surfaces. A summary of the sampling is presented below. Soil sampling locations are shown in Figure 2. Sampling locations of the various other media are provided in Appendix C.

Media	No. of Samples	Analysis
Soil	5	TPH, PCBs, SVOCs, EPA Target Analyte List (TAL) Metals, and PCDDs/PCDFs
Oil	5	Flashpoint, PCBs, TAL Metals, and Fuel Identification
Trench Liquid	1	TPH, TAL Metals, and VOCs
Ash	1	PCBs and SVOCs
Wipe/Scrapings	7	PCBs, TAL Metals, and Fuel Identification.

2.1.2 March 1993 Site Investigation

Based on the findings of the initial sampling, USACOE conducted a second round of investigation within the building between March 16 and 29, 1993. The investigation included the collection of additional surficial soil and equipment surface samples. In total, 69 soil samples were collected from three depth intervals (0 to 12 inches, 12 to 24 inches, and 24 to 26 inches) and were analyzed for TPH, PCBs, and Resource Conservation and Recovery Act (RCRA) 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver). In addition, 23 soil samples from 0 to 12 inches and one sample from 12 to 24 inches were collected and analyzed for PCDDs/PCDFs, and twenty solid scrape samples of the paint and surface residuals from equipment surfaces were analyzed for TPH, PCBs, and RCRA-8 metals.

The locations of soil samples collected by USACOE in March 1993 are provided in Figure 2. Sampling locations for the various process equipment and machinery are provided in Appendix C.

2.1.3 December 1994 to January 1995 Investigation

Between December 6, 1994 and January 9, 1995, Metcalf & Eddy, on behalf of USACOE, performed a third investigation at the Site. The purpose of the investigation was to confirm the results of the previous two investigations and fill data gaps. As part of the investigation, ten soil borings (SB-01 through SB-07 and MW-01 through MW-03) were advanced and three monitoring wells (MW-01 through MW-03) were installed within the building.

Metcalf & Eddy's investigation included the collection of samples from seven different media: surface and subsurface soil, groundwater, concrete, interior walls surfaces, and standing water and floating petroleum observed within the trenches and vaults in the main forge shop. A summary of the sampling is presented below. Soil boring and monitoring well locations are shown in Figure 2. Concrete, wall, vault water, and vault oil sampling locations are provided in Appendix C.

Media	No. of Samples	Analysis
Surface Soil	8	VOCs, SVOCs, PCBs, PCDD/PCDF, metals, and TPH
Subsurface Soil	11	VOCs, SVOCs, PCBs, PCDD/PCDF, metals and TPH
Concrete	14	SVOCs, PCBs, PCDD/PCDF, metals, and Diesel Range Hydrocarbons (DRO)
Interior Wall Surfaces (wipe)	10	SVOCs, PCBs, PCDD/PCDF, metals and DRO
Vault Water	4	VOCs, SVOCs, PCBs, PCDD/PCDF, metals and DRO
Groundwater	3	VOCs, SVOCs, PCBs, PCDD/PCDF, metals, and TPH
Vault Oil	2	Total Organic Halides (TOX), flashpoint, PCBs, PCDD/PCDF, and metals

*Sample numbers excluded field quality control samples (field blanks, duplicates, etc.)

2.1.4 Summary of Phase I Investigation Results

The results from the initial USACOE and M&E investigations completed between 1992 and 1995 indicated the following:

- Soil, vault oil and water, concrete, and non-porous equipment surfaces within Building 105 contained elevated concentrations of metals, PCBs, SVOCs, TPH and PCDD and PCDF isomers.
- Contaminated media in the roundhouse included the concrete floor slab and soil. The contaminants identified included PAHs, PCBs, PCDDs/PCDFs, TPH and various metals;
- Contaminated media in the blacksmith shop included surface and subsurface soil and the equipment surfaces. Contaminants of concern included PCBs, PCDDs/PCDFs, TPH and various metals. No samples for SVOCs were collected.

- The main forge shop exhibited the greatest amount of contamination. Contaminated media in the main forge shop included soil, concrete, interior wall and equipment surfaces, vault oil and water, and groundwater beneath the building. The contaminants of concern included metals, TPH, PCB, SVOCs, and PCDDs/PCDFs.

The Phase I concluded that the sources of these contaminants were spills and improper waste handling/disposal activities related to the past forging, blacksmith and railroad roundhouse maintenance operations in the building. The Phase I report also concluded that contamination was present throughout the building at sufficiently high concentrations to support the need for additional response actions at the Site (Metcalf & Eddy, 1995).

2.2 Immediate Response Actions – March 1995

On March 21, 1995, USACOE became aware that BRA and NPS were utilizing Building 105 for storage, and that their employees were entering the Site without proper Occupation Safety and Health Administration (OSHA) training or personal protective equipment. Given that PCBs, TPH and PCDDs/PCDFs were identified in several locations of exposed soil at concentrations exceeding the applicable MCP imminent hazard (IH) levels during the Phase I investigation activities, the presence of the workers in the building represented an IH condition and triggered a 2-hour notification to DEP.

Upon discovery of the IH condition, USACOE immediately notified DEP, who assigned RTN 3-12291 to the Site. As required, USACOE began an Immediate Response Action (IRA) at the Site. The IRA included providing notifications of the chemical hazards in the building to BRA, NPS and local fire department, after which the building was secured with locking doors and gates, and BRA and NPS eliminated employees from entering the building. This elimination of BRA and NPS personnel from visiting the Site effectively eliminated the IH conditions and therefore, an IRA Completion report was submitted to DEP.

2.3 Phase II Site Assessment – May 1997

Using the data collected as part of the Phase I initial site investigation, , M&E prepared a Phase II Site Assessment Report for RTN 3-10627. As part of the report, M&E performed a Method 3 risk characterization to evaluate the risk of human health, public welfare, safety and environment posed by contamination at the Site. The risk characterization concluded site conditions posed No Significant Risk (NSR) for the current use as an unoccupied building, but that significant risk existed under a theoretical future use that assumed the building would be redeveloped as a mixture of commercial and museum exhibit space. The significant risk was primarily attributed to the soil on top of the concrete floor and soil within the top three feet in exposed soil areas; however, M&E indicated that contaminants present on the interior wall surfaces, equipment surfaces, and oil in the vaults would also pose significant health risks (Metcalf & Eddy, 1997a). Based on these findings, the Phase II report recommended the completion of Phase III study to identify, evaluate, and select a Comprehensive Remedial Action Alternative for the Site.

2.4 Phase III Remedial Action Plan – May 1997

Based on the findings of the Phase II and Method 3 risk characterization, M&E prepared a Phase III Remedial Action Plan (RAP) for RTN 3-10627 in May 1997. The Phase III RAP presented an evaluation of several proposed remedial alternatives to address contaminated soil as well as the contaminated equipment and surfaces within Building 105. Based on the Phase III evaluation, M&E selected a remedial alternative that combined containment (i.e., capping or construction of an engineered barrier) of areas of exposed soil floor and removal and off-site

disposal of soil covering the concrete floor followed by surface cleaning with chemical extraction/decontamination of the concrete. The Phase III also indicated the selected alternative would include the decontamination of all process equipment within the building (Metcalf & Eddy, 1997b).

2.5 Phase IV Remedy Implementation Plan – November 1997

In November 1997, Stone & Webster, Inc. (S&W), on behalf of USACOE, prepared a remediation work plan and Phase IV Remedy Implementation Plan (RIP) that described the approach and procedures to be used to remediate contamination at Building 105. The proposed remediation included both steps to address soil contamination and interior building materials. The proposed remediation also included the proper handling of other hazardous materials (asbestos and lead paint) necessary to perform the remediation/decontamination work. Specifically, the plan proposed the following "general cleaning" and decontamination activities:

- Removal of asbestos containing materials (ACM) from select locations in the main forge shop to facilitate other cleaning and decontamination activities;
- Draining the oil reservoirs of the machinery in the building;
- Brushing and/or HEPA vacuuming of all readily accessible interior building surfaces in the main forge shop and the floor only in the roundhouse and blacksmith shop to remove contaminated dust and/or soil on top the concrete slab;
- Removal of debris;
- Removal of residual materials and wash-down of trenches and vaults;
- Sampling and analysis of wipe samples from walls, structural steel, overhead cranes, and ceiling to determine additional surfaces requiring decontamination and development of final cleanup goals for the Site.

The remediation work plan/Phase IV RIP also proposed to complete interim evaluation pilot testing to identify appropriate surface decontamination methods for equipment and interior building materials in the main forge shop, as well as to conduct full-scale decontamination of interior surfaces within the main forge shop and construct a cap within the building to prevent future direct exposure to contaminated soils. In order to construct the cap, the plan also included the removal of approximately 10 inches of soil from exposed soil areas.

According to several historic reports prepared by S&W between November 1997 and June 1998, S&W and its subcontractors mobilized to Building 105 and performed a portion of the remediation/decontamination work outlined in the remediation work plan/Phase IV RIP. Specifically, the preliminary response actions conducted by S&W included the "general cleaning" of the building interior and removal of the top ten inches of soil from exposed soil area areas surrounding the equipment inside the building. Pilot-testing of various decontamination methods for porous and non-porous surfaces was also conducted; however, full-scale decontamination of building surfaces and construction of the proposed concrete cap were not completed.

In preparation of this RAM and Risk-Based Cleanup Plan, Weston & Sampson reviewed historic reports documenting site investigations and cleanup of Building 105 from USACOE, BRA, and NPS. No specific report including the details of S&W's preliminary response actions were identified. However, review of subsequent reports prepared by S&W and visual observations of site conditions suggests the preliminary response actions described in this section were completed.

2.6 Stone & Webster Site Activities – April 1998 to July 1999

Following the completion of the preliminary response outlined in Section 2.5, S&W conducted several additional phases of investigation at the Site. The additional investigations included pre-pilot testing and baseline sampling to evaluate decontamination methods for building and equipment surfaces, two follow-up stages of investigation, referred to as Phase I and Phase II, to adequately characterize the extent of contamination, and a subsurface investigation to further evaluate contamination of soil and groundwater below the building. Data obtained through these investigations was collected to support remedial planning and the development of site-specific remedial objectives for Building 105. A summary of the sampling completed during each phase is provided in the following sections.

2.6.1 Pre-Pilot Test and Baseline Sampling

In accordance with the remedial work plan and Phase IV RIP prepared for the Site, S&W performed pre-pilot test and baseline sampling to identify areas within the building where pilot testing of proposed decontamination methods would be performed and to gather data to establish baseline conditions in order to evaluate the effectiveness of various decontamination techniques. Pre-pilot test and baseline sampling was conducted in two sub-phases between April and May 1998 and included the collection of wipe, bulk (concrete, wood, and brick), and paint scrape samples. Samples were collected from locations based on surface type, previous chemical data, visual evidence of contamination (i.e., hardened grease, oil, etc.) and site history (Stone & Webster, 2000). A summary of the sampling is provided below.

Media	Samples	Analysis
Wipe	32	PCBs, PAHs, metals & PCDD/PCDF
Paint Scrape	13	PCBs and metals
Bulk (wood, brick, etc.)	3	PCBs, PAHs, metals, hexavalent chromium, and PCDD/PCDF
Concrete	44	PCBs, PAHs, metals, hexavalent chromium, and PCDD/PCDF

A summary of the pre-pilot test and baseline sampling results is provided in Appendix C. A shown in these data summary tables, PCBs were detected at the greatest frequency in the wipe, bulk concrete, and paint samples collected in the main forge shop. In general, the highest PCB concentrations coincided with samples collected from the concrete floor slab in the vicinity of or from the surface of the former forging equipment and machinery. PCB concentrations in bulk building materials, other than concrete, were relatively low by comparison. A summary of the pre-pilot test and baseline PCB sampling results is included below.

Media	Samples	PCB Concentration Range
Wipe	32	<1.0 to 46 µg/100 cm^2
Paint Scrape	13	1.1 to 1,500 mg/kg
Concrete	3	<0.1 to 320 mg/kg
Bulk (wood, brick, etc.)	44	0.033 to 2.8 mg/kg

In addition to PCBs, PCDDs/PCDFs, PAHs, and metals were also detected in several of the wipe, bulk, concrete, and paint samples. In particular, the concentration of lead in paint samples

from the existing equipment were significantly elevated with concentrations as high as 94,900 mg/kg.

2.6.2 Interim Evaluation I

Based on the findings of the pre-pilot test and baseline sampling, S&W performed an interim evaluation of various decontamination methods between April and June 1998. The interim evaluation consisted of small-scale pilot tests in 10 areas (Areas A through I). Locations were selected based on the pre-pilot test and baseline sampling results and included seven pieces of equipment (test areas A though G) and two areas of the concrete floor slab in the main forge shop. Pilot testing areas are shown in Appendix C.

The evaluation of decontamination methods included the use of a variety of non-abrasive to moderately abrasive decontamination methods, including hand scraping, detergent washing and degreasing, solvent washing, corncob and walnut shell blasting, and other proprietary PCB decontamination products, and was performed on both porous and non-porous surfaces. The effectiveness of the various decontamination methods was evaluated through the collection of post-pilot testing confirmatory wipe and concrete samples. A summary of the baseline and post-treatment sampling results is provided in Appendix C.

Based on the confirmatory results, S&W evaluated each decontamination method based on their overall effectiveness, implementability, cost, and potential impact on historic value. For non-porous surfaces, the recommended decontamination method was corncob blasting followed by solvent washing with Pipe X-Metal X® cleaning solvent. S&W also recommended application of a NPS-approved high-solids epoxy protective coating to encapsulate non-porous areas following decontamination.

The evaluation of porous surface decontamination methods did not identify any effective alternatives. Therefore, S&W indicated that alternate remedial strategies to address contaminated porous surfaces, such as removal or capping, would be required.

2.6.3 Phase I Sampling

Phase I sampling was conducted after the pilot testing in October 1998. The purpose of the sampling was to collect additional data to further delineate contamination in the blacksmith shop, roundhouse, and main forge shop. The sampling included the collection of wipe samples from porous non-wall (wood and gypsum ceiling panels) and wall surfaces (transite, wood and brick). The sampling also included the collection of bulk concrete samples from floors and trenches throughout the building, as well as grab soil samples from areas of exposed soil in the blacksmith shop and main forge shop areas where ten inches of soil were removed during the preliminary response actions conducted by S&W. In addition, air samples were collected from the main forge shop to assess the extent of volatile PCBs in ambient air.

A summary of the Phase I sampling is provided in the table below. Concrete and soil sampling locations are shown in Figure 2. Wipe sampling locations are provided in Appendix C.

Media	Samples	Analysis
Wipe	30 – MFS	Total PCBs (EPA Method 8082) and PCB Homologues (EPA Method 1668)
Bulk	29 – MFS	PCBs, PAHs, metals, and PCDD/PCDF
Soil	4 – BS 99 –MFS	PCBs, PAHs, metals, and PCDD/PCDF
Concrete	19 – RH & BS 195 – MFS	PCBs, PAHs, metals, and PCDD/PCDF
Indoor Air	2 - MFS	PCBs Homologues

MFS – Main Forge Shop / BS – Blacksmith Shop / RH – Roundhouse

The results of the Phase I sampling were similar to the previous investigations at the Site. PCBs were detected in each of the media sampled, with the highest concentrations coming from building and equipment surfaces and concrete in close proximity to the former forging equipment and associated vaults and trenches in the main forge shop. PCBs were also detected in samples collected from the blacksmith shop and roundhouse; however, the concentrations were significantly lower than those observed in the main forge shop area of the building. A summary of PCB detections during the S&W Phase I investigation are presented below. Tables of the PCB sampling results are included in Appendix C.

S&W Phase I - Main Forge Shop				
Media	**No. Detections**	**No. ≥ 10**	**No. ≥ 50**	**Max. Conc.**
Wipe	10	0	0	5.2 µg/100 cm^2
Bulk	39	0	0	7.0 mg/kg
Concrete – Floor	72	17	14	1,700 mg/kg
Concrete – Trench	53	14	7	500 mg/kg
Soil	56	12	4	2,700 mg/kg

S&W Phase I – Blacksmith/Roundhouse				
Media	**No. Detections**	**No. ≥ 10**	**No. ≥ 50**	**Max. Conc.**
Concrete	17	0	0	8.1 mg/kg
Soil	5	0	0	4.1 mg/kg

In addition to PCBs, concentrations of PCDD/PCDF isomers, PAHs, and metals were detected in wipe, bulk, soil and concrete samples collected during the Phase I investigation. Low concentrations of dioxin-like PCB congeners were also detected in indoor air within the main forge shop; however, the concentrations were very low suggesting the presence of these contaminants did not pose significant risk and did not warrant evaluation of remedial alternatives to address ambient air within the building. A complete summary of the non-PCB Phase I sampling results is provided in Appendix C.

2.6.4 Phase II Sampling

Based on the results of the Phase I sampling, S&W performed Phase II sampling between January 27 and March 1, 1999 to fill the data gaps identified in the Phase I data set and to adequately characterize contamination for the purposes of conducting a risk characterization for the Site. The Phase II sampling included the collection of additional wipe samples of non-porous, non-wall surfaces in the blacksmith shop, roundhouse and main forge shop. Non-porous, non-wall surfaces consisted of structural steel and overhead piping greater than eight feet above the floor slab and garage doors, steel plates and glass located on the floors and

walls less than eight feet. The Phase II sampling also included the collection additional concrete, soil and bulk porous building materials (wood, brick, plaster, concrete and transite).

A summary of the Phase II sampling is provided below. Phase II concrete and soil sampling locations are shown in Figure 2. Additional bulk building material and wipe sampling locations are included in Appendix C.

Media	Samples	Analysis
Wipe	252 – MFS 13 – BS & RH	Total and PCB Homologues, PAHs, metals, and PCDD/PCDF
Bulk	68 – MFS	Total and PCB Homologues, PAHs, metals, and PCDD/PCDF
Concrete	145 – MFS 2 - BS	Total and PCB Homologues, PAHs, metals, and PCDD/PCDF
Soil	6 – MFS	Total and PCB Homologues, PAHs, metals, and PCDD/PCDF

MFS – Main Forge Shop / BS – Blacksmith Shop / RH – Roundhouse

A summary of the PCB detections in the various sample types collected during the Phase II sampling event are provided below. Tables providing the PCB sampling results at each sampling location are included in Appendix C.

S&W Phase II - Main Forge Shop				
Media	**No. Detections**	**No. ≥ 10**	**No. ≥ 50**	**Max. Conc.**
Bulk (non-wall)	43	0	0	2.7 mg/kg
Bulk (wall)	25	0	0	2.3 mg/kg
Wipe (non-wall)	130	30	3	120 µg/100 cm^2
Wipe (wall)	12	2	0	14 µg/100 cm^2
Concrete (floor)	57	13	5	230 mg/kg
Concrete (trench)	30	4	1	85 mg/kg
Soil	21	8	6	1,400 mg/kg

S&W Phase II – Blacksmith/Roundhouse				
Media	**No. Detections**	**No. ≥ 10**	**No. ≥ 50**	**Max. Conc.**
Wipe (non-wall)	10	0	0	6.7 µg/100 cm^2
Concrete	6	0	0	0.4 mg/kg

The Phase II PCB sampling results were consistent with the previous investigations in Building 105. Elevated concentrations of PCBs were detected in concrete and soil in the vicinity of the former equipment, trenches, and vaults. The Phase II results indicate PCBs were detected at the greatest frequency in samples collected from the steel plates covering trenches and vaults within the building. The location of these steel plate covered trenches and vaults are shown in Figure 2.

Similar to the Phase I sampling results, concentrations of PCDDs/PCDFs, PAHs, and metals were also detected in wipe, bulk building material, concrete and soil samples collected during the Phase II sampling event. Summary tables with the results for these additional parameters are provided in Appendix C.

2.6.5 Subsurface Investigation

In July 1999, S&W conducted a subsurface investigation in Building 105. The purpose of the investigation was to collect representative subsurface soil and groundwater samples to characterize the vertical extent of soil contamination and groundwater conditions below the building. In total 53 composite soil samples, including seven duplicate samples, were collected from ten soil borings (B-1, B-2, and B-4 through B-11) and five monitoring wells (MW-101 through MW-104 and MW-102A) were completed in the main forge shop. Soil samples collected during the investigation were analyzed for PCBs, VOCs, SVOCs, TPH, metals and PCDDs/PCDFs. Groundwater samples were collected from each of the newly installed monitoring wells and analyzed for PCBs, VOCs, PAHs, and total metals.

A summary of S&W's subsurface investigation results is provided in Appendix C. Soil samples collected during the investigation identified PCBs at eight sampling locations and exceeded 50 mg/kg at two locations. The concentration of PCBs in soil ranged from less than 0.037 mg/kg to 410 mg/kg. Based on the results, PCB concentrations exceeded the MCP Upper Concentrations Limit (UCL) of 100 mg/kg at two locations (B-5 and B-6).

In addition to PCBs, concentrations of PCDDs/PCDFs (expressed as 2,3,7,8-TCDD equivalent) were detected in two samples collected from the 0 to 1-foot interval (B-7 and MW-101) above the applicable MCP cleanup standards. Concentrations of antimony, lead, and nickel were also detected above MCP cleanup standards at several borings locations, with the concentration of lead at MW-102 exceeding the UCL of 3,000 mg/kg.

2.7 Non-Porous Surfaces Remedial Action – December 2000 to June 2001

Between December 2000 and June 2001, S&W and its subcontractors performed the decontamination of non-porous surfaces within the main forge shop as detailed in Final Interim Evaluation Report prepared by S&W dated November 2000. The decontamination consisted of the removal of paint and grease contaminated with PCBs and heavy metals from non-porous surfaces of former process equipment and interior building columns; follow-up solvent washing of the surfaces to ensure the removal of residual PCBs; and the application of an epoxy coating for future protection of decontaminated surfaces (Stone & Webster, July 2002). In addition, the work also included abatement of asbestos-containing materials to facilitate decontamination; removal of residual hydraulic oils from accessible reservoirs on the existing equipment; and the pumping and off-site disposal of accumulated stormwater from a trench inside the former Chain Testing Room.

In total, approximately 31,450 square feet (sf) of equipment surfaces and approximately 5,760 sf of structural columns, electrical panels, and miscellaneous equipment/part surfaces were decontaminated as part of this work. An inventory of the decontaminated surfaces is provided in Appendix D. Following decontamination, confirmatory wipe samples were collected. The confirmatory samples were collected at a maximum frequency of one sample per 400 square feet of decontaminated surface area. A total of 261 wipe samples, including all associated quality assurance/quality control (QA/QC) samples, were collected from 103 locations. All of the samples were analyzed for PCBs by EPA Method 8082 using soxhlet extraction. A subset of samples was also analyzed for PCBs by EPA Method 1668, and PAHs, metals and PCDDs/PCDFs.

A summary of the post-decontamination confirmatory wipe samples is provided in Appendix D. Based on the results, the concentrations of PCBs on equipment and non-porous decontaminated surfaces in the main forge shop were reduced to below the recommended site-

specific cleanup level of 2.27 µg/100 cm^2 developed by S&W, with the exception of one piece of equipment (Unit #051) located in the southeast corner of the building. Decontamination was ineffective for removing residual contamination from this equipment, even after multiple decontamination attempts.

Following receipt of confirmatory sample results, decontaminated equipment, including Unit N0. 51, and other non-porous surfaces in the building were encapsulated using a high-solids two part epoxy coating system.

2.8 Interim Evaluation II – August 2002

In August 2002, S&W performed a second Interim Evaluation for the Site. The purpose of the report was to evaluate current site conditions based on the completed remedial/decontamination activities conducted at the Site and recommended remediation of the remaining interior building surfaces, concrete floors, trenches and vaults, and subsurface soils in the main forge shop. Recommendations for the cleanup of the roundhouse and/or blacksmith shop were not provided.

As part of the evaluation, S&W developed site-specific cleanup standards for the contaminants of concern (COCs), in particular PCBs and PCDDs/PCDFs, for porous and non-porous building surfaces. Cleanup standards for bulk building materials and concrete, within the building were based on TSCA high-occupancy standards for PCBs, while all other COCs were based on the applicable MCP Method 1 cleanup standards.

Based on current site conditions, the remedial activities previously completed, and anticipated future use of the building a museum in the main forge shop, S&W recommended a comprehensive remedial alternative to address residual contamination at the Site. The alternative included the following:

- Decontamination of non-porous surfaces in the main forge shop using corncob blasting followed by solvent washing;
- Removal of porous wood building materials, such as doors, window frames, sills, sashes, walls and ceiling panels;
- Decontamination of brick and masonry surfaces on the walls and ceiling of the main forge shop by high-pressure water wash followed by encapsulation;
- Removal of the existing concrete floor slab;
- Excavation and off-site disposal of soil with PCB concentrations greater than 10 mg/kg; and
- Capping the remaining soil in the main forge shop with a new concrete cap constructed in accordance with the requirements of TSCA.

Review of available reports for the Site indicates that the recommended cleanup plan presented in the Interim Evaluation Report II was never implemented. The plan was submitted to EPA, and EPA provided comments, but no further action was taken.

3.0 NATURE & EXTENT OF CONTAMINATION

Historical assessments completed at the Site included the sampling and analysis of interior porous and non-porous surfaces, bulk porous building materials (i.e., wood, concrete, brick, etc.), paint/surface scrapings, soil, and groundwater. The results of these samples indicate concentrations of numerous compounds in excess of applicable TSCA and/or MCP Method 1 cleanup standards. The primary COCs include PCBs, TPH, PCDD/PCDF isomers. Other less frequent COCs include SVOCs, specifically polycyclic aromatic hydrocarbons (PAHs), and metals. The source of these COCs is attributed to the historic forging, blacksmith and roundhouse operations at the Site.

As described in Section 1.0, a developer proposes to remediate the Site as part of the redevelopment of Building 105. The proposed redevelopment of Building 105 includes redevelopment of the main forge shop portion of the building as a hotel, and reuse of the blacksmith shop and roundhouse area as a restaurant and various other functions. Given the difference in proposed future use of each area, as well as differences in the level of contamination between the main forge shop and head house area, the nature and extent of contamination for each is discussed separately below.

3.1 Main Forge Shop

The nature and extent of contamination in the main forge shop includes the former process equipment, building walls, ceiling, structural steel, steel plates and overhead piping, concrete floors and trenches, and surface and subsurface soils. Contamination associated with each media is discussed below.

3.1.1 Process Equipment

Wipe and paint scrape samples indicated the process equipment contained elevated PCB and metals concentrations. Based on these results, the process equipment was decontaminated in 2000-2001 using a combination of abrasive blasting to remove paint and harden grease/oil from the equipment followed by solvent washing to remove residual PCBs and encapsulation. As part of the decontamination, confirmatory wipe samples were collected and the results indicated that with the exception of a quenching tank (Unit No. 051) located in the southeast corner of the building, PCB concentrations were below the decontamination cleanup goal (2.67 µg/100 cm^2) for the equipment. The final confirmatory wipe sampling results for Unit No. 051 was 22 µg/wipe.

Confirmatory samples for dioxin-like PCB congeners, PCDD/PCDF isomers, PAHs, and metals were also collected during decontamination activities. The results indicated concentrations of these COC were all below their respective risk-based cleanup goals.

3.1.2 Interior Porous and Non-Porous Building Surfaces

Wipe sampling within the main forge shop indicates COCs are present on the surface of or in different porous and non-porous building materials, including the building walls and ceiling, structural steel and overhead piping, and the steel plates covering the various trenches and vaults.

3.1.2.1 Walls

Wipe samples from both porous and non-porous wall surfaces contain low concentrations of PCB isomers, dioxin-like PCB congeners, PCDDs/PCDFs, PAHs and metals above laboratory reporting limits. PCB isomers, specifically Aroclor 1254, dioxin-like PCBs congeners, and PCDD/PCDF were detected most frequently. In general, the highest concentrations of these

COCs corresponded with historic wipe sampling locations in close proximity to the former forging equipment, and surface concentrations decreased with an increase in height above the building floor slab. Sample No. 990, taken from the steel surface of the roll-up door at the northwest corner of the main forge shop exhibited the greatest number of detected analytes in samples collected below 8 feet. Sample No. 970, collected from the metal surface of a vertical ceiling wall, contained the greatest number of detected analytes above 8 feet (Stone & Webster, 2002).

3.1.2.2 Ceilings, Structural Steel and Overhead Piping

Wipe samples from porous and non-porous ceiling surfaces contained concentrations of PCB isomers, dioxin-like PCB congeners, PCDDs/PCDFs, PAHs and metals above laboratory reporting limits. PCB congeners, PCDDs/PCDFs and metals, specifically arsenic, were detected in all of the wipe samples collected, while PAHs were detected in 18 out of 19 samples collected (GZA, 2000). PCB isomers were detected in approximately half of the samples collected. In general, the maximum concentration of COCs corresponded to samples collected from overhead piping and structural steel at various locations along ceiling of the building.

3.1.2.3 Steel Plates

Wipes samples of the steel plates covering the trenches and vaults throughout the main forge shop contained PCBs above laboratory reporting limits. Based on the sampling results, surficial contamination of the steel plates appears to be evenly distributed throughout the building with concentrations up to 120 µg/100 cm^2.

3.1.3 Interior Porous Building Materials

Interior porous building materials include brick, wood, plaster, paint and concrete associated with the building walls and ceiling. The primary contamination of concern in these materials is PCBs. PCBs were detected in bulk samples of brick, wood, plaster and paint from wall and ceiling materials in the main forge shop. In general, contamination of wood panels has been observed up to depths of 5 centimeters (cm) on the walls and ceiling. Contamination of the brick walls was limited primarily to surficial impacts identified in samples collected from 0 to 1 cm. These results suggest the source of PCBs on the brick wall and ceiling surfaces is likely attributed to residual paint or dust related to the former industrial process.

3.1.4 Concrete Floor and Trenches

The results of the historic concrete sampling indicate elevated concentrations of PCBs are present in the floor slab and trenches throughout the main forge shop at depths ranging from the concrete surface to up to 10 cm. Similar to the sampling results of other media in the building, PCB concentrations generally decreased with increases in sampling depth, suggesting the source of the PCBs is likely attributed to spills and splashes of PCB-containing oils related to the processing of anchor chain within the building. The areas of concrete floor with the highest PCB concentrations are primarily situated at the northwest and southeast corner of the main forge shop. The trench area with the greatest PCB concentrations is located at the southeast corner of the building.

3.1.5 Soil

COCs detected in soil within the main forge shop include PCBs, TPH, PAHs, and PCDDs/PCDFs. The distribution of these COCs is confined to several localized areas of soil impacts where the concentrations exceed applicable cleanup standards. These areas are located primarily in exposed surface soil (0 to 1 foot) around former high-impact machinery and valve pits in the vicinity of the forging equipment. The area with the maximum extent of

contamination is around the valve pits near the former bar cutting machine in the northwest corner of the building, where elevated concentrations of several COCs were detected up to six feet below ground surface.

3.1.6 Groundwater

Historically, constituents detected in groundwater were primarily inorganic, and lead was the only contaminant detected in excess of applicable MCP GW-2 Reportable Concentrations (RCGW-2). Although other soil contaminants were also detected in groundwater, their concentrations were generally lower than applicable RCGW-2 standards. It should also be noted that direct comparison of the historical groundwater sampling results to the MCP RCGW-2 standards is conservation since historically samples were analyzed for total metals and the MCP standards are based on dissolved metals concentrations.

Based on the where these parameters were detected, no single source area or discernable pattern in groundwater contamination was identified.

3.2 Roundhouse & Blacksmith Shop

Historically, the previous site investigations in the blacksmith shop and round house were limited. Based on the limited historical assessment completed, the nature and extent of contamination in the blacksmith shop and round house included the concrete floor and trenches, surficial soil, and steel plates covering the trenches in this portion of the building.

3.2.1 Steel Plates

Wipe samples of the steel plates in the roundhouse and blacksmith shop contained low concentrations of PCBs. PCB concentrations on steel plates in the blacksmith shop ranged from less than 1 µg/100 cm^2 to 6.7 µg/100 cm^2. PCB concentrations in the roundhouse ranged from less than 1 µg/100 cm^2 to 3.7 µg/100 cm^2. Based on the concentrations and distribution of PCBs, there was no discernable pattern in the detection of PCBs within this portion of the building; therefore, the source of the PCBs is believed to be attributed to the minor forging operations historically conducted in the blacksmith shop.

3.2.2 Concrete Floor and Trenches

Bulk samples of the concrete floor and trenches within the roundhouse and blacksmith shop identified low concentrations of PCBs and several metals. PCB concentrations ranged from less than 0.17 mg/kg to 8.1 mg/kg. Similar to the results observed in the main forge shop, PCB concentrations were primarily identified in surficial concrete samples collected from 0 to 1 cm; although, PCBs impacts from 1 to 5 cm were also detected in several samples.

3.2.3 Soil

Soil sampling results from the limited investigation of soil in roundhouse and blacksmith shop identified low concentrations of PCBs. PCB concentrations ranged from 0.41 mg/kg to 4.1 mg/kg in samples collected from 0 to 10 cm below ground surface.

In addition to PCBs, soil also contained low to moderate concentrations of metals, PCDDs/PCDFs, and TPH. No samples for SVOCs were historically collected from this portion of the building; however, based on the concentration of petroleum hydrocarbons and physical classification/screening of soil samples, the concentration of SVOCs in this portion of the building is expected to be similar to the concentrations identified in the main forge portion of the building.

3.3 Supplemental Site Investigation Approach

Based on the findings of the historic site investigation activities, Weston & Sampson developed an approach to complete a supplemental site investigation at the Site. The primary objective of the investigation was to further characterize the nature and extent of contamination at the Site and obtain additional data necessary to assist in the preparation of a risk-based cleanup plan for the Site. Specifically, the investigation focused on confirming the results of previous site investigations; further characterizing the horizontal and vertical extent of PCB contamination in the main forge shop, roundhouse, and blacksmith shop; and evaluating current groundwater conditions at the Site. In addition, the investigation also included the evaluation of additional decontamination methods to address PCB-contaminated concrete, assessing sub-slab soil gas, and further characterizing PCBs on building surfaces and in porous materials within blacksmith shop and roundhouse.

4.0 SUPPLEMENTAL SITE INVESTIGATION

Between August 2014 and March 2015, Weston & Sampson completed a supplemental investigation to further characterize the nature and extent of contamination at the Site. The investigation consisted of multiple sampling events/phases and included the following:

- Collection of soil samples in the main forge shop, blacksmith shop, and roundhouse to further delineate the horizontal and vertical extent of PCBs, petroleum, PCDDs/PCDFs and metals in soil beneath the building;
- Collection of concrete samples in the main forge shop, blacksmith shop, and roundhouse to further delineate the horizontal and vertical extent of PCBs and PCDDs/PCDFs in the concrete floor slab;
- Installation of one new monitoring wells and the collection of one round of groundwater samples from all accessible monitoring wells within the building to evaluate current groundwater conditions;
- Collection of additional surface and bulk samples from interior non-porous and porous building materials in the main forge shop, blacksmith shop, and roundhouse;
- Collection of surface wipe samples from the remaining forging equipment and machinery located in the blacksmith shop;
- Collection of additional soil samples from areas of known petroleum contamination in the main forge shop to investigate the nature of petroleum-impacted soils beneath the building; and
- Installation of sub-slab soil vapor implants and the collection of one round of sub-slab soil gas sampling to assess potential vapor migration pathways within the proposed building.

Supplemental site investigation sampling locations are shown in Figure 4 – Supplemental Site Investigation Plan. Details regarding the location and collection of samples as part of the investigation are described in the following sections.

4.1 Soil Sampling & Analysis

Soil samples were collected during two rounds of sampling completed in August and December 2014. The samples were collected from a total of twenty-five (25) soil borings advanced in the main forge shop, blacksmith shop, and roundhouse. The soil borings were advanced using a track-mounted Geoprobe drill rig to various depths up to 12 feet below grade. Soil boring locations are shown in Figure 4.

During soil boring activities, soil samples were collected continuously from each boring using disposable acetate liners, and a Weston & Sampson geologist classified the physical characteristics and screened each sample for the presence of visual and/or olfactory evidence of contamination. Samples were also screened for total volatile organic compounds (TVOCs) using a Photo-ionization Detector (PID) in accordance with DEP's jar headspace screening procedure. Soil samples for laboratory analysis were also collected from each boring. Details on the collection of samples during each round of sampling are described below.

4.1.1 August 2014

Between August 21 and 26, 2014, Weston & Sampson advanced twenty-two (22) soil borings (WSB-1 and WSB-3 through 23) at the Site. From each boring, Weston & Sampson collected soil samples for laboratory analysis from four (4) depth intervals: 0 to 0.5 feet, 0.5 to 2 feet, 2 to 4 feet, and 4 to 6 feet below grade. All of these samples were submitted to Contest Analytical

Laboratories of East Longmeadow, Massachusetts (Contest) for the analysis of PCBs by EPA Method 8082 with soxhlet extraction; however, initially only the samples from the top two sampling intervals (0 to 0.5 and 0.5 to 2.0 feet) were analyzed. The remaining PCB samples were held pending the results of the top intervals. In total, 55 soil samples were analyzed for PCBs, including three (3) samples from 2 to 4 feet, four (4) samples from 4 to 6 feet, and three (3) field duplicate quality assurance/quality control (QA/QC) samples.

In addition, Weston & Sampson collected a subset of soil samples for analysis of other parameters. These parameters included extractable petroleum hydrocarbons (EPH) with target PAHs, volatile petroleum hydrocarbons (VPH), VOCs, and RCRA-8 metals. In total, ten (10) samples were submitted to Contest for the analysis of these additional parameters. The sample locations and depths were selected based on the results of field screening during soil boring advancement, with samples exhibiting the greatest evidence of contamination or PID screening results submitted for laboratory analysis.

4.1.2 December 2014

On December 19, 2014, Weston & Sampson advanced three (3) shallow soil borings (WSSB 101 0-6", WSSB 102 0-6", and WSSB 103 0-6") in the blacksmith shop and roundhouse. The purpose of these borings was to collect shallow soil samples for the analysis of dioxin-like PCB congeners and PCDDs/PCDFs to supplemental the historical data set for these parameters . The locations of the samples are shown in Figure 4.

In total, Weston & Sampson collected three (3) soil samples (one from each of the additional soil borings) for laboratory analysis. The samples were collected from 0 to 6 inches below grade and submitted to Pace Analytical Laboratories of Minneapolis, Minnesota for analysis of PCB Congeners by EPA Method 1668 and PCDDs/PCDFs by EPA Method 8290.

4.2 Concrete Sampling & Analysis

Concrete sampling of the Building 105 floor slab was conducted during August and December 2014. In total, concrete samples were collected from 43 sampling locations distributed throughout Building 105. The concrete sampling locations are shown in Figure 4.

During the initial sampling, concrete samples were collected from the top 0.5-inches of concrete at each location. Concrete samples from the second round of sampling were collected the top 0.5-inch as well as 0.5 to 2.0 inches below the top of concrete. All of the samples were collected using a rotary hammer drill in accordance with EPA's Standard Operating Procedures (SOP) for Sampling Porous Surfaces for PCBs. Further details regarding the selection of sampling locations and laboratory analysis are provided below.

4.2.1 August 2014

Between August 21 and 26, 2014, Weston & Sampson collected concrete samples from 18 locations (CS-1 through CS-18) within Building 105. Due to the limited assessment of the blacksmith shop and roundhouse during the historical site investigations, 16 of the 18 concrete samples were collected from the blacksmith shop, roundhouse, and the adjacent small area of office/storage space. Two samples (CS-15 and CS-16) were collected in northwest corner of the main forge shop in the vicinity of the former band saws and valve pits, where significantly elevated PCBs concentrations were detected during historic site investigations. All of the samples were collected from the top 0.5-inch of concrete and were submitted to Contest for the analysis of PCBs by EPA Method 8082 with soxhlet extraction.

4.2.2 December 2014

Based on the results of the initial round of concrete sampling, Weston & Sampson performed a second round of concrete sampling at Building 105 on December 18 and 19, 2014. During this second round, Weston & Sampson collected samples from an additional twenty-eight (28) locations . The location of these concrete samples were selected primarily to delineate areas of the concrete floor slab with PCB concentrations greater than 10 mg/kg for the purposes of evaluating different concrete removal alternatives in support of this risk-based cleanup plan. The additional concrete sampling locations are shown in Figure 4.

As part of the second round of concrete sampling, Weston & Sampson collected two samples from 25 sampling locations (CS-101 through CS-125) in the main forge shop. The samples were collected from the top 0.5-inch and from 0.5 to 2 inches below the top of concrete and were submitted to Contest for the analysis of PCBs by EPA Method 8082 with soxhlet extraction. In addition, Weston & Sampson collected samples from three locations (WSB 101 0-0.5" through WSB 103 0-0.5") within the roundhouse and blacksmith shop to evaluate the presence of dioxin-like PCB congeners and PCDDs/PCDFs. These additional samples were collected from the top 0.5-inch of concrete at each location and submitted to Pace Analytical Laboratories of Minneapolis, Minnesota for the analysis of PCB congeners by EPA Method 1668 and PCDDs/PCDFs isomers by EPA Method 8290.

4.3 Groundwater Sampling & Analysis

Weston & Sampson performed one round of groundwater sampling to evaluate current groundwater conditions at the Site. Prior to conducting the groundwater sampling event, Weston & Sampson installed one new monitoring well (MW-WS1) in the western portion of the building to supplement the existing network of monitoring wells installed by others. The well was installed in the blacksmith shop during soil boring activities in August 2014. The well was constructed at the location of WSB-1 using 1-inch diameter PVC and 10 feet of well screen, which, based on the depth of groundwater observed during the investigation, was set from 2 to 12 feet below ground surface.

Weston & Sampson conducted groundwater sampling at the Site in September 2014. The sampling included the collection of groundwater samples from the newly installed monitoring well in the blacksmith shop and five (5) of the existing monitoring wells in the building (MW-101, MW-102A, MW-EX01, MW-EX02, and MW-EX03). The monitoring well locations are shown in Figure 4.

In total, Weston & Sampson collected seven (7) groundwater samples, including one field duplicate for QA/QC purposes. The groundwater samples were collected using low-flow sampling techniques and were submitted to Contest for the analysis of EPH parameters with target PAHs, VPH parameters, VOCs, PCBs, and dissolved RCRA-8 metals. Samples for dissolved metals were field filtered using disposable 0.45 µm filters prior to submitting to the laboratory.

4.4 Building Materials Sampling & Analysis

Based on the results of historic investigations, Weston & Sampson developed an approach to further characterize the nature and extent of PCB contamination on building surfaces and in porous building materials at the Site. The approach included the following:

- Assess PCBs in paint focusing on the blacksmith shop, roundhouse, and office/storage area;

- Assess surface levels of PCBs via wipe sampling in the blacksmith shop, roundhouse, and office/storage area;
- Assess PCBs in the interior brick walls in the blacksmith shop and roundhouse; and
- Assess PCBs in caulking and window glazing compound throughout the building.

The investigation of interior building surfaces and materials was conducted on December 18, 2014 and February 18, 2015. Sampling locations are shown in Figure 4. Additional details regarding the investigation are summarized below.

4.4.1 Brick Wall Sampling

To evaluate potential impacts to the interior bricks walls in the blacksmith shop and roundhouse, on December 18, 2014, Weston & Sampson collected ten (10) samples (BS Wall 1 through 5 and RH Wall 1 through 5) from the painted interior brick walls in the roundhouse and blacksmith shop. The bulk samples were collected from top 0.5-inch of brick at each location using a rotary hammer drill in accordance with EPA SOPs, and the samples were submitted to Contest for the analysis of PCBs by EPA Method 8082 with soxhlet extraction.

4.4.2 Paint Sampling

Weston & Sampson collected nine (9) paint samples from the blacksmith shop, roundhouse, and office/storage area for laboratory analysis. Two (2) additional samples were collected from the main forge shop to confirm previous sample results. In each sample location, paint was collected down to the bare substrate. All of the samples were submitted to Contest for the analysis of PCBs by EPA Method 8082 with soxhlet extraction.

4.4.3 Surface Sampling

Weston & Sampson collected four (4) wipe samples from the blacksmith shop and roundhouse. Samples were collected from two separate pieces of machinery, a wall and a floor. Two samples were collected from machinery in the blacksmith shop. Within the roundhouse one sample was collected from a wall and another was collected from a floor surface. The wipe samples were collected following the methods outlined in the EPA document “Wipe Sampling and Double Wash/Rinse Cleanup as Recommended by the Environmental Protection Agency PCB Spill Cleanup Policy” dated June 23, 1987 and revised on April 18, 1991. All of the wipe samples were submitted to Contest for the analysis of PCBs by EPA Method 8082 with soxhlet extraction.

4.4.4 Caulking and Glazing Compounds

Weston & Sampson collected five caulking and five glazing compound samples from Building 105 windows for laboratory analysis. Since no caulking was observed in the main forge shop, samples were collected from the blacksmith shop and roundhouse sections of the building only. Window glazing compound is present and was sampled throughout the building.

All of the samples were submitted to Contest for the analysis of PCBs by EPA Method 8082 with soxhlet extraction. The caulking and glazing compound sampling locations are shown on Figure 4.

4.5 Additional Petroleum Assessment

Results from the historic investigations of Building 105 identified numerous areas in the main forge shop where soil contained elevated concentrations of TPH as high as 140,000 mg/kg. Given that these significantly elevated TPH concentrations, Weston & Sampson conducted an additional assessment of these areas to better understand the nature of petroleum

contamination below the building. Since the historic samples were analyzed for TPH Diesel Range and Gasoline Range Organics (DRO/GRO), the assessment focused on evaluating the share of EPH and VPH fractions associated with the historic petroleum contamination at each location. In addition, because the elevated petroleum concentrations represented a possible source of petroleum-impacted vapors below the building floor slab, the assessment also included an evaluation of the sub-slab soil gas.

4.5.1 Soil

The assessment of petroleum-impacted soil was performed on March 19, 2015. The assessment included advancing nine (9) soil borings (SB-E1-0-6", SB-E3-4-24", SB-F2-12-42", SB-F3-0-15", SB-H1-0-19", SB-I2-14-51", SB-O1-0-21", SB-S5-0-6", and SB-S6-0-3") at 9 of the 10 locations where historically elevated TPH concentrations in soil were identified. The soil boring locations are shown in Figure 4. Note, as shown in Figure 4, the historic sampling location D1 was not investigated due to an unknown subsurface obstruction that prevented drilling in the area.

The additional soil borings were advanced using a track-mounted Geoprobe drill rig. During the drilling, soil samples were collected continuously from each boring using 5-foot disposable acetate sleeves and screened for the visual and olfactory evidence of contamination as well as TVOCs. Based on the results of the field screening and depths at which the historic samples were collected, Weston & Sampson collected one sample from each boring for laboratory analysis. In total, ten (10) soil samples, including one field duplicate sample, were collected and submitted to Contest for the analysis of EPH with target PAHs and VPH with target VOCs.

4.5.2 Sub-Slab Soil Gas

As noted above, in addition to soil sampling to evaluate the fractions of VPH and EPH in soil, Weston & Sampson also evaluated sub-slab soil gas concentrations below the building. The evaluation was conducted in order to assess possible vapor intrusion pathways due to residual petroleum contamination in soil that could potentially impact indoor air following redevelopment of the building. The evaluation consisted of installing nine (9) sub-slab vapor implants (SG-E1, SG-02, SG-03, SG-E3, SG-F2, SG-F3, SG-S5, SG-S6, and SG-0I) and collection of sub-slab soil gas samples.

The sub-slab vapor implants were installed on March 19, 2015. In general, vapor impacts were installed in locations corresponding to the historic sampling locations containing elevated TPH concentrations; however, due to the remaining equipment and drilling accessibility, some locations could only be installed in the general vicinity of historic locations. Final locations are shown in Figure 4.

As shown in Figure 4, the sub-slab vapor implants were installed within the existing concrete floor slab. The implants were installed by coring the existing concrete floor slab and drilling to a depth of approximately 5 feet below the top of slab using a Geoprobe drill rig. Prefabricated 5-foot long vapor impacts, consisting of 3 feet of screen and 2 feet of solid riser, were installed in each location and finished with flush-mount caps set in concrete.

Weston & Sampson collected sub-slab soil gas samples on March 25, 2015. The samples were collected from each sub-slab vapor implants using 6-liter stainless steel SUMMA canisters over an eight hour period. Prior to sampling, the vapor implants were purged with a peristaltic pump using a flow rate of 200 ml/min for 5 minutes to remove stagnant vapors from the implants and sample tubing. Samples were submitted to Contest for the analysis of VOCs by EPA Method

TO-15. In addition, one sample (SG-F3) was also analyzed for Air Phase Petroleum Hydrocarbons (APH) by Method MADEP APH revision 1.

5.0 SUPPLEMENTAL SITE INVESTIGATION RESULTS

This section presents the results of the supplemental site investigation described in Section 4.0. The results of the various soil, concrete, groundwater, and surface and bulk building material samples collected as part of the investigation are presented in Tables 1 through 9. Sampling locations are shown in Figure 4. Copies of the associated laboratory data reports are provided in Appendix E.

5.1 Soil Analytical Results

5.1.1 PCBs

PCB soil sampling results are presented in Table 1. The results indicate PCBs were detected at several locations in the main forge shop, but were not detected in two samples collected from below the existing floor slab in the roundhouse or blacksmith shop. Consistent with the results from previous investigations, PCBs were detected at the greatest frequency and concentrations in shallow soils samples from the top two sampling intervals (0 to 0.5 feet and 0.5 to 2 feet). PCBs were detected in 25 of the samples collected from 0 to 2 feet (16 from 0 to 0.5 feet and 9 from 0.5 to 2.0 feet), as opposed to only 1 sample collected from greater than 2 feet below grade. Of the 25 detections in shallow soil, two samples contained PCBs in excess of 10 mg/kg and only one exceeded 50 mg/kg. Both these samples were collected from top sample interval (0 to 0.5 feet) and from areas exposed soil floor. The maximum PCB concentration identified was 72 mg/kg at WSB-19 from 0 to 0.5 feet

As described in Section 4.1.2, Weston & Sampson also collected three samples from the blacksmith shop and roundhouse for the analysis of PCB congeners. PCB congeners were detected in all three of the soil samples; however, concentrations of the individual congeners, as well as total PCBs, were all significantly less than 1 mg/kg. Total PCB concentrations ranged from 0.0094 mg/kg to 0.0383 mg/kg. The results for individual PCB congeners are provided in the laboratory data report provided in Appendix E.

5.1.2 PCDDs/PCDFs

Weston & Sampson collected three soil samples from the roundhouse and blacksmith shop for the analysis of PCDDs/PCDFs. The results are summarized in Table 2. As indicated in Table 2, several PCDD/PCDF isomers were detected in shallow soil below the concrete floor slab in the roundhouse and blacksmith shop. For comparison purposes, the concentrations of PCDDs/PCDFs were converted to a 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) toxicity equivalent (TEQ) using DEP equivalence factors and compared to the MCP Method 1 cleanup standard. The calculated 2,3,7.8-TCDD TEQ concentrations were all less than the MCP Method 1 cleanup standard of 50 nanograms per kilogram (ng/kg). The concentrations ranged from 8.7 ng/kg at WSSB-103 (0-6”) to 29 ng/kg at WSSB-101 (0-6”).

5.1.3 EPH/VPH

Weston & Sampson collected samples for EPH with target PAHs and VPH with target VOCs during two rounds of sampling at the Site. During the first round, samples were collected from fifteen locations throughout the building from depths up to 6 feet below grade based on evidence of contamination or elevated PID screening results. The second round of samples were collected during the additional petroleum assessment, and the samples locations were preferentially selected from areas and depths within the main forge shop where historic sample results indicated the presence of elevated TPH concentrations.

The results from the first round of sampling are summarized in Table 3. As shown in the table, several samples collected from depths up to 6 feet below grade contained concentrations of the EPH fractions C_9-C_{18} aliphatic and C_{11}-C_{22} aromatic hydrocarbons and the VPH fraction C_9-C_{10} aromatic hydrocarbons in excess of MCP Method 1 cleanup standards. In addition, elevated concentrations of C_{19}-C_{36} aliphatic hydrocarbons and acenaphthylene in excess of the Method 1 cleanup standards were detected in one location (WSB-10). The concentrations were all below applicable MCP UCLs.

The second round sampling results are presented in Table 4. The results indicate soil in the vicinity of historic locations with elevated TPH contained concentrations of EPH and VPH fractions as well as several PAHs above laboratory reporting limits. The detected concentrations were below MCP Method 1 cleanup standards, except for C_9-C_{18} aliphatic hydrocarbons at SB-F2-12-42" and SB-F3-0-15" and C_{19}-C_{36} aliphatic and C_{11}-C_{22} aromatics hydrocarbons at SB-F3-0-15". SB-F3-0-15" was the only location to exceed a MCP UCL. The concentration of C_{19}-C_{36} aliphatic hydrocarbons at SB-F3-0-15" (21,000 mg/kg) slightly exceeded the MCP UCL of 20,000 mg/kg.

5.1.4 Metals

Table 3 provides the soil sampling results for RCRA-8 metals. As shown in the table, the results indicate the presence of arsenic, barium, cadmium, chromium, lead, and mercury in soil, and with the exception of the concentration of lead at WSB-8 from 0.5 to 2 feet and concentrations of arsenic, cadmium, chromium and lead at WSB-23 from 2 to 4 feet, metals results were below the applicable MCP Method 1 cleanup standards. Sample results were all less than applicable MCP UCLs.

5.2 Concrete Analytical Results

5.2.1 PCBs

Sampling of the concrete floor slab was conducted during two rounds of investigation performed in August and December 2014. As part of the initial round, 18 concrete samples were collected to confirm historic sampling results in main forge shop and to further evaluate the extent of PCB impacts in the blacksmith shop and roundhouse. During the second round, 50 additional samples of the floor slab were collected to further assess the extent of PCB contamination in the main forge shop. The second round also included in the collection of three samples to evaluate the presence of dioxin-like PCB congeners in the blacksmith shop and roundhouse.

The PCB concrete sampling results are provided in Table 5. As presented in Table 5, PCBs were detected in 62 of 68 samples collected during the two rounds of concrete sampling. Of these detections, PCB concentrations exceeded 10 mg/kg at 12 locations and 50 mg/kg at 4 locations. Detected PCB concentrations ranged from 0.13 to 200 mg/kg. Based on the results, the highest PCB concentrations were generally detected at the surface of the concrete floor slab (0 to 0.5 inches) in areas where historically elevated concentrations of PCBs were detected. PCB concentrations in concrete also appear to decrease with an increase in sample depth indicating contamination is primarily surficial.

As noted above, Weston & Sampson collected three concrete samples to evaluate the presence of dioxin-like PCB congeners in the blacksmith shop and roundhouse as part of the second round of concrete sampling. PCB congeners were detected in all three of the samples collected. Concentrations, expressed as total PCBs, ranged from 1.29 mg/kg to 4.23 mg/kg. The results for individual PCB congeners are provided in the laboratory data report provided in Appendix E.

5.2.2 PCDDs/PCDFs

As part of the second round of concrete sampling, Weston & Sampson collected three samples from the blacksmith shop and roundhouse for the analysis of PCDDs/PCDFs. A summary of the results is included in Table 2. The results indicate PCDD/PCDF isomers were present in each of the samples collected. The concentration of PCDDs/PCDFs, expressed as 2,3,7,8-TCDD TEQ, ranged from 42 ng/kg at WSB-102 0-0.5" to 90 ng/kg at WSB-103 0-0.5".

5.3 Groundwater Analytical Results

Groundwater sampling results are included in Table 6. As shown in Table 6, groundwater samples contained low concentrations of petroleum compounds, 2-methylnaphthalene, arsenic, barium and PCBs; however, the concentrations were all significantly below Method 1 GW-2 and GW-3 cleanup standards. PCBs were detected at only one location (MW-102A) at a concentration of 0.26 mg/l. Given this sample was collected from a historic monitoring well, and was not developed prior to sampling, the source of the low concentration of PCBs is believed to be associated with turbidity in the sample, not representative of dissolved phase concentrations.

5.4 Building Material Analytical Results

Weston & Sampson performed sampling and analysis of various building surfaces and materials inside Building 105, including the brick walls in the blacksmith shop and roundhouse; window caulking and glazing throughout the building, paint sampling throughout the building, and wipe sampling in the blacksmith shop and roundhouse. The sampling results for these surfaces/materials are provided below.

5.4.1 Brick Wall

Weston & Sampson collected 10 samples of the interior brick walls within the blacksmith shop and roundhouse. The sampling results are summarized in Table 7. As shown in Table 7, low concentrations of PCBs were detected in 7 of the 10 samples, including all of the samples collected from the blacksmith shop. Where detected, PCB concentrations were all less than 1 mg/kg. The maximum concentration detected was 0.37 mg/kg at sample location "BS Wall 1".

5.4.2 Window Caulking and Glazing Compound

A summary of the caulking and glazing compound sampling results are provided in Table 8. The caulking and glazing compound sampling results indicated that four of the ten samples contained PCBs. Of the samples containing PCBs, the concentrations ranged from 1.7 mg/kg to 2.9 mg/kg. Window glazing compound containing PCBs was found in the main forge shop while samples collected from the blacksmith shop and roundhouse did not contain PCBs. No window caulking was observed in the main forge shop. Of the five samples collected from the west section of the building, only one detected PCBs; having a concentration of 1.7 mg/kg.

5.4.3 Paint

The paint PCB sampling results are provided in Table 8. As shown in Table 8, PCBs were detected in each of the 11 samples, and the concentrations ranged from 2.1 mg/kg to 29.1 mg/kg.

5.4.4 Building Surface Samples

Both porous (concrete floor and brick wall) and non-porous wipe samples were collected from the blacksmith shop and roundhouse. The sampling locations are shown in Figure 4, and the results are summarized in Table 8. PCBs were detected in three of the four wipe samples. Each of the wipe samples that detected PCBs contained PCB concentrations greater than 2 mg/kg.

The concentrations ranged from 2.1 µg/100 cm^2 to 3.2 µg/100 cm^2. The wipe sample determined not to contain PCBs was collected from a vertical wall surface while the other three samples were collected from horizontal machinery surfaces and a horizontal floor surface

5.5 Sub-Slab Soil Gas Analytical Results

As described in Section 4.5.2, sub-slab soil gas samples were collected from nine (9) locations to assess potential pathways for vapor intrusion inside Building 105. The sample results suggest soil gas below the building contains low concentration of several VOCs and C_5-C_8 aliphatic hydrocarbons. For comparison purposes, sample results were evaluated against the sub-slab residential screening values published in DEP's Interim Vapor Intrusion Guidance. The results indicate the concentrations of VOCs and petroleum hydrocarbon fractions were all significantly less than the applicable screening values. A summary of the sub-slab soil gas sampling results is provided in Table 9.

5.6 Summary of Supplemental Site Investigation Results

5.6.1 Main Forge Shop

The results from the supplemental site investigation are consistent with previous investigations at Building 105. PCBs were detected in soil, concrete, and bulk building materials and on various building surfaces in main forge shop, blacksmith shop, and roundhouse. Other Site contaminants, including metals and petroleum hydrocarbons, were identified in soil at several locations. In general, contaminant concentrations detected in main forge shop during this Site investigation were significantly less than those identified during the previous Site investigations; however, the overall distribution and frequency of occurrence was similar.

The results of petroleum assessment to evaluate areas in the main forge shop with evidence of significant petroleum soil contamination indicate that EPH and VPH concentrations in the vicinity of each location were significantly less than the corresponding TPH concentrations detected during the historic site investigation activities. While the differences in concentration may be partially associated with heterogeneity in contaminant distribution below the slab, these results suggest the historic petroleum contamination is confined to relatively isolated areas within the main forge shop. The sampling results also imply the residual contamination is likely composed of heavy range petroleum, which has undergone weathering/degradation over time. While numerous areas with TPH concentrations in excess of applicable MCP UCLs were historically detected in the building, based on the sampling results from this the supplemental investigation, only one location contains a concentration of EPH exceeding the UCL.

Subsequent soil gas sampling conducted following the additional petroleum assessment indicate sub-slab soil gas concentrations of VOCs and EPH/VPH are significantly below the applicable DEP residential sub-slab screening values. These results, combined with the groundwater sampling results indicating EPH and VPH concentrations significantly below the applicable GW-2 criteria, suggest residual petroleum contamination is likely not a significant source of petroleum contamination to sub-slab soil gas and that vapor intrusion of petroleum vapors following redevelopment in unlikely.

5.6.2 Blacksmith Shop & Roundhouse

Supplemental Site investigation results for the blacksmith shop and roundhouse are consistent with previous investigations. Concrete in this portion of the building contained low concentrations of PCBs, which were all less than 10 mg/kg. The maximum PCB concentration in concrete was 8.3 mg/kg. Low levels of dioxin-like PCB congeners were also identified in soil

within blacksmith shop and roundhouse; however, the total PCB concentrations were significantly less than 1 mg/kg. The maximum concentration of PCBs in soil was 0.0383 mg/kg.

Sampling results of paint and interior brick walls from the blacksmith shop and roundhouse are also consistent with the previous investigations at Building 105. In general, paint in these areas contains PCB concentrations greater than 1 mg/kg, with highest concentrations observed in paint samples from the small office and storage area between the main forge shop and the head house. PCB concentrations in the underlying brick substrate were all less than 1 mg/kg. These results suggest that the PCB contamination of the walls is primarily associated with the paint and/or surface residuals. Wipe sampling results of the non-porous equipment surfaces, walls, and floor in the blacksmith shop and roundhouse contained similarly low or non-detectable levels of PCBs.

Window glazing compound and one sample of the window caulking in the blacksmith shop contains low concentration of PCBs. The maximum was detected in window glazing compound at a concentration of 2.9 mg/kg. Samples for these same materials from the roundhouse were below laboratory reporting limits indicating that the source of PCBs may actually be attributed to surface contamination from the former forging operations in the blacksmith shop, not the materials themselves.

6.0 METHOD 3 RISK CHARACTERIZATION

A Method 3 risk characterization was performed to evaluate whether a condition of No Significant Risk ("NSR") to human health, safety, public welfare, and the environment exists due to the presence of residual PCBs, PCDDs/PCDFs, polycyclic PAHs, petroleum hydrocarbons, metals and other constituents detected in soil, concrete, and building materials (floors, walls, ceilings, windows and caulking) at the Site. The Site is currently vacant; however, the proposed building use is as a hotel with a restaurant, conference rooms, and small exhibit space for some of the historic forging equipment and machinery in the main forge shop. The Method 3 risk characterization was performed in accordance with *Risk Assessment Guidance for Superfund* (RAGS, EPA, 1989a) and 310 CMR 40.0990 of the MCP and MassDEP's document entitled, *"Guidance for Disposal Site Risk Characterization - In Support of the Massachusetts Contingency Plan"* dated July 1995. Separate characterizations of risk to safety, public welfare, and the environment were completed in accordance with 310 CMR 40.0960, 40.0994, and 40.0995, respectively, of the MCP. Supporting data for the risk characterization is provided in Appendix F. The four-step process for risk assessment based on the *Risk Assessment Guidance for Superfund* (RAGS, EPA, 1989a) was followed:

1. Hazard Identification
2. Exposure Assessment
3. Dose-Response Assessment
4. Risk Calculations and Uncertainty Analysis

6.1 Hazard Identification

PCB- or PAH-containing oils and petroleum as well as other contaminants may have been released to building surfaces and to the subsurface during activities formerly conducted in the Main Forge Shop, including making chain for the U.S. Navy. Stone & Webster collected baseline characterization samples from equipment, walls, ceilings and floors throughout Building 105. These samples were analyzed for PCBs, PCDDs/PCDFs, total petroleum hydrocarbons (TPH), PAHs, and/or metals. Surficial and subsurface soil samples and concrete core samples were also collected. These subfloor samples were analyzed for the same analytical parameters.

As part of this supplemental investigation performed by Weston & Sampson, additional soil samples and concrete sampling was performed. Building materials including brick walls in the blacksmith shop and roundhouse; window caulking and glazing throughout the building, paint sampling throughout the building, and wipe sampling in the blacksmith shop and roundhouse were also sampled. To further characterize Site media, Weston & Sampson also collected groundwater and sub-slab soil vapor samples. As outlined in Sections 4.0 and 5.0 of this report, these samples were analyzed for PCBs, PCDDs/PCDFs, PAHs, petroleum hydrocarbon (EPH and VPH), VOCs, and/or metals.

This risk assessment relies on a subset of the validated data presented in Stone & Webster's data report that was summarized and evaluated in GZA's 2000 Risk Assessment with additional supplemental investigation data collected by Weston & Sampson in 2014 and 2015. Refer to previous documents by Stone & Webster and GZA as well as Section 2.0 of this report for more information regarding soil data collected prior to this Supplemental Investigation.

This risk assessment focuses on the analytical data that were used to estimate concentrations of contaminants that future museum and/or hotel and restaurant maintenance workers, museum and/or hotel visitors or construction/utility line workers may contact. Available data on the concentrations of contaminants in building surfaces, as measured in wipe samples, were used

to estimate potential exposures to interior building surfaces. Additionally, maintenance workers and museum workers were assumed to be exposed to bulk samples collected around window caulking and glazing and the brick walls in the blacksmith shop and round house. While this risk assessment assumed that visitors and maintenance workers would be exposed to building materials (such as walls, bricks, flooring, ceilings, caulking and glazing around windows) as well as equipment within the future museum, under the proposed future conditions, the building will be refurbished into a hotel with a restaurant and museum. Currently exposed surfaces will be encapsulated and/or covered or removed from the building to mitigate potential exposures to contaminants. With the rehabilitation and remediation of this Site, it is expected that future visitors, maintenance workers and other potential receptors in the building will have no significant risk.

Soil and concrete samples historically collected from in and under trenches were combined with additional soil and concrete samples in the main forge shop, blacksmith shop, and roundhouse collected in this supplemental investigation. These soil and concrete samples were considered collectively to estimate the concentrations of contaminants that a construction/utility line worker may contact. While this risk assessment assumed that construction workers may be exposed to soil and concrete collected from under the building, under the proposed conditions, construction workers may only be exposed to a subset of these samples in areas where the clean utility corridors will be laid. Workers were assumed to be exposed to all soil and concrete at this point because the locations of the future utility corridors is unknown at this time. In the future once the building reconstruction is complete, construction and utility workers will only work within the clean utility corridors, mitigating potential exposures to contaminated soil and concrete.

In the Risk Assessment completed by GZA in 2000, data from samples collected from areas of the main forge shop were presented for each exposure location separately: soil/trench concrete, floor, equipment, walls less than 8 feet, walls greater than 8 feet, and ceiling. The historic risk assessment did not include data from the blacksmith shop or round house. Supplemental wipes collected from the blacksmith shop and roundhouse were combined with the historic wipe samples from building materials within the main forge shop to calculate EPCs. The EPCs used in this report, therefore, are representative of all areas of the building (i.e., the main forge shop, blacksmith shop and round house).

6.2 Hazard Evaluation

6.2.1 Contaminants of Potential Concern

In accordance with DEP risk assessment guidance (July 1995), chemical contaminants detected at a Site may be eliminated from the risk characterization as a COC based on any of the following criteria:

- The chemical is present at a low frequency of detection and at low concentrations;
- The chemical concentration is consistent with background levels and there is no evidence that the chemical is associated with site activities; or
- The chemical is a laboratory or field contaminant.

N-Butylbenzene, sec-butylbenzene, isopropylbenzene, p-isopropyltoluene, n-propylbenzene, and 1,2,4-trimethylbenzene detected in soil are part of the C_9-C_{10} aromatics that were also detected in the same soil samples collected from the Site. Since an EPC was calculated for this fraction range that included these individual compounds, to include the individual detections of these constituents would count them twice. Therefore, n-butylbenzene, sec-butylbenzene,

isopropylbenzene, p-isopropyltoluene, n-propylbenzene, and 1,2,4-trimethylbenzene were excluded from this risk assessment.

C_9-C_{12} aliphatics are counted within the C_9-C_{36} aliphatics fraction range and naphthalene is analyzed via both VPH and EPH methods. Since the concentrations of C_9-C_{12} aliphatics are less than the C_9-C_{36} aliphatics, the C_9-C_{12} aliphatics were eliminated as constituents of potential concerns (COPCs) (DEP, 2002). Similarly, naphthalenes detected via VPH method were less than the naphthalenes detected via EPH method. Therefore, naphthalenes detected via VPH method were eliminated.

The maximum concentration of mercury is less than Massachusetts background concentrations in "Natural" soil (DEP, 2002). Mercury was therefore eliminated as a COPC.

No other detected contaminants were eliminated as COPCs in this risk assessment.

6.2.2 Toxicity Profiles

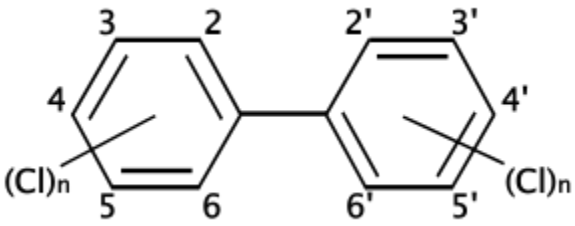
The potential health effects associated with exposure to each COC can be found in toxicity profiles developed by the Agency for Toxic Substances and Disease Registry ("ATSDR"). ATSDR does not have a toxicity profile for EPH parameters, but has developed one for Total Petroleum Hydrocarbons (TPH), which is applicable. The ASTDR toxicity profiles are very comprehensive but condensed toxicological summaries – ToxFAQs™ – are provided on-line for a number of hazardous substances including those identified at the Site.[1]

In terms of detection frequency, concentrations and relative toxicities, the primary COCs at the Site are PCBs and 2 3,7,8-TCDD TEQ. A brief toxicological overview for each is presented below.

6.2.2.1 PCBs

PCBs do not occur in nature and were first manufactured in 1929 for various industrial and commercial applications due to their non-flammability, chemical stability, high boiling point, and electrical insulating properties. Products containing PCBs included electrical equipment (transformers and capacitors), coolants, plastics, and fluorescent light ballasts. PCBs were banned in the late 1970s because they were found to be bioaccumlative, toxic and persistent in the environment.

PCBs are actually a mixture of individual chemicals containing one or more chlorines attached to a biphenyl compound (see figure below). Chlorine can attach to any of the positions labeled 2 through 6, forming a total of 209 possible chemical combinations or *congeners*. PCBs that contain the same number of chlorine atoms but in different positions are called *homologs.* For example, the dichlorobiphenyl homolog contains all congeners with 2 chlorine atoms, and the pentachlorobiphenyl homolog contains congeners with 5 chlorine atoms.



[1] http://www.atsdr.cdc.gov/toxfaq.html

Most PCBs were manufactured as a mixture of the 209 congeners and sold under the trade name of Aroclor. The Aroclor products were identified according to percent chlorine (Aroclors 1242 and 1254 contained approximately 42% and 54% chlorine, respectively), with the exception of Aroclor 1016, which is a derivative of Aroclor 1242.

The toxicity of a PCB mixture depends on the type and concentrations of congeners present. In general, toxicity increases with increased chlorine concentration. Other factors in assessing human health effects from exposure to PCBs are the environmental media and pathways. Vapor inhalation is associated with "low risk" because the more volatile PCBs are less chlorinated and, therefore, have lower toxicity. Similarly, water-soluble PCBs tend to be less chlorinated and exposure through drinking water is also considered low risk. "High risk" exposure is generally associated with ingestion of food and/or soil.

Cancer and non-cancer health effects associated with exposure to PCBs have been widely studied and well documented. Non-cancer effects include acne-like skin conditions in adults and neurobehavioral and immunological changes in children. PCBs are also known to cause cancer in animals based on increased occurrence of liver tumors.

6.2.2.2 Chlorinated Dioxins including 2,3,7,8-TCDD

Chlorinated Dibenzo-p-dioxins (CDDs) are a family of chemicals commonly known as chlorinated dioxins; this family contains 75 chemically related compounds. 2,3,7,8-TCDD is commonly considered one of the most toxic of the CDDs and is the one most studied. Toxicity equivalency factors are applied to the concentrations of CDDs, and the resulting values are summed to create a 2,3,7,8-TCDD toxicity equivalency factor (TEQ). The 2,3,7,8-TCDD TEQ is used to estimate potential risks from exposures to dioxins.

CDDs enter the environment as mixtures containing a number of individual components. 2,3,7,8-TCDD is odorless and the odors of the other CDDs are not known.

CDDs are not intentionally manufactured by industry except for research purposes. They (mainly 2,3,7,8-TCDD) may be formed during the chlorine bleaching process at pulp and paper mills. CDDs are also formed during chlorination by waste and drinking water treatment plants. They can occur as contaminants in the manufacture of certain organic chemicals. CDDs are released into the air in emissions from municipal solid waste and industrial incinerators.

The toxicity of TCDD has been comprehensively examined in multiple acute, subchronic, and chronic studies. TCDD is capable of causing an acnegenic response in man (i.e., causing acne on the skin) and a similar skin response in certain animals. It is also a potent inducer of microsomal enzymes in some but not all species. Suppression of cell-mediated immunity that is dose-related and has been observed at higher dose levels in laboratory animals but not in humans manifesting TCDD-induced acnegenic response. There is also animal evidence that TCDD causes a dose-related teratogenic response in mice, rats and monkeys. A multigeneration reproduction study as well as a lifetime chronic toxicity study have been completed with TCDD in rats; in both studies, the no-adverse-effect level was found to be 0.001 microgram TCDD/kg/day. While a mutagenic response was noted in a few of the vitro test systems, there are no definitive in vivo correlates of TCDD mutagenicity in higher mammals or man. TCDD has been studied for carcinogenic potential in rats and mice. There is good correlation of the results, with a carcinogenic response noted in both species only after long-term ingestion of higher dose levels that induce toxicity. No carcinogenic response occurred at continuous dose levels of 0.001-0.0014 micrograms/kg/day in rats and 0.001-0.03

micrograms/kg/day in mice. Data presently available are more supportive of a nongenetic (promotor) rather than a genetic mechanism of carcinogenesis. The most recent research, some of which is still underway, indicates that the biologic uptake and toxicity of TCDD may be significantly decreased if the TCDD is adsorbed onto carbon or soil particles. This information is helpful in hazard assessment of exposure to TCDD.

6.3 Exposure Assessment

6.3.1 Receptors of Concern

There are no current receptors to the interior of the building. The building is inactive, and access is prohibited by locked and boarded up doorways and windows. The current proposal for redevelopment of the building is as a hotel and restaurant with a museum/exhibit space for a portion of the former industrial equipment currently located in the building. The potential receptors include hotel/restaurant/museum visitors and maintenance workers of the future museum. Construction/utility line workers may contact subsurface materials while digging areas for the clean utility corridors. In the future, once the clean utility corridors are in place, it is unlikely that construction/utility workers will be exposed to impacted soil or concrete.

Potential receptors accessed in the previous 2000 GZA Risk Assessment include:

- Museum Visitors (6-18 years old) potentially exposed to contaminants on porous surfaces [walls below a height of eight feet (EPA, 1998a), floors and equipment] via dermal contact which may result in absorption through the skin and some incidental ingestion of contaminants that are on the skin;

- Maintenance Workers (adults) potentially exposed to contaminants on porous surfaces (walls above and below a height of eight feet (EPA, 1998a), concrete floors, ceiling and equipment) via dermal contact which may result in absorption through the skin and some incidental ingestion of contaminants that are on the skin; and

- Construction/Utility Line Workers potentially exposed to contaminants in soil and concrete in the trenches via dermal contact and incidental ingestion.

These exposures focused on the main forge shop because at the time, it was proposed that this area be turned into a museum. Currently, the proposed building use has changed in that the plan is for the building to be converted into a 5-story hotel with a restaurant. The plan still includes a smaller museum/exhibit in area of the main forge shop.

Based on these changes in use, in addition to the potential receptors accessed in the previous 2000 GZA Risk Assessment, the Museum Visitor scenario has been modified slightly to assume a Hotel/Restaurant/Museum Visitor which is exposed to the wipe samples from the main forge shop and the more recent wipe samples collected in this supplemental assessment. This receptor is also assumed to be exposed to the constituents detected in the brick, paint, and window glazing and caulking data collected from the blacksmith shop and roundhouse. Museum Visitor exposures to wipe samples used previously by GZA were not modified because the assumptions used for museum visitor exposures are conservative and have not changed. The only change to potential Museum Visitor exposures to building materials (via wipe samples) was to include the more recently collected 4 wipe samples collected from the blacksmith shop and round house that are described in Section 5.44 of this report. However, for exposures to the brick walls, paint, window caulking and glazing collected from the blacksmith shop and

roundhouse, the Hotel/Restaurant/Museum Visitor, referred to as the "Visitor" for the remainder of this report, was very conservatively assumed to be a regular customer; coming to the hotel/restaurant one week per year over 30 years for the central tendency and two weeks per year over 30 years for the reasonable maximum exposure (RME). This receptor was conservatively assumed to come to the hotel from age 1 to 31 years. Visitors were assumed to be exposed to brick walls, paint, window caulking and glazing via dermal contact and incidental ingestion.

Assuming the Visitor will be exposed to these building material is extremely conservative because under the proposed use of the property, all contaminated building materials will be either removed, encapsulated and/or covered, or cleaned to remove exposures to contamination. It is unlikely that future Visitors to the hotel/restaurant/museum will come into contact with contaminated building materials.

Similarly, the assumptions used for the Maintenance Worker exposure to building materials (via wipe samples) by GZA in the previous Risk Assessment are conservative and have not changed. The only change to potential Maintenance Worker exposures to building materials (via wipe samples) was to include the more recently collected 4 wipe samples collected from the blacksmith shop and round house. In addition, these receptors are also assumed to be exposed to the contaminants on the brick walls of the blacksmith shop and round house as well as the window caulking and glazing compound and paint samples via incidental ingestion and dermal contact.

As with the Visitor receptor, it is extremely conservative to assume that the Maintenance Worker will be exposed to impacted building materials. Under the proposed use of the property, all contaminated building materials will be either removed, encapsulated and/or covered, or cleaned to remove exposures to contamination; therefore, it is unlikely that future Maintenance Workers will come into contact with contaminated building materials.

As in the 2000 GZA Risk Assessment, Construction/Utility Line Workers were assumed to be potentially exposed to contaminants in soil and concrete in the trenches via dermal contact and incidental ingestion. In this assessment, soil and concrete EPCs were updated to include soil and concrete data collected in this Supplemental Investigation. Since the locations of the clean utility corridors have not been determined, it was assumed that Construction/Utility Line Workers could be exposed to any soil and concrete at the Site. This is conservative because during construction of the proposed building, it is likely that construction/utility workers will only be exposed to impacted soil or concrete during installation of clean utility corridors. Once the clean utility corridors are in place and a concrete building slab is poured to reinforce the foundation of the building, exposures to impacted soil and concrete are unlikely by any receptor.

Construction of a concrete building slab over earthen floors will also eliminate the Visitors' and Maintenance Workers' exposure to surface soil, subsurface soil, and soil-borne fugitive dust.

Other assumptions about potential exposures were made in this assessment, including:

- Exposures to adult museum/hotel/restaurant visitors and/or tour guides would be less significant relative to the child-aged receptor included in the assessment because of body weight to intake ratios.
- The Massachusetts Water Resources Authority supplies drinking water, and therefore risks were not quantified for ingestion of groundwater as drinking water.

- Exposures were assumed to occur inside the main forge shop, blacksmith shop and round house.
- Exposures to sub-slab soil vapor were assumed to be negligible based on the comparison of detected constituents in sub-slab soil vapor to DEP Sub-Slab Residential Screening Values (refer to Table 9). Concentrations of VOCs and petroleum hydrocarbon fractions were all significantly less than the applicable screening values.
- Once the new hotel/restaurant/ museum is completed, there will be a concrete subfloor and vapor barrier which will serve as a vapor barrier as well as a direct contact barrier and remediation of PCB-contaminated building materials will be completed. Based on the proposed remediation activities, the volatile component of PCBs will not be an indoor air issue.

6.3.2 Evaluation of "Hot Spots"

An evaluation of potential hot spots was conducted in accordance with the requirements of 310 CMR 40.0926. DEP Guidance (DEP, 1996) defines a "hot spot" as an area where concentrations more than 100-fold higher than surrounding areas are observed, except where potential for greater exposure exists. At these latter sub-areas, concentrations more than 10-fold higher than surrounding concentrations might be "hot spots." Soil "hot spots" cannot be averaged with other soil concentrations throughout the Site and must be evaluated as separate exposure-point concentrations ("EPCs") in accordance with 310 CMR 40.0924(2).

The soil data was reviewed to determine if a hotspot exists on the Site. It was determined that there is no hotspot for PCBs because there is such a wide distribution of PCBs across the Site and no one area appeared to have elevated concentrations over other areas.

For petroleum, there were elevated detections of TPH historically detected at the Site. Weston & Sampson collected soil samples from those locations and analyzed them for EPH fractions. The highest concentrations of EPH fractions in soil were detected in soil samples SB-F3 0-15" and WSB-10, both located in the central portion of the Site building in close proximity to each other. EPH concentrations within these samples were compared to surrounding concentrations of EPH fractions. The average concentration of C_9- C_{18} aliphatics was 9,550 mg/kg, C_{19} -C_{36} aliphatics was 17,000 mg/kg and $C_{11}C_{22}$ aromatics was 8,900 mg/kg within these two soil samples. When compared to EPH fraction concentrations in soil from surrounding area, they were less than 10 times the concentrations in the surrounding areas. Therefore, although the concentrations within these two soil samples are elevated compared with the surrounding area, they do not constitute a hotspot. No other constituents appeared to meet the definition of a hotspot. Since the highest concentrations of EPH fractions were within an order of magnitude of other concentrations of constituents detected at the Site and no other constituents meet the definition of a hotspot, no hot spots were determined to exist at the Site.

6.3.3 Exposure Assumptions

Museum/Hotel/Restaurant Visitor: As indicated above, assumptions for Visitor exposure to wipes did not change since the previous GZA Risk Assessment. Exposure assumptions for Visitor exposure to building materials via wipe samples are presented in Table 12 of GZA's Risk Assessment and discussed here briefly. Two sets of values are used for each receptor: central tendency (CT) and reasonable maximum exposure (RME). The 6 to 18 year old child visitor was assumed to have a skin surface area available for contact of 3,000 cm^2 per event for CT and 4,000 cm^2 per event for RME. The contact frequency was assumed to be one and two events per day for CT and RME, respectively. The exposure frequency was assumed to be 7 and 12

events per year, respectively, for CT and RME. These are extremely conservative assumptions that were recommended by EPA in a letter to GZA (refer to the 2000 GZA Risk Assessment). They are conservative since it is unlikely that Visitors will visit the museum area this frequently. Additionally, under future conditions, exposures to the building materials will be unlikely post-remediation.

For bulk samples (presented in units of mg/kg), Visitors were assumed to be exposed to bricks, paint, window glazing and caulking in the blacksmith shop and roundhouse via dermal contact and incidental ingestion. The representative receptor was assumed to be children and adults including a young child (1 to 2 years old) for subchronic or short-term exposure, older child (1 to 8 years or 8 to 15 years) for chronic exposure, and young adult for lifetime cancer effects. In all cases, the receptors are assumed to be female because they have a higher contaminant intake to body weight ratio and therefore are more sensitive to risk. The exposure frequency for the 1 to 2 year old child was 2 events over 30 weeks; for ages 2 through 31 years the exposure frequency was assumed to be 7 events per year for the CT. For the RME, the exposure frequency for the 1 to 2 year old child increased to 7 events over 30 weeks; for ages 2 through 31 years the exposure frequency increase to 14 events per year. Amount of skin exposed for both CT and RME was based on face (which is calculated as 1/3 head (DEP, 2012), forearms, hands, lower legs, and feet for females. The averaging period and exposure period are the same for chronic and subchronic risk. For lifetime cancer effects, the exposure period is 30 years over an averaging period of 70 years. Refer to risk tables presented in Appendix F, Tables labeled PS-6, for exposure assumptions.

Maintenance Worker: As indicated above, assumptions for Maintenance Worker exposure to wipes did not change since the previous GZA Risk Assessment. Exposure assumptions for Visitor exposure to building materials via wipe samples are presented in Table 13 of GZA's Risk Assessment and discussed here briefly. The adult Maintenance Worker was assumed to have a skin surface area available for contact of 2,850 cm^2 per event for CT and 3,120 cm^2 per event for RME. The contact frequency was assumed to be one and two events per day for CT and RME, respectively. The exposure frequency was assumed to be 150 events for 10 years and 250 events per year for 25 years, respectively, for CT and RME.

For bulk samples (presented in units of mg/kg), Maintenance Workers were assumed to be exposed to bricks, paint, window glazing and caulking in the blacksmith shop and round house via dermal contact and incidental ingestion. The receptors are assumed to be female because they have a higher contaminant intake to body weight ratio and therefore are more sensitive to risk. The exposure frequency was assumed to be 150 events per year for the CT and 250 events per year for the RME. Amount of skin exposed for both CT and RME was based on hands and arms for females. The soil ingestion rate was assumed to be 50 mg/day for CT and 100 mg/day for RME. This is extremely conservative because these ingestion rates are for soil and the amount of ingested indoor dust would be much less than that assumed. For lifetime cancer effects, the exposure period is 30 years over an averaging period of 70 years. Refer to risk tables presented in Appendix F, Tables labeled EM-4, for exposure assumptions.

Construction/Utility Worker: The construction/utility worker exposure to soil and concrete was calculated in three different ways. The first way was to use the DEP Shortform for Construction Worker exposure to soil. The Shortform assumes that the Construction Worker is a female, age 18 to 25 years, and on-Site for a 6-month period (182 days per year, 8 hours per day). The soil exposure pathways evaluated included dermal contact, incidental ingestion and inhalation of soil particulates in air. The ShortForm assumes that inhalation of particulates is a significant pathway and occurs through two mechanisms depending on the particulate size. Respirable

particulates less than 10 microns are absorbed into the lungs while larger particulates are coughed up, swallowed and eventually enter the gastrointestinal tract. The default PM10 concentration in air used in the ShortForm is 60 micrograms per cubic meter ($\mu g/m^3$). All equations and assumptions used to evaluate inhalation of particulates are provided in MassDEP's Technical Update, "*Characterization of Risks Due to Inhalation of Particulates by Construction Workers"*, revised July 2008.

The Shortform for Construction Worker exposure to soil was used as the basis for the CT and RME Construction worker exposures to soil and concrete. For the CT, the exposure frequency was modified to 150 days over a year (equivalent to 3 days per week) to match the CT in the GZA Risk Assessment. For the RME, the exposure frequency was modified to 250 days per year over a two year period to match the RME in the GZA Risk Assessment. The ingestion rate was assumed to be 100 mg per day for the CT and 200 mg per day for the RME. This is less than was assumed in the GZA Risk Assessment but matches what is in the current Exposure Factors Handbook (EPA, 2011). Skin surface area for both CT and RME was assumed to be 3,473 cm^2 per day which represents hands, forearms, and face.

Assumptions for inhalation of particulate exposure were the same as those used in the Shortform and are similar, and slightly come conservative, to what GZA used in the 2000 Risk Assessment. Refer to risk tables presented in Appendix F, Tables labeled CW-4, for exposure assumptions.

6.3.4 Exposure-Point Concentrations

As in the previous risk assessment, exposure-point concentrations (EPCs) for all Site media were based on the 95th percentile upper confidence limit on the mean ("UCL95"). This UCL95 represents a concentration in which there is 95% confidence or certainty that the true mean of the sample population will be at or less than this value. The soil EPC was based on this statistic to provide a more conservative estimate of human health risk. The UCL95 is calculated as follows:

$$UCL95 = x + t\,(s/n^{0.5})$$

where:

x	=	sample data set mean (average concentration)
t	=	t-statistic (significance level or $\alpha = 0.05$)
s	=	standard deviation
n	=	number of samples

The UCL95 was computed on an Excel spreadsheet which assumes that the data is normally distributed. In general, normal distributions occur with larger data sets representative of this Site. One-half the reporting limit ("RL") was used for all concentrations reported as non-detect.

Total PCB concentrations were used to evaluate risk and were calculated for each sample as the more toxic PCBs (Aroclor 1254 and 1260), which accounted for nearly 100% of the PCB detections in this Supplemental Evaluation.

6.3.3.1 Building Materials Represented by Wipe Samples

The EPC for each COPC was calculated as a weighted average of the exposure to different surfaces for Visitors and Maintenance Workers. The EPCs were based on the 95 percent UCL

on the mean concentration for each COPC detected in each distinct building surface (floor, equipment, walls less than 8 feet, walls greater than 8 feet, ceiling and supplemental wipe samples from the blacksmith shop and round house). Exposures to surfaces were weighted by likelihood of exposure. The following equations show the weights that were applied to calculate EPCs for museum visitors and maintenance workers.

Museum Visitors

$$EPC = 0.25[Floor] + 0.25[Equipment] + 0.25[Walls < 8ft] + 0.25[Supplemental\ Investigation\ Wipes]$$

Where:

[surface concentration] = 95% UCL on mean concentration.
Non-detects included in the mean at a value equal to one-half the detection limit for that parameter in each sample.

The calculation of the weighted EPC for each COPC for museum visitors is presented in Appendix F, Table F.1. Historic EPCs obtained from the previous risk assessment were used to represent floor, equipment, and walls <8ft. The resulting EPC for PCBs was compared to the Historic EPC calculated for the Museum Visitor. The updated EPC, 1.4E-2 mg/100 cm^2, is less than the historic EPC of 1.8E-2 mg/100 cm^2. Based on this analysis, the historic risk estimates were conservatively used to represent Visitor contact with building materials as wipe samples.

Maintenance Workers

$$EPC = 0.25[Floor] + 0.25[Equipment] + 0.20[Walls < 8ft] + 0.15[Walls > 8ft] + 0.05[Ceiling] + 0.10[Supplemental\ Investigation\ Wipes]$$

Where:

[surface concentration] = 95% UCL on mean concentration

The calculation of the weighted EPC for each COPC for Maintenance Workers is presented in Appendix F, Table F.2. Historic EPCs obtained from the previous risk assessment were used to represent floor, equipment, walls <8ft, walls >8ft, and ceiling. The resulting EPC for PCBs was compared to the Historic EPC calculated for the Maintenance Worker. The updated EPC, 1.6E-2 mg/100 cm^2, is the same as the historic EPC of 1.6E-2 mg/100 cm^2. Based on this analysis, the historic risk estimates were conservatively used to represent Maintenance Worker contact with building materials as wipe samples.

6.3.3.2 Building Materials Represented by Bulk Samples in Units of mg/kg

A summary of analytical data for brick wall samples collected from the blacksmith shop and roundhouse is presented on Appendix F, Table F.7. This table includes the 95th percent UCLs that were used as EPCs for this data set.

Appendix F, Table F.6 presents a summary of analytical data for window caulking and glazing compound and paint samples; the 95th percent UCLs that were used as EPCs for this data set are included.

6.3.3.3 Soil and Concrete

For soil and concrete, EPCs were estimated by using a ratio of the historic EPCs from GZA's 2000 Risk Assessment and the EPCs calculated from this Supplemental Investigation as

presented in Appendix F, Table F.3. The soil and concrete EPCs are based on 95% UCLs and were calculated as follows:

$$Soil\&Concrete\ EPC = [Historic\ EPC * No.Historic\ Samples] + [Supplemental\ EPC * No.Supplemental\ Samples]/[No.Historic + No.Supplemental\ Samples]$$

6.3.3.4 EPCs for Chlorinated Dioxins

The EPCs for Chlorinated Dioxins are summed into one concentration that represents the toxicity of these constituents relative to the toxicity of 2,3,7,8-TCDD. This summary concentration is presented as 2,3,7,8-TCDD-TEQ (toxicity equivalents) and was calculated by multiplying the 95 percent UCL concentration (or maximum detected concentration if 95 percent UCL concentration exceeded the maximum detected concentration) of each dioxin and furan by its Toxic Equivalency Factor (TEF). These products were summed to yield total 2,3,7,8-TCDD-TEQ. Table 2 presents 2,3,7,8-TCDD-TEQ as one COPC that summarizes the EPCs for all dioxins and furans.

6.4 Dose-Response Assessment

Published dose-response data provides information relating the exposure of a contaminant (dose) to its anticipated health effect (response), and is derived separately for non-cancer (chronic) and cancer (lifetime) health effects as described below.

6.4.1 Non-Carcinogenic Health Effects

Constituents with known or potential noncarcinogenic effects are assumed to have a dose below which no adverse effect occurs, or conversely, above which an effect may be seen. In laboratory experiments, this dose is known as the "No Observed Adverse Effect Level" (NOAEL). The lowest dose at which an adverse effect is seen is called the "Lowest Observed Adverse Effect Level" (LOAEL). By applying uncertainty factors to the NOAEL or the LOAEL, the United States Environmental Protection Agency (USEPA) developed Reference Doses (RfDs) for chronic and, in some cases, subchronic, exposures to constituents with potential noncarcinogenic effects (USEPA, 2013). Subchronic toxicity values were used for evaluating exposure lasting from several days up to seven (7) years.

Uncertainty factors account for uncertainties associated with the dose-response data such as the appropriateness of using an animal study to derive a human dose-response value, and the potential for sensitive subpopulations to exist, which may not be adequately represented by the laboratory testing of animals. For constituents with potential noncarcinogenic effects, the RfD provides reasonable certainty through the use of uncertainty factors that, if the specified exposure dose is below the threshold, then no noncarcinogenic health effects are expected to occur. RfDs are expressed in terms of milligrams of compound per kilogram of body weight per day (mg/kg-day) and are used to evaluate estimated doses from oral and dermal exposures. (Attachment F – Visitor, Tables PS-6), (Attachment F – Maintenance, Tables EM-5), and (Attachment F – Construction Worker, Tables CW-5) summarize the toxicity information for the COPCs evaluated at this Site for the oral and dermal contact with soil and inhalation of fugitive dust exposure routes. The RfDs used in the risk characterization were obtained from MassDEP's lookup tables (April 2013) and, where applicable, were verified from the EPA's Integrated Risk Information System (IRIS) on-line database, reviewed May 2015.

6.4.2 Carcinogenic Effects

In 2005, the USEPA published new guidelines (USEPA, 2005) for evaluating carcinogenic risk in which a new weight of evidence approach considers all scientific information in determining whether and under which conditions an agent may cause cancer in humans. In addition, the new guidelines provide a narrative approach to characterizing carcinogenicity rather than using specific categories (e.g., Group A and Group B). Although the 2005 revised guidelines are the basis of the USEPA's guidance to evaluating cancer risk, not all constituents in the Integrated Risk Information System (IRIS) database have been revised under the new guidelines.

Under the previous cancer risk assessment guidelines (USEPA, 1986), the underlying assumption of regulatory risk assessment for constituents with known or assumed potential carcinogenic effects was that no threshold dose exists. In other words, it was assumed that a finite level of risk is associated with any dose above zero (0). Theoretically, even a single molecule could cause some level of risk. For carcinogenic effects, the USEPA risk assessment guidelines (USEPA, 1986) used a two-step evaluation in which the compound was assigned a weight-of-evidence classification, and then a cancer slope factor was calculated. Cancer slope factors are a numerical estimate of the carcinogenic potency of a compound. The weight-of-evidence classification was based on the likelihood of the compound being a human carcinogen. Under this system, which is still in place for constituents in IRIS that have not been revised since 1999, Group A constituents are classified as human carcinogens, Group B constituents are probable human carcinogens, Group C constituents are possible human carcinogens, Group D constituents are not classifiable as to human carcinogenicity, and for Group E constituents there is evidence of noncarcinogenicity for humans. Furthermore, in the second part of the evaluation, cancer slope factors were calculated for constituents that are known or probable human carcinogens. The risk assessment guidelines (USEPA, 1986) used linear models in the low dose region (which represents environmental exposure) as a default to estimate cancer slope factors. The USEPA's approach was to use the upper ninety-five (95) percent confidence bound on the slope of the line generated by the linear model to estimate the potency of carcinogens. Such potencies were then used to estimate risks at various exposures.

Under the new cancer guidelines (USEPA, 2005), one of the most important features is the incorporation of greater emphasis on mechanisms for carcinogenic action. The USEPA has proposed a departure from using linearized models to relate doses to responses when the mode of action is deemed not to be genotoxic. In these cases, the guidelines propose to use a benchmark dose approach to risk assessment (USEPA, 2005). A benchmark approach uses a model to determine the dose that would result in a defined rate of an outcome, usually five (5) or ten (10) percent. Safety factors can then be applied to this benchmark dose level.

Attachment F – Visitor, Tables PS-6; Attachment F – Maintenance, Tables EM-5; and Attachment F – Construction Worker, Tables CW-5 summarize toxicity information for COPCs assumed by the DEP to produce potential carcinogenic effects through the oral and inhalation routes of exposure, respectively. Carcinogenic toxicity values for oral exposure are cancer slope factors and are expressed in terms of $(mg/kg\text{-}day)^{-1}$; carcinogenic toxicity values for inhalation exposures are inhalation unit risk values and are expressed in terms of 1/microgram per cubic meter $(\mu g/m^3)^{-1}$.

6.4.3 Relative Absorption Factors

The premise of estimating risk or hazard is that potential dose to the defined receptor is similar to the administered dose or applied dose in the laboratory experiment used as the basis for the RfD or CSF. The animal-derived CSFs and RfDs used in the quantitative risk assessment were

based on applied doses, in most cases. However, the efficiency of COPC absorption via a particular route and from a particular matrix (e.g., soil) at the Site may differ from the absorption efficiency for the exposure route and matrix used in the experimental study that serves as the basis for the CSF or RfD. RAFs are used to adjust the calculated exposure dose to a particulate COPC so that it is comparable to the toxicity information for that compound as recommended by DEP (1996) and USEPA (1989). RAFs for site-related COPCs were derived and used in the calculation of human exposure doses and are shown in Attachment F – Visitor, Tables PS-6; Attachment F – Maintenance, Tables EM-5; and Attachment F – Construction Worker, Tables CW-5. The RAFs were obtained from the DEP recommended values (DEP, 2013).

6.5 Risk Characterization

6.5.1 Estimating Exposure Using Wipe Sample Data

EPA Region I provided-equations (EPA, 1998b) were used to quantify exposures to contaminants detected on equipment and building surfaces as measured in wipe samples. This estimation method follows the traditional risk paradigm (EPA, 1989a) which involves treating wipe samples as indicative of the contaminant source, estimating exposure parameters to determine dose, and combining dose information with toxicity factors to estimate risk. This method assumes that a fraction of the contaminants present on the surface will be transferred to the receptor's skin as a result of dermal contact with the surface. Once on the skin, a fraction of the contaminants is assumed to be dermally absorbed and some is assumed to be transferred to the mouth and ingested.

This method has been discussed by EPA scientists as being over-conservative (Hubbard, 1996). A time-dependent transfer coefficient method, which assumes that duration of skin contact is more truly indicative of dermal uptake than activity level, has been proposed (Durkin et al, 1995 as cited in Hubbard, 1996). This method is typically applied to pesticide-sprayed turf, but it is intended to relate dislodgeable residues of contaminated surfaces to dermal exposure. The main drawback to using this method for contaminated building surfaces is that information about duration of skin contact is no more readily available than information about frequency of skin contact for this scenario.

The uncertainties involved in estimating the contact rate and fraction transferred to skin could be offset by assuming that a certain percentage of contaminants present in the building material would ultimately be transferred to the receptor over the exposure duration. The drawback to this method is that there is little information available that could be used to estimate this total transfer percentage. This method has not been pursued further in this risk assessment but is acknowledged to highlight the uncertainties associated with quantifying exposures to building surfaces. Exposure to a contaminant on a building surface was estimated using the following equation (EPA, 1998b):

$$ADD_{dermal} = \mathbf{EPC} * \left(\frac{1}{BW}\right) * \mathbf{SA} * \mathbf{CF} * \mathbf{FTSS} * \mathbf{(1\text{-}FTSM)} * \mathbf{EF} * \mathbf{ED} * \left(\frac{I}{AT}\right) * \mathbf{RAF}$$

where:

ADD_{dermal} = Average Daily Dose, dermal exposures are quantified as doses absorbed into body (mg/kg-day)

EPC = Exposure Point Concentration of chemical on contaminated surface (mg/100 cm^2)
BW = Body Weight (kilograms)
SA = Exposed skin surface area (cm2/event)
CF = Contact frequency of skin against surface (event/day)
FTSS = Fraction transferred from surface to skin
FTSM = Fraction transferred from skin to mouth
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
AT = Averaging time (days)

RAF = Relative Absorption Factor is the ratio of the dermal absorption efficiency (ABSd) to the absorption efficiency in the experimental study upon which the dose-response values are based (Refer to Section 7.4.3).

The above equation was used to estimate exposure doses for museum visitors and maintenance workers' dermal contact with building surfaces. To estimate the exposure doses for incidental ingestion of contaminants from surfaces, the following equation was used (EPA, 1998b):

$$ADD_{oral} = EPC*(\frac{1}{BW})*SA*CF*FTSS*FTSM*EF*ED*(\frac{I}{AT})*RAF$$

where:

ADD_{oral} = Average Daily Dose, oral exposures are quantified as doses absorbed into body (mg/kg-day)

RAF = Relative Absorption Factor is the ratio of the oral absorption efficiency (ABSo) to the absorption efficiency in the experimental study upon which the dose-response values are based.

These equations assume:

1. Volatilization of the chemical on the surface is negligible;
2. The chemical is available on the surface for the entire exposure duration (i.e., a previous transfer of contaminant from surface to skin would not deplete the amount of surface contamination; and
3. There is a limit on how much contaminant could be transferred to the skin in a single day, but that maximum is unknown. Therefore, this is not factored into the equations.

These underlying assumptions lead to exposure estimates that are conservatively biased, i.e., overestimated, with respect to oral and dermal exposure to contaminants on surfaces.

6.5.2 Estimating Average Daily Dose/Risk – Soil, Concrete and Bulk Samples

Cancer and non-cancer risks are calculated separately for each receptor in human health risk assessments. The non-cancer risk is characterized by a hazard quotient (HQ_I), which is the ratio of the receptor's exposure (ADD) to the maximum allowable exposure level (RfD) for each contaminant and exposure pathway or:

$$HQ_1 = ADDi / RfDi$$

A condition of NSR for non-cancer effects exists if the total Site Hazard Index (HI) is equal to or less than 1.0 for each receptor as follows:

$$HI = \Sigma \frac{ADD}{RfD} = \Sigma \frac{EPC \times EF \times ED \times EP \times PSF}{BW \times AP \times RfD}$$

where:

ADD	=	Average Daily Dose, mg/kg-day
RfD	=	Reference Dose, mg/kg-day
EPC	=	Exposure-Point Concentration of contaminant, mg/kg
EF	=	Exposure Frequency (events/day)
ED	=	Exposure Duration (time/event)
EP	=	Exposure Period (time)
PSF	=	Pathway/receptor-specific factor for ingestion and dermal contact
BW	=	Body Weight (kg)
AP	=	Averaging Period (time)

The LADD is calculated in the same manner as the ADD, except that the averaging period is over a lifetime of 70 years. A condition of NSR for cancer effects exists if the Excess Lifetime Cancer Risk (ELCR) is less than or equal to 1×10^{-5}, shown in the following equation:

$$ELCR = \Sigma \; LADD * CSF = \Sigma \frac{EPC \times EF \times ED \times EP \times PSF \times CSF}{BW \times AP}$$

6.5.3 Cumulative Risk Estimates

The equations and calculations for risk are included in Appendix F, and the results are summarized in Appendix F, Tables F.4 and F.5, for CT and RME, respectively.

6.5.4 Central Tendency

A summary of the total Central Tendency Risk Estimates is presented below. Highlighting denotes an exceedance of USEPA's noncancer limit or cancer risk range.The total Site risks calculated for the Visitor were less than USEPA's acceptable cancer and non-cancer risk limits. For the Maintenance Workers, cumulative non-cancer risk estimates were less than USEPA's acceptable risk limit of 1.0; however, the ELCR (3E-6) exceeds the lower end of the risk range of 1E-6. EPA's risk range for cancer endpoints is 1E-4 to 1E-6. This exceedance is due to the concentrations of PCBs.

For the construction worker receptor using the Shortform assumptions, the non-cancer risk exceeds USEPA's acceptable non-cancer risk limit of 1.0 and the lower end of EPA's cancer risk range. These exceedances were due to the concentrations of PCBs in soil and concrete. Using the CT assumptions, the estimated risks for the construction worker are less than or equivalent to USEPA's acceptable cancer and non-cancer risk limits.

Central Tendency Total Risk Estimates

Receptor	Subchronic HI	Chronic HI	ELCR
Visitor	2E-02	9E-02	6E-07
Maintenance Worker	NA	2E-01	3E-6
Construction Worker (Shortform Assumptions)	3E+00	NA	3E-6
Construction Worker (CT – from GZA Risk Assessment)	8E-01	NA	1E-06

6.5.5 Reasonable Maximum Exposure

A summary of the total Reasonable Maximum Exposure Risk Estimates is presented below. The total Site risks calculated for the Visitor were less than USEPA's acceptable non-cancer risk limit. However, the ELCR (5E-6) exceeds the lower end of the risk range of 1E-6. This exceedance is due to the concentrations of PCBs and arsenic. For the Maintenance Workers, cumulative non-cancer risk estimates were less than USEPA's acceptable risk limit of 1.0; however, the ELCR (8E-5) exceeds the lower and middle of the risk range (1E-6 and 1E-5). This exceedance is due to the concentrations of arsenic, 2,3,7,8-TCDD TEQ, and PCBs.

Using the RME assumptions, the estimated risks for the construction worker are greater than USEPA's acceptable cancer (lower end of 1E-6) and non-cancer risk limits.

Reasonable Maximum Exposure Total Risk Estimates

Receptor	Subchronic HI	Chronic HI	ELCR
Visitor	**8E-02**	**3E-01**	5E-06
Maintenance Worker	NA	1E+00	8E-5
Construction Worker (RME – from GZA Risk Assessment)	5E+00	NA	1E-5

Consequently, depending upon the use of the RME and which target cancer risk limit used, a condition of NSR does not exist for future Site use as a hotel/restaurant and museum assuming these potential exposures with current contamination in soil, concrete and building materials. Construction workers will be required through conditions of the AUL to wear personal protective equipment during activities involving potential exposure to soil and concrete.

It should be noted that during Site redevelopment, most of the building materials will be either remediated, encapsulated and covered, or cleaned prior to opening of the renovated building. Upon completion of the proposed hotel/restaurant/museum, it is unlikely that receptors would be exposed to significant concentrations of impacted material and therefore, under the anticipated future conditions, a condition of NSR will exist for the potential receptors.

6.6 Uncertainty Evaluation

The characterization of human health is based on a number of assumptions and parameters, each of which introduces some degree of uncertainty in the overall process of quantitatively assessing risk. Some of these are discussed below.

6.6.1 Hazard Identification Assumptions

The risk assessment includes as COPCs both PCB mixtures reported as Aroclors, and dioxin-like PCBs. There may be some overlap in the concentrations of PCBs measured in these separate analyses for the same compounds. Both mixtures have been conservatively included

in the risk estimates. This contributes to a conservative, likely overestimate, of risks associated with exposures to PCBs on building surfaces and in soil and concrete.

6.6.2 Exposure Assumptions

Estimation of EPCs, characterization of current and reasonably foreseeable site activities and uses, and calculation of ADDs contribute most to the uncertainty in the exposure assessment component of the risk characterization. To counter this uncertainty, health-protective exposure assumptions based on either site-specific information or conservative default values provided in DEP and EPA guidance were used to quantitatively evaluate potential risks posed by the site.

The EPCs were based on the 95 percent upper confidence limit on the mean concentrations of the COPCs in the exposure medium. Using 95 percent UCL on the mean concentrations will likely provide a conservative estimate of exposure. This EPC is conservative because it is a UCL estimate and is therefore higher than the true mean. Also, the mean for each building surface was calculated by averaging concentrations from each surface rather than averaging concentrations from the whole interior. This approach provides higher concentrations for each surface because other less contaminated areas would not dilute the detected concentrations. Also, for those building surfaces with a small number of samples, the maximum concentration rather than the 95 percent UCL was used to estimate EPCs. There is uncertainty associated with this assumption but it is likely in the direction of overestimating potential exposures. Non-detects were included in the mean at a value equal to one-half the detection limit for that parameter in each sample. For some of the congeners measured in wipe samples collected in the Main Forge Shop, a concentration equal to one-half the sample quantitation limit is greater than the maximum detected concentration. This arises from some of the samples having elevated sample quantitation limits. EPA policy directs risk assessors to use concentrations equal to one-half the sample quantitation limit in averaging data because elevated detection limits can mask the presence of a compound. For some COPCs on some surfaces, the EPCs on which the risk is based can be driven by the inclusion of concentrations equal to one-half the sample quantitation limit.

The EPCs used in the risk calculations assume that the concentrations of contaminants identified will remain the same over time, and also that the dust will continue to be available for the entire exposure duration. This may overestimate future exposure.

In calculating receptor-specific exposure factors for the quantitatively evaluated scenarios, the most health-protective of the default range of values available were used. Receptor-specific parameters, such as contact and ingestion rates, were obtained from EPA guidance, which are intended to err on the side of protecting human health.

One example of using default assumptions is the exposure frequency and exposure duration for maintenance workers. Maintenance workers were assumed to be exposed to COPCs on interior building surfaces five days per week throughout the year excluding two weeks of vacation time. This RME assumption is likely to over-estimate risks because workers are unlikely to be inside for eight hours every day because of holiday time, sick time or vacation time in excess of two weeks per year. Also, these workers were assumed to be employed for 25 years in the same building. This length of employment is a conservative assumption and is more than double the median occupational tenure of 10 years (EPA, 1996a). The RME assumptions are upper-bound estimates for this receptor group. EPA policy states that the use of default parameters may lead to an overestimation of risk, since these values are conservative for the purpose of protecting sensitive receptors in risk evaluation.

One example of using site-specific information in the exposure assessment is the exposure frequency and exposure duration for visitors. The selection of 12 visits per year for 30 years is a purposeful over-estimate used in the RME case. It is unlikely that the same child/adult would visit the hotel/restaurant/museum every month from age 1 to 31. The central tendency estimates are still overestimates of exposure frequency and duration at 7 times per year for 7 years. Rather than providing an average estimate for visitors, the CT assumptions are still higher-than-average.

There are also uncertainties associated with chemical-specific or class specific input parameters such as dermal absorption rate. Maintenance workers were assumed to have more contact with surfaces. No special sensitivity was assumed for the workers; the workforce is expected to consist mainly of healthy adults, especially in industrial settings where the workers are likely to be subject to more rigorous health and safety requirements.

6.6.3 Dose-Response Data

The primary sources of uncertainty associated with the toxicity values used to quantify risks include: (1) extrapolation of dose-response information from effects observed at high doses to predict adverse effects at low levels anticipated for human exposure to environmental contaminants, (2) use of toxicity information compiled from short-term exposure studies to predict the effects associated with long-term exposures (and vice-versa), (3) use of dose-response information from animal studies to predict likely effects in humans, and (4) use of toxicity information based on homogeneous animal populations or healthy human populations to predict the effects that are likely to be observed in the general population (including sensitive subgroups).

The dose-response values used in the calculation of HIs and cancer risk estimates are conservative values. Since RfDs and RfCs are derived using a number of safety factors and are developed to protect sensitive populations, the actual dose or concentration associated with a health effect is likely to be higher than the dose or concentration established by EPA for most groups in the general population. In addition, the CSFs and unit risks are derived based on the upper 95 percent confidence limit and assume that no threshold level exists for exposure to carcinogens.

Although no values have been established for dermal contact exposures, it is standard practice to use values derived from studies based on oral exposures to evaluate dermal contact exposures. This technique is health protective since it has been demonstrated that the most significant exposures for most contaminants occur via the oral and inhalation routes.

6.6.4 Cumulative Total Site Risk

Sources of uncertainty in the risk characterization include:

- the equal weight given to Groups A, B1, B2 and C carcinogens in estimation of ELCR estimates;
- the equal weight given to chemical constituents whose RfDs have difference confidence levels in estimating noncarcinogenci HI(s); and
- the assumption of simple additivity of ELCRs and HI(s) across COPCs.

As with the evaluation of EPCs, the use of conservative assumptions and parameters in developing risk estimates would be expected to err on the side of protecting human health. Thus, the calculated HIs and cancer risk estimates are likely to result in upper-bound estimates

of the hazard resulting from exposure to COPCs present in building surfaces. Consequently, the estimates should be used to highlight areas of potential concern rather than as absolute estimates of health risks.

6.7 Characterization of Risk to Safety

Examples of Site conditions that potentially pose a risk to safety are described in 310 CMR 40.0960 of the MCP. Risk to safety is defined as a threat of physical harm or bodily injury to people. As described in Section 1.0, Building 105 contains the former forging equipment and machinery as well as an extensive network of open trenches and vaults. While the former equipment and trenches/vaults pose risk of harm and/or bodily injury, a condition of NSR to safety currently exists at the Site because Building 105 is unoccupied and access is restricted. In the future the majority of the former equipment will be removed and trenches/vaults will be filled. Equipment and trenches/vaults to remain as part of the exhibit of the Building's past industrial use will be adequately safeguarded against hotel visitors to ensure a condition of NSR to is maintained after redevelopment.

6.8 Characterization of Risk to Public Welfare

In accordance with 310 CMR 40.0994 of the MCP, a condition of NSR of harm to public welfare exists if the following conditions are met for current and reasonably foreseeable uses of a Site:

- Nuisance conditions (e.g., odors, fires, flooding) are not present as a result of the release of oil and/or hazardous material at a Site.
- There is no loss of active or passive property use as a result of the release of oil and/or hazardous material at a Site.
- All soil and groundwater EPCs are below the Method 3 Upper Concentration Limits (UCLs) established in 310 CMR 40.0996(7).

Soil (recent), soil/concrete (historic), and groundwater EPCs were compared to DEP UCLs as shown in Tables F.6, F.7, and F.8. As shown on Table F.6 and F.7, the 95th percent UCL for soil and soil/concrete, used as the EPCs throughout this report, are less then soil UCLs. It should be noted that a single sample in the recent soil samples collected, SB-F3-0-15'', contained concentrations of the C_{19}-C_{36} aliphatic fraction range greater than the UCL. While this is an elevated concentration, this single sample does not constitute an exceedance of the UCL. Additionally, this soil sample along with soil sample WSB-10 were evaluated to determine if the concentrations within those samples constitute a hotspot and they were found not to constitute a hotspot (refer to Section 6.3.2). Since there are no known hotspots on the Site, use of the 95th percentile UCL as the EPC for comparison to UCLs is appropriate. While the comparison of a combination of soil and concrete concentrations (historic samples) is not a proper use of the UCLs, this comparison was conservatively made to show that historic soil samples (in combination with concrete samples) are less than soil UCLs.

As shown in Table F.8, groundwater concentrations are all well below DEP UCLs for groundwater. Since all of the above criteria are met, a condition of NSR to public welfare exists at the Site.

6.9 Characterization of Risk to the Environment

An environmental risk characterization evaluates the potential risk of harm to ecological receptors including terrestrial, aquatic and benthic organisms. The first step of the environmental risk characterization is to determine if potentially significant exposure pathways

exist. The Site is completely developed; therefore, there is no significant exposure pathway for terrestrial receptors.

According to Figure 3 - Area Receptors Map, there are no ACECs, Certified Vernal Pools, wetlands, or sensitive habitat areas as mapped by the NHESP within 500 feet of the Site. The nearest surface water body to the Site is Boston's Inner Harbor, located approximately 450 feet to the west. As shown in Table 6, groundwater samples contained low concentrations of petroleum compounds, 2-methylnaphthalene, arsenic, barium and PCBs; however, the concentrations were all significantly below Method 1 GW-3 cleanup standards. PCBs were detected at only one location (MW-102A) at a concentration of 0.26 mg/l. Consequently, there are no significant exposure pathways for contaminants in groundwater to impact aquatic or benthic receptors, and a condition of NSR to the environment exists under current and future use conditions.

6.10 Summary of Method 3 Risk Characterization

The human health risk characterization concluded that a condition of NSR does not exist for future Site use as a hotel/restaurant and museum assuming potential exposures to current contamination in soil, concrete and building materials. However, during the proposed construction of the building, most of the building materials will be remediated, encapsulated and/or covered, or cleaned prior to opening of the renovated building. Upon completion of the proposed hotel/restaurant/museum, it is unlikely that receptors would be exposed to significant concentrations of impacted material. Therefore, under the anticipated future Site conditions, a condition of NSR will exist for the potential receptors in the renovated hotel/restaurant and museum.

The risk characterization concluded that a condition of NSR exists for public welfare, safety and the environment.

7.0 EVALUATION OF CLEANUP ALTERNATIVES

The results of site investigations completed to date indicate widespread contamination of various building materials, concrete floor slab, and subsurface soil at the Site. Based on the Method 3 risk characterization presented in Section 6.0, significant risk exists at the site due to the historical contamination. As part of the intended redevelopment, remediation of the historical contamination will be conducted.

As discussed in Section 2.0, a limited amount of soil remediation, decontamination of building surfaces, and abatement of hazardous materials within the building has already been completed at the Site, and a number of studies have been performed to identify and evaluate additional remedial/decontamination strategies to address the remaining contaminated surfaces and materials within the building. The latest study was performed by S&W in 2002, following the completion of the preliminary remedial work, and it recommended complete decontamination and/or removal of porous and non-porous building materials, complete removal of the concrete floor slab, selective removal of soil with PCB concentrations greater than 10 mg/kg followed by construction of a concrete cap, and the implementation of a deed restriction. While this evaluate was submitted to EPA, our understanding is that the approach was never implemented.

7.1 Development of Cleanup Alternatives

On October 28, 2014, representatives from Kavanagh, the BRA, and Weston & Sampson met with the US EPA Region 1 TSCA Coordinator, Ms. Kim Tisa. The purpose of the meeting was to review the historic Site investigation results and discuss a potential risk-based cleanup approach to address the remaining contamination at the Site and allow for the redevelopment of Building 105. The cleanup approach was based on the recommended cleanup strategy provided in the Interim Evaluation Report II dated August 2002 prepared by S&W and included the following:

- Removal and off-site disposal of porous PCB-impacted building materials (e.g., windows, wood trim, doors and frames, etc.)
- Abrasive blasting using fine grit media of non-porous PCB-impacted building materials (e.g., steel beams, columns, etc.);
- Decontamination and encapsulation of interior brick walls;
- Selective removal and off-site disposal of soil below the building with PCB concentrations ≥ 50 mg/kg at any location;
- Selective removal and off-site disposal of sections of the existing concrete floor slab with PCB concentrations ≥ 50 mg/kg at any location;
- Removal of PCB-impacted soil and concrete from proposed utility corridors within the footprint of the building with PCB concentrations ≥ 1 mg/kg (i.e., clean utility corridors);
- Capping the entire building floor with a new 6-inch thick reinforced concrete slab; and
- Placement of a deed restriction, in the form of an Activity and Use Limitation (AUL), on the Site.

During the meeting, EPA conceptually agreed to the cleanup approach for building materials and soil with PCB concentration of greater than or equal 50 mg/kg provided a new concrete slab and clean utility corridors are provided. However, based on the intended future use of the Site as a hotel with a restaurant, EPA requested that two concrete removal scenarios be considered. Specifically, EPA requested that the removal of concrete with both 50 mg/kg and 10 mg/kg be evaluated. EPA also suggested that alternative decontamination methods for the concrete slab

be evaluated as potentially more cost effective option for addressing low levels of PCBs in concrete.

7.2 Evaluation of Concrete Removal Alternatives

As requested by EPA, Weston & Sampson evaluated concrete removal scenarios that included the removal of concrete with PCB concentrations of ≥10 mg/kg (Scenario #1) and ≥ 50 mg/kg (Scenario #2) at any location. The evaluation assumed the proposed decontamination and remediation strategy to address the remainder of the building materials and soil at Building 105 were unchanged and that the final cleanup approach would include the construction of a new concrete floor slab and implementation of an AUL. The evaluation also assumed that concrete removed in order to access soil with elevated concentrations of PCBs, other COCs, and the construction of clean utility corridors and subsurface foundations would be removed.

The two concrete removal scenarios were evaluated based on their effectiveness, implementability and cost. Weston & Sampson utilized the historic concrete sampling results collected by S&W and M&E as well as the supplemental concrete sampling conducted in 2014 to complete the evaluation. Concrete sampling locations are provided in Figure 5.

7.2.1 Effectiveness

Both concrete removal scenarios will reduce PCB concentrations within the building. The reduction in PCB concentrations would assist in reducing overall site risk. The removal limits for each scenario are provided in Figure 6. However, given that the proposed cleanup approach will include the construction of a reinforced concrete cap, construction of clean utility corridors and the placement of an AUL, which will mitigate current exposures and ensure building conditions are maintained to prevent future exposure to contaminated materials, the benefits of targeting specific cleanup levels is questionable, as it provides limited additional risk-reduction.

7.2.2 Implementability

Both concrete removal scenarios are readily implementable and require the same labor, materials, and equipment. Implementing these scenarios would require temporarily or permanently removing several of the large pieces of equipment with the building to gain accessibility to contaminated areas, followed by saw cutting and/or jackhammering to remove sections of contaminated concrete. Removed pieces of concrete would require temporary on-site storage in roll-off containers or bins before being transported off-site for disposal. In addition, the concrete removal would require implementation of engineering controls, such erecting negative pressure enclosures/containment in work areas, wet suppression for dust control, dust monitoring within and outside the building, and the management of any water generated during decontamination or dust control activities.

7.2.3 Cost

The primary factor affecting the cost of each concrete removal scenario are the costs associated with concrete removal (i.e., labor, materials and equipment needed to physically remove the concrete as described above) and transportation and disposal of contaminated concrete. As such, the more concrete required to be removed, the greater the cost. Ranges for the volume and costs associated with each removal scenario are provided below.

Item	Scenario #1	Scenario #2
Volume (cubic yards)	400-475 cy	150-180 cy
Cost Range (dollars)	$640,000 – $760,000	$240,000 – $290,000

The ranges for volume and cost are due to unknowns associated with the variable thickness of the existing concrete slab, which reportedly varies from 4 up to 18 inches, as well as additional removal based on confirmatory concrete sampling and inherent uncertainty due to the irregular distribution of PCBs given the source and large floor area. Note these volumes do not account for additional concrete removal required for the construction of clean utility corridors and/or new subsurface foundations. These activities are expected to generate a small volume of additional impacted concrete requiring proper handling and off-site disposal. The estimated concrete volume associated with these activities may be upwards of 50 cubic yards.

7.3 Evaluation of Concrete Decontamination Alternatives

As suggested by EPA during the meeting in October 2014, Weston & Sampson performed a pilot test of concrete decontamination methods as part of the evaluation of concrete cleanup alternatives. The pilot test included the use of two commercial PCB decontamination products, CAPSUR®, and DeconGel 1101®. In 2000, S&W conducted a pilot test using different PCB decontamination methods for the concrete floor slab, which indicated there was no effective method for removing contamination from concrete within the building.

Weston & Sampson, and its sub-contractor, JM Environmental Inc., conducted the pilot-test on January 15, 2015. As noted above, the pilot test evaluated two commercial products: CAPSUR®, a foam applied, aqueous-based solvent extraction product, and DeconGEL 1101®, an alcohol-based gel detergent product. The pilot test was conducted by treating areas of known PCB concrete contamination (based on previous sampling results) in the building with each product, then collecting confirmatory samples to verify the reduction in PCB concentrations. In total, four (4) areas were treated during the pilot test. The areas corresponded to the concrete sampling locations #577, #622, CS-115 and CS-118. Pilot-testing locations are shown in Figure 5.

Following the treatment of each area, Weston & Sampson collected confirmatory concrete samples. It should be noted that during the pilot test the DeconGEL product was determined to be ineffective due to cold temperature preventing the product to adequately cure per manufacturer's instructions and "rough" finish on the concrete slab, which prohibited the product from being effectively removed after each application. Therefore, confirmatory samples were only collected from locations corresponding to the CAPSUR treatment. Confirmatory concrete samples were collected from the top 0.5-inch of concrete in each area using a rotary hammer drill in accordance with EPA SOP and submitted to Contest for analysis of PCBs by EPA Method 8082 with soxhlet extraction. A comparison of the pre- and post-treatment PCB results is provided below.

Pilot Testing Locations (Pre/Post)	Pre-Testing Concentration	Post-Testing Concentration
577 / P-105C	27	38.6
622 / P-103C	13	11.7
CS-115 / P-115C	15.3	11
CS-118 / P-118C	18	23

*Concentrations of PCBs in units of mg/kg

As shown above, pilot testing results were irregular with two locations showing slight decreases in PCB concentrations and two locations where the concentrations slightly increased after the treatment. The increase is attributed to the heterogeneous distribution of PCBs in the concrete slab. In general, the results of this evaluation indicated that neither product was effective at

reliably reducing the PCB concentrations in the concrete slab, such that it could be considered for full-scale remediation. Therefore, based on the results of the S&W evaluation and the pilot testing described above, decontamination of the concrete slab has been eliminated from further evaluation of the cleanup alternatives for the Site.

7.4 Selection of Concrete Remediation Alternative

Based on the evaluation of concrete removal and decontamination alternatives, Weston & Sampson recommends removal of concrete with PCB concentrations greater than or equal to 50 mg/kg at any location. Given that the estimated total cost for remediation for all hazardous materials at the Site (i.e., building materials, concrete, soil, asbestos, etc.) is $9 to $10 million, Weston & Sampson believes the added benefit of concrete removal below 50 mg/kg, at an estimated additional cost of approximately $500,000 dollars, is disproportionate to the relative risk reduction benefits for further removal. In addition, the removal of concrete with PCB concentrations greater than or equal to 50 mg/kg will result in removing the most significantly impacted concrete, while exposure to residual PCB-impacted concrete remaining at the Site after remediation will be effectively controlled through the construction of concrete cap and implementation of an deed restriction.

8.0 SITE CLEANUP AND RISK-BASED DISPOSAL PLAN

This section presents the cleanup and risk-based disposal plan for the proposed remediation of contaminated materials at the Site. This plan outlines the plans and procedures to be implemented to address all of the COCs and contaminated media, including contaminated building materials/surfaces, the concrete floor slab, and soil beneath the building. Based on the results of recent sampling, groundwater at the Site is not impacted above applicable cleanup standards; therefore, additional response actions to address groundwater are not required.

Weston & Sampson developed this plan in accordance with the requirements of 40 CFR 761.61(c) to address remediation of various PCB contaminated materials at the Site. Since the plan also deals with other COCs, such as PCDDs/PCDFs, TPH, and metals in soil, and site remediation is intended to be performed as part of building redevelopment under a RAM, the plan was also prepared to be consistent with the requirements of the MCP, 310 CMR 40.0440. Specific aspects of the RAM are presented separately in Section 9.0.

8.1 Identification of Impacted Areas

As described in Sections 3.0 and 5.0, various building materials/surfaces, concrete floor slab, and soil beneath the building have been contaminated as a result of the historic industrial use of Building 105. Based on the distribution and frequency of occurrence, the primary COCs at the Site are PCBs, PCDDs/PCDFs, and TPH. Other contaminants of concern include SVOCs, specifically PAHs, and metals.

PCBs have been identified throughout the building. They were detected most frequently on porous (e.g., brick walls, ceiling panels, etc.) and non-porous (e.g., structural steel, overhead piping, etc.) surfaces and building materials, the concrete floor slab, and soil. The extent of PCB impacts to soil and concrete are shown in Figure 5 and Figure 7. Elevated concentrations of PCBs were also detected in a layer of harden grease/oil and paint on equipment and lower portions of the structural steel (i.e., < 8 feet) in the main forge shop; however, these impacts were remediated as discussed in Section 2.0. Low concentrations of PCB are present on these materials in the blacksmith shop and roundhouse, including the existing the equipment which was not previously remediated.

After PCBs, PCDDs/PCDFs and TPH are the most significant COCs at the Site. A summary of the extent of PCDDs/PCDFs and TPH contamination in soil is illustrated in Figure 8. In general, PCDDs/PCDFs detections coincide with locations where PCBs were detected; however, with the exception of a few isolated locations in soil, the PCDD/PCDF concentrations were generally below the applicable cleanup standards. TPH is primarily associated with shallow soils in the main forge shop, and was detected at several locations in excess of applicable cleanup standards and MCP UCLs in shallow soil. Various metals and SVOCs have also been detected in soil below the floor slab, with several locations exceeding applicable MCP cleanup standards.

8.2 Cleanup and Disposal Plan

As outlined in Section 7.0, the cleanup and disposal plan for the Site includes the following:

- Removal and off-site disposal of porous PCB-impacted building materials (e.g., windows, wood trim, doors and frames, etc.);
- Decontamination of non-porous PCB-impacted building materials (e.g., steel beams, columns, etc.);
- Decontamination and encapsulation of interior brick walls;

- Removal and off-site disposal of soil with PCB concentrations ≥ 50 mg/kg;
- Removal and off-site disposal of concrete with PCB concentrations ≥ 50 mg/kg;
- Removal of PCB-impacted soil and concrete to provide clean utility corridors with PCB concentrations < 1 mg/kg;
- Construction a 6-inch concrete cap over the entire building footprint; and
- Placement of a restriction, in the form of an Activity and Use Limitation (AUL), on the entire building/property.

In addition, based on the results of the supplemental investigation and additional assessment of petroleum impacted soil in the main forge shop, the plan also includes the following;

- Targeted excavation and removal of soil with elevated TPH and PCDDs/PCDFs concentrations in the main forge shop; and
- Installation of a 20-mil vapor barrier beneath the proposed 6-inch concrete cap to mitigate potential vapor intrusion from residual petroleum impacted soils.

Figure 9 – Soil & Concrete Remediation Plan shows the limits of proposed excavation and removal of contaminated concrete and soil with PCB concentrations greater than 50 mg/kg, as well as soil with elevated concentrations of TPH and PCDDs/PCDFs. Further details regarding the removal and decontamination of contaminated materials outlined above are described in the following sections.

8.2.1 Soil

Remediation will include excavation and off-site disposal of soil with PCB concentrations greater than or equal to 50 mg/kg. Areas with PCB concentrations greater than or equal to 50 mg/kg are shown in Figure 9. As shown in Figure 9, the remediation will include removing soil from several areas within the main forge shop portion of the building. Based on PCB data from these areas, the planned excavation will require removal of approximately 1 foot below the bottom of concrete in the majority of the areas. The deepest area of excavation is anticipated to be up to 5 feet below ground surface in the northwest corner of the building near the former bar cutting machine. The total expected volume of material to be generated from these activities is 250-300 cubic yards; however, the final volume will be determined based on confirmatory verification testing as outlined in Section 8.3. Excavated materials will be managed in accordance with the procedures outlined in Section 8.5.

In addition to the selective removal of PCB-impacted soil with PCB concentrations equal to or greater than 50 mg/kg, excavated soil will also be generated from the installation of clean utility corridors, drilling of new foundation piles, and the targeted removal of soil with elevated TPH and PCDDs/PCDFs concentrations in the main forge shop portion of the building.

The locations to be excavated to remove other COC-impacted soil are shown in Figure 9. At this time, final utility corridors and subsurface foundation locations are unknown. A conceptual plan for the proposed redevelopment indicates there are two planned utility corridors for the building, each of which will be 2 feet wide by 2 feet deep and will run the entire length of the building along First and Second Avenue. New foundations will include pile caps and 132 mini-piles. Given that PCB concentrations vary significantly within the building, following final design, the in-place PCB concentrations corresponding to the utility and pile locations will be evaluated. Since most of the soil PCB-impacted materials generated from these activities are expected to contain PCB concentrations of less than 50 mg/kg, excavated materials associated with this work will segregated and managed separately in accordance with the procedures in Section 8.5.

In total, approximately 170 cubic yards of soil is expected from installation of the new utility corridors and 125 cubic yards is expected to be generated from the installation of new foundations.

8.2.2 Concrete Floor Slab

Based on the site investigation completed within Building 105, several areas of the concrete floor slab in the main forge shop contain PCB concentrations greater than or equal to 50 mg/kg. The locations of these areas are shown in Figure 9. Concrete in each area will be removed to the limits shown in Figure 9; however, the final limits of removal will be based on confirmatory testing outlined in Section 8.3. Based on the anticipated limits, concrete remediation activities are expected to generate approximately 150 to 180 cubic yards of material requiring off-site disposal.

In addition to the concrete remediation activities, concrete will also be removed for the installation of new utility corridors and subsurface foundations. Given that final design of the utility corridors and new foundations is incomplete, the concentrations of PCBs to be encountered during this work are unknown. Following final design, in-place PCB concentration corresponding with the final locations of these components will be reviewed to determine material management options. The majority of the concrete to be generated during these activities is anticipated to contain PCB concentrations of less 50 mg/kg; therefore, the generated concrete will be segregated and managed separately in accordance with the procedures identified in Section 8.5.

8.2.3 Interior Brick Walls

Interior brick walls will be washed to decontaminate the walls of dust, peeling/flaking paint, and other surface residuals. Water generated during decontamination activities will be collected for proper on-site treatment or transportation and off-Site disposal. Procedures for the characterization and management of decontamination derived water and any accumulated dust/dirt are outlined in Section 8.5.

The redevelopment of Building 105 will include areas of exposed brick walls. In particular, the interior of the existing exterior wall adjacent to Thirteenth Street is expected remain exposed. Following the decontamination of this area, confirmatory wipe samples for PCBs will be collected to ensure surface PCB concentrations are less than 10 µg/100 cm^2. The procedures for the collection of confirmatory wipe samples are provided in Section 8.3.

Following receipt of confirmatory sampling results, areas of the interior brick walls to remain exposed will be encapsulated with a high-build epoxy protective coating. Encapsulation will include the entire exposed brick surface as well as the inner face of brick in contact with any former windows, doors and/or porous building materials. The remainder of the interior brick walls throughout the building will be covered with framing and interior wall coverings (i.e., sheet rock). It is proposed that portions of the brick walls behind new wall systems will not be encapsulated because:

- The walls and associated framing behind them are fixed and not anticipated to be removed;
- The wall coverings provide adequate protection from direct contract to the brick behind the walls; and
- Existing PCB concentrations in the brick throughout the building are low and presently pose NSR.

8.2.4 Non-Porous Building Surfaces

Non-porous building surfaces to remain following redevelopment include structural steel columns and trusses, horizontal steel beams and two large overhead cranes in the main forge shop. These building elements are anticipated to be exposed in a large atrium from floor to ceiling as part of the redevelopment. These non-porous materials will also be inaccessible, suspended greater than 8 feet above the nearest floor surface. Although direct contact with these materials is not anticipated, they will be decontaminated prior to redevelopment. Decontamination will include washing the non-porous surfaces to remove residual dust and flaking/peeling paint, followed by repainting. Once repainted, confirmatory wipe samples will be collected to verify surficial PCBs are less than 10 µg/100 cm^2 in accordance with the procedures identified in Section 8.3.

Any non-porous building materials that will remain accessible will be decontaminated as recommended by S&W using abrasive blasting using a fine grit media to remove paint and other residual surface materials. The abrasive blasting will be conducted under negative pressure containment to prevent the generation of fugitive dust, and air within the these containments structures as well as blasting media will be collected using High Efficiency Particulate Air (HEPA) vacuum systems. Spent media, HEPA filters, and other personal protective equipment will be placed directly into roll-off containers or drums, as required, for temporary on-site storage, characterized for disposal, and transported off-site for disposal. Procedures for the management of blasting wastes are provided in Section 8.5.

Confirmatory wipe samples of accessible non-porous building materials will also be collected. The sample will be collected in accordance with the procedures identified in Section 8.3.

8.2.5 Porous Building Materials

Porous building materials include the wood and concrete ceiling panels, wood windows, trim, and doors, and miscellaneous debris within the building. Sampling of these materials indicates they contain low to moderate concentrations of PCBs. The majority of the porous building materials will be removed, characterized for disposal, and disposed of off-site in accordance with the procedures outlined in Section 8.3 and 8.5. A portion of the existing ceiling, roof and raised monitor running along ridge of the roof of the main forge shop may remain depending on the structural integrity of these building systems. If suitable for reuse, these porous materials will be inaccessible, and therefore they will be washed and/or vacuumed to remove residual dust/debris and then painted.

8.2.6 Non-Porous Building Materials

In addition to the removal of porous building materials, select non-porous building materials will also be removed during remediation. Non-porous building materials to be removed include overhead and trench piping, the steel roll-up doors, and steel plates located throughout the building. Most of the existing non-porous equipment located in the building will also be removed. Since the former equipment in the main forge shop has already been decontaminated, this equipment will be wiped down to remove dust and then removed. Remaining non-porous building materials will be decontaminated either by washing or abrasive blasting, as needed, prior to removal. Large non-porous materials, such steel plates and equipment in the blacksmith shop, will also be decontaminated by solvent wash that will include wiping down the non-porous materials with a PCB extraction solvent (Pipe-X Metal X or equal). Details on the management of non-porous building materials and decontamination derived wastes are provided in Section 8.5.

8.2.7 Cap Construction

Following the removal of contaminated concrete and soil, remedial excavations and portions of the existing concrete slab that were removed will be backfilled with clean fill or gravel to provide a suitable base for the construction of a proposed 6-inch reinforced concrete cap. The cap will be constructed to encompass the footprint of Building 105, and will be designed in accordance with the requirements of 40 CFR 761.61(a)(7).

8.2.8 Vapor Barrier

The additional petroleum assessment of the building revealed the concentration of petroleum hydrocarbon fractions in sub-slab soil gas are well below the applicable DEP residential sub-slab screening values. These results suggest future vapor intrusion of petroleum contaminants from the residual petroleum impacted soils to remain after remediation will not be a pathway of concern. However, given that the building will be occupied, the cleanup will include installation of vapor barrier to safeguard against potential future concerns regarding vapor intrusion and risk of impacts to indoor air. The vapor barrier will consists of 20-mil high density polyethylene (or equal) and will be installed between the proposed concrete cap and the existing concrete floor slab and soil beneath the building.

8.3 Confirmatory Sampling Procedures

Confirmatory soil and concrete samples will be collected following soil and concrete removal to verify soil and concrete are removed to the cleanup concentrations specified in this plan. Confirmatory wipe samples will also be collected from portions of the interior brick walls that will be exposed following redevelopment to verify the effectiveness of the decontamination of these surfaces. It is anticipated concrete and wipe samples will be analyzed for PCBs only. Depending on location within the building, soil samples will be analyzed for PCBs, EPH and VPH, and/or PCDDs/PCDFs. A summary of the analytical methods are provide below.

Parameter	Media	Laboratory Method
PCBs	Soil, concrete, and wipe	EPA Method 8082 with soxhlet extraction
EPH	Soil	MADEP-EPH-04-1.1
VPH	Soil	MADEP-VPH-04-1.1
PCDDs/PCDFs	Soil	EPA Method 8290

8.3.1 Soil

Confirmatory soil samples will be collected from remedial excavation areas. Confirmatory PCB soil samples will be collected from the bottom of excavation in each area at a frequency of 1 grab sample per 100 square feet (sf). Confirmatory sidewall samples will be collected at a frequency of 1 sample per 25 linear feet from a depth half way between the top and bottom of excavation. At a minimum, 1 sample from the pit bottom and four sidewalls will be collected. In accordance with 40 CFR 761.286, samples will be collected from 0 to 3 inches.

In addition to PCBs, following the removal of soil from areas containing elevated TPH and/or PCDDs/PCDFs additional confirmatory soil samples for these parameters will also be collected. Confirmatory sampling will include the collection of grab sample from the pit bottom and a composite sample of the four sidewalls. In the case of areas with elevated TPH concentrations, confirmatory samples will be submitted for analysis of EPH and VPH, instead of TPH, because these analyses provide a better overall assessment of petroleum contamination.

8.3.2 Concrete

Confirmatory concrete samples will be collected along the perimeter of the concrete removal areas shown in Figure 9 at a frequency of 1 sample per 25 linear feet. The samples will be collected from the top 0.5 inches of concrete at each location using a rotary hammer drill in accordance with EPA SOPs.

8.3.3 Wipes

As noted in Section 8.2, confirmatory wipe samples will be collected from exposed brick walls and non-porous building materials to remain. Wipe samples will be collected at a frequency of 1 sample per 100 square feet of decontaminated wall surface and non-porous building materials. The samples will be collected in accordance with the procedures recommended by EPA in 40 CFR 761.123 using hexane wipes provided by the laboratory.

8.4 Contingency Plans

Based on the sampling and analysis conducted to date, the extent of PCBs in building materials and soil beneath the building is well defined. However, due to the nature of the release and some uncertainty regarding the distribution of PCBs in the concrete floor slab and soil, additional impacted materials requiring removal may be identified during remediation. As discussed in Section 8.3, the limits of concrete and soil removal will be evaluated through the collection of confirmatory samples. If the results of confirmatory sampling indicate that residual PCB (or other COCs) concentrations exceed applicable cleanup thresholds, then additional soil/concrete will be removed. The removal will be conducted as an iterative process, where the limits of the removal will be expanded in 2-foot increments horizontally for failed sidewall samples and 1-foot vertically for failed bottom samples, followed by additional confirmatory sampling. The process will continue until all post-removal confirmatory samples are below the applicable cleanup thresholds established in this plan.

8.5 Waste Management Plan

Anticipated waste streams to be generated during remediation include the following:

- Excavated soil and concrete with PCB concentrations ≥ 50 mg/kg;
- Excavated soil and concrete with PCB concentrations < 50 mg/kg;
- Abrasive blasting media;
- Decontamination wash-water;
- Porous and non-porous building materials, spent solvent, and debris with PCBs; and
- Personal Protective Equipment (PPE) and site containment and dust control wastes.

8.5.1 Soil, Concrete, Building Material, and Solid Decontamination Wastes

PCB-impacted soil, concrete, building materials and blasting media will be segregated from one another and temporarily stockpiled on-Site. In addition, soil and concrete from areas with known PCB concentrations greater than or equal to 50 mg/kg will be segregated and stockpiled separately from materials with PCB concentrations less than 50 mg/kg. Once stockpiled, representative samples will be collected for disposal characterization of each waste stream. Disposal characterization will include: VOCs, SVOCs, TPH, RCRA-8 metals, PCDDs/PCDFs, and hazardous characteristics (ignitability, reactivity, conductivity, and corrosivity). In addition, parameters that exceed the RCRA Rule of 20 will also be analyzed for Toxicity Characteristic Leaching Procedure (TCLP).

Non-porous building materials to be removed will also be segregated and stockpiled on-Site during remediation. Non-porous building materials will be characterized with the collection of wipe samples for the analysis of PCBs using EPA Method 8082 with soxhlet extraction. Characterization wipe samples will be collected by the methods outlined in the EPA document "Wipe Sampling and Double Wash/Rinse Cleanup as Recommended by the Environmental Protection Agency PCB Spill Cleanup Policy" dated June 23, 1987 and revised on April 18, 1991.

Porous building materials, soil, concrete and fine grit blasting media will be transported and disposed off-Site based on the disposal characterization results according to the following:

- **Bulk Product Waste** will be transported and disposed off-site in accordance with the requirements specified under TSCA.
- **Remediation Waste with PCBs ≥ 50 mg/kg** will be transported and disposed off-site as at a TSCA-certified disposal facility;
- **Remediation Waste PCBs ≥ 1 mg/kg and <50 mg/kg** will be transported and disposed off-site at a an out-of-state RCRA Subtitle D landfill ; and
- **Remediation Waste with PCBs < 1 mg/kg** will be transported and disposed/reused off-site at an in-state solid waste landfill facility.

Non-porous building materials to be removed may be painted or unpainted. For unpainted materials, wipe samples will be collected in accordance of the procedures identified in Section 8.3, and the materials will be disposed of according to the following:

- **Unpainted Non-Porous Surfaces with PCBs ≥10 µg/100cm^2** will be transported and recycled/disposed off-Site at a TSCA-certified disposal facility; and
- **Unpainted Non-Porous Surfaces with PCBs <10 µg/100cm^2** will be transported and recycled/disposed off-Site as solid waste at a licensed landfill or recycling facility.

For painted materials, samples of the paint will be collected and analyzed for PCBs. Based on the results, these painted non-porous materials will be disposed of according to the following:

- **Painted Non-Porous Materials with PCBs≥50 mg/kg** will be transported and disposed off-site as bulk product waste in accordance with the requirements of TSCA; and
- **Painted Non-Porous Materials with PCBs<50 mg/kg** will be transported and disposed off-site as excluded waste at licensed recycling and/or disposal facility.

8.5.2 Liquid Decontamination Wastes

Wash water from the decontamination of building walls will be collected and pumped to an on-Site temporary storage tank. The accumulated wash water will be sampled for disposal characterization analysis and transported and disposed off-Site based on the characterization data, or alternatively, the water will be pumped to and treated through a temporary on-Site treatment system and discharged under a temporary dewatering permit. Sediment and/or grit collected through the treatment of the water will be collected and managed as described in Section 8.5.1.

8.5.3 Additional Waste Management Considerations

Surveys within Building 105 have identified the presence of Asbestos Containing Materials (ACM) and lead paint. These materials will be properly abatement and disposed concurrently

with the remediation of various materials described in this plan in accordance all the applicable state and federal regulations.

8.6 Activity and Use Limitation

As discussed with EPA, the proposed cleanup plan includes placing a deed restriction in the form of an AUL on the property to minimize potential exposures and maintain a condition of NSR during future activities at the Site with the potential to disturb the concrete cap or wall surfaces within the building. The AUL will contain a description of the residual PCB contamination left in place at the Site, identify futures activities at the building that are consistent and inconsistent with the level of PCB contamination remaining, and outline a list of obligations and conditions necessary to ensure a level of NSR is maintained. As part of the obligations and conditions, implementation of an Operation, Maintenance and Monitoring (OMM) plan will be included to ensure capped and encapsulated/covered wall surfaces are effectively mitigating exposure to residual contamination. Details of the OMM plan will provided in the AUL and RAM Completion/Risk-Based Cleanup Closure report to be filed at the completion of the Project.

8.7 Schedule and Sequence of Work

Kavanagh anticipates receiving permits and approvals and finalizing the redevelopment design during the remainder of 2015. Once approved, removal of the existing building equipment followed by decontamination and remediation activities will begin. At this time, removal of the existing equipment is expected to begin in December 2015, with remediation completed during the first and second quarter of 2016.

9.0 RELEASE ABATEMENT MEASURE PLAN

As noted previously, the cleanup and disposal plan developed for the Site was prepared to concurrently address the requirements of 40 CFR 761.61(c) related to the risk-based cleanup of PCBs and the MCP, 310 CMR 40.0440, to address the release of COCs to soil. This Section presents the MCP requirements for the RAM Plan. The MCP requirements are shown in ***bold italic*** text, and the required information is shown in normal text.

(a) The name, address, telephone number and relationship to the site of the person assuming responsibility for conducting the Release Abatement Measure;

This RAM is being conducted by the proposed building developer, Kavanagh Advisory Group, LLC. The point of contact, address and telephone number is listed below.

Thomas A. Miller
Kavanagh Advisory Group, LLC.
99 Conifer Hill Drive, Suite 201
Danvers, Massachusetts 01923

(b) A description of the release or threat of release, site conditions and surrounding receptors;

The Site includes the former Building 105 located at the intersection of First Avenue and Ninth Streets in the former Charlestown Navy Yard, Boston, Massachusetts (see Figure 1). A description of the release and current site conditions are presented in Sections 1.1 and 1.3 of this report. Details regarding surrounding receptors are discussed in Section 1.5.

(c) The objective(s), specific plan(s), and proposed implementation schedule for the Release Abatement Measure, including, as appropriate, plans and/or sketches of the site and any proposed investigative and/or remedial installations;

The objectives of the RAM are to remediate and manage contaminated soil, concrete, and various building materials during construction of the proposed redevelopment of Building 105. Details regarding the remediation contaminated materials at the Site and management of contaminated generated during site remediation are provided in Section 8.0.

(d) A Statement as to whether Remediation Waste, Remedial Wastewater and/or Remedial Additives will be excavated, collected, stored, treated, discharged, applied, reused, or otherwise managed at the Site;

A discussion of the waste streams to be generated during the project and the management of each are provided in Section 8.5.

(e) Where appropriate, a proposed environmental monitoring plan for implementation during and/or after the Release Abatement Measure;

Dust monitoring will be conducted for the duration of remediation activities within the building to prevent generation of fugitive dust and potential exposure to on-site works and surrounding community during remediation activities. Fugitive dust emissions will be controlled through the construction temporary engineering controls, such installation of containment structures,

establishment of work and decontamination zones, pre-wetting surfaces to prevent the creating of dust, and covering material stockpiles and containers during material transport from the Site.

(f) A listing of federal, state and local permits likely to be needed to conduct the Release Abatement Measure;

If the Contractor elects to collect, treat and discharge decontamination wash-water generated during remedial activities at the Site to a nearby sanitary sewer or storm drain, then a permit will be required from the applicable agencies or authorities. Anticipated permits for the management of decontamination wash-water included a Massachusetts Water Resource Authority (MWRA) sewer use discharge permit and/or US EPA Remediation General Permit (RGP).

(g) The seal and signature of the Licensed Site Professional who prepared the Release Abatement Measure Plan;

Prasanta K. Bhunia, Ph.D. is the Licensed Site Professional (LSP) of record for the Site. His signature and seal are included in the RAM Transmittal Form (BWSC-106) filed electronically through the MassDEP e-DEP filing system.

(h) The certification required at 310 CMR 40.0442(5), if greater than 1,500 cubic yards of Remediation Wastes are to be excavated and managed at the disposal site; and

The volume of contaminated soil to be excavated and managed as remediation waste is estimated to be less than 1,500 cubic yards.

i) Any other information that the Department, during its review and evaluation of the Release Abatement Measure determines to be necessary to complete said plan, in view of site specific circumstances and conditions.

No additional information has been requested.

10.0 LIMITATIONS

This Release Abatement Measure (RAM) and Risk-Based Cleanup Plan was prepared for the use of Kavanagh Advisory Group, LLC, exclusively. The findings provided by Weston & Sampson in this report are based solely on the information presented in this document. Future investigations, and/or information that was not available to Weston & Sampson at the time of the investigation, may result in a modification of the findings stated in this report.

Should additional information become available concerning this Site or neighboring properties, which could directly impact the Site in the future, that information should be made available to Weston & Sampson for review so that, if necessary, conclusions presented in this report may be modified. The conclusions of this report are based on Site conditions observed by Weston & Sampson personnel at the time of the investigation, information provided by DEP and Kavanagh Advisory Group, LLC, and samples collected and analyzed on the dates shown or stated in this report. This report has been prepared in accordance with generally accepted engineering and geological practices. No other warranty, express or implied, is made

11.0 REFERENCES

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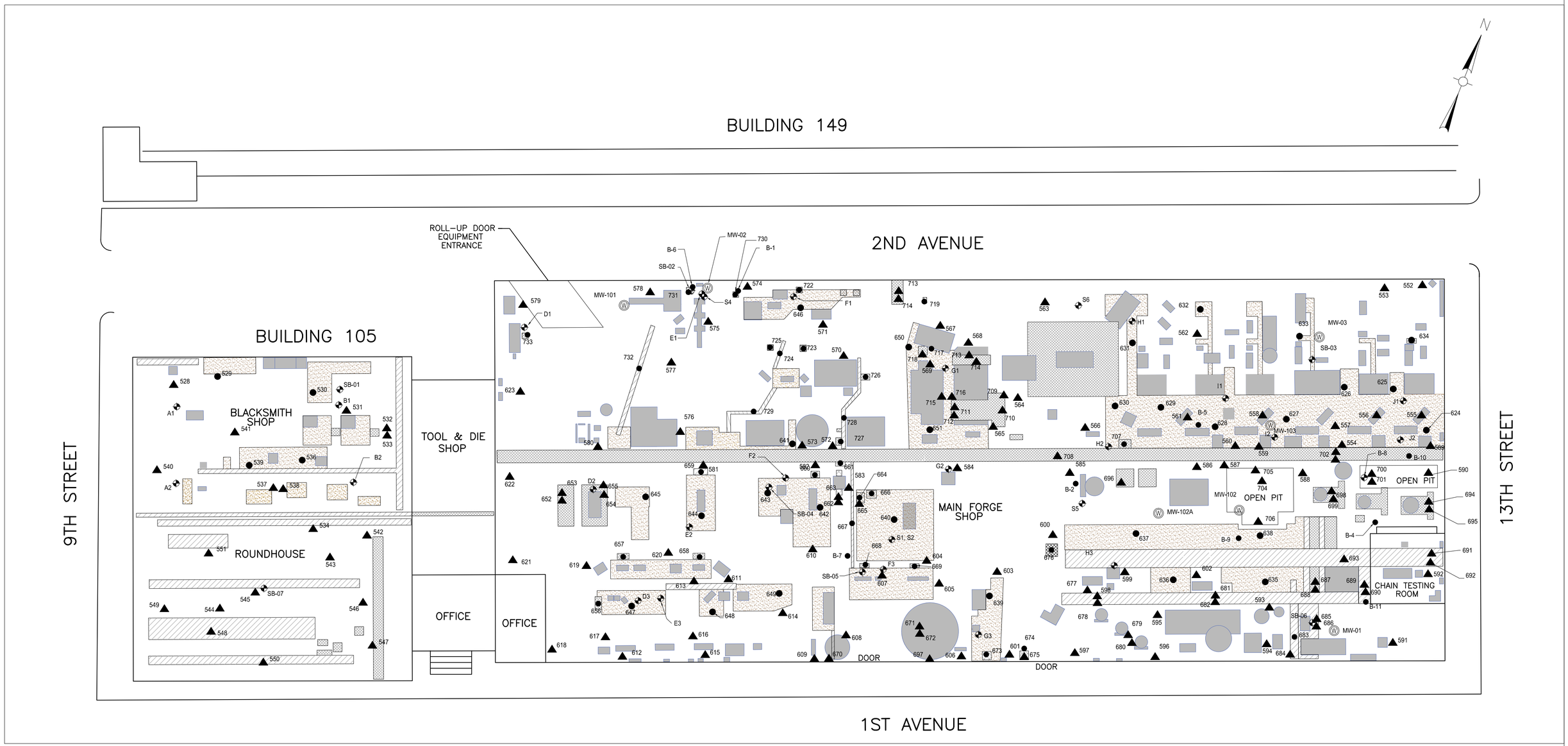
FIGURE 1
FORMER CHARLESTOWN NAVY YARD
BUILDING NO. 105
CHARLESTOWN, MASSACHUSETTS

LOCUS MAP

0 2,000 4,000 **Feet**

Weston&Sampson

Path: O:\Kavanagh - Bldg 105\Figure 1 - Locus Map.mxd **User:** mcgrathl **Saved:** 4/20/2015 9:47:34 AM **Opened:** 4/20/2015 9:48:12 AM



LEGEND:

- OPEN TRENCH
- STEEL PLATE COVERED TRENCH
- AREA OF SOIL FLOOR
- EXISTING EQUIPMENT
- USACOE AND METCALF & EDDY SOIL SAMPLING LOCATION (1992–1995)
- EXISTING MONITORING WELL LOCATION
- STONE & WEBSTER SOIL SAMPLING LOCATION (1998–2000)
- STONE & WEBSTER CONCRETE SAMPLING LOCATION (1998–2000)

NOTES:

1. BASE MAP TAKEN FROM PLAN TITLED "SITE PLAN" PREPARED BY STONE & WEBSTER INC.
2. THE LOCATIONS OF VAULTS, TRENCHES AND PITS AND THE CLASSIFICATION OF THE FLOORING TYPES ARE APPROXIMATE. THE INFORMATION IS BASED ON BUILDING DRAWINGS THAT WERE MADE AVAILABLE BY THE NATIONAL PARKS SERVICE (NPS) AND OBSERVATIONS MADE BY THE U.S. ARMY CORPS OF ENGINEERS AND STONE & WEBSTER.
3. INVENTORY OF PROCESS EQUIPMENT PROVIDED BY NPS. EQUIPMENT LOCATIONS ARE APPROXIMATE.
4. LOCATIONS OF HISTORIC SOIL AND CONCRETE SAMPLES TAKEN FROM THE FIGURES PROVIDED IN STONE & WEBSTER'S DATA SUMMARY REPORT DATED OCTOBER 2000 AND THE INTERIM EVALUATION REPORT II DATED AUGUST 2002.

FIGURE 2
FORMER CHARLESTOWN NAVY YARD
BUILDING NO. 105

EXISTING CONDITIONS PLAN

JUNE 2015 SCALE: 1" = 16'

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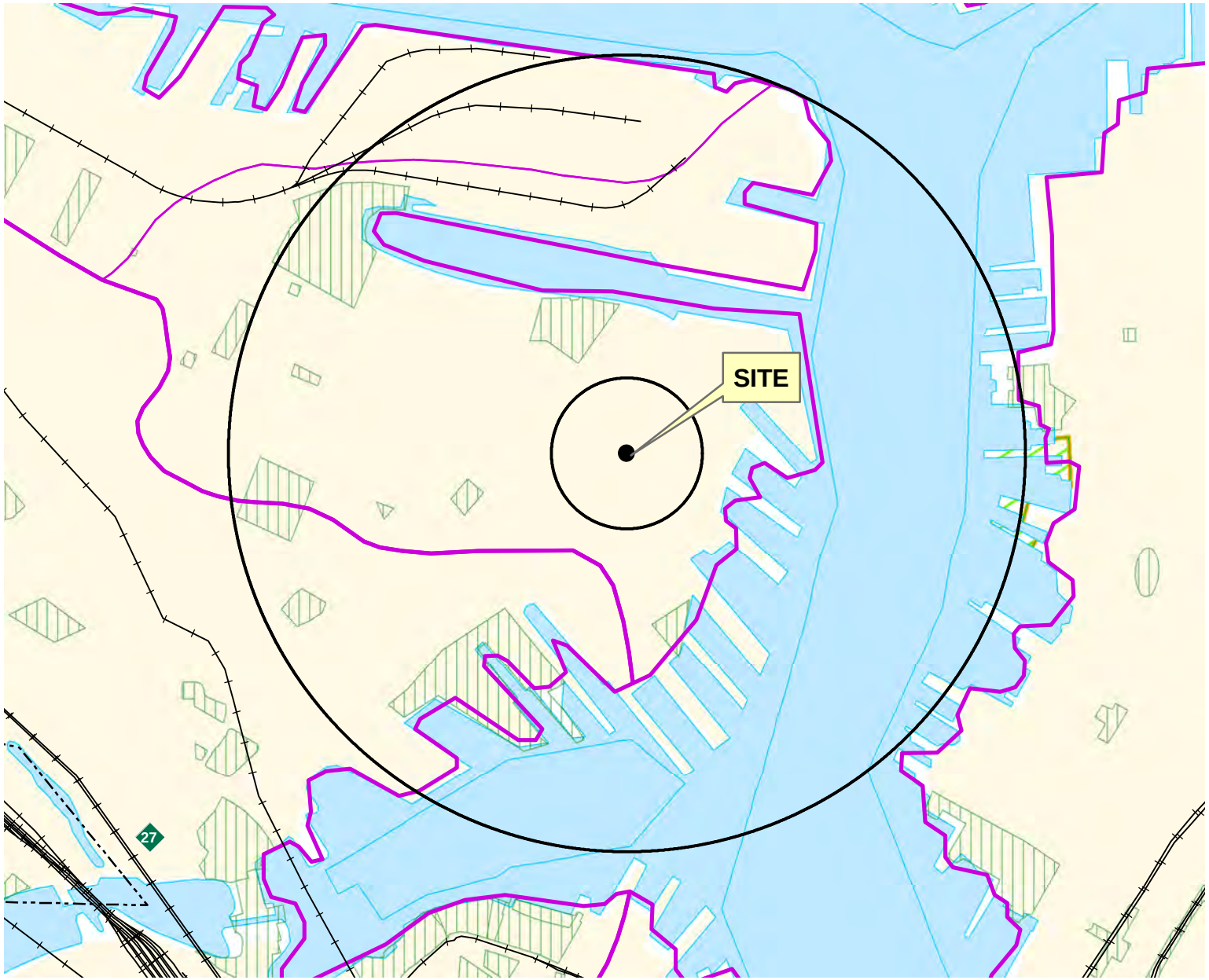
O:\Kavanagh - Bldg 105\CAD\Final RBCP Dwgs\Figure 2 - Existing Conditions Plan_rev.dwg



N
W E
S

1,000 500 0 1,000
Feet

0.5 0.25 0
Miles

Data Source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs

Note: Radii shown are approximately 500-feet and 1/2-mile from center of Site.

Legend

- Town Boundaries
- State Boundary
- Ground Water
- Surface Water
- Non-Community
- NHESP Certified Vernal Pools
- Railroads by Ownership
- Pipeline
- Pipeline Arbitrary Extension
- Powerline
- Powerline Arbitrary Extension
- Ski Lift/Tramway
- Substation
- Landing Strip/Airport
- Highway Exit Locations

All Roads

Road Classification

- Limited Access Highway
- Multi-lane Hwy, not limited access
- Other Numbered Highway
- Major Road, Collector
- Minor Road, Arterial
- Sub-basins
- Major Basins
- Solid Waste Facilities
- Protected Open Space
- ACECs
- Zone A
- IWPAs
- DEP Approved Zone IIs
- River, Stream, Shoreline
- Water
- Wetland
- Sole Source Aquifers
- NHESP Estimated Habitats of Rare Wildlife
- NHESP Priority Habitats of Rare Species

Non Potential Drinking Water Source Area

- High Yield
- Medium Yield

Aquifers

- High Yield
- Medium Yield

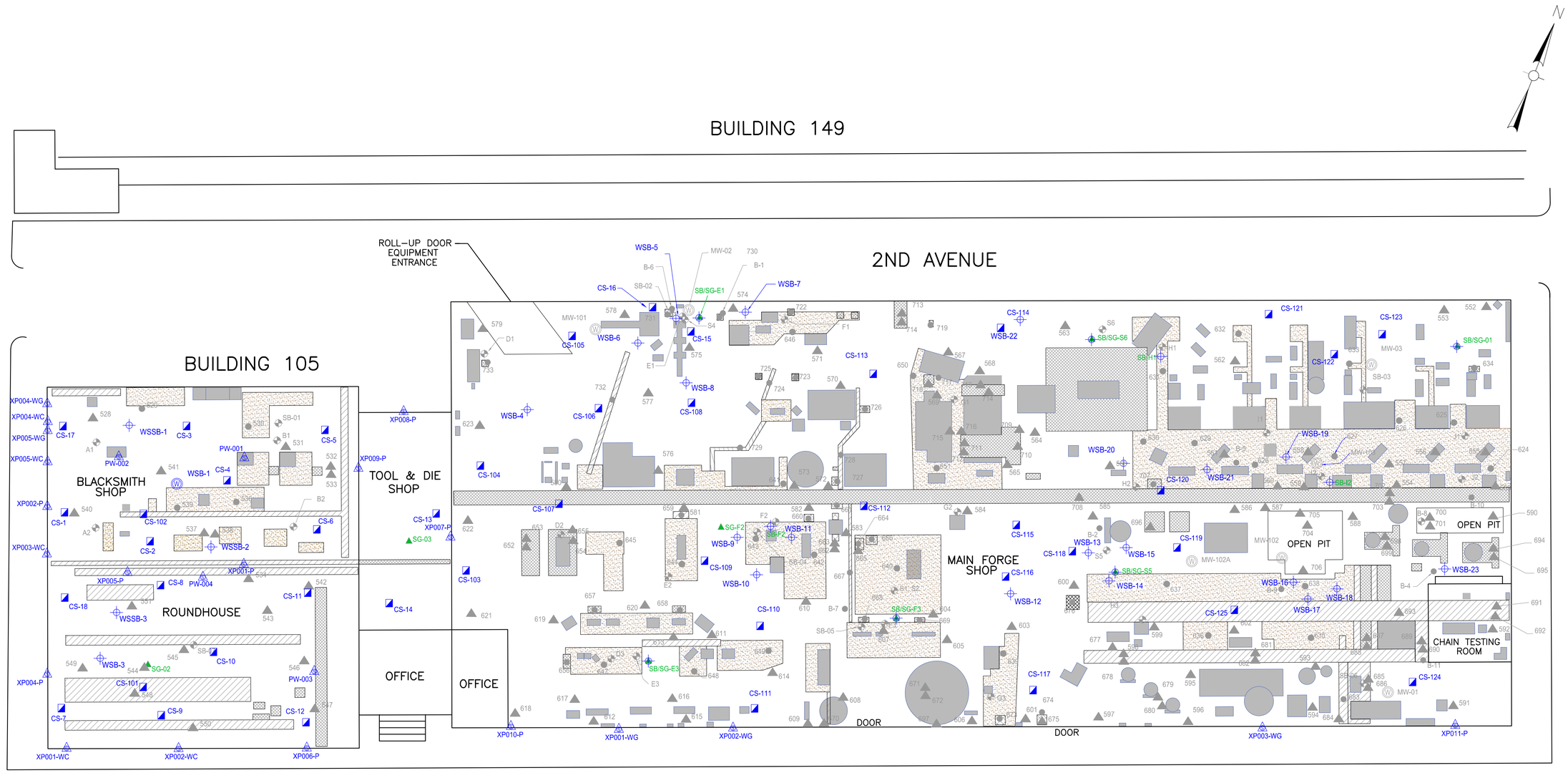
MA Towns (from Survey Points)

- MA Towns (from Survey Points)

FIGURE 3

Area Receptors Map
Former Charlestown Navy Yard
Building No. 105
Charlestown, Massachusetts

Weston&Sampson®



LEGEND:

- OPEN TRENCH
- STEEL PLATE COVERED TRENCH
- AREA OF SOIL FLOOR
- EXISTING EQUIPMENT
- USACOE AND METCALF & EDDY SOIL SAMPLING LOCATION (1992–1995)
- EXISTING MONITORING WELL LOCATION
- STONE & WEBSTER SOIL SAMPLING LOCATION (1998–2000)
- STONE & WEBSTER CONCRETE SAMPLING LOCATION (1998–2000)
- WESTON & SAMPSON CONCRETE SAMPLE LOCATION
- WESTON & SAMPSON SUB-SLAB VAPOR IMPLANT
- COMBINED WESTON & SAMPSON SOIL BORING LOCATION AND SOIL GAS LOCATION
- WESTON & SAMPSON BUILDING MATERIAL/SURFACE SAMPLE LOCATION
- WESTON & SAMPSON SOIL BORING LOCATION
- WESTON & SAMPSON MONITORING WELL LOCATION

NOTES:

1. BASE MAP TAKEN FROM PLAN TITLED "SITE PLAN" PREPARED BY STONE & WEBSTER INC.
2. THE LOCATIONS OF VAULTS, TRENCHES AND PITS AND THE CLASSIFICATION OF THE FLOORING TYPES ARE APPROXIMATE. THE INFORMATION IS BASED ON BUILDING DRAWINGS THAT WERE MADE AVAILABLE BY THE NATIONAL PARKS SERVICE (NPS) AND OBSERVATIONS MADE BY THE U.S. ARMY CORPS OF ENGINEERS AND STONE & WEBSTER.
3. INVENTORY OF PROCESS EQUIPMENT PROVIDED BY NPS. EQUIPMENT LOCATIONS ARE APPROXIMATE.
4. LOCATIONS OF HISTORIC SOIL AND CONCRETE SAMPLES TAKEN FROM THE FIGURES PROVIDED IN STONE & WEBSTER'S DATA SUMMARY REPORT DATED OCTOBER 2000 AND THE INTERIM EVALUATION REPORT II DATED AUGUST 2002.
5. WESTON & SAMPSON SOIL BORINGS, MONITORING WELLS, CONCRETE SAMPLES AND SOIL VAPOR IMPLANTS INSTALLED BETWEEN SEPTEMBER 2014 AND MARCH 2015.

FIGURE 4
FORMER CHARLESTOWN NAVY YARD
BUILDING NO. 105

SUPPLEMENTAL INVESTIGATION SAMPLING LOCATION PLAN

JUNE 2015 SCALE: 1" = 16'

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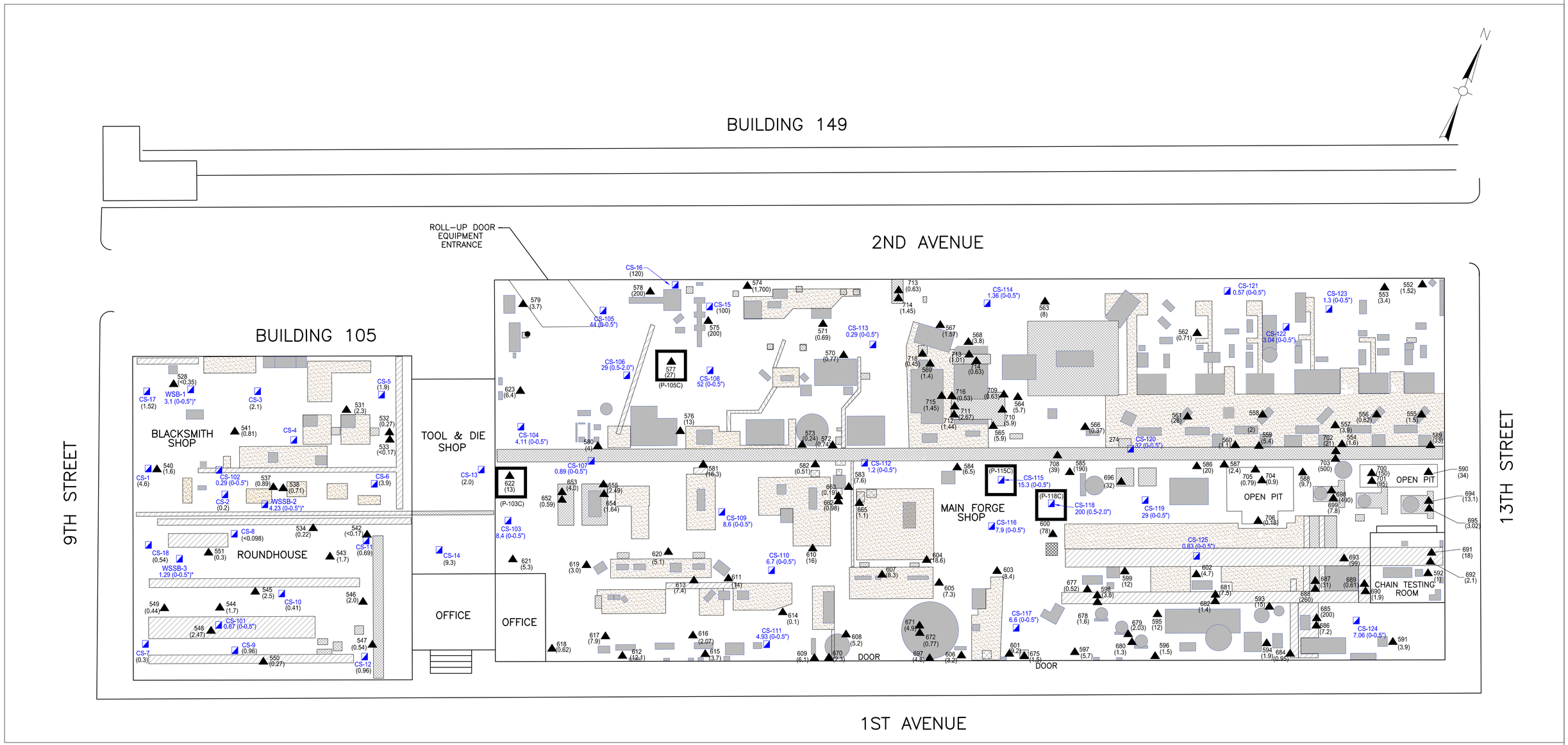
O:\Kavanagh - Bldg 105\CAD\Final RBCP Dwgs\Figure 4 - Supplemental Investigation Plan.dwg



LEGEND:

- OPEN TRENCH
- STEEL PLATE COVERED TRENCH
- AREA OF SOIL FLOOR
- EXISTING EQUIPMENT
- (P-103C) PILOT TEST AREA
- STONE & WEBSTER CONCRETE SAMPLING LOCATION (1998–2000)
- WESTON & SAMPSON CONCRETE SAMPLE LOCATION

NOTES:

1. BASE MAP TAKEN FROM PLAN TITLED "SITE PLAN" PREPARED BY STONE & WEBSTER INC.
2. THE LOCATIONS OF VAULTS, TRENCHES AND PITS AND THE CLASSIFICATION OF THE FLOORING TYPES ARE APPROXIMATE. THE INFORMATION IS BASED ON BUILDING DRAWINGS THAT WERE MADE AVAILABLE BY THE NATIONAL PARKS SERVICE (NPS) AND OBSERVATIONS MADE BY THE U.S. ARMY CORPS OF ENGINEERS AND STONE & WEBSTER.
3. INVENTORY OF PROCESS EQUIPMENT PROVIDED BY NPS. EQUIPMENT LOCATIONS ARE APPROXIMATE.
4. LOCATIONS OF HISTORIC SOIL AND CONCRETE SAMPLES TAKEN FROM THE FIGURES PROVIDED IN STONE & WEBSTER'S DATA SUMMARY REPORT DATED OCTOBER 2000 AND THE INTERIM EVALUATION REPORT II DATED AUGUST 2002.
5. WESTON & SAMPSON CONCRETE SAMPLES COLLECTED BETWEEN SEPTEMBER 2014 AND JANUARY 2015.
6. PCB CONCENTRATIONS IN UNITS OF MG/KG.

FIGURE 5
FORMER CHARLESTOWN NAVY YARD
BUILDING NO. 105

EXTENT OF CONTAMINATION: PCBs IN CONCRETE

JUNE 2015 SCALE: 1" = 16'

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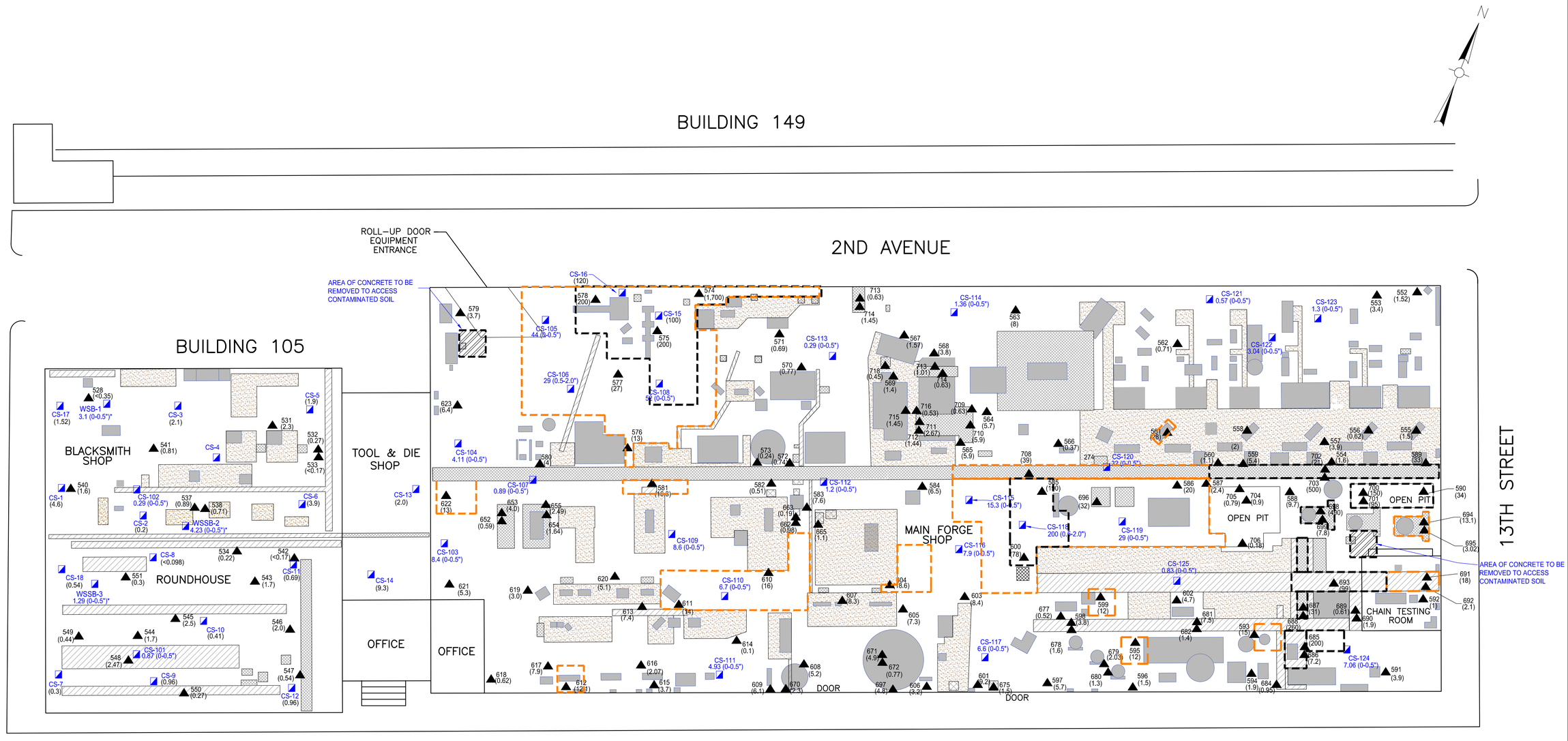
O:\Kavanagh – Bldg 105\CAD\Final RBCP Dwgs\Figure 7 – Extent of PCBs in Concrete.dwg



LEGEND:

- OPEN TRENCH
- STEEL PLATE COVERED TRENCH
- AREA OF SOIL FLOOR
- EXISTING EQUIPMENT
- ▲ STONE & WEBSTER CONCRETE SAMPLING LOCATION (1998–2000)
- ◪ WESTON & SAMPSON CONCRETE SAMPLE LOCATION
- PROPOSED CONCRETE REMOVAL (PCBs >10 PPM)
- PROPOSED CONCRETE REMOVAL (PCBs >50 PPM)

NOTES:

1. BASE MAP TAKEN FROM PLAN TITLED "SITE PLAN" PREPARED BY STONE & WEBSTER INC.
2. THE LOCATIONS OF VAULTS, TRENCHES AND PITS AND THE CLASSIFICATION OF THE FLOORING TYPES ARE APPROXIMATE. THE INFORMATION IS BASED ON BUILDING DRAWINGS THAT WERE MADE AVAILABLE BY THE NATIONAL PARKS SERVICE (NPS) AND OBSERVATIONS MADE BY THE U.S. ARMY CORPS OF ENGINEERS AND STONE & WEBSTER.
3. INVENTORY OF PROCESS EQUIPMENT PROVIDED BY NPS. EQUIPMENT LOCATIONS ARE APPROXIMATE.
4. LOCATIONS OF HISTORIC SOIL AND CONCRETE SAMPLES TAKEN FROM THE FIGURES PROVIDED IN STONE & WEBSTER'S DATA SUMMARY REPORT DATED OCTOBER 2000 AND THE INTERIM EVALUATION REPORT II DATED AUGUST 2002.
5. THE MAXIMUM PCB CONCENTRATION DETECTED AT EACH SAMPLING LOCATION SHOWN. CONCENTRATIONS IN UNITS OF MG/KG.
6. UNLESS OTHERWISE NOTED, HISTORIC PCB SAMPLES ANALYZED BY EPA METHOD 8082 WITH SOXHLET EXTRACTION. SAMPLES DENOTED WITH AN ASTERIKS (*) ANALYZED BY EPA METHOD 1668A.
7. WESTON & SAMPSON CONCRETE SAMPLES COLLECTED BETWEEN SEPTEMBER 2014 AND JANUARY 2015.

FIGURE 6
FORMER CHARLESTOWN NAVY YARD
BUILDING NO. 105

EVALUATION OF CONCRETE REMOVAL ALTERNATIVES

MAY 2015 SCALE: 1" = 16'

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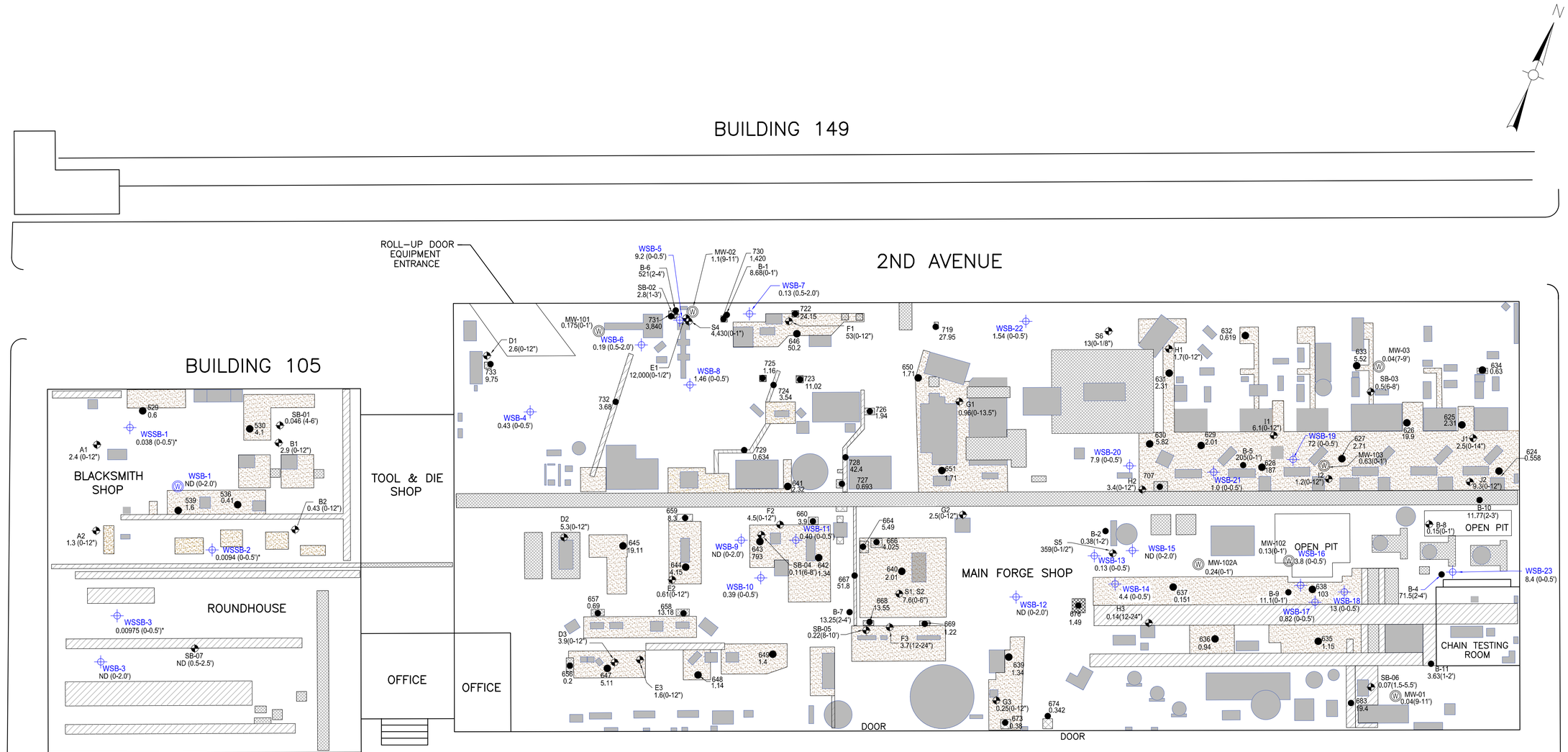
D:\Vaxcrayn - Bldg 105\CAD\Final RBCP Dwgs\Figure 6 - Concrete Removal Alternatives r1.dwg



LEGEND:

- OPEN TRENCH
- STEEL PLATE COVERED TRENCH
- AREA OF SOIL FLOOR
- EXISTING EQUIPMENT
- USACOE AND METCALF & EDDY SOIL SAMPLING LOCATION (1992–1995)
- EXISTING MONITORING WELL LOCATION
- STONE & WEBSTER SOIL SAMPLING LOCATION (1998–2000)
- WESTON & SAMPSON SOIL BORING LOCATION
- WESTON & SAMPSON MONITORING WELL LOCATION

NOTES:

1. BASE MAP TAKEN FROM PLAN TITLED "SITE PLAN" PREPARED BY STONE & WEBSTER INC.
2. THE LOCATIONS OF VAULTS, TRENCHES AND PITS AND THE CLASSIFICATION OF THE FLOORING TYPES ARE APPROXIMATE. THE INFORMATION IS BASED ON BUILDING DRAWINGS THAT WERE MADE AVAILABLE BY THE NATIONAL PARKS SERVICE (NPS) AND OBSERVATIONS MADE BY THE U.S. ARMY CORPS OF ENGINEERS AND STONE & WEBSTER.
3. INVENTORY OF PROCESS EQUIPMENT PROVIDED BY NPS. EQUIPMENT LOCATIONS ARE APPROXIMATE.
4. FOR SAMPLES COLLECTED IN AREAS WHERE THE EXISTING CONCRETE FLOOR SLAB IS INTACT, SAMPLE DEPTH MEASURED IN FEET BELOW THE BOTTOM OF THE EXISTING SLAB (SLAB THICKNESS VARIES). FOR SAMPLES COLLECTED IN AREA OF SOIL FLOOR (I.E., NO CONCRETE FLOOR SLAB), SAMPLE DEPTH MEASURE IN FEET BELOW EXISTING GROUND SURFACE.
5. THE MAXIMUM TOTAL PCB CONCENTRATION (MG/KG) DETECTED AT EACH SAMPLING LOCATION SHOWN.
6. UNLESS OTHERWISE NOTED, HISTORIC PCB SAMPLES ANALYZED BY EPA METHOD 8082 WITH SOXHLET EXTRACTION. SAMPLES DENOTED WITH AN ASTERIKS (*) ANALYZED BY EPA METHOD 1668A.
7. LOCATIONS OF HISTORIC SOIL SAMPLES TAKEN FROM THE FIGURES PROVIDED IN STONE & WEBSTER'S DATA SUMMARY REPORT DATED OCTOBER 2000 AND THE INTERIM EVALUATION REPORT II DATED AUGUST 2002.
8. WESTON & SAMPSON SOIL BORINGS, MONITORING WELLS, CONCRETE SAMPLES AND SOIL VAPOR IMPLANTS INSTALLED BETWEEN SEPTEMBER 2014 AND MARCH 2015.

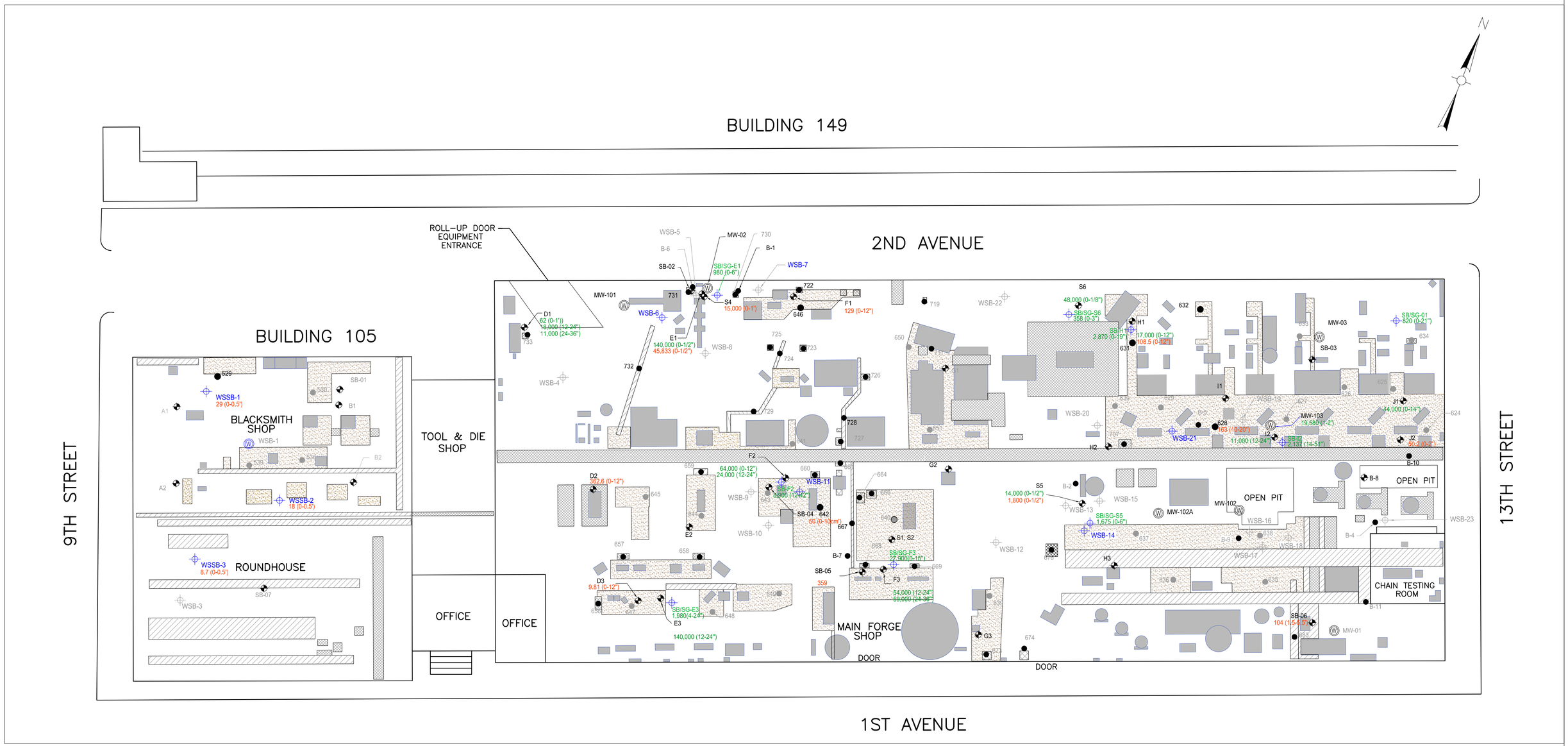
FIGURE 7
FORMER CHARLESTOWN NAVY YARD
BUILDING NO. 105

EXTENT OF CONTAMINATION: PCBs IN SOIL

JUNE 2015 SCALE: 1" = 16'

Weston & Sampson

O:\Vanorsdgh - Bldg 105\CAD\Final RBCP Dwgs\Figure 5 - Extent of PCBs in Soil.dwg



LEGEND:

- OPEN TRENCH
- STEEL PLATE COVERED TRENCH
- AREA OF SOIL FLOOR
- EXISTING EQUIPMENT
- USACOE AND METCALF & EDDY SOIL SAMPLING LOCATION (1992–1995)
- EXISTING MONITORING WELL LOCATION
- STONE & WEBSTER SOIL SAMPLING LOCATION (1998–2000)
- WESTON & SAMPSON CONCRETE SAMPLE LOCATION
- WESTON & SAMPSON SOIL BORING LOCATION
- WESTON & SAMPSON MONITORING WELL LOCATION

NOTES:

1. BASE MAP TAKEN FROM PLAN TITLED "SITE PLAN" PREPARED BY STONE & WEBSTER INC.
2. THE LOCATIONS OF VAULTS, TRENCHES AND PITS AND THE CLASSIFICATION OF THE FLOORING TYPES ARE APPROXIMATE. THE INFORMATION IS BASED ON BUILDING DRAWINGS THAT WERE MADE AVAILABLE BY THE NATIONAL PARKS SERVICE (NPS) AND OBSERVATIONS MADE BY THE U.S. ARMY CORPS OF ENGINEERS AND STONE & WEBSTER.
3. INVENTORY OF PROCESS EQUIPMENT PROVIDED BY NPS. EQUIPMENT LOCATIONS ARE APPROXIMATE.
4. WESTON & SAMPSON SOIL BORINGS, MONITORING WELLS, AND CONCRETE SAMPLES INSTALLED BETWEEN SEPTEMBER 2014 AND MARCH 2015.
5. POLYCHLORINATED DIBENZO-P-DIOXINS (PCDDs) AND POLYCHLORINATED DIBENZOFURANS (PCDF) RESULTS ARE REPORTED AS TOTAL 2,3,7,6-TCDD EQUIVALENT USING MASSDEP RISK FACTORS. TCDD RESULTS SHOWN IN ORANGE. CONCENTRATIONS REPORTED IN UNITS OF NG/KG.
6. TOTAL PETROLEUM HYDROCARBON CONCENTRATIONS SHOWN IN GREEN. CONCENTRATIONS REPORTED IN MG/KG TPH.
7. LOCATION SHOWN IN BOLD WERE HISTORICALLY SAMPLED FOR PCDDS/PCDFs AND/OR TPH.

FIGURE 8
FORMER CHARLESTOWN NAVY YARD
BUILDING NO. 105

EXTENT OF CONTAMINATION: PCDDs/PCDFs AND TPH IN SOIL

JUNE 2015 SCALE: 1" = 16'

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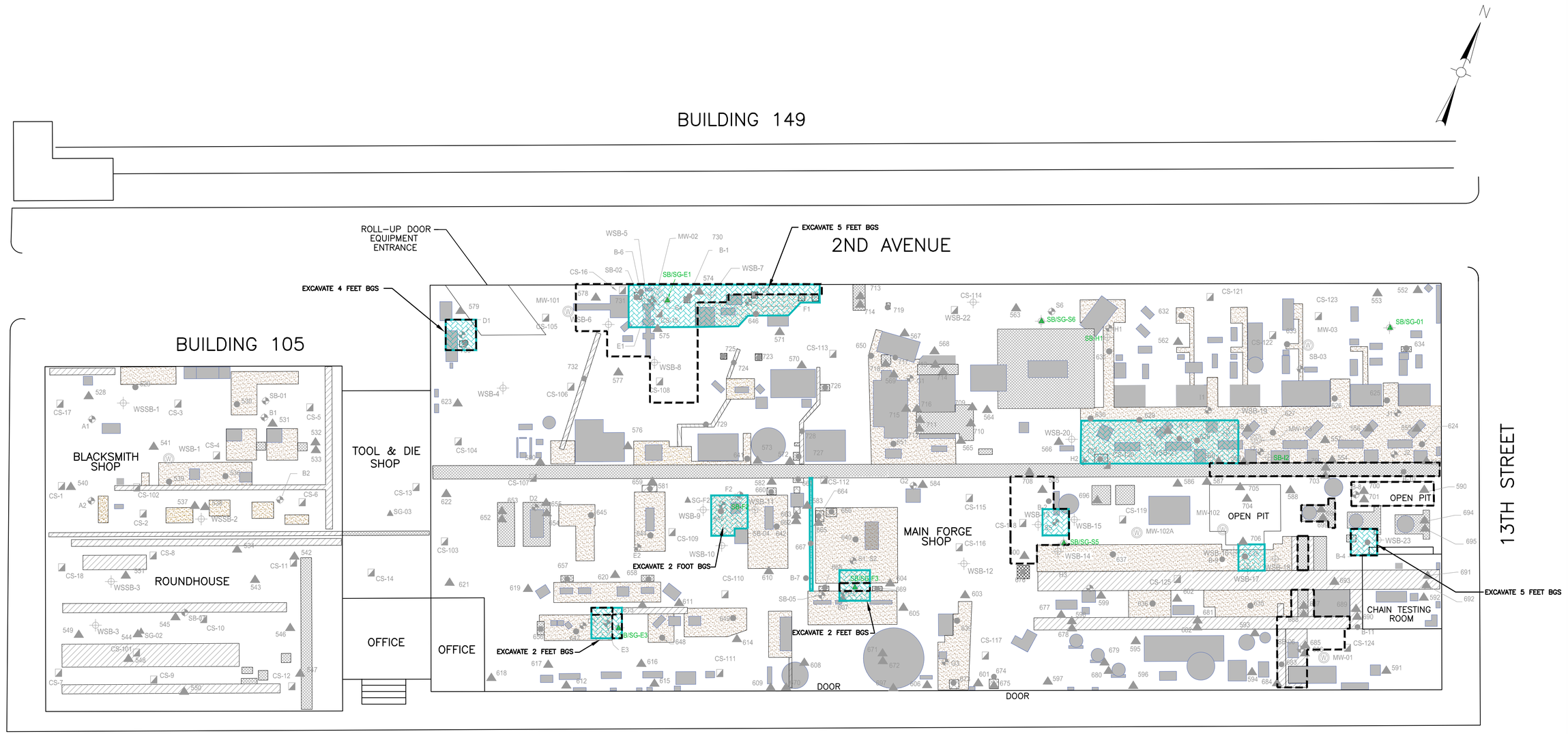
O:\Kavanagh - Bldg 105\CAD\Final RBCP Dwgs\Figure 6 - Other COCs in Soil.dwg



LEGEND:

- OPEN TRENCH
- STEEL PLATE COVERED TRENCH
- AREA OF SOIL FLOOR
- EXISTING EQUIPMENT
- USACOE AND METCALF & EDDY SOIL SAMPLING LOCATION (1992–1995)
- EXISTING MONITORING WELL LOCATION
- STONE & WEBSTER SOIL SAMPLING LOCATION (1998–2000)
- STONE & WEBSTER CONCRETE SAMPLING LOCATION (1998–2000)
- WESTON & SAMPSON CONCRETE SAMPLE LOCATION
- WESTON & SAMPSON SUB–SLAB VAPOR IMPLANT
- COMBINED WESTON & SAMPSON SOIL BORING LOCATION AND SOIL GAS LOCATION
- WESTON & SAMPSON SOIL BORING LOCATION
- WESTON & SAMPSON MONITORING WELL LOCATION
- PROPOSED CONCRETE REMOVAL (PCBs >50 PPM)
- PROPOSED SOIL REMOVAL AREAS (SEE NOTE 7)

NOTES:

1. BASE MAP TAKEN FROM PLAN TITLED "SITE PLAN" PREPARED BY STONE & WEBSTER INC.
2. THE LOCATIONS OF VAULTS, TRENCHES AND PITS AND THE CLASSIFICATION OF THE FLOORING TYPES ARE APPROXIMATE. THE INFORMATION IS BASED ON BUILDING DRAWINGS THAT WERE MADE AVAILABLE BY THE NATIONAL PARKS SERVICE (NPS) AND OBSERVATIONS MADE BY THE U.S. ARMY CORPS OF ENGINEERS AND STONE & WEBSTER.
3. INVENTORY OF PROCESS EQUIPMENT PROVIDED BY NPS. EQUIPMENT LOCATIONS ARE APPROXIMATE.
4. LOCATIONS OF HISTORIC SOIL AND CONCRETE SAMPLES TAKEN FROM THE FIGURES PROVIDED IN STONE & WEBSTER'S DATA SUMMARY REPORT DATED OCTOBER 2000 AND THE INTERIM EVALUATION REPORT II DATED AUGUST 2002.
5. WESTON & SAMPSON SOIL BORINGS, MONITORING WELLS, CONCRETE SAMPLES AND SOIL VAPOR IMPLANTS INSTALLED BETWEEN SEPTEMBER 2014 AND MARCH 2015.
6. WESTON & SAMPSON CONCRETE SAMPLES COLLECTED BETWEEN SEPTEMBER 2014 AND JANUARY 2015.
7. DEPTH OF EXCAVATION MEASURED IN FEET BELOW THE BOTTOM OF CONCRETE SLAB IN AREAS WHERE THE CONCRETE FLOOR SLAB IS INTACT, AND DEPTH BELOW GROUND SURFACE IN AREAS WITH EXPOSED SOIL FLOOR. DEPTH OF EXCAVATION IS 1 FOOT IN ALL AREAS UNLESS OTHERWISE INDICATED. FINAL DEPTHS OF EXCAVATION TO BE DETERMINED BASED ON POST–EXCAVATION CONFIRMATORY VERIFICATION TESTING RESULTS.

FIGURE 9
FORMER CHARLESTOWN NAVY YARD
BUILDING NO. 105

SOIL & CONCRETE REMEDIATION PLAN

MAY 2015 SCALE: 1" = 16'

Weston&Sampson®

O:\Kavanagh – Bldg 105\CAD\Final RBCP Dwgs\Figure 9 – Remediation Plan -F2.dwg

TABLE 1
Supplemental Site Investigation Soil Sampling Results: PCBs
Former Building 105
Charlestown, Massachusetts

Sample Locations	Depth	Units	Sampling Results									
			PCB 1016	PCB 1221	PCB 1232	PCB 1242	PCB 1248	PCB 1254	PCB 1260	PCB 1262	PCB 1268	Total PCBs
WSB-1	0-0.5 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	ND
	0.5-2 Feet	mg/kg	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	ND
	4-6 Feet	mg/kg	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	ND
WSB-3	0-0.5 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	ND
	0.5-2 Feet	mg/kg	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	ND
WSB-4	0-0.5 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	**0.43**	<0.11	<0.11	<0.11	**0.43**
	0.5-2 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	**0.29**	<0.11	<0.11	<0.11	**0.29**
	2-4 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	ND
WSB-5	0-0.5 Feet	mg/kg	<0.22	<0.22	<0.22	<0.22	<0.22	**1.8**	<0.22	<0.22	<0.22	**1.8**
	0.5-2 Feet	mg/kg	<1.1	<1.1	<1.1	<1.1	<1.1	**9.2**	<1.1	<1.1	<1.1	**9.2**
	2-4 Feet	mg/kg	<0.21	<0.21	<0.21	<0.21	<0.21	**1.3**	<0.21	<0.21	<0.21	**1.3**
WSB-6	0-0.5 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	**0.12**	<0.11	<0.11	<0.11	**0.12**
	0.5-2 Feet	mg/kg	<0.12	<0.12	<0.12	<0.12	<0.12	**0.19**	<0.12	<0.12	<0.12	**0.19**
WSB-7	0-0.5 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	ND
	0.5-2 Feet	mg/kg	<0.12	<0.12	<0.12	<0.12	<0.12	**0.13**	<0.12	<0.12	<0.12	**0.13**
WSB-8	0-0.5 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	**1.1**	**0.36**	<0.11	<0.11	**1.46**
	0.5-2 Feet	mg/kg	<0.12	<0.12	<0.12	<0.12	<0.12	**0.32**	**0.15**	<0.12	<0.12	**0.47**
WSB-9	0-0.5 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	ND
	0.5-2 Feet	mg/kg	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	ND
	4-6 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	ND
WSB-10	0-0.5 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	**0.39**	<0.11	<0.11	<0.11	**0.39**
	0.5-2 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	ND
	2-4 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	ND
WSB-11	0-0.5 Feet	mg/kg	<0.10	<0.10	<0.10	<0.10	**0.13**	**0.27**	<0.10	<0.10	<0.10	**0.4**
	0.5-2 Feet	mg/kg	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	ND
WSB-12	0-0.5 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	ND
	0.5-2 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	ND
WSB-13	0-0.5 Feet	mg/kg	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	**0.13**	<0.12	<0.12	**0.13**
	0.5-2 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	ND
	4-6 Feet	mg/kg	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	ND
WSB-14	0-0.5 Feet	mg/kg	<0.61	<0.61	<0.61	<0.61	<0.61	**4.4**	<0.61	<0.61	<0.61	**4.4**
	0.5-2 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	ND
	0-2 Feet	mg/kg	<0.24	<0.24	<0.24	<0.24	<0.24	**1.8**	<0.24	<0.24	<0.24	**1.8**
WSB-15	0-0.5 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	ND
	0.5-2 Feet	mg/kg	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	ND
WSB-16	0-0.5 Feet	mg/kg	<0.59	<0.59	<0.59	<0.59	<0.59	**3.8**	<0.59	<0.59	<0.59	**3.8**
	0.5-2 Feet	mg/kg	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	ND
WSB-17	0-0.5 Feet	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	**0.82**	<0.10	<0.10	<0.10	**0.82**
	0.5-2 Feet	mg/kg	<0.12	<0.12	<0.12	<0.12	<0.12	**0.23**	<0.12	<0.12	<0.12	**0.23**
WSB-18	0-0.5 Feet	mg/kg	<2.1	<2.1	<2.1	<2.1	<2.1	**13**	<2.1	<2.1	<2.1	**13**
	0.5-2 Feet	mg/kg	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	ND
WSB-19	0-0.5 Feet	mg/kg	<11	<11	<11	<11	<11	**72**	<11	<11	<11	**72**
	0.5-2 Feet	mg/kg	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	ND
WSB-20	0-0.5 Feet	mg/kg	<1.1	<1.1	<1.1	<1.1	<1.1	**7.9**	<1.1	<1.1	<1.1	**7.9**
	0.5-2 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	**0.17**	**0.6**	<0.11	<0.11	<0.11	**0.77**
	4-6 Feet	mg/kg	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	ND
WSB-21	0-0.5 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	**1**	<0.11	<0.11	<0.11	**1**
	0.5-2 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	ND
WSB-22	0-0.5 Feet	mg/kg	<0.11	<0.12	<0.11	<0.12	<0.12	**0.73**	**0.64**	<0.11	**0.17**	**1.54**
	0.5-2 Feet	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	**0.11**	**0.11**
WSB-23	0-0.5 Feet	mg/kg	<1.1	<1.1	<1.1	<1.1	<1.1	**8.4**	<1.1	<1.1	<1.1	**8.4**
	0.5-2 Feet	mg/kg	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	ND

Notes
"<" = Parameter not detected above laboratory reporting limit shown
ND = Total PCB concentration not detected above laboratory reporting limits

= Concentration equals or exceeds TSCA High Occupancy Standard and MCP S-1 Cleanup Standard of 1 mg/kg PCBs
= Concentration equals or exceeds the Site-specific Risk-Based Cleanup Plan soil remediation cleanup concentration of 50 mg/kg

TABLE 2
Supplemental Site Investigation PCDDs/PCDFs Sampling Results
Former Building 105
Charlestown, Massachusetts

Parameter	Units	MCP Method 1 Cleanup Standard S-2/S-3	MCP Upper Concentration Limit (UCL)	Sample Locations					
				Soil Samples			Concrete Samples		
				WSSB 101 0-6"	WSSB 102 0-6"	WSSB 103 0-6"	WSB 101 0-0.5"	WSB 102 0-0.5"	WSB 103 0-0.5"
				12/19/14	12/19/14	12/19/14	12/19/14	12/19/14	12/19/14
Native Isomers									
2,3,7,8-TCDF	ng/kg	~	~	**5.7**	**5.5**	**3.3**	**42**	**24**	**2.1**
2,3,7,8-TCDD	ng/kg	~	~	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3,7,8-PeCDF	ng/kg	~	~	<5.0	<5.0	<5.0	**13**	**8.9**	<5.0
2,3,4,7,8-PeCDF	ng/kg	~	~	**11**	**6.6**	**<5.0**	**20**	**17**	**33**
1,2,3,7,8-PeCDD	ng/kg	~	~	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2,3,4,7,8-HxCDF	ng/kg	~	~	**9**	**5.8**	**<5.0**	**10**	**10**	<33
1,2,3,6,7,8-HxCDF	ng/kg	~	~	**5.9**	<5.0	<5.0	**6.3**	**8.5**	<33
2,3,4,6,7,8-HxCDF	ng/kg	~	~	**7.2**	<5.0	<5.0	**6.2**	**7.1**	**15**
1,2,3,7,8,9-HxCDF	ng/kg	~	~	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2,3,4,7,8-HxCDD	ng/kg	~	~	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2,3,6,7,8-HxCDD	ng/kg	~	~	**5.6**	**5.3**	**7.4**	**6.9**	**<5.0**	**18**
1,2,3,7,8,9-HxCDD	ng/kg	~	~	<5.0	<5.0	<5.0	<5.0	<5.0	**6.9**
1,2,3,4,6,7,8-HpCDF	ng/kg	~	~	**66**	**18**	**6.6**	**28**	**39**	**110**
1,2,3,4,7,8,9-HpCDF	ng/kg	~	~	<5.0	<5.0	<5.0	<5.0	<5.0	**7.1**
1,2,3,4,6,7,8-HpCDD	ng/kg	~	~	**22**	**25**	**26**	**89**	**66**	**310**
OCDF	ng/kg	~	~	**18**	<10.0	<10.0	**62**	**73**	**230**
OCDD	ng/kg	~	~	**100**	**1700**	**93**	**500**	**630**	**3400**
PCDD/PCDF Total									
Total TCDF	ng/kg	~	~	**130**	**85**	**46**	**420**	**270**	**120**
Total TCDD	ng/kg	~	~	**58**	**59**	**21**	**28**	**29**	**6.6**
Total PeCDF	ng/kg	~	~	**110**	**39**	**11**	**190**	**160**	**260**
Total PeCDD	ng/kg	~	~	**46**	**62**	**42**	**21**	**23**	**5.9**
Total HxCDF	ng/kg	~	~	**88**	**18**	**5.8**	**92**	**100**	**220**
Total HxCDD	ng/kg	~	~	**66**	**68**	**74**	**52**	**37**	**93**
Total HpCDF	ng/kg	~	~	**95**	**18**	**6.6**	**74**	**87**	**260**
Total HpCDD	ng/kg	~	~	**41**	**54**	**50**	**160**	**120**	**540**
MassDEP 2,3,7,8-TCDD TEQ	ng/kg	50	500	**29**	**18**	**8.7**	**51**	**42**	**90**

Notes:

">" - Indicates parameter not detected above laboratory reporting limits

"~" - No MCP Method 1 Cleanup Standard available

1. **Bolded** values detected in excess of laboratory detection limits.

2. TEQ: Total 2,3,7,8-TCDD Equivelance, Using MassDEP Factors.

= Concentration equals or exceeds MCP Method 1 Cleanup Standards

= Concentration equals or exceeds MCP Upper Concentration Limit

TABLE 3
Supplemental Site Investigation Soil Sampling Results: EPH, VPH and Metals
Former Building 105
Charlestown, Massachusetts

Parameter	MCP Method 1 Cleanup Standards				SAMPLING LOCATIONS													
					WSB-1	WSB-4	WSB-8	WSB-9	WSB-10	WSB-13	WSB-14	WSB-11	WSB-12	WSB-19	WSB-18	WSB-20	WSB-21	WSB-22	WSB-23
	S-1/GW-2	S-1/GW-3	S-3/GW-2	S-3/GW-3	4-6 Feet	2-4 Feet	0.5-2 Feet	4-6 Feet	2-4 Feet	4-6 Feet	0-2 Feet	4-6 Feet	2-4 Feet	2-4 Feet	4-6 Feet	4-6 Feet	4-6 Feet	4-6 Feet	2-4 Feet
Extractable Petroleum Hydrocarbons																			
C_9-C_{18} Aliphatics	1000	1000	5000	5000	**3,700**	**5,900**	**1,800**	**1,500**	**16,000**	**1,400**	**44**	**550**	**790**	**290**	*<14*	**3,700**	**230**	**280**	**250**
C_{19}-C_{36} Aliphatics	3000	3000	5000	5000	**860**	**960**	**660**	**410**	**13,000**	**530**	**29**	**1,400**	**600**	**110**	*<14*	**1,200**	**160**	**220**	**72**
C_{11}-C_{22} Aromatics	1000	1000	5000	5000	**1,100**	**1,900**	**600**	**670**	**8,900**	**790**	**86**	**660**	**620**	**230**	*<14*	**1,500**	**170**	**190**	**280**
Target PAHs																			
Acenaphthene	1000	1000	5000	5000	**1.1**	*<0.12*	**0.45**	**0.51**	**7.2**	**0.42**	*<0.12*	**0.67**	**0.41**	**0.39**	*<0.14*	*<0.12*	*<0.11*	**0.36**	**0.33**
Acenaphthylene	600	10	600	10	**3.4**	*<0.12*	**0.16**	**0.73**	**10**	**0.66**	*<0.12*	*<0.13*	**0.46**	*<0.12*	*<0.14*	*<0.12*	*<0.11*	*<0.11*	*<0.11*
Anthracene	1000	1000	5000	5000	*<0.13*	*<0.12*	*<0.12*	*<0.12*	*<0.58*	*<0.11*	*<0.12*	*<0.13*	*<0.12*	*<0.12*	*<0.14*	*<0.12*	*<0.11*	**0.69**	*<0.11*
Benzo(a)anthracene	7	7	300	300	*<0.13*	*<0.12*	*<0.12*	*<0.12*	*<0.58*	*<0.11*	*<0.12*	*<0.13*	*<0.12*	*<0.12*	*<0.14*	*<0.12*	*<0.11*	**1.4**	*<0.11*
Benzo(a)pyrene	2	2	30	30	*<0.13*	*<0.12*	*<0.12*	*<0.12*	*<0.58*	*<0.11*	*<0.12*	*<0.13*	*<0.12*	*<0.12*	*<0.14*	*<0.12*	*<0.11*	**1.4**	*<0.11*
Benzo(b)fluoranthene	7	7	300	300	*<0.13*	*<0.12*	*<0.12*	*<0.12*	*<0.58*	*<0.11*	*<0.12*	*<0.13*	*<0.12*	*<0.12*	*<0.14*	*<0.12*	*<0.11*	**1.8**	*<0.11*
Benzo(g,h,i)perylene	1000	1000	5000	5000	*<0.13*	*<0.12*	*<0.12*	*<0.12*	*<0.58*	*<0.11*	*<0.12*	*<0.13*	*<0.12*	*<0.12*	*<0.14*	*<0.12*	*<0.11*	**0.82**	*<0.11*
Benzo(k)fluoranthene	70	70	3000	3000	*<0.13*	*<0.12*	*<0.12*	*<0.12*	*<0.58*	*<0.11*	*<0.12*	*<0.13*	*<0.12*	*<0.12*	*<0.14*	*<0.12*	*<0.11*	**0.72**	*<0.11*
Chrysene	70	70	3000	3000	*<0.13*	*<0.12*	*<0.12*	*<0.12*	*<0.58*	*<0.11*	*<0.12*	*<0.13*	*<0.12*	*<0.12*	*<0.14*	*<0.12*	*<0.11*	**1.5**	*<0.11*
Dibenz(a,h)anthracene	0.7	0.7	30	30	*<0.13*	*<0.12*	*<0.12*	*<0.12*	*<0.58*	*<0.11*	*<0.12*	*<0.13*	*<0.12*	*<0.12*	*<0.14*	*<0.12*	*<0.11*	**0.19**	*<0.11*
Fluoranthene	1000	1000	5000	5000	**0.42**	**0.93**	**0.3**	*<0.12*	**3.5**	**0.32**	*<0.12*	**0.38**	*<0.12*	**0.13**	*<0.14*	**0.61**	*<0.11*	**3.2**	**0.25**
Fluorene	1000	1000	5000	5000	**3.2**	**10**	**0.84**	**0.57**	**9**	**1.2**	*<0.12*	**1.4**	**1**	**1.3**	*<0.14*	**7**	**0.29**	**0.37**	**0.9**
Indeno(1,2,3-cd)pyrene	7	7	300	300	*<0.13*	*<0.12*	*<0.12*	*<0.12*	*<0.58*	*<0.11*	*<0.12*	*<0.13*	*<0.12*	*<0.12*	*<0.14*	*<0.12*	*<0.11*	**0.91**	*<0.11*
2-Methylnaphthalene	80	300	80	500	**3.1**	**23**	**8.2**	**0.91**	**14**	**1.4**	*<0.12*	**1.1**	**0.88**	**2.2**	*<0.14*	**10**	**0.12**	**0.35**	**0.59**
Naphthalene	20	500	20	3000	**1.1**	**2.7**	**3.9**	**0.41**	**6.9**	**0.43**	*<0.12*	**0.36**	**0.31**	**0.5**	*<0.14*	**2.9**	*<0.11*	**0.24**	**0.34**
Phenanthrene	500	500	3000	3000	**1.6**	**3.6**	**0.75**	*<0.12*	*<0.58*	**0.2**	*<0.12*	**0.67**	**0.78**	**0.7**	*<0.14*	**3.3**	**0.3**	**2.7**	**0.56**
Pyrene	1000	1000	5000	5000	*<0.13*	**0.23**	*<0.12*	**0.13**	*<0.58*	*<0.11*	*<0.12*	**0.13**	*<0.12*	*<0.12*	*<0.14*	*<0.12*	*<0.11*	**3.1**	**0.24**
Volatile Petroleum Hydrocarbons																			
C_5-C_8 Aliphatics	100	100	500	500	*<110*	*<120*	*<18*	*<78*	*<110*	*<69*	*<13*	*<22*	*<91*	*<170*	*<14*	*<91*	*<8.0*	*<14*	*<90*
C_9-C_{12} Aliphatics	1000	1000	5000	5000	*<110*	**140**	*<18*	*<78*	**120**	*<69*	*<13*	*<22*	*<91*	*<170*	*<14*	*<91*	**10**	*<14*	*<90*
C_9-C_{10} Aromatics	100	100	500	500	**230**	**430**	**22**	**190**	**410**	**150**	*<13*	**40**	**190**	**360**	**46**	**230**	**28**	*<14*	**170**
Volatile Organic Compounds (VOCs)																			
N-Butylbenzene	~	~	~	~	**0.7**	**1.4**	*<0.0021*	*<0.063*	**0.52**	*<0.22*	*<0.0012*	**0.16**	*<0.085*	**1.6**	*<0.0017*	**1.1**	**0.003**	*<0.0019*	*<0.0016*
Sec-Butylbenzene	~	~	~	~	**0.47**	**0.61**	*<0.0021*	*<0.063*	**0.29**	*<0.22*	*<0.0012*	**0.13**	*<0.085*	**1.2**	*<0.0017*	**0.8**	**0.0017**	*<0.0019*	*<0.0016*
Ethylbenzene	500	500	1000	3000	*<0.22*	*<0.25*	*<0.0021*	*<0.063*	*<0.26*	*<0.22*	*<0.0012*	*<0.056*	*<0.085*	*<0.18*	*<0.0017*	*<0.20*	**0.0028**	*<0.0019*	*<0.0016*
Isopropylbenzene	~	~	~	~	*<0.22*	**0.3**	*<0.0021*	*<0.063*	*<0.26*	*<0.22*	*<0.0012*	**0.085**	*<0.085*	**0.53**	*<0.0017*	**0.37**	**0.0019**	*<0.0019*	*<0.0016*
P-Isopropyltoluene	~	~	~	~	*<0.22*	*<0.25*	*<0.0021*	*<0.063*	*<0.26*	*<0.22*	*<0.0012*	**0.11**	*<0.085*	*<0.18*	*<0.0017*	*<0.20*	**0.0024**	*<0.0019*	*<0.0016*
Naphthalene	20	500	20	3000	*<0.45*	*<0.50*	*<0.011*	*<0.13*	*<0.51*	*<0.43*	*<0.0060*	**0.9**	*<0.17*	*<0.35*	*<0.0087*	*<0.40*	**0.013**	*<0.0039*	*<0.0080*
N-Propylbenzene	~	~	~	~	**0.33**	**0.71**	*<0.0021*	*<0.063*	*<0.26*	*<0.22*	*<0.0012*	**0.12**	*<0.085*	**0.89**	*<0.0017*	**0.66**	**0.0025**	*<0.0019*	*<0.0016*
Toluene	500	500	2000	3000	*<0.22*	*<0.25*	*<0.0021*	*<0.063*	*<0.26*	*<0.22*	*<0.0012*	*<0.056*	*<0.085*	*<0.18*	*<0.0017*	*<0.20*	**0.0014**	*<0.0019*	*<0.0016*
Trichloroethylene	0.3	30	0.3	60	*<0.22*	*<0.25*	*<0.0021*	*<0.063*	*<0.26*	*<0.22*	**0.0013**	*<0.056*	*<0.085*	*<0.18*	*<0.0017*	*<0.20*	*<0.0011*	*<0.0019*	*<0.0016*
1,2,4-Trimethylbenzene	~	~	~	~	*<0.22*	*<0.25*	*<0.0021*	*<0.063*	*<0.26*	*<0.22*	*<0.0012*	**0.17**	*<0.085*	*<0.18*	*<0.0017*	*<0.20*	**0.024**	*<0.0019*	*<0.0016*
Total Xylenes	100	500	100	3000	*<0.22*	*<0.25*	*<0.0021*	*<0.063*	*<0.26*	*<0.22*	*<0.0012*	*<0.056*	*<0.085*	*<0.18*	*<0.0017*	*<0.20*	**0.0253**	*<0.0019*	*<0.0016*
Metals																			
Arsenic	20	20	50	50	**5.6**	*<2.8*	**12**	*<2.8*	**9.2**	*<2.7*	**3.4**	**11**	*<2.9*	*<2.9*	*<3.5*	*<2.9*	*<2.7*	**9.3**	**23**
Barium	1000	1000	5000	5000	**65**	**40**	**90**	**40**	**53**	**39**	**43**	**81**	**41**	**31**	**51**	**54**	**42**	**56**	**180**
Cadmium	70	70	100	10	**0.53**	*<0.28*	**1.1**	*<0.28*	**0.61**	*<0.27*	**1.2**	**1.2**	*<0.29*	**0.85**	*<0.35*	*<0.29*	*<0.27*	**1.6**	**120**
Chromium	100	100	200	200	**32**	**21**	**76**	**19**	**50**	**18**	**29**	**85**	**19**	**25**	**26**	**31**	**28**	**170**	**220**
Lead	200	200	600	600	**37**	**42**	**450**	**43**	**140**	**58**	**110**	**84**	**10**	**11**	**89**	**160**	**7.6**	**180**	**1500**
Mercury	20	20	30	30	**0.13**	**0.049**	**0.25**	**0.041**	**0.1**	**0.099**	**0.09**	**0.17**	*<0.031*	**0.048**	*<0.036*	**0.088**	*<0.028*	**0.2**	**1.2**
Selenium	400	400	700	700	*<6.4*	*<5.6*	*<5.9*	*<5.7*	*<5.4*	*<5.4*	*<6.0*	*<5.9*	*<5.8*	*<5.7*	*<7.1*	*<5.9*	*<5.4*	*<5.2*	*<5.3*
Silver	100	100	200	200	*<0.64*	*<0.56*	*<0.59*	*<0.57*	*<0.54*	*<0.54*	*<0.60*	*<0.59*	*<0.58*	*<0.57*	*<0.71*	*<0.59*	*<0.54*	*<0.52*	**1.3**

NOTES:

"<" = Not detected above the lab reporting limits shown in parenthesis.

~ = No Method 1 Standard

1. Concentrations in units of mg/kg

BOLD	= parameter detected above the laboratory detection limit
BOLD	= concentration exceeds applicable MCP Method 1 Cleanup Standards

TABLE 4
Additional Petroleum Assessment Soil Sampling Results
Former Building 105
Charlestown, Massachusetts

Parameter	MCP - Method 1 Cleanup Standards					SAMPLING LOCATION									
	S-2/GW-2	S-2/GW-3	S-3/GW-2	S-3/GW-3	UCL	SB-E1-0-6"	SB-E3-4-24"	SB-F2-12-42"	SB-F3-0-15"	SB-H1-0-19"	SB-I2-14-51"	SB-I2-DUP	SB-O1-0-21"	SB-S5-0-6"	SB-S6-0-3"
						3/19/2015	3/19/2015	3/19/2015	3/19/2015	3/19/2015	3/19/2015		3/19/2015	3/19/2015	3/19/2015
Extractable Petroleum Hydrocarbons															
C_9-C_{18} Aliphatics	3,000	3,000	5,000	5,000	20,000	**380**	**1,100**	**3,000**	**3,100**	**1,100**	**1,100**	**1,400**	**240**	**95**	**120**
C_{19}-C_{36} Aliphatics	5,000	5,000	5,000	5,000	20,000	**390**	**360**	**4,300**	**21,000**	**1,200**	**270**	**310**	**370**	**1,200**	**150**
C_{11}-C_{22} Aromatics	3,000	3,000	5,000	5,000	10,000	**210**	**520**	**1,600**	**3,800**	**570**	**360**	**360**	**210**	**380**	**88**
Targert Polycyclic Aromatic Hydrocarbons															
Acenaphthene	3,000	3,000	5,000	5,000	10,000	<0.11	<0.22	<0.12	<0.45	<0.21	<0.11	<0.11	**0.14**	<0.11	<0.11
Acenaphthylene	600	10	600	10	10,000	<0.11	<0.22	<0.12	<0.45	<0.21	<0.11	<0.11	<0.11	<0.11	<0.11
Anthracene	3,000	3,000	5,000	5,000	10,000	**0.15**	<0.22	**0.62**	<0.45	<0.21	<0.11	<0.11	**0.14**	<0.11	<0.11
Benzo(a)anthracene	40	40	300	300	3,000	**0.24**	<0.22	<0.12	<0.45	<0.21	<0.11	<0.11	**0.24**	<0.11	<0.11
Benzo(a) pyrene	4	4	30	30	300	**0.19**	<0.22	<0.12	<0.45	<0.21	<0.11	<0.11	<0.11	<0.11	<0.11
Benzo(b) fluoranthene	40	40	300	300	3,000	**0.36**	<0.22	<0.12	<0.45	<0.21	<0.11	<0.11	**0.35**	<0.11	<0.11
Benzo(g,h,i) perylene	3,000	3,000	5,000	5,000	10,000	**0.18**	<0.22	<0.12	<0.45	<0.21	<0.11	<0.11	<0.11	<0.11	<0.11
Benzo(k) fluoranthene	400	400	3,000	3,000	10,000	<0.11	<0.22	<0.12	<0.45	<0.21	<0.11	<0.11	<0.11	<0.11	<0.11
Chrysene	400	400	3,000	3,000	10,000	**0.25**	<0.22	<0.12	<0.45	<0.21	<0.11	<0.11	**0.35**	<0.11	<0.11
Dibenz(a,h) anthracene	4	4	30	30	300	<0.11	<0.22	<0.12	<0.45	<0.21	<0.11	<0.11	<0.11	<0.11	<0.11
Fluoranthene	3,000	3,000	5,000	5,000	10,000	**1.00**	<0.22	**0.68**	**0.64**	**1.40**	**0.21**	<0.11	**0.57**	<0.11	**0.14**
Fluorene	3,000	3,000	5,000	5,000	10,000	**0.11**	<0.22	**5.80**	**1.30**	**0.72**	**1.50**	**1.30**	**0.21**	<0.11	**0.23**
Indeno(1,2,3-cd) pyrene	40	40	300	300	3,000	**0.19**	<0.22	<0.12	<0.45	<0.21	<0.11	<0.11	<0.11	<0.11	<0.11
2-Methylnaphthalene	80	500	80	500	5,000	**0.31**	<0.22	**11.00**	**3.10**	**0.26**	<0.11	**0.24**	**0.90**	**0.12**	**0.41**
Naphthalene	40	1,000	20	3,000	10,000	**0.22**	<0.22	**2.30**	**0.97**	<0.21	**0.46**	**0.44**	**0.44**	<0.11	<0.11
Phenanthrene	1,000	1,000	3,000	3,000	10,000	**0.84**	<0.22	**1.90**	**1.00**	**1.10**	**0.95**	**0.93**	**0.52**	<0.11	**0.20**
Pyrene	3,000	3,000	5,000	5,000	10,000	**0.75**	<0.22	**0.56**	**1.50**	**0.34**	<0.11	**0.14**	**0.56**	<0.11	<0.11
Volatile Petroleum Hydrocarbons															
C_5-C_8 Aliphatics	500	500	500	500	5,000	<12	<11	<67	<11	<11	<57	<61	<13	<13	<10
C_9-C_{12} Aliphatics	3,000	3,000	5,000	5,000	20,000	<12	<11	<67	<11	<11	<57	**67**	<13	<13	<10
C_9-C_{10} Aromatics	500	500	500	500	5,000	<12	<11	**290**	**23**	<11	**240**	**290**	<13	<13	<10
Targert Volatile Organic Compounds															
Benzene	200	200	400	1,000	10,000	<0.059	<0.053	<0.33	<0.055	<0.054	<0.28	<0.31	<0.063	<0.066	<0.052
Ethylbenzene	1,000	1,000	1,000	3,000	10,000	<0.059	<0.053	<0.33	<0.055	<0.054	<0.28	<0.31	<0.063	<0.066	<0.052
Methyl Tert-Butyl Ether (Mtbe	100	500	100	500	5,000	<0.059	<0.053	<0.33	<0.055	<0.054	<0.28	<0.31	<0.063	<0.066	<0.052
Naphthalene	40	1,000	20	3,000	10,000	<0.30	<0.26	**2.10**	<0.28	<0.27	<1.4	<1.5	<0.32	<0.33	<0.26
Toluene	1,000	1,000	2,000	3,000	10,000	<0.059	<0.053	<0.33	<0.055	<0.054	<0.28	<0.31	<0.063	<0.066	<0.052
M/P-Xylene	300	1,000	100	3,000	10,000	<0.12	<0.11	<0.67	<0.11	<0.11	<0.57	<0.61	<0.13	<0.13	<0.10
O-Xylene	300	1,000	100	3,000	10,000	<0.059	<0.053	<0.33	<0.055	<0.054	<0.28	<0.31	<0.063	<0.066	<0.052

NOTES:
"<" = Not detected above the lab reporting limits shown
~ = No Method 1 Standard
1. Concentrations in units of mg/kg
2. Parameters shown in **BOLD** were detected above the laboratory reporting limits

= Concentration equals or exceeds applicable MCP Method 1 Cleanup Standards
= Concentration equals or exceeds applicable MCP Upper Concentrations Limits

TABLE 5
Supplemental Site Investigation Concrete Sampling Results: PCBs
Former Building 105
Charlestown, Massachusetts

Sample Locations	Depth	Units	Sampling Results									
			PCB 1016	PCB 1221	PCB 1232	PCB 1242	PCB 1248	PCB 1254	PCB 1260	PCB 1262	PCB 1268	Total PCBs
CS-1	0-0.5 in.	mg/kg	<0.99	<0.99	<0.99	<0.99	<0.99	**3.1**	**1.5**	<0.99	<0.99	**4.6**
CS-2	0-0.5 in.	mg/kg	<0.099	<0.099	<0.099	<0.099	<0.099	**0.2**	<0.099	<0.099	<0.099	**0.2**
CS-3	0-0.5 in.	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	**2.1**	<0.50	<0.50	<0.50	**2.1**
CS-4	0-0.5 in.	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	**4.1**	<0.50	<0.50	<0.50	**4.1**
CS-5	0-0.5 in.	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	**1.9**	<0.50	<0.50	<0.50	**1.9**
CS-6	0-0.5 in.	mg/kg	<0.98	<0.98	<0.98	<0.98	<0.98	**3.9**	<0.98	<0.98	<0.98	**3.9**
CS-7	0-0.5 in.	mg/kg	<0.099	<0.099	<0.099	<0.099	<0.099	**0.11**	**0.19**	<0.099	<0.099	**0.3**
CS-8	0-0.5 in.	mg/kg	<0.098	<0.098	<0.098	<0.098	<0.098	<0.098	<0.098	<0.098	<0.098	ND
CS-9	0-0.5 in.	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.96**	<0.50	<0.50	**0.96**
CS-10	0-0.5 in.	mg/kg	<0.099	<0.099	<0.099	<0.099	<0.099	**0.14**	**0.27**	<0.099	<0.099	**0.41**
CS-11	0-0.5 in.	mg/kg	<0.097	<0.097	<0.097	<0.097	<0.097	**0.25**	**0.44**	<0.097	<0.097	**0.69**
CS-12	0-0.5 in.	mg/kg	<0.098	<0.098	<0.098	<0.098	<0.098	<0.098	**0.96**	<0.098	<0.098	**0.96**
CS-13	0-0.5 in.	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	**2**	<0.50	<0.50	<0.50	**2**
CS-14	0-0.5 in.	mg/kg	<0.99	<0.99	<0.99	<0.99	<0.99	**8.3**	<0.99	<0.99	<0.99	**8.3**
CS-15	0-0.5 in.	mg/kg	<19	<19	<19	<19	<19	**100**	<19	<19	<19	**100**
CS-16	0-0.5 in.	mg/kg	<20	<20	<20	<20	<20	**120**	<20	<20	<20	**120**
CS-17	0-0.5 in.	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	**1.2**	**0.32**	<0.20	<0.20	**1.52**
CS-18	0-0.5 in.	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	**0.54**	<0.10	<0.10	**0.54**
CS 101	0-0.5in	mg/kg	< 0.098	< 0.098	< 0.098	< 0.098	**0.19**	**0.3**	**0.38**	< 0.098	< 0.098	**0.87**
	0.5-2in	mg/kg	< 0.099	< 0.099	< 0.099	< 0.099	< 0.099	< 0.099	< 0.099	< 0.099	< 0.099	< 0.099
CS 102	0-0.5in	mg/kg	< 0.099	< 0.099	< 0.099	< 0.099	< 0.099	**0.29**	< 0.099	< 0.099	< 0.099	**0.29**
	0.5-2in	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
CS 103	0-0.5in	mg/kg	< 0.99	< 0.99	< 0.99	< 0.99	< 0.99	**6.2**	**2.2**	< 0.99	< 0.99	**8.4**
	0.5-2in	mg/kg	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49	**2.4**	**0.64**	< 0.49	< 0.49	**3.04**
CS 104	0-0.5in	mg/kg	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	**3.3**	**0.81**	< 0.48	< 0.48	**4.11**
	0.5-2in	mg/kg	< 0.099	< 0.099	< 0.099	< 0.099	< 0.099	**0.76**	**0.17**	< 0.099	< 0.099	**0.93**
CS 105	0-0.5in	mg/kg	< 9.7	< 9.7	< 9.7	< 9.7	< 9.7	**44**	< 9.7	< 9.7	< 9.7	**44**
	0.5-2in	mg/kg	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	**12**	< 1.9	< 1.9	< 1.9	**12**
CS 106	0-0.5in	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	**0.59**	**0.13**	< 0.10	< 0.10	**0.72**
	0.5-2in	mg/kg	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	**29**	< 4.9	< 4.9	< 4.9	**29**
CS 107	0-0.5in	mg/kg	< 0.098	< 0.098	< 0.098	< 0.098	< 0.098	**0.74**	**0.15**	< 0.098	< 0.098	**0.89**
	0.5-2in	mg/kg	< 0.094	< 0.094	< 0.094	< 0.094	< 0.094	**0.16**	< 0.094	< 0.094	< 0.094	**0.16**
CS 108	0-0.5in	mg/kg	< 9.0	< 9.0	< 9.0	< 9.0	< 9.0	**52**	< 9.0	< 9.0	< 9.0	**52**
	0.5-2in	mg/kg	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	**3.6**	< 0.48	< 0.48	< 0.48	**3.6**
CS 109	0-0.5in	mg/kg	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	**7.1**	**1.5**	< 0.96	< 0.96	**8.6**
	0.5-2in	mg/kg	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47	**2.4**	< 0.47	< 0.47	< 0.47	**2.4**
CS 110	0-0.5in	mg/kg	< 0.97	< 0.97	< 0.97	< 0.97	< 0.97	**5.6**	**1.1**	< 0.97	< 0.97	**6.7**
	0.5-2in	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	**0.66**	**0.13**	< 0.10	< 0.10	**0.79**
CS 111	0-0.5in	mg/kg	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49	**4.1**	**0.83**	< 0.49	< 0.49	**4.93**
	0.5-2in	mg/kg	< 0.097	< 0.097	< 0.097	< 0.097	< 0.097	**0.33**	< 0.097	< 0.097	< 0.097	**0.33**
CS 112	0-0.5in	mg/kg	< 0.096	< 0.096	< 0.096	< 0.096	< 0.096	**1.1**	**0.14**	< 0.096	< 0.096	**1.24**
	0.5-2in	mg/kg	< 0.098	< 0.098	< 0.098	< 0.098	< 0.098	**0.43**	< 0.098	< 0.098	< 0.098	**0.43**
CS 113	0-0.5in	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	**0.29**	< 0.10	< 0.10	< 0.10	**0.29**
	0.5-2in	mg/kg	< 0.089	< 0.089	< 0.089	< 0.089	< 0.089	< 0.089	< 0.089	< 0.089	< 0.089	< 0.089
CS 114	0-0.5in	mg/kg	< 0.098	< 0.098	< 0.098	< 0.098	< 0.098	**0.79**	**0.57**	< 0.098	< 0.098	**1.36**
	0.5-2in	mg/kg	< 0.087	< 0.087	< 0.087	< 0.087	< 0.087	< 0.087	< 0.087	< 0.087	< 0.087	< 0.087
CS 115	0-0.5in	mg/kg	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	**13**	**2.3**	< 1.9	< 1.9	**15.3**
	0.5-2in	mg/kg	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47	**2.5**	< 0.47	< 0.47	< 0.47	**2.5**
CS 116	0-0.5in	mg/kg	< 0.96	< 0.96	< 0.96	< 0.96	< 0.96	**7.9**	< 0.96	< 0.96	< 0.96	**7.9**
	0.5-2in	mg/kg	< 0.089	< 0.089	< 0.089	< 0.089	< 0.089	**0.43**	< 0.089	< 0.089	< 0.089	**0.43**
CS 117	0-0.5in	mg/kg	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	**6.6**	< 1.9	< 1.9	< 1.9	**6.6**
	0.5-2in	mg/kg	< 0.88	< 0.88	< 0.88	< 0.88	< 0.88	**4.7**	< 0.88	< 0.88	< 0.88	**4.7**
CS 118	0-0.5in	mg/kg	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4	**18**	< 4.4	< 4.4	< 4.4	**18**
	0.5-2in	mg/kg	< 37	< 37	< 37	< 37	< 37	**200**	< 37	< 37	< 37	**200**
CS 119	0-0.5in	mg/kg	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	**29**	< 3.5	< 3.5	< 3.5	**29**
	0.5-2in	mg/kg	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	**18**	< 2.3	< 2.3	< 2.3	**18**
CS 120	0-0.5in	mg/kg	< 3.8	< 3.8	< 3.8	< 3.8	< 3.8	**32**	< 3.8	< 3.8	< 3.8	**32**
	0.5-2in	mg/kg	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	**3.7**	< 0.45	< 0.45	< 0.45	**3.7**
CS 121	0-0.5in	mg/kg	< 0.090	< 0.090	< 0.090	< 0.090	< 0.090	**0.38**	**0.19**	< 0.090	< 0.090	**0.57**
	0.5-2in	mg/kg	< 0.090	< 0.090	< 0.090	< 0.090	< 0.090	< 0.090	< 0.090	< 0.090	< 0.090	<0.090
CS 122	0-0.5in	mg/kg	< 0.46	< 0.46	< 0.46	< 0.46	< 0.46	**2.5**	**0.54**	< 0.46	< 0.46	**3.04**
	0.5-2in	mg/kg	< 0.087	< 0.087	< 0.087	< 0.087	< 0.087	**0.23**	< 0.087	< 0.087	< 0.087	**0.23**
CS 123	0-0.5in	mg/kg	< 0.093	< 0.093	< 0.093	< 0.093	< 0.093	**0.94**	**0.36**	< 0.093	< 0.093	**1.3**
	0.5-2in	mg/kg	< 0.087	< 0.087	< 0.087	< 0.087	< 0.087	**0.13**	< 0.087	< 0.087	< 0.087	**0.13**
CS 124	0-0.5in	mg/kg	< 0.87	< 0.87	< 0.87	< 0.87	< 0.87	**6.1**	**0.96**	< 0.87	< 0.87	**7.06**
	0.5-2in	mg/kg	< 0.092	< 0.092	< 0.092	< 0.092	< 0.092	**0.45**	< 0.092	< 0.092	< 0.092	**0.45**
CS 125	0-0.5in	mg/kg	< 0.088	< 0.088	< 0.088	< 0.088	**0.21**	**0.45**	**0.17**	< 0.088	< 0.088	**0.83**
	0.5-2in	mg/kg	< 0.090	< 0.090	< 0.090	< 0.090	< 0.090	< 0.090	< 0.090	< 0.090	< 0.090	<0.090

Notes
"<" = Parameter not detected above laboratory reporting limit shown
ND = Total PCB concentration not detected above laboratory reporting limits

= Concentration equals or exceeds TSCA High Occupancy Standard and MCP S-1 Cleanup Standard of 1 mg/kg PCBs
= Concentration equals or exceeds the Site-specific Risk-Based Cleanup Plan concrete remediation cleanup concentration of 50 mg/kg

TABLE 6
Supplemental Site Investigation Groundwater Sampling Results
Former Building 105
Charlestown, Massachusetts

Parameter	Units	MCP Method 1 Cleanup Standards		SAMPLING LOCATIONS						
		GW-2	GW-3	MW-101 9/19/2014	MW-102A 9/19/2014	MW-EX01 9/19/2014	MW-EX02 9/16/2014	MW-EX03 9/19/2014	MW-WS1 9/19/2014	MW-20/DUP 9/19/2014
Extractable Petroleum Hydrocarbons										
C_9-C_{18} Aliphatics	µg/L	5,000	50,000	--	<100	<100	<100	**140**	**210**	**200**
C_{19}-C_{36} Aliphatics	µg/L	~	50,000	--	<100	<100	<100	<100	<100	<100
C_{11}-C_{22} Aromatics	µg/L	50,000	5,000	--	<100	<100	**160**	**270**	**250**	**300**
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/L	~	10,000	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Acenaphthylene	µg/L	10,000	40	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Anthracene	µg/L	~	30	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Benzo(a)anthracene	µg/L	~	1,000	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Benzo(a)pyrene	µg/L	~	500	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Benzo(b)fluoranthene	µg/L	~	400	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Benzo(g,h,i)perylene	µg/L	~	20	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Benzo(k)fluoranthene	µg/L	~	100	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chrysene	µg/L	~	70	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Dibenz(a,h)anthracene	µg/L	~	40	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Fluoranthene	µg/L	~	200	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Fluorene	µg/L	~	40	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Indeno(1,2,3-cd)pyrene	µg/L	~	100	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
2-Methylnaphthalene	µg/L	2,000	20,000	--	<2.0	<2.0	<2.0	**3.6**	**<2.0**	<2.0
Naphthalene	µg/L	700	20,000	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Phenanthrene	µg/L	~	10,000	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Pyrene	µg/L	~	20	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Volatile Petroleum Hydrocarbons										
C_5-C_8 Aliphatics	µg/L	3,000	50,000	<100	<100	<200	<100	<100	<100	<100
C_9-C_{12} Aliphatics	µg/L	5,000	50,000	<100	<100	<200	<100	**140**	**<100**	<100
C_9-C_{10} Aromatics	µg/L	4,000	50,000	<100	<100	<200	<100	<100	<100	<100
Volatile Organic Compounds										
Acetone	µg/L	50,000	50,000	<20	<20	**55**	<40	**23**	**<20**	<20
Benzene	µg/L	1,000	10,000	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	µg/L	20,000	5,000	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
Methyl	µg/L	50,000	50,000	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	µg/L	700	20,000	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0
Toluene	µg/L	50,000	40,000	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
Total Xylene	µg/L	3,000	5,000	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
Dissolved Metals										
Arsenic	mg/L	~	0.9	<0.010	**0.021**	**0.015**	**0.023**	<0.010	<0.010	<0.010
Barium	mg/L	~	50	<0.050	<0.050	**0.25**	**0.073**	<0.050	0.058	**0.058**
Cadmium	mg/L	~	0.004	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Chromium	mg/L	~	0.3	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Lead	mg/L	~	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Mercury	mg/L	~	0.02	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	mg/L	~	0.1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Silver	mg/L	~	0.007	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Polychlorinated Biphenyls										
PCB 1016	µg/L	5	10	--	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
PCB 1221	µg/L	5	10	--	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
PCB 1232	µg/L	5	10	--	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
PCB 1242	µg/L	5	10	--	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
PCB 1248	µg/L	5	10	--	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
PCB 1254	µg/L	5	10	--	**0.26**	<0.20	<0.20	<0.20	<0.20	<0.20
PCB 1260	µg/L	5	10	--	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
PCB 1262	µg/L	5	10	--	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
PCB 1268	µg/L	5	10	--	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Notes:
"<" = Parameter not detected above laboratory detection limit
"~" = No MCP Method 1 Standard for the parameter
"--" = Parameter not tested
MW-20 is a field duplicate collected from MW-WS1

TABLE 7
Supplemental Site Investigation Additional Wall PCB Sample Results
Former Building 105
Charlestown, Massachusetts

		Blacksmith Shop					Roundhouse				
		BS Wall 1	BS Wall 2	BS Wall 3	BS Wall 4	BS Wall 5	RH Wall 1	RH Wall 2	RH Wall 3	RH Wall 4	RH Wall 5
Parameter	**Units**	**0-0.5in**	**0-0.5in**	**0-0.5in**	**0-0.5in**	**0-0.5in**	**0-0.5in**	**0-0.5in**	**0-0.5in**	**0-0.5in**	**0-0.5in**
Polychlorinated Biphenyls											
PCB 1016	mg/kg	< 0.096	< 0.099	< 0.098	< 0.098	< 0.099	< 0.091	< 0.098	< 0.095	< 0.098	< 0.099
PCB 1221	mg/kg	< 0.096	< 0.099	< 0.098	< 0.098	< 0.099	< 0.091	< 0.098	< 0.095	< 0.098	< 0.099
PCB 1232	mg/kg	< 0.096	< 0.099	< 0.098	< 0.098	< 0.099	< 0.091	< 0.098	< 0.095	< 0.098	< 0.099
PCB 1242	mg/kg	< 0.096	< 0.099	< 0.098	< 0.098	< 0.099	< 0.091	< 0.098	< 0.095	< 0.098	< 0.099
PCB 1248	mg/kg	< 0.096	< 0.099	< 0.098	< 0.098	< 0.099	< 0.091	< 0.098	< 0.095	< 0.098	< 0.099
PCB 1254	mg/kg	**0.37**	**0.21**	**0.12**	**0.39**	**0.32**	**0.22**	< 0.098	**0.19**	< 0.098	< 0.099
PCB 1260	mg/kg	< 0.096	< 0.099	< 0.098	< 0.098	< 0.099	< 0.091	< 0.098	**0.25**	< 0.098	< 0.099
PCB 1262	mg/kg	< 0.096	< 0.099	< 0.098	< 0.098	< 0.099	< 0.091	< 0.098	< 0.095	< 0.098	< 0.099
PCB 1268	mg/kg	< 0.096	< 0.099	< 0.098	< 0.098	< 0.099	< 0.091	< 0.098	< 0.095	< 0.098	< 0.099
Total PCBs	mg/kg	**0.37**	**0.21**	**0.12**	**0.39**	**0.32**	**0.22**	BDL	**0.44**	BDL	BDL

Supplemental Site Investigation Additional Bulk PCB Sampling Results

Notes:
1. "<" or "BDL" = Below laboratory method reporting limits.
2. Bold values indicate an analyte concentration above the laboratory method detection limit.
3. "mg/kg" = milligram per kilogram

BOLD = Parameter exceeds applicable MCP RCS-1 Standard

TABLE 8
Supplemental Site Investigation Building Material Sampling Results: PCBs
Former Building 105
Charlestown, Massachusetts

Sample Locations	Sample ID	Media	Units	Sampling Results									
				PCB 1016	PCB 1221	PCB 1232	PCB 1242	PCB 1248	PCB 1254	PCB 1260	PCB 1262	PCB 1268	Total PCBs
Blacksmith Shop	**PW-001**	Surface	µg/wipe	<0.20	<0.20	<0.20	<0.20	<0.20	**1.6**	**0.48**	<0.20	<0.20	**2.08**
	PW-002	Surface	µg/wipe	<0.20	<0.20	<0.20	<0.20	<0.20	**2.3**	**0.89**	<0.20	<0.20	**3.19**
	XP001-P	Paint	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	**7.1**	**1.9**	<0.50	<0.50	**9**
	XP001-WC	Caulking	mg/kg	<0.76	<0.76	<0.76	<0.76	<0.76	<0.76	<0.76	<0.76	<0.76	ND
	XP001-WG	Glazing	mg/kg	<0.78	<0.78	<0.78	<0.78	<0.78	**1.7**	**1.2**	<0.78	<0.78	**2.9**
	XP002-P	Paint	mg/kg	<0.44	<0.44	<0.44	<0.44	<0.44	**1.2**	**0.85**	<0.44	<0.44	**2.05**
	XP002-WC	Caulking	mg/kg	<0.79	<0.79	<0.79	<0.79	<0.79	**0.83**	**0.89**	<0.79	<0.79	**1.72**
	XP002-WG	Glazing	mg/kg	<0.79	<0.79	<0.79	<0.79	<0.79	**1.6**	**1.1**	<0.79	<0.79	**2.7**
	XP003-P	Paint	mg/kg	<0.49	<0.49	<0.49	<0.49	<0.49	**8.4**	**1.8**	<0.49	<0.49	**10.2**
	XP003-WC	Caulking	mg/kg	<0.77	<0.77	<0.77	<0.77	<0.77	<0.77	<0.77	<0.77	<0.77	ND
	XP003-WG	Glazing	mg/kg	<0.80	<0.80	<0.80	<0.80	<0.80	**2.9**	<0.80	<0.80	<0.80	**2.9**
Main Forge Shop	**XP010-P**	Paint	mg/kg	<0.48	<0.48	<0.48	<0.48	<0.48	**2.7**	**2.4**	<0.48	<0.48	**5.1**
	XP011-P	Paint	mg/kg	<2.2	<2.2	<2.2	<2.2	<2.2	**24**	**5.1**	<2.2	<2.2	**29.1**
Roundhouse	**PW-003**	Surface	µg/wipe	<0.20	<0.20	<0.20	<0.20	<0.20	**0.92**	**1.3**	<0.20	<0.20	**2.22**
	PW-004	Surface	µg/wipe	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ND
	XP004-P	Paint	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	**1.7**	**2**	<0.50	<0.50	**3.7**
	XP004-WC	Caulking	mg/kg	<0.77	<0.77	<0.77	<0.77	<0.77	<0.77	<0.77	<0.77	<0.77	ND
	XP004-WG	Glazing	mg/kg	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	ND
	XP005-P	Paint	mg/kg	<0.46	<0.46	<0.46	<0.46	<0.46	**2.7**	**2.1**	<0.46	<0.46	**4.8**
	XP005-WC	Caulking	mg/kg	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	ND
	XP005-WG	Glazing	mg/kg	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	ND
	XP006-P	Paint	mg/kg	<0.48	<0.48	<0.48	<0.48	<0.48	**3.8**	**5.5**	<0.48	<0.48	**9.3**
Tool & Die Shop	**XP007-P**	Paint	mg/kg	<2.4	<2.4	<2.4	<2.4	<2.4	**20**	**4.6**	<2.4	<2.4	**24.6**
	XP008-P	Paint	mg/kg	<2.2	<2.2	<2.2	<2.2	<2.2	**14**	**4.7**	<2.2	<2.2	**18.7**
	XP009-P	Paint	mg/kg	<0.95	<0.95	<0.95	<0.95	<0.95	**8.7**	**2.6**	<0.95	<0.95	**11.3**

Notes

"<" = Parameter not detected above laboratory reporting limit shown.
ND = Total PCB concentration not detected above laboratory reporting limits.
PW = Wipe Sample; P = Paint Sample; WC = Window Caulking Sample; WG = Window Glaze Sample
µg/wipe = micrograms per wipe sample; mg/kg = milligrams per kilogram.
All samples collected by Weston & Sampson on February 18, 2015.

= Concentration equals or exceeds TSCA High Occupancy Standard and MCP S-1 Cleanup Standard of 1 mg/kg PCBs
= Concentration equals or exceeds the Site-specific Risk-Based Cleanup Plan soil remediation cleanup concentration of 50 mg/kg

Created by: DK 4/23/2015
Checked by: SQ 4/23/2015

TABLE 9
Additional Petroleum Assessment Sub-Slab Vapor Sampling Results
Former Building 105
Charlestown, Massachusetts

Parameter	Units	MassDEP Sub-Slab Residential Screeing Values	Sampling Locations								
			SG-E1 03/25/15	SG-02 03/25/15	SG-03 03/25/15	SG-E3 03/25/15	SG-F2 03/25/15	SG-F3 03/25/15	SG-S5 03/25/15	SG-S6 03/25/15	SG-01 03/25/15
Volatile Organic Compounds (TO-15)											
Acetone	ppbv	2,700	**23**	**28**	**27**	**43**	**39**	**68**	**22**	**22**	**49**
Benzene	ppbv	50	**0.22**	**0.49**	**1.6**	**0.51**	**0.39**	**0.65**	**0.69**	**0.46**	**0.88**
1,3-Butadiene	ppbv	~	<0.10	<0.10	<0.10	**0.27**	<0.10	<0.10	<0.10	<0.10	<0.10
Carbon Disulfide	ppbv	~	<1.0	<1.0	**2.5**	<1.0	<1.0	**1.3**	<1.0	<1.0	**2**
Chloroform	ppbv	27	<0.10	<0.10	**0.12**	<0.10	**0.16**	<0.10	**0.22**	**0.22**	**0.36**
Chloromethane	ppbv	~	**0.22**	<0.20	**0.43**	**0.29**	**0.28**	**0.22**	**0.23**	<0.20	<0.20
Cyclohexane	ppbv	~	<0.10	**0.36**	**0.58**	**0.67**	**0.69**	**0.97**	**0.82**	**0.41**	**21**
Dichlorodifluoromethane (Freon 12)	ppbv	~	**0.23**	**0.19**	**0.2**	**0.19**	**0.17**	**0.21**	**0.2**	**0.2**	**0.18**
Ethanol	ppbv	~	**140**	**170**	**100**	**160**	**180**	**120**	**100**	**120**	**140**
Ethyl Acetate	ppbv	~	**1.6**	**1.1**	**1.2**	**1.9**	**2.1**	**0.8**	**1.3**	**1.8**	**1.4**
Ethylbenzene	ppbv	120	**0.16**	**0.19**	**0.14**	**0.22**	**0.18**	**0.18**	**0.2**	**0.18**	**0.3**
4-Ethyltoluene	ppbv	~	<0.10	<0.10	<0.10	<0.10	**0.1**	<0.10	<0.10	<0.10	<0.10
Heptane	ppbv	~	**0.2**	**0.22**	**0.71**	**0.35**	**0.45**	**0.73**	**0.49**	**0.37**	**9.3**
Hexane	ppbv	~	<4.0	<4.0	**4.4**	**6.5**	**8.1**	**7.2**	**46**	**11**	**7.2**
2-Hexanone (MBK)	ppbv	~	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Isopropanol	ppbv	~	**28**	**33**	**21**	**26**	**28**	**27**	**19**	**23**	**25**
Propene	ppbv	~	<4.0	<4.0	<4.0	**9.2**	<4.0	**58**	<4.0	<4.0	<4.0
Tetrachloroethylene	ppbv	14	<0.10	<0.10	<0.10	<0.10	<0.10	**0.12**	<0.10	**0.14**	<0.10
Toluene	ppbv	1,000	**1.1**	**1.1**	**1.4**	**1.2**	**1.2**	**1.1**	**1.2**	**1.1**	**1.6**
1,1,1-Trichloroethane	ppbv	39	<0.10	**1.1**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Trichloroethylene	ppbv	5.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	**0.49**	<0.10	<0.10
1,2,4-Trimethylbenzene	ppbv	~	**0.25**	**0.24**	**0.15**	**0.35**	**0.34**	**0.24**	**0.3**	**0.29**	**0.35**
Total Xylenes	ppbv	320	**0.73**	**0.94**	**0.63**	**1.08**	**0.81**	**0.9**	**1**	**0.87**	**1.32**
Air Phase Petroleum Hydrocarbons											
C_5-C_8 Aliphatics	µg/m^3	4,100	--	--	--	--	--	**390**	--	--	--
C_9-C_{10} Aromatics	µg/m^3	4,800	--	--	--	--	--	<19	--	--	--
C_9-C_{12} Aliphatics	µg/m^3	700	--	--	--	--	--	<27	--	--	--
Benzene	ppbv	50	--	--	--	--	--	**0.55**	--	--	--
1,3-Butadiene	ppbv	~	--	--	--	--	--	<0.38	--	--	--
Ethylbenzene	ppbv	120	--	--	--	--	--	<0.38	--	--	--
Methyl tert-Butyl Ether (MTBE)	ppbv	750	--	--	--	--	--	<0.38	--	--	--
Toluene	ppbv	1,000	--	--	--	--	--	**0.91**	--	--	--
Naphthalene	ppbv	8	--	--	--	--	--	<0.33	--	--	--
Total Xylenes	ppbv	320	--	--	--	--	--	**0.47**	--	--	--

Notes
"<" - Parameter not detected above laboratory reporting limits shown
"--" - Sample not tested
"~" - No MassDEP sub-slab soil gas screening standard available
= Parameter equals or exceeds applicable sub-slab screening value

APPENDIX A

Public Notification Letters

Five Centennial Drive
Peabody, MA 01960-7985
tel: 978-532-1900 fax: 978-977-0100
www.westonandsampson.com

planning, permitting, design, construction, operation, maintenance

Weston&Sampson®

Former Building 105, Boston, Massachusetts
WSE Project No. 2140398

May 5, 2015

The Honorable Martin J. Walsh
Mayor of Boston
1 City Hall Square, Suite 500
Boston, Massachusetts 02201-2013

RE: Release Abatement Measure/Risk-Based Cleanup Plan - **DRAFT**
Building 105
Former Charlestown Navy Yard
Boston, Massachusetts
RTN 3-10627

Dear Mayor Walsh:

Weston & Sampson, on behalf of Kavanagh Advisory Group, LLC (Kavanagh), is hereby notifying your office that a Release Abatement Measure (RAM) and Risk-Based Cleanup Plan for the above-referenced Site has been submitted to the United States Environmental Protection Agency (EPA) and Massachusetts Department of Environmental Protection (DEP). The plan outlines proposed remedial activities to address the presence of historical contamination at Building 105. Historical contamination includes the presence of polychlorinated biphenyls (PCBs), polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs), metals, total petroleum hydrocarbons (TPH), and semi-volatile organic compounds (SVOCs) in various building materials, concrete, and soil.

The historical contamination at Building 105 will be addressed as part of a proposed redevelopment project that will include renovating the former industrial building for use as a hotel with a restaurant and museum exhibit space, which will showcase the building's historic industrial use. Remedial activities to be implemented at the Site will include removal of contaminated building materials, decontamination of building surfaces, removal of contaminated concrete and soil, and construction of cap of residually impacted concrete and soil. Following the completion of these activities an Activity and Use Limitation will be implemented at the Site.

This notification is provided in accordance with public involvement requirements of the MCP, 310 CMR 40.1403(3)(e). The RAM Plan is on file and available for review at the MassDEP's website (www.mass.gov/dep/cleanup). If you have any comments or questions regarding this Site, please contact me at 978-532-1900.

Very truly yours,

WESTON & SAMPSON

Prasanta K. Bhunia, Ph.D., LSP
Vice President

Five Centennial Drive
Peabody, MA 01960-7985
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www.westonandsampson.com

planning, permitting, design, construction, operation, maintenance

Weston&Sampson®

Former Building 105, Boston, Massachusetts
WSE Project No. 2140398

May 5, 2015

Dr. Barbara Ferrer
Executive Director
City of Boston – Public Health Commission
1010 Massachusetts Avenue, 2nd Floor
Boston, Massachusetts 02118

RE: Release Abatement Measure/Risk-Based Cleanup Plan - **DRAFT**
Building 105
Former Charlestown Navy Yard
Boston, Massachusetts
RTN 3-10627

Dear Dr. Ferrer:

Weston & Sampson, on behalf of Kavanagh Advisory Group, LLC (Kavanagh), is hereby notifying your office that a Release Abatement Measure (RAM) and Risk-Based Cleanup Plan for the above-referenced Site has been submitted to the United States Environmental Protection Agency (EPA) and Massachusetts Department of Environmental Protection (DEP). The plan outlines proposed remedial activities to address the presence of historical contamination at Building 105. Historical contamination includes the presence of polychlorinated biphenyls (PCBs), polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs), metals, total petroleum hydrocarbons (TPH), and semi-volatile organic compounds (SVOCs) in various building materials, concrete, and soil.

The historical contamination at Building 105 will be addressed as part of a proposed redevelopment project that will include renovating the former industrial building for use as a hotel with a restaurant and museum exhibit space, which will showcase the building's historic industrial use. Remedial activities to be implemented at the Site will include removal of contaminated building materials, decontamination of building surfaces, removal of contaminated concrete and soil, and construction of cap of residually impacted concrete and soil. Following the completion of these activities an Activity and Use Limitation will be implemented at the Site.

This notification is provided in accordance with public involvement requirements of the MCP, 310 CMR 40.1403(3)(e). The RAM Plan is on file and available for review at the MassDEP's website (www.mass.gov/dep/cleanup). If you have any comments or questions regarding this Site, please contact me at 978-532-1900.

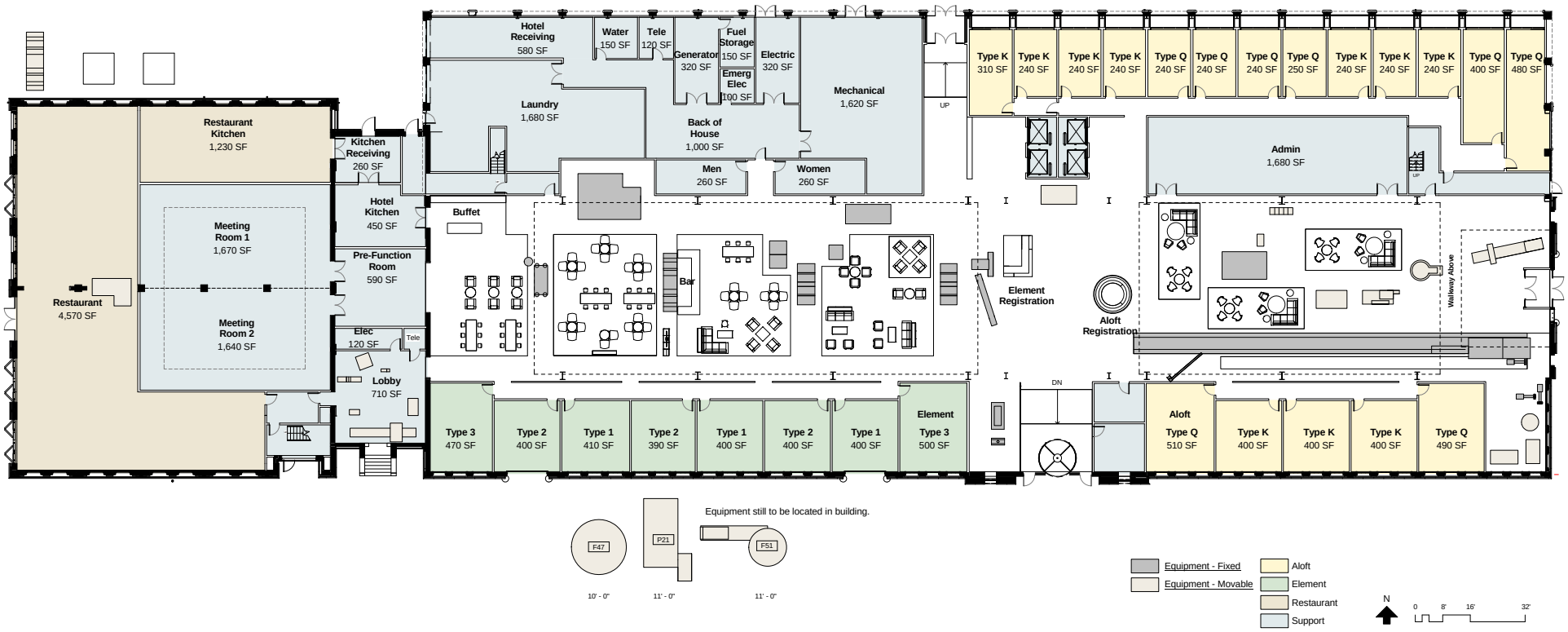
Very truly yours,

WESTON & SAMPSON

Prasanta K. Bhunia, Ph.D., LSP
Vice President

APPENDIX B

Conceptual Hotel Plans



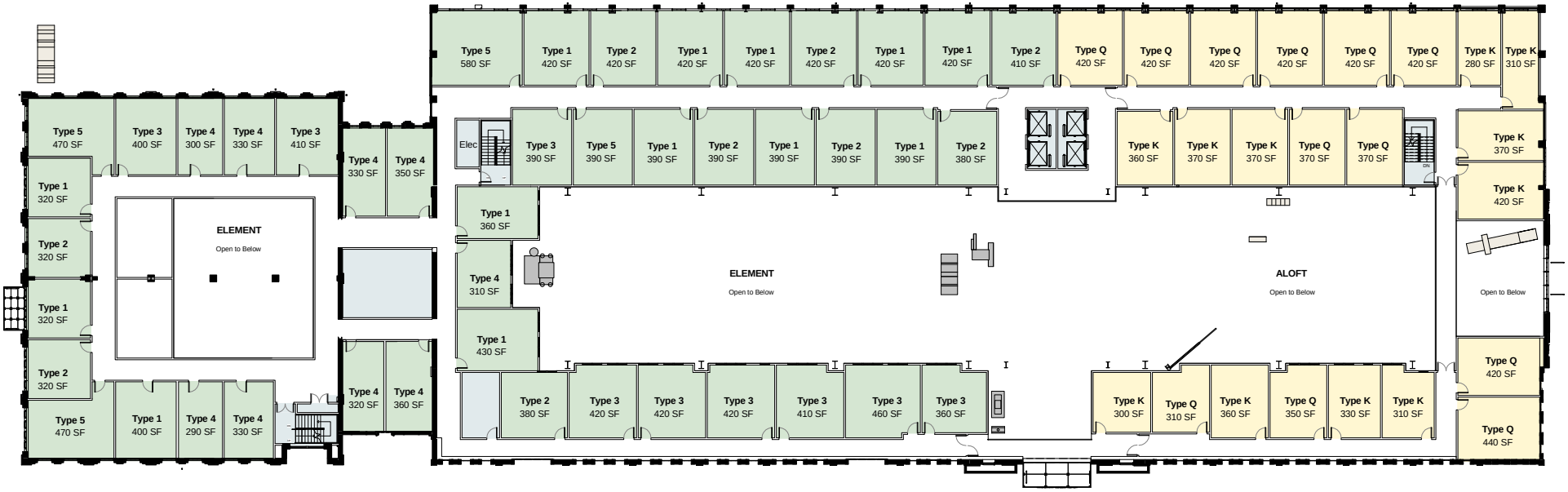
Kavanagh Advisory Group, LLC

Bargmann Hendrie + Archetype, Inc.

1st Floor Plan

The Chain Forge Hotel

4/23/2015



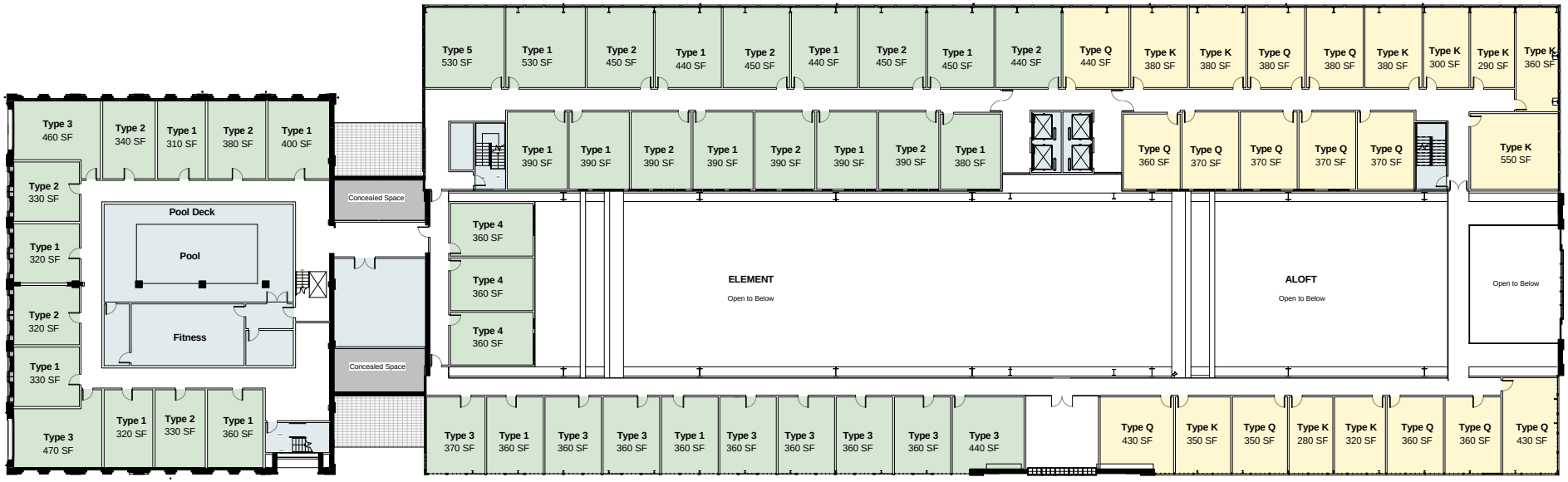
Kavanagh Advisory Group, LLC

Bargmann Hendrie + Archetype, Inc.

2nd Floor Plan

The Chain Forge Hotel

4/23/2015



Kavanagh Advisory Group, LLC

Bargmann Hendrie + Archetype, Inc.

3rd Floor Plan

The Chain Forge Hotel

4/23/2015

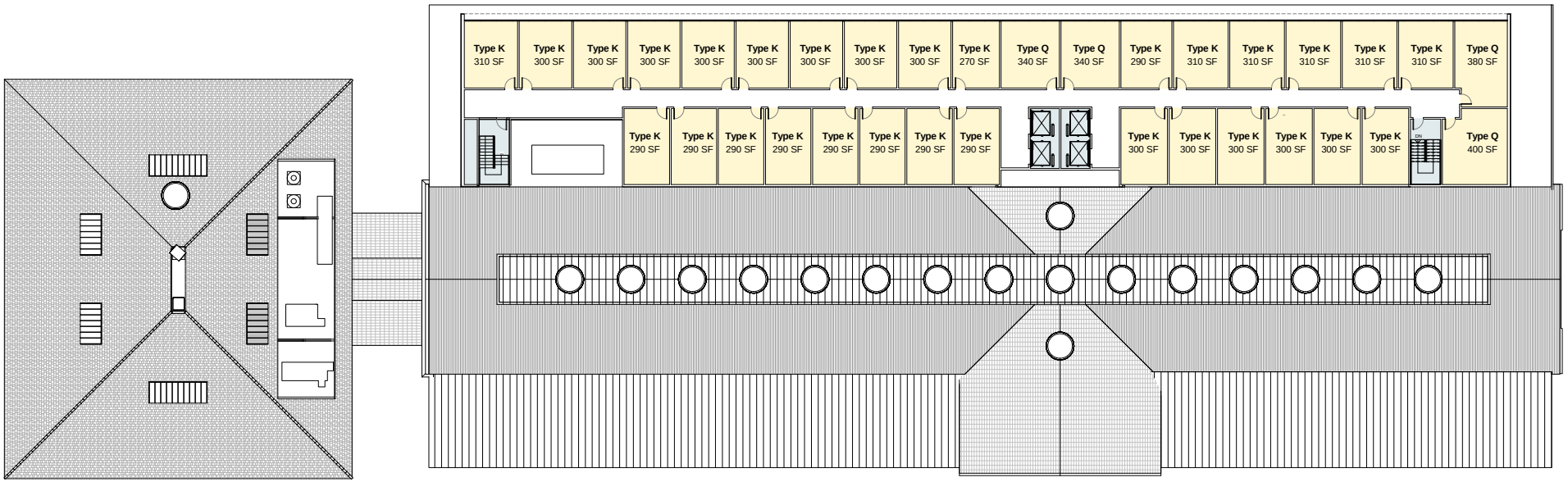
Kavanagh Advisory Group, LLC

Bargmann Hendrie + Archetype, Inc.

4th Floor Plan

The Chain Forge Hotel

4/23/2015



Kavanagh Advisory Group, LLC

Bargmann Hendrie + Archetype, Inc.

5th Floor Plan

The Chain Forge Hotel

4/23/2015

APPENDIX C

Summary of Historical Site Investigation Activities

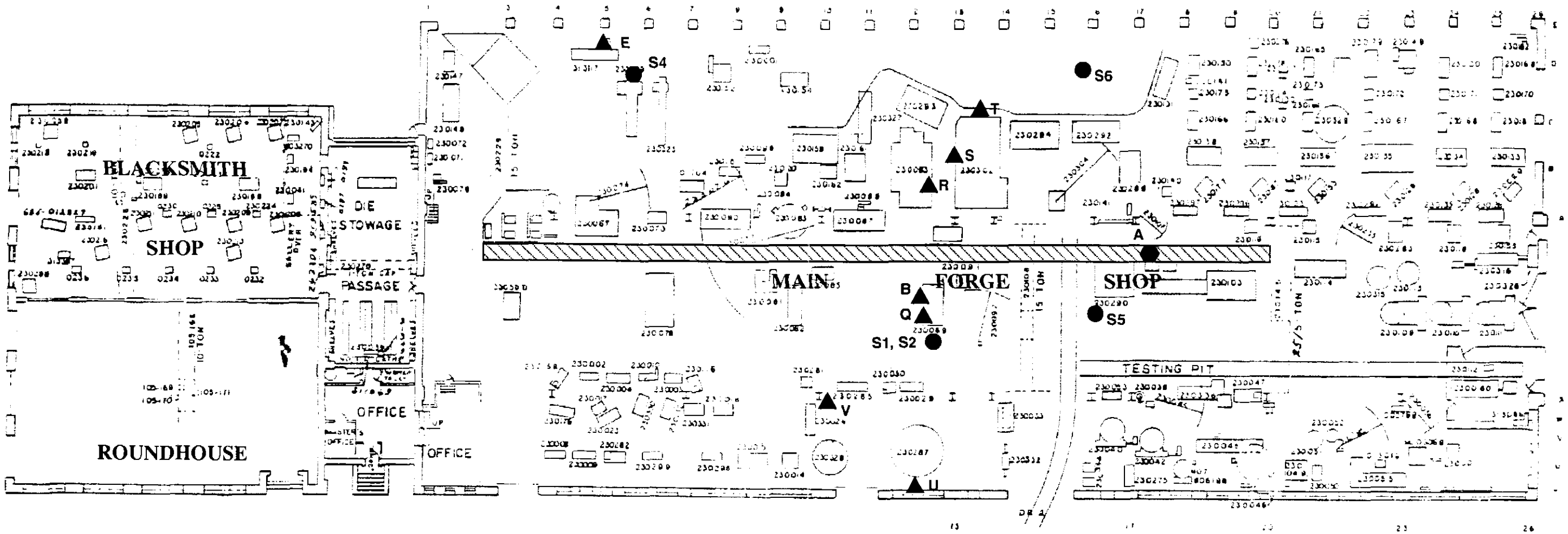


FIGURE 5-1.
JANUARY 1992 SAMPLING LOCATIONS

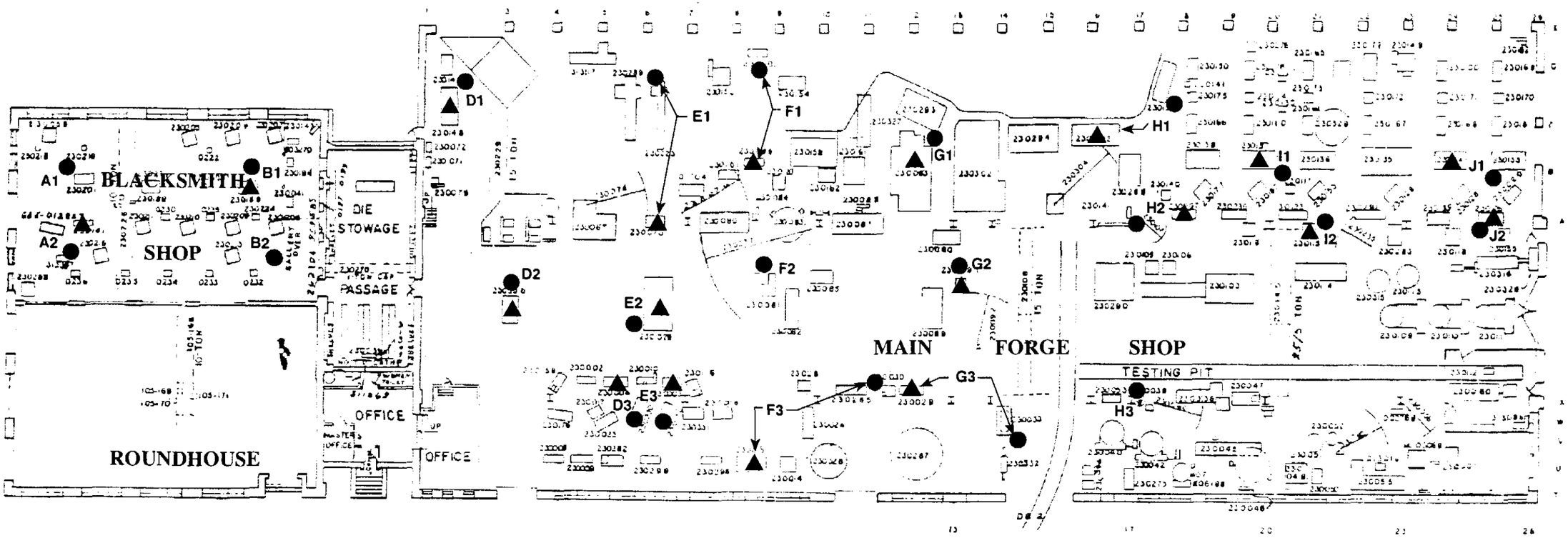
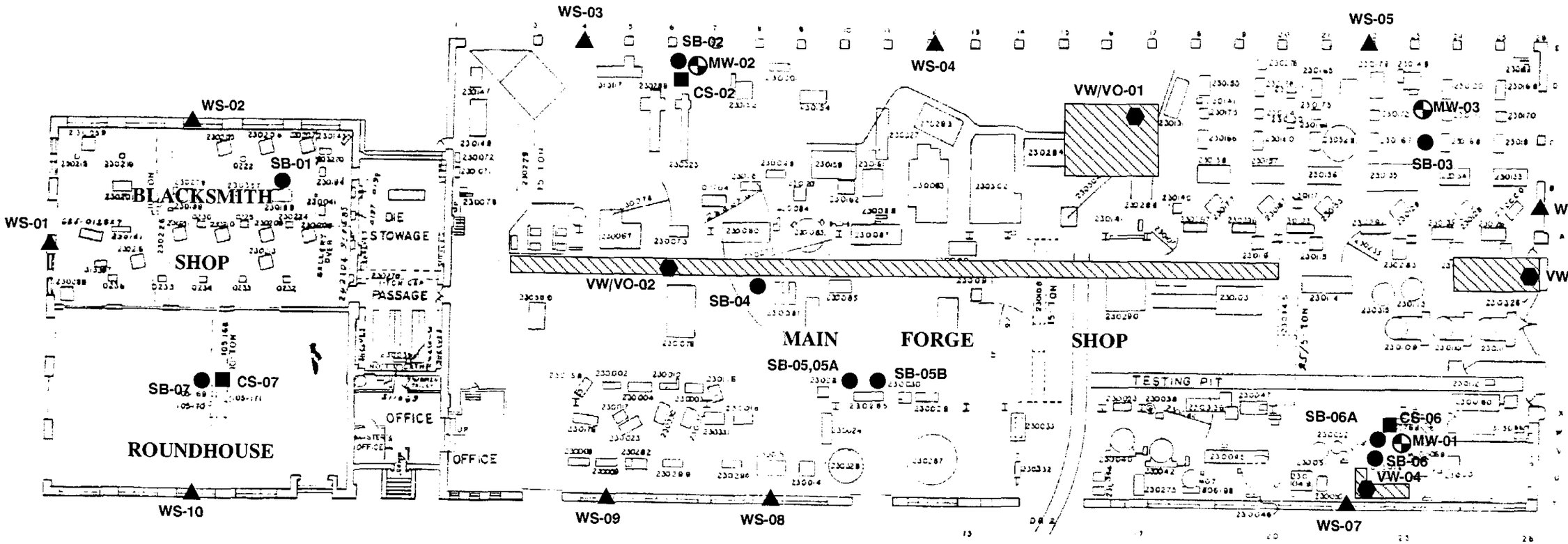


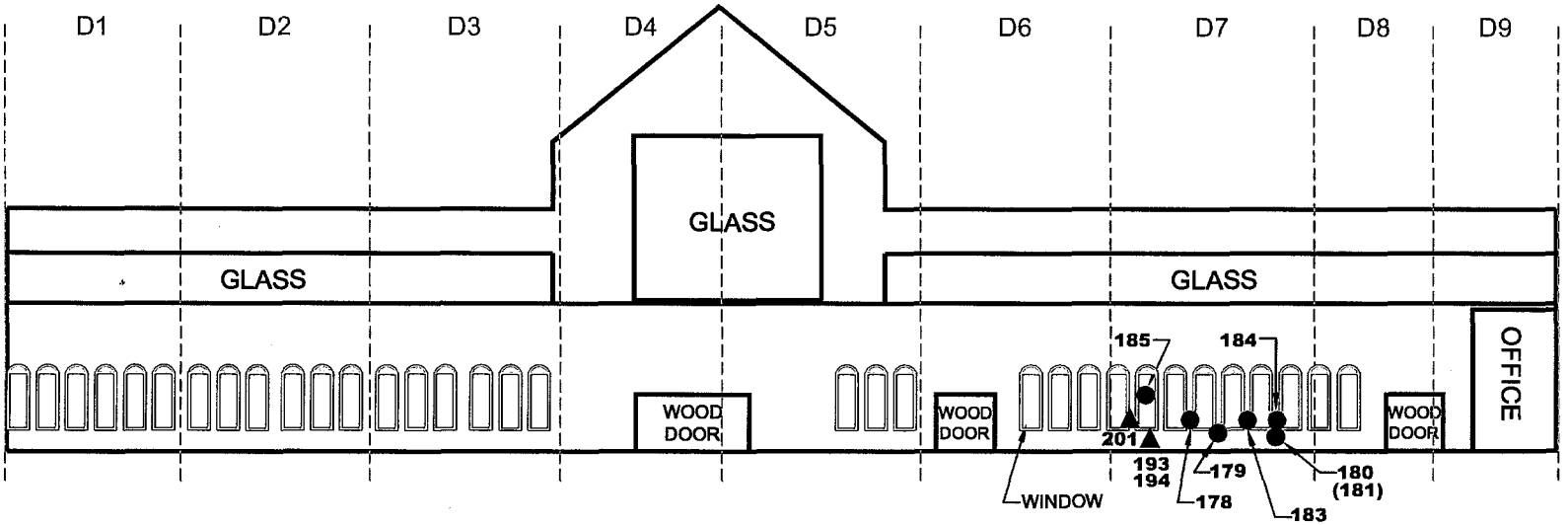
FIGURE 5-2.
MARCH 1993 SAMPLING LOCATIONS



DECEMBER 1994 SAMPLING

CS-01 ■	Concrete Sample
WS-09 ▲	Wipe Sample
SB-02 ●	Soil Boring/Soil Sample
MW-02 ⊕	Monitoring Well
VW/VO-02 ⬢	Vault/Trench Water or Oil Sample
▨	Vault or Trench

FIGURE 5-3.
DECEMBER 1994 SAMPLING LOCATIONS



LEGEND:

● 180	WIPE LOCATION SAMPLE DESIGNATION NUMBER
▲ 201	BULK LOCATION SAMPLE DESIGNATION NUMBER
(181)	DUPLICATE SAMPLE

NOTES:

1. POSITION: INTERIOR SOUTH WALL OF MAIN FORGE SHOP.
2. SAMPLE LOCATIONS BASED UPON FIELD NOTES BY STONE & WEBSTER.
3. PRE-PILOT TEST/BASELINE SAMPLES COLLECTED BY STONE & WEBSTER BETWEEN APRIL AND MAY 1998.

0 40 80 FEET

1" = 40'-0" (APPROXIMATE)

FIGURE 6

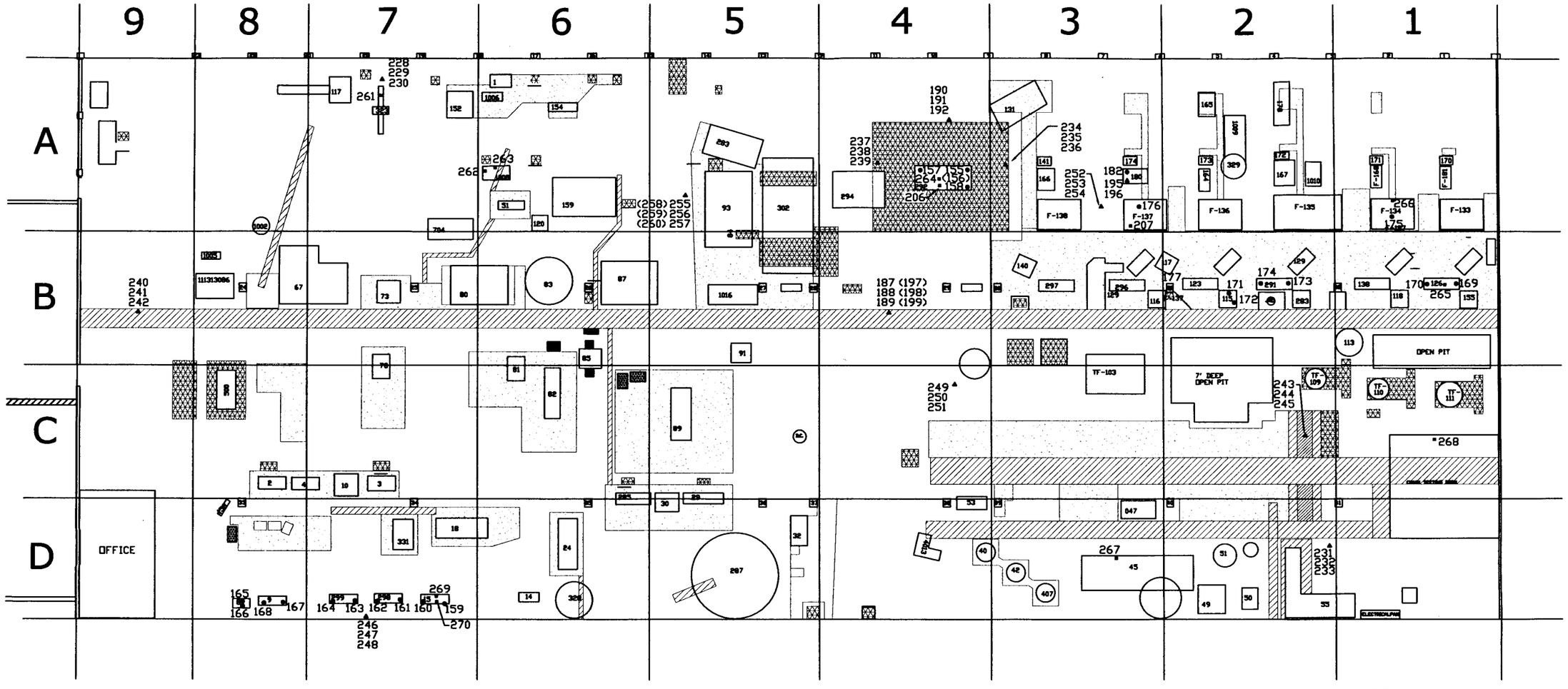
PRE-PILOT TEST/BASELINE SOUTH WALL SAMPLE LOCATIONS

BUILDING NO. 105
FORMER CHARLESTOWN NAVY YARD
BOSTON, MASSACHUSETTS

INTERIM EVALUATION-II REPORT

STONE & WEBSTER INC.
STOUGHTON, MASSACHUSETTS

U.S ARMY CORPS OF ENGINEERS



NOT TO SCALE

LEGEND

- TRENCH
- STEEL PLATE COVERED TRENCH
- SOIL FLOOR
- CONCRETE FLOOR

SAMPLE LEGEND

- ● WIPE SAMPLE
- ▲ BULK SAMPLE
- ■ PAINT SCRAPE SAMPLE
- (197) DUPLICATE SAMPLE

FIGURE 3

CHARLESTOWN BUILDING #105
PILOT TEST AREA
IDENTIFICATION SAMPLE LOCATIONS

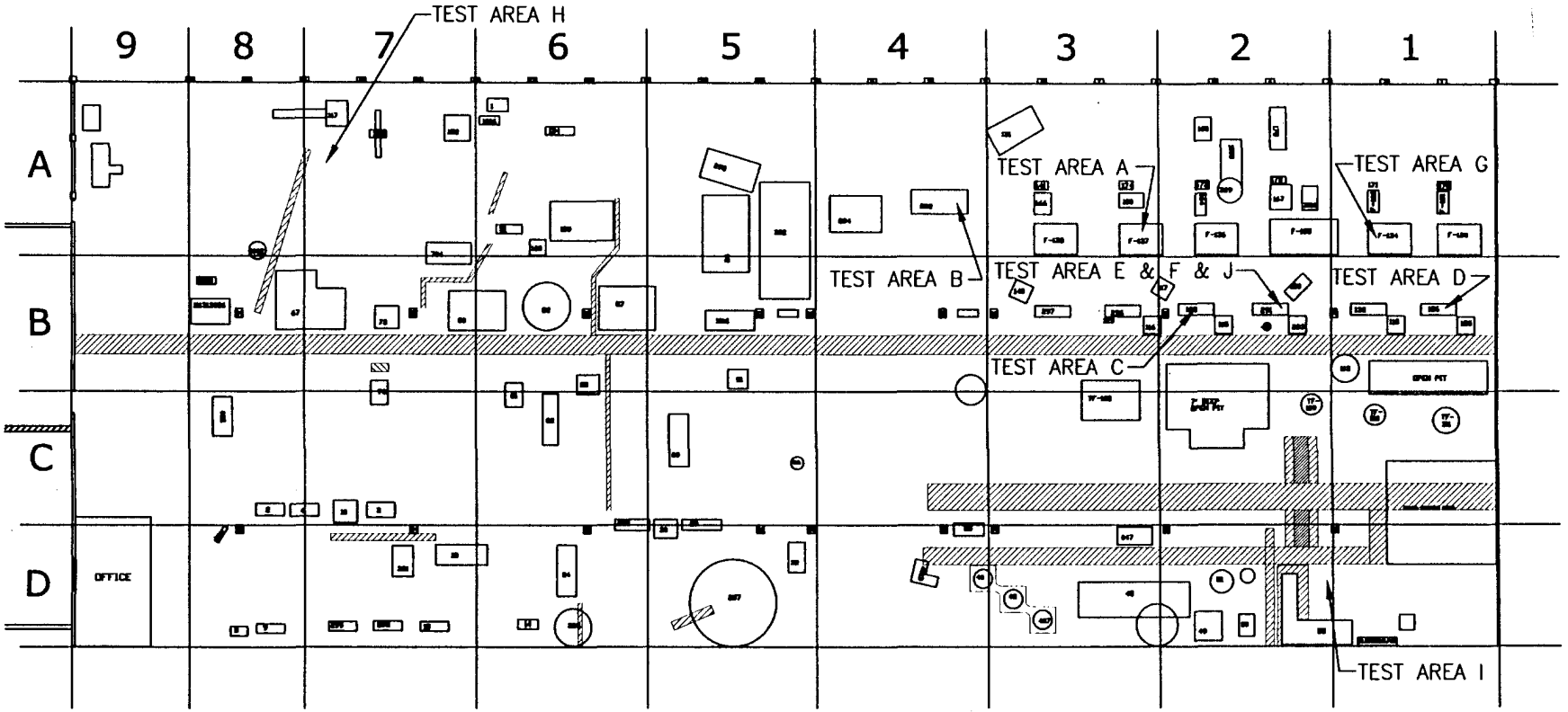
FLOOR/TRENCH/EQUIPMENT

BUILDING 105 SITE REMEDIATION—CHARLESTOWN NAVY YARD

STONE & WEBSTER BOSTON, MASS. | U.S. ARMY CORPS OF ENGINEERS

[ENV_BOSFS02]\HAZWASTE\USACE\BLDG_105\DWG&QTY\INTERIMEVALUATION\SL4_00.DWG

BUILDING #105 – FORMER CHARLESTOWN NAVY YARD
BOSTON, MASSACHUSETTS
INTERIM EVALUATION TEST AREAS



NOT TO SCALE

FIGURE 5

CHARLESTOWN BUILDING #105
PILOT TEST AREA LOCATIONS

BUILDING 105 SITE REMEDIATION–CHARLESTOWN NAVY YARD

STONE & WEBSTER BOSTON, MASS.

U.S. ARMY CORPS OF ENGINEERS

[DW/BOSFS02]\HAZWASTE\USACE\BLDG-105\DWG&GIF\INTERIMEVALUATION\TESTAREA.DWG

TABLE 3
TEST AREA A - SUMMARY OF PILOT TEST ANALYTICAL DATA
BUILDING 105 - FORMER CHARLESTOWN NAVY YARD
BOSTON, MASSACHUSETTS

COMPARISON OF TEST AREA A												
Sample #	176		209			213			220			
Decontamination Method	Baseline		Gross Removal, Hand Scrape w/ Plastic Scraper			Detergent Liquinox			Detergent Liquinox			
Analyte	Concentration		Concentration		% Removal	Concentration		% Removal	Concentration		% Removal	
PCBs (ug/100 cm sq):												
Aroclor 1016	<10	U	<1	U	NC	<1	U	NC	<1	U	NC	
Aroclor 1221	<10	U	<1	U	NC	<1	U	NC	<1	U	NC	
Aroclor 1232	<10	U	<1	U	NC	<1	U	NC	<1	U	NC	
Aroclor 1242	<10	U	<1	U	NC	<1	U	NC	<1	U	NC	
Aroclor 1248	<10	U	<1	UJ	NC	<1	UJ	NC	<1	UJ	NC	
Aroclor 1254	46		12		74%	4.9		59%	5		-2%	
Aroclor 1260	<10	U	<1	U	NC	<1	U	NC	<1	U	NC	
Metals (mg/100cm sq):												
Antimony	1.3		0.53	J	59%	0.42	J	21%	0.095	J	77%	
Arsenic	0.95		0.21		78%	0.16		24%	0.11	U	31%	
Beryllium	0.022	U	0.0061	UJ	72%	0.007	U	-15%	0.065	U	-829%	
Lead	24.7		4.9		80%	2		59%	0.94		53%	
PCDDs/PCDFs (ng/100 cm sq):												
Total 2378-TCDD Equivalence	0.25		0.32		-28%	0.003		99%	0.008		-146%	
1234678-HpCDD	0.5		0.26		48%	<0.017	UJ	NC	<0.0097	U	NC	
1234678-HpCDF	0.27		0.26		4%	0.0076	J	97%	<0.0077	UJ	NC	
123478-HxCDD	<0.035	U	<0.056	U	NC	<0.0066	U	NC	<0.0062	U	NC	
123478-HxCDF	<0.38	UJ	<0.31	UJ	NC	<0.012	UJ	NC	<0.013	UJ	NC	
1234789-HpCDF	0.031	J	<0.086	U	NC	<0.015	U	NC	<0.012	U	NC	
123678-HxCDD	0.066		0.028	J	58%	<0.0058	U	NC	<0.0062	U	NC	
123678-HxCDF	0.11		0.14		-27%	<0.011	U	NC	<0.0076	U	NC	
12378-PeCDD	<0.037	U	<0.045	U	NC	<0.0072	U	NC	<0.0076	U	NC	
12378-PeCDF	0.15		0.26		-73%	<0.012	U	NC	<0.012	U	NC	
123789-HxCDD	0.061		<0.048	U	NC	<0.0063	U	NC	<0.0075	U	NC	
123789-HxCDF	<0.032	U	<0.074	UJ	NC	<0.011	U	NC	<0.016	U	NC	
234678-HxCDF	0.096		0.12		-25%	<0.0083	UJ	NC	0.0036	J	NC	
23478-PeCDF	0.28		0.38		-36%	<0.014	U	NC	0.0093	J	NC	
2378-TCDD	<0.016	U	<0.015	U	NC	<0.01	U	NC	<0.0058	U	NC	
2378-TCDF	0.63		0.85	J	-35%	0.031		96%	0.03		3%	
OCDD	1.5		1.6		-7%	0.078	J	95%	0.034	J	56%	
OCDF	0.26		0.33		-27%	0.012	J	96%	<0.0023	UJ	NC	
TOTAL HpCDD	0.88		0.5		43%	0.012		98%	0	U	NC	
TOTAL HpCDF	0.5		0.49		2%	0.013	J	97%	0	U	NC	
TOTAL HxCDD	1.7		0.36		79%	0.0075	J	98%	0	U	NC	
TOTAL HxCDF	0.97		1.2		-24%	0.013	J	99%	0.016	J	-23%	
TOTAL PeCDD	0.32		0.19		41%	0	U	NC	0	U	NC	
TOTAL PeCDF	2.9		4.1		-41%	0.055		99%	0.064		-16%	
TOTAL TCDD	0.38		0.23		39%	0	U	NC	0.0085	J	NC	
TOTAL TCDF	7.9		6.4		19%	0.22		97%	0.15		32%	
PAHs (ug/100 cm sq):												
Acenaphthene	<10		<10		NC	<10		NC	<10		NC	
Acenaphthylene	<10		<10		NC	<10		NC	<10		NC	
Anthracene	<10	UJ	<10		NC	<10		NC	<10		NC	
Benzo(a)anthracene	<10		<10		NC	<10		NC	<10		NC	
Benzo(a)pyrene	<10		<10		NC	<10		NC	<10		NC	
Benzo(b)fluoranthene	<10		<10		NC	<10		NC	<10		NC	
Benzo(ghi)perylene	<10		<10		NC	<10		NC	<10		NC	
Benzo(k)fluoranthene	<10		<10		NC	<10		NC	<10		NC	
Chrysene	<10		0.51	J	NC	<10		NC	<10		NC	
Dibenzo(a,h)anthracene	<10		<10		NC	<10		NC	<10		NC	
Indeno(1,2,3-cd)pyrene	<10		<10		NC	<10		NC	<10		NC	
Fluoranthene	2.8	J	1.4	J	50%	<10		NC	<10		NC	
Fluorene	<10		<10		NC	<10		NC	<10		NC	
Naphthalene	<10		<10		NC	<10		NC	<10		NC	
Phenanthrene	1.7	J	0.86	J	49%	<10		NC	<10		NC	
Pyrene	<10		<10		NC	<10		NC	<10		NC	

Notes:

% Removal is calculated for each iteration and is not cumulative from the baseline concentration

PCBs - Polychlorinated biphenyls

PCDDs - Polychlorinated dibenzo-p-dioxins

PCDFs - Polychlorinated dibenzofurans

PAHs - Polyaromatic hydrocarbons

ug/100 cm sq - micrograms per 100 square centimeters

mg/100cm sq - milligrams per 100 square centimeters

ng/100 cm sq - nanograms per 100 square centimeters

NC - % Removal not calculated for results below detection limit

Description of Data Qualifiers

J - Estimated

U - Undetected

UJ - Undetected but estimated

R - Rejected

TABLE 4
TEST AREA B - SUMMARY OF PILOT TEST ANALYTICAL DATA
BUILDING 105 - FORMER CHARLESTOWN NAVY YARD
BOSTON, MASSACHUSETTS

COMPARISON OF TEST AREA B								
Sample #	158		208			214		
Decontamination Method	Baseline		Gross Removal, Hand Scrape w/ Plastic Scraper			Degrease w/ Safety-Kleen		
Analyte	Concentration		Concentration		% Removal	Concentration		% Removal
PCBs (ug/100 cm sq):								
Aroclor 1016	<4	U	<1	U	NC	<1	U	NC
Aroclor 1221	<4	U	<1	U	NC	<1	U	NC
Aroclor 1232	<4	U	<1	U	NC	<1	U	NC
Aroclor 1242	<4	U	<1	U	NC	<1	U	NC
Aroclor 1248	<4	U	<1	UJ	NC	<1	UJ	NC
Aroclor 1254	28		18		36%	9.1		49%
Aroclor 1260	<4	U	<1	U	NC	<1	U	NC
Metals (mg/100cm sq):								
Antimony	3.7		0.25	J	93%	0.027	UJ	89%
Arsenic	0.38		0.36		5%	0.034	U	91%
Beryllium	0.0038	U	0.008	U	-111%	0.004	U	50%
Lead	13.8		6.3		54%	0.63		90%
PCDDs/PCDFs (ng/100 cm sq):								
Total 2378-TCDD Equivalence	0.05		0.04		7%	0.009		80%
1234678-HpCDD	0.18		0.17		6%	<0.032	UJ	NC
1234678-HpCDF	0.19		0.085		55%	0.013	J	85%
123478-HxCDD	<0.014	U	<0.024	U	NC	<0.007	U	NC
123478-HxCDF	0.084		<0.054	UJ	NC	0.0096	J	NC
1234789-HpCDF	<0.028	U	<0.059	U	NC	<0.015	U	NC
123678-HxCDD	<0.0097	U	<0.026	J	NC	<0.0093	U	NC
123678-HxCDF	0.046	J	0.026		43%	<0.021	U	NC
12378-PeCDD	<0.029	U	<0.021	U	NC	<0.0079	U	NC
12378-PeCDF	0.056		<0.036	UJ	NC	<0.0099	U	NC
123789-HxCDD	0.007	J	<0.023	U	NC	<0.011	U	NC
123789-HxCDF	<0.019	U	<0.026	U	NC	<0.025	U	NC
234678-HxCDF	<0.05	U	0.019	J	NC	0.0073	J	62%
23478-PeCDF	<0.09	U	0.048	J	NC	0.0096	J	80%
2378-TCDD	<0.0081	U	<0.0073	U	NC	<0.0049	U	NC
2378-TCDF	0.27		0.13	J	52%	0.02		85%
OCDD	1		0.78		22%	0.19		76%
OCDF	0.19		0.14		26%	0.021		85%
TOTAL HpCDD	0.35		0.35		0%	0.019	J	95%
TOTAL HpCDF	0.32		0.17		47%	0.027	J	84%
TOTAL HxCDD	0.095		0	U	NC	0	U	NC
TOTAL HxCDF	0.41		0.13		68%	0.043	J	67%
TOTAL PeCDD	0	U	0.016	J		0	U	
TOTAL PeCDF	0.75		0.52		31%	0.046	J	91%
TOTAL TCDD	0.06		0.037		38%	0.0076	J	79%
TOTAL TCDF	0	U	1.6			0.18		89%
PAHs (ug/100 cm sq):								
Acenaphthene	<10	U	<10	U	NC	<10	U	NC
Acenaphthylene	<10	U	<10	U	NC	<10	U	NC
Anthracene	<10	U	<10	U	NC	<10	U	NC
Benzo(a)anthracene	<10	U	<10	U	NC	<10	U	NC
Benzo(a)pyrene	<10	U	<10	U	NC	<10	U	NC
Benzo(b)fluoranthene	<10	U	<10	U	NC	<10	U	NC
Benzo(ghi)perylene	<10	U	<10	U	NC	<10	U	NC
Benzo(k)fluoranthene	<10	U	<10	U	NC	<10	U	NC
Chrysene	0.92	J	<10	U	NC	<10	U	NC
Dibenzo(a,h)anthracene	<10	U	<10	U	NC	<10	U	NC
Indeno(1,2,3-cd)pyrene	<10	U	<10	U	NC	<10	U	NC
Fluoranthene	2.3	J	<10	U	NC	<10	U	NC
Fluorene	<10	U	<10	U	NC	<10	U	NC
Naphthalene	<10	U	<10	U	NC	0.93	J	NC
Phenanthrene	1.2	J	<10	U	NC	<10	U	NC
Pyrene	0.74	J	<10	U	NC	<10	U	NC

Notes:
% Removal is calculated for each iteration and is not cumulative from the baseline concentration
PCBs - Polychlorinated biphenyls
PCDDs - Polychlorinated dibenzo-p-dioxins
PCDFs - Polychlorinated dibenzofurans
PAHs - Polyaromatic hydrocarbons
ug/100 cm sq - micrograms per 100 square centimeters
mg/100cm sq - milligrams per 100 square centimeters
ng/100 cm sq - nanograms per 100 square centimeters
NC - % Removal not calculated for results below detection limit

Description of Data Qualifiers
J - Estimated
U - Undetected
UJ - Undetected but estimated
R - Rejected

TABLE 5
TEST AREA C - SUMMARY OF PILOT TEST ANALYTICAL DATA
BUILDING 105 - FORMER CHARLESTOWN NAVY YARD
BOSTON, MASSACHUSETTS

COMPARISON OF TEST AREA C								
Sample #	171		210			215		
Decontamination Method	Baseline		Gross Removal, Hand Scrape w/ Plastic Scraper			Solvent Pipe X-Metal X/ HCMS-101		
Analyte	Concentration		Concentration		% Removal	Concentration		% Removal
PCBs (ug/100 cm sq):								
Aroclor 1016	<2	UJ	<2	U	NC	<1	U	NC
Aroclor 1221	<2	UJ	<2	U	NC	<1	U	NC
Aroclor 1232	<2	UJ	<2	U	NC	<1	U	NC
Aroclor 1242	<2	UJ	<2	U	NC	<1	U	NC
Aroclor 1248	<2	UJ	<2	UJ	NC	<1	UJ	NC
Aroclor 1254	27	J	30	J	-11%	5.3	J	82%
Aroclor 1260	<2	UJ	<2	U	NC	1.2	J	NC
Metals (mg/100cm sq):								
Antimony	1.5		3.3	J	-120%	0.0097	UJ	100%
Arsenic	1.1		0.27		75%	0.016	U	94%
Beryllium	0.0096	J	0.012	U	-25%	0.0062	U	48%
Lead	24.5		19.2		22%	0.17		99%
PCDDs/PCDFs (ng/100 cm sq):								
Total 2378-TCDD Equivalence	0.24		0.33		-37%	0.005		99%
1234678-HpCDD	0.11		0.28		-155%	<0.017	U	NC
1234678-HpCDF	0.27		0.59		-119%	0.012		98%
123478-HxCDD	<0.011	U	<0.055	U	NC	<0.0087	U	NC
123478-HxCDF	<0.025	UJ	0.13		NC	<0.024	UJ	NC
1234789-HpCDF	0.03	J	<0.12	UJ	NC	<0.015	U	NC
123678-HxCDD	0.019	J	<0.042	U	NC	<0.011	U	NC
123678-HxCDF	0.13		0.19		-46%	<0.011	U	NC
12378-PeCDD	<0.022	U	<0.064	U	NC	<0.0084	U	NC
12378-PeCDF	0.18		0.17		6%	<0.015	U	NC
123789-HxCDD	0.013	J	<0.075	U	NC	<0.012	J	NC
123789-HxCDF	0.0081	J	<0.056	UJ	NC	<0.02	U	NC
234678-HxCDF	0.11		0.15		-36%	0.009	J	94%
23478-PeCDF	0.32		0.38		-19%	<0.018	UJ	NC
2378-TCDD	0.0047	J	<0.015	U	NC	<0.0064	U	NC
2378-TCDF	0.37		0.76		-105%	0.035		95%
OCDD	0.59		1.7		-188%	0.041	J	98%
OCDF	0.13		0.58		-346%	<0.032	U	NC
TOTAL HpCDD	0.22		0.52		-136%	0	U	100%
TOTAL HpCDF	0.46		1		-117%	0.012		99%
TOTAL HxCDD	0.23		0.21		9%	0	U	100%
TOTAL HxCDF	1.6		1.7		-6%	0.037	J	98%
TOTAL PeCDD	0.034	J	0.13		-282%	0	U	100%
TOTAL PeCDF	3.2		4.1		-28%	0.099		98%
TOTAL TCDD	0.15		0.2		-33%	0.012	J	94%
TOTAL TCDF	4.9		6.2		-27%	0.3		95%
PAHs (ug/100 cm sq):								
Acenaphthene	<10		<10		NC	<10	UJ	NC
Acenaphthylene	<10		<10		NC	<10	UJ	NC
Anthracene	<10		<10		NC	<10	UJ	NC
Benzo(a)anthracene	<10		<10		NC	<10	UJ	NC
Benzo(a)pyrene	<10		<10		NC	<10	UJ	NC
Benzo(b)fluoranthene	<10		<10		NC	<10	UJ	NC
Benzo(ghi)perylene	<10		<10		NC	<10	UJ	NC
Benzo(k)fluoranthene	<10		<10		NC	<10	UJ	NC
Chrysene	0.67	J	<10		NC	<10	UJ	NC
Dibenzo(a,h)anthracene	<10		<10		NC	<10	UJ	NC
Indeno(1,2,3-cd)pyrene	<10		<10		NC	<10	UJ	NC
Fluoranthene	1.8	J	2.5	J	-39%	<10	UJ	NC
Fluorene	<10		<10		NC	<10	UJ	NC
Naphthalene	<10		<10		NC	<10	UJ	NC
Phenanthrene	1.1	J	1.7	J	-55%	<10	UJ	NC
Pyrene	<10		<10		NC	<10	UJ	NC

Notes:

% Removal is calculated for each iteration and is not cumulative from the baseline concentration

PCBs - Polychlorinated biphenyls

PCDDs - Polychlorinated dibenzo-p-dioxins

PCDFs - Polychlorinated dibenzofurans

PAHs - Polyaromatic hydrocarbons

ug/100 cm sq - micrograms per 100 square centimeters

mg/100cm sq - milligrams per 100 square centimeters

ng/100 cm sq - nanograms per 100 square centimeters

NC - % Removal not calculated for results below detection limit

Description of Data Qualifiers

J - Estimated

U - Undetected

UJ - Undetected but estimated

R - Rejected

TABLE 6
TEST AREA D - SUMMARY OF PILOT TEST ANALYTICAL DATA
BUILDING 105 - FORMER CHARLESTOWN NAVY YARD
BOSTON, MASSACHUSETTS

COMPARISON OF TEST AREA D																	
Sample #	170		216			221			222			226		227			
Decontamination Method	Baseline		Gross Removal, Hand Scrape w/ Plastic Scraper			Degrease/solvent Safety-Kleen			Detergent		Liquinox	Paint Scrape		Post Paint Scrape			
Analyte	Concentration		Concentration		% Removal	Concentration		% Removal	Concentration		% Removal	Concentration		Concentration			
PCBs (ug/100 cm sq):												(ug/kg)					
Aroclor 1016	<2	U	<1	U	NC	<1	U	NC	<1	U	NC	<3400	U	<1	U		
Aroclor 1221	<2	U	<1	U	NC	<1	U	NC	<1	U	NC	<3400	U	<1	U		
Aroclor 1232	<2	U	<1	U	NC	<1	U	NC	<1	U	NC	<3400	U	<1	U		
Aroclor 1242	<2	U	<1	U	NC	<1	U	NC	<1	U	NC	<3400	U	<1	U		
Aroclor 1248	<2	U	<1	UJ	NC	<1	UJ	NC	<1	UJ	NC	<3400	U	<1	U		
Aroclor 1254	20		3.7		82%	3.4		8%	5.6		-65%	52000	UJ	<1	UJ		
Aroclor 1260	<2	U	<1	U	NC	<1	U	NC	<1	U	NC	<3400	U	<1	U		
Metals (mg/100cm sq):																	
Antimony	0.77		0.02	UJ	97%	0.22	J	-1000%	0.2	J	9%	N/A		N/A			
Arsenic	0.8		0.006	U	99%	0.028	U	-367%	0.026	U	7%	N/A					
Beryllium	0.0092	J	0.0076	U	17%	0.0064	U	16%	0.0069	U	-8%	N/A		N/A			
Lead	11.8		0.2		98%	0.21		-5%	1.4		-567%	N/A		N/A			
PCDDs/PCDFs (ng/100 cm sq):																	
Total 2378-TCDD Equivalence	0.27		0.001012		100%	0.020997		-1975%	0.002755		87%	N/A		N/A			
1234678-HpCDD	0.13		<0.0071	UJ	NC	0.0089	J	NC	0.0064	J	28%	N/A		N/A			
1234678-HpCDF	0.24	J	<0.0087		NC	0.0097	J	NC	0.0087	J	10%	N/A		N/A			
123478-HxCDD	0.01	J	<0.007		NC	<0.0036	U	NC	<0.0054	U	NC	N/A		N/A			
123478-HxCDF	<0.26	UJ	<0.007		NC	0.013	J	NC	0.0077	J	41%	N/A		N/A			
1234789-HpCDF	<0.033	U	<0.0066		NC	<0.0056	U	NC	<0.0078	U	NC	N/A		N/A			
123678-HxCDD	0.024		<0.0065		NC	<0.0088	U	NC	<0.007	U	NC	N/A		N/A			
123678-HxCDF	0.13		<0.0031		NC	<0.0095	U	NC	<0.012	U	NC	N/A		N/A			
12378-PeCDD	0.012	J	<0.0065		NC	<0.01	U	NC	<0.0095	U	NC	N/A		N/A			
12378-PeCDF	0.2		<0.0057	J	NC	0.011	J	NC	<0.0012	UJ	NC	N/A		N/A			
123789-HxCDD	0.017	J	<0.0065		NC	<0.0098	U	NC	<0.0091	U	NC	N/A		N/A			
123789-HxCDF	<0.053	UJ	<0.011		NC	<0.0095	U	NC	<0.014	U	NC	N/A		N/A			
234678-HxCDF	0.15		0.0043	J	97%	<0.0061	UJ	NC	<0.0072	UJ	NC	N/A		N/A			
23478-PeCDF	0.34		<0.0047		NC	0.018	J	NC	<0.012	U	NC	N/A		N/A			
2378-TCDD	<0.0075	U	<0.0028		NC	<0.0073	U	NC	<0.065	U	NC	N/A		N/A			
2378-TCDF	0.44		0.0057		99%	0.099		-1637%	0.018		82%	N/A		N/A			
OCDD	0.7		0.012	J	98%	0.044	J	-267%	0.034	J	23%	N/A		N/A			
OCDF	0.18		<0.012		NC	0.017	J	NC	<0.026	UJ	NC	N/A		N/A			
TOTAL HpCDD	0.25		0	U	NC	0.0089	J	NC	0.0064	J	28%	N/A		N/A			
TOTAL HpCDF	0.39		0	U	NC	0.0097	J	NC	0.0087	J	10%	N/A		N/A			
TOTAL HxCDD	0.28		0	U	NC	0	U	NC	0	U	NC	N/A		N/A			
TOTAL HxCDF	1.6		0.0096	J	99%	0.033	J	-244%	0.025	J	24%	N/A		N/A			
TOTAL PeCDD	0.092		0	U	NC	0	U	NC	0	U	NC	N/A		N/A			
TOTAL PeCDF	3.2		0.0091	J	100%	0.12		-1219%	0.041	J	66%	N/A		N/A			
TOTAL TCDD	0.16		0	U	100%	0	U	NC	0	U	NC	N/A		N/A			
TOTAL TCDF	5.7		0.04		99%	0.2		-400%	0.21		-5%	N/A		N/A			
PAHs (ug/100 cm sq):																	
Acenaphthene	<10	U	<10	U	NC	<10	U	NC	<10	U	NC	N/A		N/A			
Acenaphthylene	<10	U	<10	U	NC	<10	U	NC	<10	U	NC	N/A		N/A			
Anthracene	<10	U	<10	U	NC	<10	U	NC	<10	U	NC	N/A		N/A			
Benzo(a)anthracene	<10	U	<10	U	NC	<10	U	NC	<10	U	NC	N/A		N/A			
Benzo(a)pyrene	<10	U	<10	U	NC	<10	UJ	NC	<10	U	NC	N/A		N/A			
Benzo(b)fluoranthene	<10	U	<10	U	NC	<10	U	NC	<10	U	NC	N/A		N/A			
Benzo(ghi)perylene	<10	U	<10	U	NC	<10	U	NC	<10	U	NC	N/A		N/A			
Benzo(k)fluoranthene	<10	U	<10	U	NC	<10	U	NC	<10	U	NC	N/A		N/A			
Chrysene	<10	U	<10	U	NC	<10	U	NC	<10	U	NC	N/A		N/A			
Dibenzo(a,h)anthracene	<10	U	<10	U	NC	<10	U	NC	<10	U	NC	N/A		N/A			
Indeno(1,2,3-cd)pyrene	<10	U	<10	U	NC	<10	U	NC	<10	U	NC	N/A		N/A			
Fluoranthene	1.3	J	<10	U	NC	<10	U	NC	<10	U	NC	N/A		N/A			
Fluorene	<10	U	<10	U	NC	<10	U	NC	<10	U	NC	N/A		N/A			
Naphthalene	<10	U	1.4	J	NC	<10	U	NC	<10	U	NC	N/A		N/A			
Phenanthrene	<10	U	<10	U	NC	<10	U	NC	<10	U	NC	N/A		N/A			
Pyrene	<10	U	<10	U	NC	<10	U	NC	<10	U	NC	N/A		N/A			

Notes:

% Removal is calculated for each iteration and is not cumulative from the baseline concentration

PCBs - Polychlorinated biphenyls

PCDDs - Polychlorinated dibenzo-p-dioxins

PCDFs - Polychlorinated dibenzofurans

PAHs - Polyaromatic hydrocarbons

ug/100 cm sq - micrograms per 100 square centimeters

mg/100cm sq - milligrams per 100 square centimeters

ng/100 cm sq - nanograms per 100 square centimeters

ug/kg - micrograms per kilogram

NC - % Removal not calculated for results below detection limit

N/A - Not Analyzed

Description of Data Qualifiers

J - Estimated

U - Undetected

UJ - Undetected but estimated

R - Rejected

TABLE 7
TEST AREA E - SUMMARY OF PILOT TEST ANALYTICAL DATA
BUILDING 105 - FORMER CHARLESTOWN NAVY YARD
BOSTON, MASSACHUSETTS

COMPARISON OF TEST AREA E								
Sample #	174		217			224		
Decontamination Method	Baseline		Corn Cob (1420-grit)			Safety-Kleen		
Analyte	Concentration		Concentration		% Removal	Concentration		% Removal
PCBs (ug/100 cm sq):								
Aroclor 1016	<5	U	<2	U	NC	<1	U	NC
Aroclor 1221	<5	U	<2	U	NC	<1	U	NC
Aroclor 1232	<5	U	<2	U	NC	<1	U	NC
Aroclor 1242	<5	U	<2	U	NC	<1	U	NC
Aroclor 1248	<5	U	<2	UJ	NC	<1	UJ	NC
Aroclor 1254	35		25		29%	1.3	J	95%
Aroclor 1260	<5	U	<2	U	NC	<1	U	NC
Metals (mg/100cm sq):								
Antimony	2.8		0.21	J	93%	0.29	J	-38%
Arsenic	0.2		0.14		30%	0.13	J	7%
Beryllium	0.0058	J	0.006	U	-3%	0.0096	U	-60%
Lead	10.7		2		81%	1	J	50%
PCDDs/PCDFs (ng/100 cm sq):								
Total 2378-TCDD Equivalence	0.28		0.17		40%	0.005		97%
1234678-HpCDD	0.19		0.17		11%	<0.01	UJ	NC
1234678-HpCDF	2.3		2.1		9%	0.021	J	99%
123478-HxCDD	0.0073	J	<0.021	U	NC	<0.0048	U	NC
123478-HxCDF	<0.17	UJ	<0.13	U	NC	0.0074		NC
1234789-HpCDF	0.033	J	0.032		3%	<0.0081	U	NC
123678-HxCDD	0.024	J	<0.042	U	NC	<0.005	U	NC
123678-HxCDF	0.11		0.063		43%	<0.0056	UJ	NC
12378-PeCDD	<0.017	U	<0.031	U	NC	<0.008	U	NC
12378-PeCDF	0.24		0.096		60%	0.0053	J	94%
123789-HxCDD	0.012	J	<0.0044	U	NC	<0.053	U	NC
123789-HxCDF	0.033	J	<0.03	U	NC	<0.018	U	NC
234678-HxCDF	0.088		0.062		30%	0.0049	J	92%
23478-PeCDF	0.29		0.17		41%	<0.012	UJ	NC
2378-TCDD	0.0058	J	<0.014	U	NC	<0.0054	U	NC
2378-TCDF	0.61		0.4		34%	0.029	J	93%
OCDD	0.86		0.65		24%	0.058	J	91%
OCDF	1.4		1.6		-14%	0.016	J	99%
TOTAL HpCDD	0.35		0.3		14%	0.0071	J	98%
TOTAL HpCDF	3.8		3.6		5%	0.036	J	99%
TOTAL HxCDD	0.2		0.11		45%	0	U	NC
TOTAL HxCDF	1.7		0.77		55%	0.045	J	94%
TOTAL PeCDD	0.044	J	0	U	NC	0	U	NC
TOTAL PeCDF	3		1.8		40%	0.1	J	94%
TOTAL TCDD	0.077	U	0.081		-5%	0.011		86%
TOTAL TCDF	5		3.8		24%	0.25	J	93%
PAHs (ug/100 cm sq):								
Acenaphthene	<10	U	<10	U	NC	<10	U	NC
Acenaphthylene	<10	U	<10	U	NC	<10	U	NC
Anthracene	<10	U	<10	U	NC	<10	U	NC
Benzo(a)anthracene	<10	U	<10	U	NC	<10	U	NC
Benzo(a)pyrene	<10	U	<10	U	NC	<10	U	NC
Benzo(b)fluoranthene	<10	U	<10	U	NC	<10	U	NC
Benzo(ghi)perylene	<10	U	<10	U	NC	<10	U	NC
Benzo(k)fluoranthene	<10	U	<10	U	NC	<10	U	NC
Chrysene	<10	U	<10	U	NC	<10	U	NC
Dibenzo(a,h)anthracene	<10	U	<10	U	NC	<10	U	NC
Indeno(1,2,3-cd)pyrene	<10	U	<10	UJ	NC	<10	UJ	NC
Fluoranthene	<10	U	0.74	J	NC	<10	U	NC
Fluorene	<10	U	<10	U	NC	<10	U	NC
Naphthalene	<10	U	<10	U	NC	<10	U	NC
Phenanthrene	0.68	J	<10	U	NC	<10	U	NC
Pyrene	<10	U	<10	U	NC	<10	U	NC

Notes:
% Removal is calculated for each iteration and is not cumulative from the baseline concentration
PCBs - Polychlorinated biphenyls
PCDDs - Polychlorinated dibenzo-p-dioxins
PCDFs - Polychlorinated dibenzofurans
PAHs - Polyaromatic hydrocarbons
ug/100 cm sq - micrograms per 100 square centimeters
mg/100cm sq - milligrams per 100 square centimeters
ng/100 cm sq - nanograms per 100 square centimeters
NC - % Removal not calculated for results below detection limit

Description of Data Qualifiers
J - Estimated
U - Undetected
UJ - Undetected but estimated
R - Rejected

TABLE 8
TEST AREA F - SUMMARY OF PILOT TEST ANALYTICAL DATA
BUILDING 105 - FORMER CHARLESTOWN NAVY YARD
BOSTON, MASSACHUSETTS

COMPARISON OF TEST AREA F								
Sample #	173		218			225		
Decontamination Method	Baseline		Corn Cob (2040-grit)			Pipe X-Metal X/HCMS-101		
Analyte	Concentration		Concentration		% Removal	Concentration		% Removal
PCBs (ug/100 cm sq):								
Aroclor 1016	<2	U	<1	U	NC	<1	U	NC
Aroclor 1221	<2	U	<1	U	NC	<1	U	NC
Aroclor 1232	<2	U	<1	U	NC	<1	U	NC
Aroclor 1242	<2	U	<1	U	NC	<1	U	NC
Aroclor 1248	<2	U	<1	UJ	NC	<1	UJ	NC
Aroclor 1254	23		7.3		68%	2.3		68%
Aroclor 1260	<2	U	<1	U	NC	<1	U	NC
Metals (mg/100cm sq):								
Antimony	0.77		1.2	J	-56%	0.051	UJ	96%
Arsenic	1.1		0.41		63%	0.046	U	89%
Beryllium	0.008	J	0.0079	U	1%	0.008	U	-1%
Lead	8		10.9		-36%	0.83		92%
PCDDs/PCDFs (ng/100 cm sq):								
Total 2378-TCDD Equivalence	0.06851		0.013		81%	0.014		-10%
1234678-HpCDD	0.18		0.02		89%	0.0089	J	56%
1234678-HpCDF	0.9		0.25		72%	0.0081	J	97%
123478-HxCDD	<0.012	U	<0.013	J	NC	<0.0035	U	NC
123478-HxCDF	<0.074	UJ	<0.023	U	NC	0.01	J	NC
1234789-HpCDF	<0.014	U	<0.018	U	NC	<0.0064	U	NC
123678-HxCDD	<0.022	U	<0.016	U	NC	<0.0075	U	NC
123678-HxCDF	0.029	J	<0.012	U	NC	0.0063	J	NC
12378-PeCDD	<0.013	U	<0.018	U	NC	<0.0046	U	NC
12378-PeCDF	0.033	J	<0.03	U	NC	0.0082	J	NC
123789-HxCDD	<0.014	U	<0.018	U	NC	<0.006	U	NC
123789-HxCDF	0.012		<0.015	U	NC	<0.012	UJ	NC
234678-HxCDF	0.04	J	<0.02	J	NC	<0.0077	UJ	NC
23478-PeCDF	0.068		0.013		81%	0.015	J	-15%
2378-TCDD	<0.0038	U	<0.013	U	NC	<0.0034	U	NC
2378-TCDF	0.12	J	0.032		73%	0.043		-34%
OCDD	1.2		0.12		90%	0.039	J	68%
OCDF	0.76		0.31	J	59%	<0.007	UJ	NC
TOTAL HpCDD	0.35		0.038	J	89%	0.015	J	61%
TOTAL HpCDF	1.7		0.42		75%	0.0081	J	98%
TOTAL HxCDD	0.11		0	U	NC	0	U	NC
TOTAL HxCDF	0.76		0.15		80%	0.093		38%
TOTAL PeCDD	0	U	0	U	NC	0	U	NC
TOTAL PeCDF	0.59		0.11		81%	0.22		-100%
TOTAL TCDD	0.037	U	0	U	NC	0.018		NC
TOTAL TCDF	1.6		0.42		74%	0.29		31%
PAHs (ug/100 cm sq):								
Acenaphthene	<10	U	<10	U	NC	<10	U	NC
Acenaphthylene	<10	U	<10	U	NC	<10	U	NC
Anthracene	<10	U	<10	U	NC	<10	U	NC
Benzo(a)anthracene	<10	U	<10	U	NC	<10	U	NC
Benzo(a)pyrene	<10	U	<10	U	NC	<10	U	NC
Benzo(b)fluoranthene	<10	U	<10	U	NC	<10	U	NC
Benzo(ghi)perylene	<10	U	<10	U	NC	<10	U	NC
Benzo(k)fluoranthene	<10	U	<10	U	NC	<10	U	NC
Chrysene	<10	U	<10	U	NC	<10	U	NC
Dibenzo(a,h)anthracene	<10	U	<10	U	NC	<10	U	NC
Indeno(1,2,3-cd)pyrene	<10	U	<10	U	NC	<10	UJ	NC
Fluoranthene	<10	U	1	J	NC	<10	U	NC
Fluorene	<10	U	<10	U	NC	<10	U	NC
Naphthalene	<10	U	<10	U	NC	<10	U	NC
Phenanthrene	<10	U	1.1	J	NC	<10	U	NC
Pyrene	<10	U	0.73	J	NC	<10	U	NC

Notes:
% Removal is calculated for each iteration and is not cumulative from the baseline concentration
PCBs - Polychlorinated biphenyls
PCDDs - Polychlorinated dibenzo-p-dioxins
PCDFs - Polychlorinated dibenzofurans
PAHs - Polyaromatic hydrocarbons
ug/100 cm sq - micrograms per 100 square centimeters
mg/100cm sq - milligrams per 100 square centimeters
ng/100 cm sq - nanograms per 100 square centimeters
NC - % Removal not calculated for results below detection limit

Description of Data Qualifiers
J - Estimated
U - Undetected
UJ - Undetected but estimated
R - Rejected

TABLE 9
TEST AREA G - SUMMARY OF PILOT TEST ANALYTICAL DATA
BUILDING 105 - FORMER CHARLESTOWN NAVY YARD
BOSTON, MASSACHUSETTS

COMPARISON OF TEST AREA G								
Sample #	175		212			219		
Decontamination Method	Baseline		Gross Removal, Hand Scrape w/ Plastic Scraper			Diesel		
Analyte	Concentration		Concentration		% Removal	Concentration		% Removal
PCBs (ug/100 cm sq):								
Aroclor 1016	<2	U	<2	U	NC	<1	U	NC
Aroclor 1221	<2	U	<2	U	NC	<1	U	NC
Aroclor 1232	<2	U	<2	U	NC	<1	U	NC
Aroclor 1242	<2	U	<2	U	NC	<1	U	NC
Aroclor 1248	<2	U	<2	UJ	NC	<1	UJ	NC
Aroclor 1254	17		30		-76%	8.4		72%
Aroclor 1260	<2	U	<2	U	NC	<1	U	NC
Metals (mg/100cm sq):								
Antimony	0.27		0.76	J	-181%	0.14	J	82%
Arsenic	0.13		0.19		-46%	0.014	U	93%
Beryllium	0.0078	U	0.013	U	-67%	0.0059	U	55%
Lead	9.9		8.5		14%	0.19		98%
PCDDs/PCDFs (ng/100 cm sq):								
Total 2378-TCDD Equivalence	0.21296		0.20336		5%	0.011069		95%
1234678-HpCDD	0.14		0.21		-50%	0.0089	J	96%
1234678-HpCDF	0.13		0.26		-100%	0.0084	J	97%
123478-HxCDD	<0.017	U	<0.022	U	NC	<0.0047	U	NC
123478-HxCDF	<0.12	UJ	<0.12	UJ	NC	<0.0077	UJ	NC
1234789-HpCDF	<0.058	U	<0.056	U	NC	<0.011	U	NC
123678-HxCDD	<0.018	U	0.013	J	NC	<0.0067	U	NC
123678-HxCDF	0.059		0.086		-46%	0.0024	J	97%
12378-PeCDD	<0.021	U	<0.031	U	NC	<0.0093	U	NC
12378-PeCDF	0.071	J	0.1		-41%	<0.0097	UJ	NC
123789-HxCDD	<0.026	U	0.012	J	NC	<0.0063	U	NC
123789-HxCDF	<0.024	U	<0.024	UJ	NC	<0.015	U	NC
234678-HxCDF	0.11	U	0.093		15%	<0.0088	UJ	NC
23478-PeCDF	0.31		0.27		13%	0.016	J	94%
2378-TCDD	<0.011	U	<0.016	U	NC	<0.0037	U	NC
2378-TCDF	0.34		0.37	J	-9%	0.026		93%
OCDD	0.69		1.1		-59%	0.041	J	98%
OCDF	0.12		0.16		-33%	0.015	J	91%
TOTAL HpCDD	0.26		0.41		-58%	0.0089	J	98%
TOTAL HpCDF	0.25		0.43		-72%	0.0084	J	98%
TOTAL HxCDD	0.1		0.1		0%	0	U	100%
TOTAL HxCDF	1.1		1.2		-9%	0.046	J	96%
TOTAL PeCDD	0	U	0	U	NC	0	U	NC
TOTAL PeCDF	2.1		2.2		-5%	0.11		95%
TOTAL TCDD	0.11		0.075		32%	0.015		80%
TOTAL TCDF	4.3		3.8		12%	0.26		93%
PAHs (ug/100 cm sq):								
Acenaphthene	<10	U	<10	U	NC	<10	U	NC
Acenaphthylene	<10	U	<10	U	NC	<10	U	NC
Anthracene	<10	U	<10	U	NC	0.86	J	NC
Benzo(a)anthracene	<10	U	<10	U	NC	<10	U	NC
Benzo(a)pyrene	<10	U	<10	U	NC	<10	U	NC
Benzo(b)fluoranthene	<10	U	<10	U	NC	<10	U	NC
Benzo(ghi)perylene	<10	U	<10	U	NC	<10	U	NC
Benzo(k)fluoranthene	<10	U	<10	U	NC	<10	U	NC
Chrysene	<10	U	<10	U	NC	<10	U	NC
Dibenzo(a,h)anthracene	<10	U	<10	U	NC	<10	U	NC
Indeno(1,2,3-cd)pyrene	<10	U	<10	U	NC	<10	UJ	NC
Fluoranthene	2.3	J	<10	U	NC	2.6	J	NC
Fluorene	<10	U	<10	U	NC	6	J	NC
Naphthalene	<10	U	<10	U	NC	15		NC
Phenanthrene	1.4	J	3.7	J	-164%	13		-251%
Pyrene	<10	U	<10	U	NC	2.1	J	NC

Notes:
% Removal is calculated for each iteration and is not cumulative from the baseline concentration
PCBs - Polychlorinated biphenyls
PCDDs - Polychlorinated dibenzo-p-dioxins
PCDFs - Polychlorinated dibenzofurans
PAHs - Polyaromatic hydrocarbons
ug/100 cm sq - micrograms per 100 square centimeters
mg/100cm sq - milligrams per 100 square centimeters
ng/100 cm sq - nanograms per 100 square centimeters
NC - % Removal not calculated for results below detection limit

Description of Data Qualifiers
J - Estimated
U - Undetected
UJ - Undetected but estimated
R - Rejected

TABLE 10
TEST AREA H - SUMMARY OF PILOT TEST ANALYTICAL DATA
BUILDING 105 - FORMER CHARLESTOWN NAVY YARD
BOSTON, MASSACHUSETTS

	Baseline Samples					
Sample #:	228 (0-1 cm)		229 (1-5 cm)		230 (5-10 cm)	
Decontamination Method:	Baseline		Baseline		Baseline	
Analyte	Concentration		Concentration		Concentration	
PCBs (ug/kg):						
Aroclor 1016	<10,000	U	<5,100	U	<10,000	U
Aroclor 1221	<10,000	U	<5,100	U	<10,000	U
Aroclor 1232	<10,000	U	<5,100	U	<10,000	U
Aroclor 1242	<10,000	U	<5,100	U	<10,000	U
Aroclor 1248	<10,000	U	<5,100	U	<10,000	U
Aroclor 1254	87,000		39,000		11,000	
Aroclor 1260	<10,000	U	<5,100	U	<10,000	U
Metals (mg/kg):						
Antimony	8.8	J	N/A		N/A	
Arsenic	6		N/A		N/A	
Barium	44.9		N/A		N/A	
Beryllium	0.37	U	N/A		N/A	
Cadmium	7.30		N/A		N/A	
Lead	78.2		N/A		N/A	
Nickel	17.3		N/A		N/A	
Silver	<1	U	N/A		N/A	
PAHs (ug/kg):						
Acenaphthene	<1,700	U	N/A		N/A	
Acenaphthylene	<1,700	U	N/A		N/A	
Anthracene	<1,700	U	N/A		N/A	
Benzo(a)anthracene	<1,700	U	N/A		N/A	
Benzo(a)pyrene	260	J	N/A		N/A	
Benzo(b)fluoranthene	830	J	N/A		N/A	
Benzo(ghi)perylene	<1,700	UJ	N/A		N/A	
Benzo(k)fluoranthene	<1,700	U	N/A		N/A	
Chrysene	1,200	J	N/A		N/A	
Dibenzo(a,h)anthracene	<1,700	UJ	N/A		N/A	
Indeno(1,2,3-cd)pyrene	<1,700	UJ	N/A		N/A	
Fluoranthene	2,300		N/A		N/A	
Fluorene	<1,700	U	N/A		N/A	
Naphthalene	<1,700	U	N/A		N/A	
Phenanthrene	1,400	J	N/A		N/A	
Pyrene	720	J	N/A		N/A	

Notes:

% Removal is calculated for each iteration and is not cumulative from the baseline concentration

PCBs - Polychlorinated biphenyls

PAHs - Polynuclear aromatic hydrocarbons

ug/kg - micrograms per kilogram

mg/kg - milligrams per kilogram

N/A - Not Analyzed

NC - % Removal not calculated for results below detection limit

Description of Data Qualifiers

J - Estimated

U - Undetected

UJ - Undetected but estimated

R - Rejected

TABLE 10 - CONTINUED
TEST AREA H - SUMMARY OF PILOT TEST ANALYTICAL DATA
BUILDING 105 - FORMER CHARLESTOWN NAVY YARD
BOSTON, MASSACHUSETTS

	Samples Collected After 1st Iteration								
Sample #:	**273 (0-1 cm)**			**274 (1-5 cm)**			**275 (5-10cm)**		
Decontamination Method:	**1st TechXtract®**			**1st TechXtract®**			**1st TechXtract®**		
Analyte	**Concentration**		**% Removal**	**Concentration**		**% Removal**	**Concentration**		**% Removal**
PCBs (ug/kg):									
Aroclor 1016	<3,400	U	NC	<670	U	NC	<34	U	NC
Aroclor 1221	<3,400	U	NC	<670	U	NC	<34	U	NC
Aroclor 1232	<3,400	U	NC	<670	U	NC	<34	U	NC
Aroclor 1242	<3,400	U	NC	<670	U	NC	<34	U	NC
Aroclor 1248	<3,400	U	NC	<670	U	NC	<34	U	NC
Aroclor 1254	61,000		30%	12,000		69%	510		95%
Aroclor 1260	<3,400	U	NC	<670	U	NC	<34	U	NC
Metals (mg/kg):									
Antimony	0.61	J	93%	0.63	J	NC	0.62	J	NC
Arsenic	5.50		13%	5		NC	4.9		NC
Barium	44.00		2%	48.8		NC	50.4		NC
Beryllium	0.37	J	NC	0.45	J	NC	0.82		NC
Cadmium	2.00		73%	<0.51		NC	<0.51		NC
Lead	12.7		84%	3.3		NC	3		NC
Nickel	11.9	J	31%	10.4	J	NC	11.4	J	NC
Silver	<1		NC	<1		NC	<1		NC
PAHs (ug/kg):									
Acenaphthene	<340	U	NC	<340	U	NC	<340	U	NC
Acenaphthylene	<340	U	NC	<340	U	NC	<340	U	NC
Anthracene	<340	U	NC	<340	U	NC	<340	U	NC
Benzo(a)anthracene	<340	U	NC	<340	U	NC	<340	U	NC
Benzo(a)pyrene	210	J	19%	71	J	NC	<340	U	NC
Benzo(b)fluoranthene	920	J	-11%	280	J	NC	<340	UJ	NC
Benzo(ghi)perylene	<340	R	NC	<340	UJ	NC	<340	U	NC
Benzo(k)fluoranthene	<340	R	NC	<340	UJ	NC	<340	U	NC
Chrysene	600	J	58%	230	J	NC	<340	U	NC
Dibenzo(a,h)anthracene	<340	R	NC	<340	UJ	NC	<340	U	NC
Indeno(1,2,3-cd)pyrene	<340	R	NC	<340	UJ	NC	<340	U	NC
Fluoranthene	830		64%	390		NC	<340	U	NC
Fluorene	<340	U	NC	<340	U	NC	<340	U	NC
Naphthalene	<340	U	NC	<340	U	NC	<340	U	NC
Phenanthrene	430		69%	180	J	NC	<340	U	NC
Pyrene	870	J	-21%	280	J	NC	<340	U	NC

Notes:

% Removal is calculated for each iteration and is not cumulative from the baseline concentration

PCBs - Polychlorinated biphenyls

PAHs - Polynuclear aromatic hydrocarbons

ug/kg - micrograms per kilogram

mg/kg - milligrams per kilogram

N/A - Not Analyzed

NC - % Removal not calculated for results below detection limit

Description of Data Qualifiers

J - Estimated

U - Undetected

UJ - Undetected but estimated

R - Rejected

TABLE 10 - CONTINUED
TEST AREA H - SUMMARY OF PILOT TEST ANALYTICAL DATA
BUILDING 105 - FORMER CHARLESTOWN NAVY YARD
BOSTON, MASSACHUSETTS

	Samples Collected After 2nd Iteration					
Sample #:	**279 (0-1 cm)**		**280 (1-5 cm)**		**281 (5-10 cm)**	
Decontamination Method:	**2nd TechXtract®**		**2nd TechXtract®**		**2nd TechXtract®**	
Analyte	**Concentration**	**% Removal**	**Concentration**	**% Removal**	**Concentration**	**% Removal**
PCBs (ug/kg):						
Aroclor 1016	<3,300 U	NC	<1,700 U	NC	<34 U	NC
Aroclor 1221	<3,300 U	NC	<1,700 U	NC	<34 U	NC
Aroclor 1232	<3,300 U	NC	<1,700 U	NC	<34 U	NC
Aroclor 1242	<3,300 U	NC	<1,700 U	NC	<34 U	NC
Aroclor 1248	<3,300 U	NC	<1,700 U	NC	<34 U	NC
Aroclor 1254	31,000	49%	16,000	-33%	210	59%
Aroclor 1260	<3,300 U	NC	<1,700 U	NC	<34 U	NC
Metals (mg/kg):						
Antimony	0.42 J	31%	0.6 J	5%	0.63 J	-2%
Arsenic	6.4	-16%	4.9	2%	4.5	8%
Barium	50.7	-15%	49.8	-2%	71.4	-42%
Beryllium	0.42 J	-14%	0.42 J	7%	0.45 J	45%
Cadmium	27	-1250%	<0.51	NC	<0.51	NC
Lead	21.8	-72%	3.1	6%	3.3	-10%
Nickel	10.5 J	12%	11.1 J	-7%	16.3 J	-43%
Silver	<1	NC	<1	NC	<1	NC
PAHs (ug/kg):						
Acenaphthene	<330 U	NC	<330 U	NC	<340 U	NC
Acenaphthylene	<330 U	NC	<330 U	NC	<340 U	NC
Anthracene	<330 U	NC	<330 U	NC	<340 U	NC
Benzo(a)anthracene	<330 U	NC	<330 UJ	NC	<340 U	NC
Benzo(a)pyrene	150 U	29%	66 J	7%	<340 UJ	NC
Benzo(b)fluoranthene	620 J	33%	250 J	11%	<340 UJ	NC
Benzo(ghi)perylene	<330 R	NC	<330 R	NC	<340 UJ	NC
Benzo(k)fluoranthene	<330 R	NC	<330 R	NC	<340 UJ	NC
Chrysene	370 J	38%	260 J	-13%	63 J	NC
Dibenzo(a,h)anthracene	<330 R	NC	<330 R	NC	<340 UJ	NC
Indeno(1,2,3-cd)pyrene	<330 R	NC	<330 R	NC	<340 UJ	NC
Fluoranthene	610	27%	290 J	26%	100 U	NC
Fluorene	<330 UJ	NC	<330 U	NC	<340 U	NC
Naphthalene	54 J	NC	<330 U	NC	<340 U	NC
Phenanthrene	320 J	26%	<330 U	NC	160 J	NC
Pyrene	960 J	-10%	590 J	-111%	<340 J	NC

Notes:
% Removal is calculated for each
PCBs - Polychlorinated biphenyls
PAHs - Polynuclear aromatic hydr
ug/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
N/A - Not Analyzed
NC - % Removal not calculated fo

Description of Data Qualifiers
J - Estimated
U - Undetected
UJ - Undetected but estimated
R - Rejected

TABLE 10 - CONTINUED
TEST AREA H - SUMMARY OF PILOT TEST ANALYTICAL DATA
BUILDING 105 - FORMER CHARLESTOWN NAVY YARD
BOSTON, MASSACHUSETTS

	Samples Collected After 3rd Iteration								
Sample #:	**285 (0-1)**			**286 (1-5 cm)**			**287 (5-10 cm)**		
Decontamination Method:	**3rd TechXtract®**			**3rd TechXtract®**			**3rd TechXtract®**		
Analyte	**Concentration**		**% Removal**	**Concentration**		**% Removal**	**Concentration**		**% Removal**
PCBs (ug/kg):									
Aroclor 1016	<6,700	U	NC	<680	U	NC	<34	U	NC
Aroclor 1221	<6,700	U	NC	<680	U	NC	<34	U	NC
Aroclor 1232	<6,700	U	NC	<680	U	NC	<34	U	NC
Aroclor 1242	<6,700	U	NC	<680	U	NC	<34	U	NC
Aroclor 1248	<6,700	U	NC	<680	U	NC	<34	U	NC
Aroclor 1254	98,000		-216%	10,000		38%	130		38%
Aroclor 1260	<6,700	U	NC	<680	U	NC	<34	U	NC
Metals (mg/kg):									
Antimony	2.3	J	-448%	0.67	J	-12%	0.72	J	-14%
Arsenic	4.7		27%	5.4		-10%	5.1		-13%
Barium	185		-265%	53.5		-7%	59.8		16%
Beryllium	0.37	J	12%	0.46	J	-10%	0.48	J	-7%
Cadmium	3.5		87%	<0.51		NC	<0.51		NC
Lead	176		-707%	3.4		-10%	3.6		-9%
Nickel	12.2	J	-16%	9.1	J	18%	9.6	J	41%
Silver	<1		NC	<1		NC	<1		NC
PAHs (ug/kg):									
Acenaphthene	<330	UJ	NC	<340	U	NC	<340	U	NC
Acenaphthylene	<330	UJ	NC	<340	U	NC	<340	U	NC
Anthracene	<330	UJ	NC	<340	U	NC	<340	U	NC
Benzo(a)anthracene	390	J	NC	<340	U	NC	<340	U	NC
Benzo(a)pyrene	250	J	-67%	76	J	-15%	<340	U	NC
Benzo(b)fluoranthene	510		18%	270	J	-8%	<340	U	NC
Benzo(ghi)perylene	<330	UJ	NC	<340	UJ	NC	<340	U	NC
Benzo(k)fluoranthene	<330	UJ	NC	<340	UJ	NC	<340	UJ	NC
Chrysene	530	J	-43%	260	J	NC	<340	U	NC
Dibenzo(a,h)anthracene	<330	UJ	NC	<340	UJ	NC	<340	U	NC
Indeno(1,2,3-cd)pyrene	100	J	NC	<340	UJ	NC	<340	U	NC
Fluoranthene	780		-28%	290	J	NC	36	J	64%
Fluorene	98	J	NC	<340	U	NC	<340	U	NC
Naphthalene	82	J	-52%	<340	U	NC	<340	U	NC
Phenanthrene	410		-28%	280	J	NC	<340	U	NC
Pyrene	<330	UJ	NC	280	J	53%	<340	U	NC

Notes:

% Removal is calculated for each

PCBs - Polychlorinated biphenyls

PAHs - Polynuclear aromatic hydr

ug/kg - micrograms per kilogram

mg/kg - milligrams per kilogram

N/A - Not Analyzed

NC - % Removal not calculated fo

Description of Data Qualifiers

J - Estimated

U - Undetected

UJ - Undetected but estimated

R - Rejected

TABLE 11
TEST AREA I - SUMMARY OF PILOT TEST ANALYTICAL DATA
BUILDING 105 - FORMER CHARLESTOWN NAVY YARD
BOSTON, MASSACHUSETTS

	Baseline Samples					
Sample #:	**231 (0-1 cm)**		**232 (1-5 cm)**		**233 (5-10 cm)**	
Decontamination Method:	**Baseline**		**Baseline**		**Baseline**	
Analyte	**Concentration**		**Concentration**		**Concentration**	
PCB (ug/kg)						
Aroclor 1016	<20,000	U	<5,000	U	<400	U
Aroclor 1221	<20,000	U	<5,000	U	<400	U
Aroclor 1232	<20,000	U	<5,000	U	<400	U
Aroclor 1242	<20,000	U	<5,000	U	<400	U
Aroclor 1248	<20,000	U	<5,000	U	<400	U
Aroclor 1254	98,000		30,000		6,300	
Aroclor 1260	<20,000	U	<5,000	U	<400	U
Metals (mg/kg)						
Antimony	3.3	J	N/A		N/A	
Arsenic	7		N/A		N/A	
Barium	66.6		N/A		N/A	
Beryllium	0.41	U	N/A		N/A	
Cadmium	1.10		N/A		N/A	
Lead	533		N/A		N/A	
Nickel	22.9		N/A		N/A	
Silver	0.06	J	N/A		N/A	
PAH (ug/kg)						
Acenaphthene	<5,000	UJ	N/A		N/A	
Acenaphthylene	<5,000	UJ	N/A		N/A	
Anthracene	<5,000	U	N/A		N/A	
Benzo(a)anthracene	<5,000	U	N/A		N/A	
Benzo(a)pyrene	<5,000	U	N/A		N/A	
Benzo(b)fluoranthene	380	J	N/A		N/A	
Benzo(ghi)perylene	<5,000	UJ	N/A		N/A	
Benzo(k)fluoranthene	<5,000	U	N/A		N/A	
Chrysene	1,100	J	N/A		N/A	
Dibenzo(a,h)anthracene	<5,000	UJ	N/A		N/A	
Indeno(1,2,3-cd)pyrene	<5,000	UJ	N/A		N/A	
Fluoranthene	2,200	J	N/A		N/A	
Fluorene	<5,000	UJ	N/A		N/A	
Naphthalene	<5,000	U	N/A		N/A	
Phenanthrene	5,600		N/A		N/A	
Pyrene	640	J	N/A		N/A	

Notes:

% Removal is calculated for each iteration and is not cumulative from the baseline concentration

PCBs - Polychlorinated biphenyls

PAHs - Polynuclear aromatic hydrocarbons

ug/kg - micrograms per kilogram

mg/kg - milligrams per kilogram

N/A - Not Analyzed

NC - % Removal not calculated for results below detection limit

Description of Data Qualifiers

J - Estimated

U - Undetected

UJ - Undetected but estimated

R - Rejected

TABLE 11 - CONTINUED
TEST AREA I - SUMMARY OF PILOT TEST ANALYTICAL RESULTS
BUILDING 105 FORMER CHARLESTOWN NAVY YARD
BOSTON, MASSACHUSETTS

	Samples Collected After 1st Iteration					
Sample #:	276 (0-1 cm)		277 (1-5 cm)		278 (5-10 cm)	
Decontamination Method:	1st TechXtract®		1st TechXtract®		1st TechXtract®	
Analyte	**Concentration**	**% Removal**	**Concentration**	**% Removal**	**Concentration**	**% Removal**
PCB (ug/kg)						
Aroclor 1016	<3,400 U	NC	<1300 U	NC	<330 U	NC
Aroclor 1221	<3,400 U	NC	<1300 U	NC	<330 U	NC
Aroclor 1232	<3,400 U	NC	<1300 U	NC	<330 U	NC
Aroclor 1242	<3,400 U	NC	<1300 U	NC	<330 U	NC
Aroclor 1248	<3,400 U	NC	<1300 U	NC	<330 U	NC
Aroclor 1254	62,000	37%	25,000	17%	5,900	6%
Aroclor 1260	<3,400 U	NC	<1300 U	NC	<330 U	NC
Metals (mg/kg)						
Antimony	0.96 J	71%	0.35 J	NC	0.29 J	NC
Arsenic	6	19%	3.6	NC	2.9	NC
Barium	59.1	11%	72.8	NC	50.8	NC
Beryllium	0.49 J	20%	0.51	NC	0.46 J	NC
Cadmium	0.19 J	83%	<0.51	NC	0.14 J	NC
Lead	42.9	92%	8.6	NC	4.8	NC
Nickel	14.9 J	35%	7.2 J	NC	8.6 J	NC
Silver	<1	NC	<1	NC	<1	NC
PAH (ug/kg)						
Acenaphthene	<3,400 U	NC	<340 U	NC	<330 U	NC
Acenaphthylene	<3,400 U	NC	<340 U	NC	<330 U	NC
Anthracene	<3,400 UJ	NC	<340 U	NC	<330 U	NC
Benzo(a)anthracene	<3,400 U	NC	<340 UJ	NC	<330 UJ	NC
Benzo(a)pyrene	<3,400 UJ	NC	<340 R	NC	<330 R	NC
Benzo(b)fluoranthene	<3,400 UJ	NC	<340 R	NC	<330 R	NC
Benzo(ghi)perylene	<3,400 UJ	NC	<340 R	NC	<330 R	NC
Benzo(k)fluoranthene	<3,400 UJ	NC	<340 R	NC	<330 R	NC
Chrysene	<3,400 U	NC	130 J	NC	<330 UJ	NC
Dibenzo(a,h)anthracene	<3,400 UJ	NC	<340 R	NC	<330 R	NC
Indeno(1,2,3-cd)pyrene	<3,400 UJ	NC	<340 R	NC	<330 R	NC
Fluoranthene	<3,400 UJ	NC	<340 U	NC	<330 U	NC
Fluorene	<3,400 U	NC	<340 U	NC	<330 U	NC
Naphthalene	<3,400 U	NC	<340 U	NC	<330 UJ	NC
Phenanthrene	1,500 J	73%	<340 U	NC	<330 U	NC
Pyrene	<3,400 U	NC	<340 UJ	NC	<330 UJ	NC

Notes:

% Removal is calculated for each iteration and is not cumulative from the baseline concentration

PCBs - Polychlorinated biphenyls

PAHs - Polynuclear aromatic hydrocarbons

ug/kg - micrograms per kilogram

mg/kg - milligrams per kilogram

N/A - Not Analyzed

NC - % Removal not calculated for results below detection limit

Description of Data Qualifiers

J - Estimated

U - Undetected

UJ - Undetected but estimated

R - Rejected

TABLE 11 - CONTINUED
TEST AREA I - SUMMARY OF PILOT TEST ANALYTICAL RESULTS
BUILDING 105 FORMER CHARLESTOWN NAVY YARD
BOSTON, MASSACHUSETTS

	Samples Collected After 2nd Iteration					
Sample #:	282 (0-1 cm)		283 (1-5 cm)		284 (5-10 cm)	
Decontamination Method:	2nd TechXtract®		2nd TechXtract®		2nd TechXtract®	
Analyte	Concentration	% Removal	Concentration	% Removal	Concentration	% Removal
PCB (ug/kg)						
Aroclor 1016	<170,000 U	NC	<3,400 U	NC	<3,400 U	NC
Aroclor 1221	<170,000 U	NC	<3,400 U	NC	<3,400 U	NC
Aroclor 1232	<170,000 U	NC	<3,400 U	NC	<3,400 U	NC
Aroclor 1242	<170,000 U	NC	<3,400 U	NC	<3,400 U	NC
Aroclor 1248	<170,000 U	NC	<3,400 U	NC	<3,400 U	NC
Aroclor 1254	1,900,000	-2965%	59,000	-136%	39,000	-561%
Aroclor 1260	<170,000 U	NC	<3,400 U	NC	<3,400 U	NC
Metals (mg/kg)						
Antimony	3.1 J	-223%	0.77 J	-120%	1.1 J	-279%
Arsenic	2.6	57%	2.5	31%	3.7	-28%
Barium	37.6	36%	35.9	51%	40.5	20%
Beryllium	0.47 J	4%	0.5 J	2%	0.57	-24%
Cadmium	2.6	-1268%	<0.51	NC	<0.51	NC
Lead	382	-790%	20	-133%	13.4	-179%
Nickel	37.4 J	-151%	11.7 J	-63%	16.9	-97%
Silver	<1	NC	<1	NC	<1	NC
PAH (ug/kg)						
Acenaphthene	<3,400 UJ	NC	<340 UJ	NC	<340 R	NC
Acenaphthylene	<3,400 UJ	NC	<340 UJ	NC	<340 R	NC
Anthracene	<3,400 U	NC	<340 UJ	NC	4200 J	NC
Benzo(a)anthracene	<3,400 U	NC	<340 UJ	NC	<340 R	NC
Benzo(a)pyrene	<3,400 U	NC	<340 R	NC	<340 R	NC
Benzo(b)fluoranthene	440 J	NC	<340 R	NC	72 U	NC
Benzo(ghi)perylene	<3,400 U	NC	<340 R	NC	<340 R	NC
Benzo(k)fluoranthene	<3,400 UJ	NC	<340 R	NC	<340 R	NC
Chrysene	730 J	NC	<340 UJ	NC	170 J	NC
Dibenzo(a,h)anthracene	<3,400 U	NC	<340 R	NC	<340 R	NC
Indeno(1,2,3-cd)pyrene	<3,400 UJ	NC	<340 R	NC	<340 R	NC
Fluoranthene	<3,400 U	NC	<340 UJ	NC	<340 R	NC
Fluorene	<3,400 UJ	NC	<340 UJ	NC	<340 R	NC
Naphthalene	950 J	NC	<340 UJ	NC	<340 R	NC
Phenanthrene	4,500	-200%	<340 UJ	NC	<340 R	NC
Pyrene	330 J	NC	<340 UJ	NC	160 J	NC

Notes:

% Removal is calculated for each

PCBs - Polychlorinated biphenyls

PAHs - Polynuclear aromatic hydr

ug/kg - micrograms per kilogram

mg/kg - milligrams per kilogram

N/A - Not Analyzed

NC - % Removal not calculated fo

Description of Data Qualifiers

J - Estimated

U - Undetected

UJ - Undetected but estimated

R - Rejected

TABLE 11 - CONTINUED
TEST AREA I - SUMMARY OF PILOT TEST ANALYTICAL RESULTS
BUILDING 105 FORMER CHARLESTOWN NAVY YARD
BOSTON, MASSACHUSETTS

	Samples Collected After 3rd Iteration					
Sample #:	288 (0-1 cm)		289 (1-5 cm)		290 (5-10 cm)	
Decontamination Method:	3rd TechXtract®		3rd TechXtract®		3rd TechXtract®	
Analyte	Concentration	% Removal	Concentration	% Removal	Concentration	% Removal
PCB (ug/kg)						
Aroclor 1016	<6,800 U	NC	<1,700 U	NC	<340 U	NC
Aroclor 1221	<6,800 U	NC	<1,700 U	NC	<340 U	NC
Aroclor 1232	<6,800 U	NC	<1,700 U	NC	<340 U	NC
Aroclor 1242	<6,800 U	NC	<1,700 U	NC	<340 U	NC
Aroclor 1248	<6,800 U	NC	<1,700 U	NC	<340 U	NC
Aroclor 1254	100,000	95%	18,000	69%	5,500	86%
Aroclor 1260	<6,800 U	NC	<1,700 U	NC	<340 U	NC
Metals (mg/kg)						
Antimony	0.88 J	72%	0.35 J	55%	0.32 J	71%
Arsenic	5.6	-115%	3.8	-52%	3.1	16%
Barium	78.1	-108%	49.2	-37%	160 J	-295%
Beryllium	0.52	-11%	0.6	-20%	0.5 J	12%
Cadmium	0.38	85%	<0.51	NC	0.23	NC
Lead	24.8	94%	6.8	66%	9.1	32%
Nickel	10.7	71%	6.5	44%	6.9	59%
Silver	<1	NC	<1	NC	<1	NC
PAH (ug/kg)						
Acenaphthene	<3,400 UJ	NC	<340 R	NC	<340 R	NC
Acenaphthylene	<3,400 UJ	NC	<340 R	NC	<340 R	NC
Anthracene	<3,400 UJ	NC	<340 R	NC	<340 R	NC
Benzo(a)anthracene	<3,400 UJ	NC	<340 R	NC	<340 R	NC
Benzo(a)pyrene	<3,400 UJ	NC	81 J	NC	<340 R	NC
Benzo(b)fluoranthene	590 J	-34%	120 J	NC	150 J	-108%
Benzo(ghi)perylene	<3,400 UJ	NC	<340 R	NC	<340 R	NC
Benzo(k)fluoranthene	<3,400 UJ	NC	<340 R	NC	<340 R	NC
Chrysene	640 J	12%	<340 R	NC	<340 R	NC
Dibenzo(a,h)anthracene	<3,400 UJ	NC	<340 R	NC	<340 R	NC
Indeno(1,2,3-cd)pyrene	<3,400 UJ	NC	<340 R	NC	<340 R	NC
Fluoranthene	<3,400 UJ	NC	<340 R	NC	<340 R	NC
Fluorene	<3,400 UJ	NC	<340 R	NC	<340 R	NC
Naphthalene	<3,400 UJ	NC	<340 R	NC	<340 R	NC
Phenanthrene	920 J	80%	<340 R	NC	<340 R	NC
Pyrene	<3,400 UJ	NC	<340 R	NC	<340 R	NC

Notes:

% Removal is calculated for each

PCBs - Polychlorinated biphenyls

PAHs - Polynuclear aromatic hydr

ug/kg - micrograms per kilogram

mg/kg - milligrams per kilogram

N/A - Not Analyzed

NC - % Removal not calculated fo

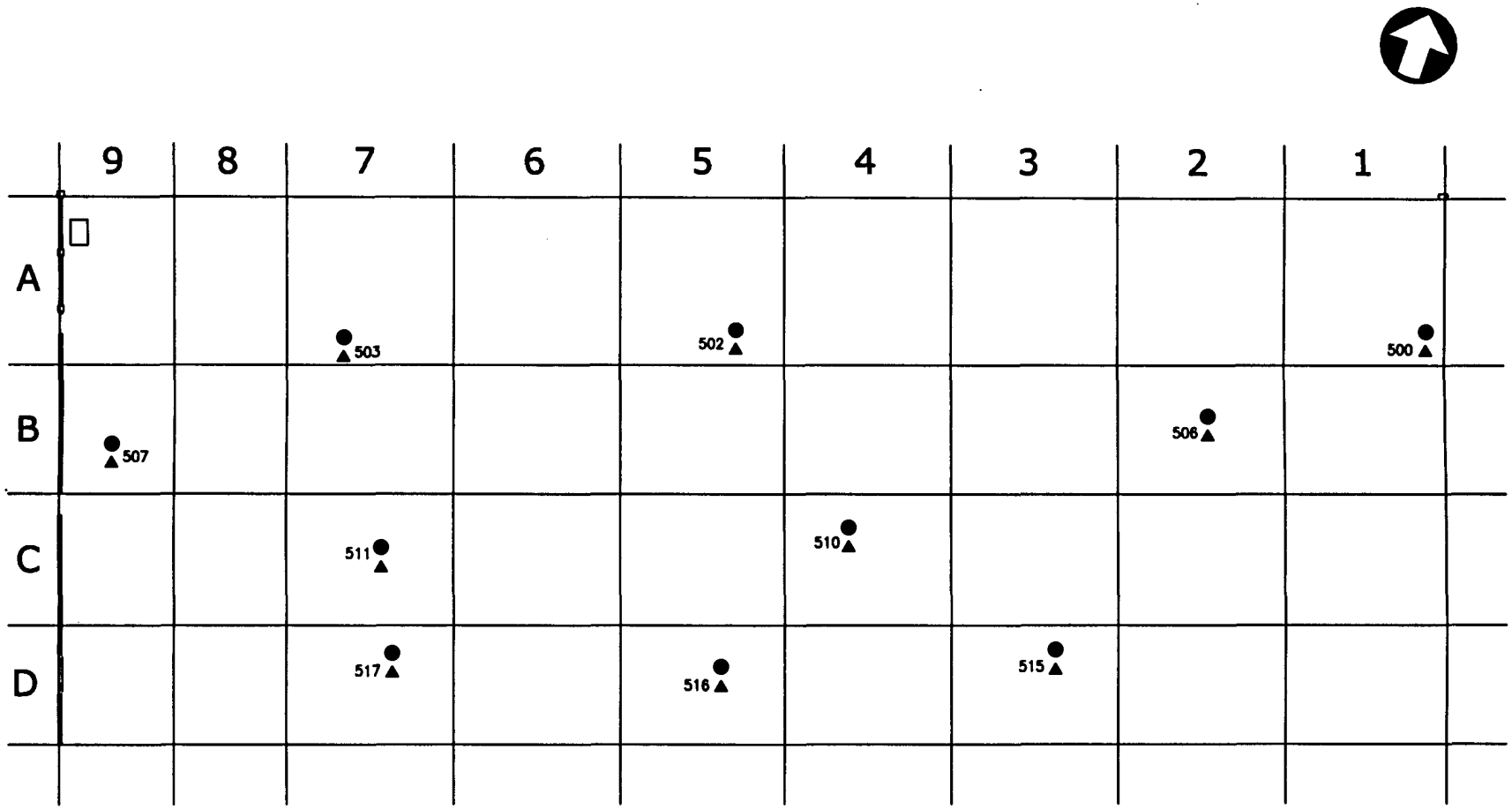
Description of Data Qualifiers

J - Estimated

U - Undetected

UJ - Undetected but estimated

R - Rejected



SCALE: 1"=40' (APPROX.)

NOTES:
1. POSITION: PLAN VIEW OF MAIN FORGE SHOP
2. SAMPLE LOCATIONS BASED UPON FIELD NOTES BY STONE & WEBSTER
3. PHASE I SAMPLES COLLECTED IN OCTOBER 1998
4. ALPHA-NUMERIC GRID DESIGNATION IS BASED UPON LABEL SYSTEM IDENTIFIED IN FIGURE 2

LEGEND:
● WIPE LOCATIONS
▲ BULK LOCATIONS
515 SAMPLE DESIGNATION NUMBER

FIGURE 5

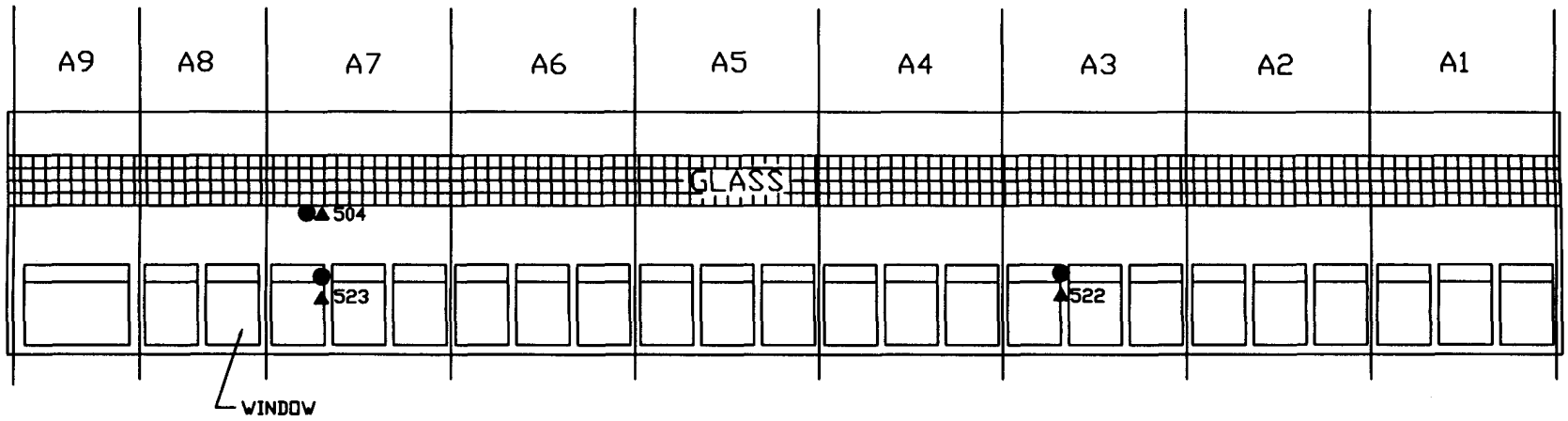
CHARLESTOWN BUILDING #105
PHASE I-SAMPLE LOCATIONS
CEILING/VERTICAL ROOF MATERIALS

BUILDING 105 SITE REMEDIATION
FORMER CHARLESTOWN NAVY YARD

STONE & WEBSTER BOSTON, MASS. | U.S. ARMY CORPS OF ENGINEERS

DATE: 6/26/00 | CKD' BY: ENH | REVISION: 1

[ENV/BOSFS02]\HAZWASTE\USACE\BLDG_105\DWGMOTY\SAMPLE-LOCATION\PHASE1\PHI-CEILROOF.DWG



SCALE: 1"=40' (APPROX.)

NOTES:

1. POSITION: INTERIOR NORTH WALL OF MAIN FORGE SHOP
2. SAMPLE LOCATIONS BASED UPON FIELD NOTES BY STONE & WEBSTER
3. PHASE I SAMPLES COLLECTED IN OCTOBER 1998
4. ALPHA-NUMERIC GRID DESIGNATION IS BASED UPON LABEL SYSTEM IDENTIFIED IN FIGURE 2

LEGEND:

● WIPE LOCATIONS

▲ BULK LOCATIONS

522 SAMPLE DESIGNATION NUMBER

FIGURE 6

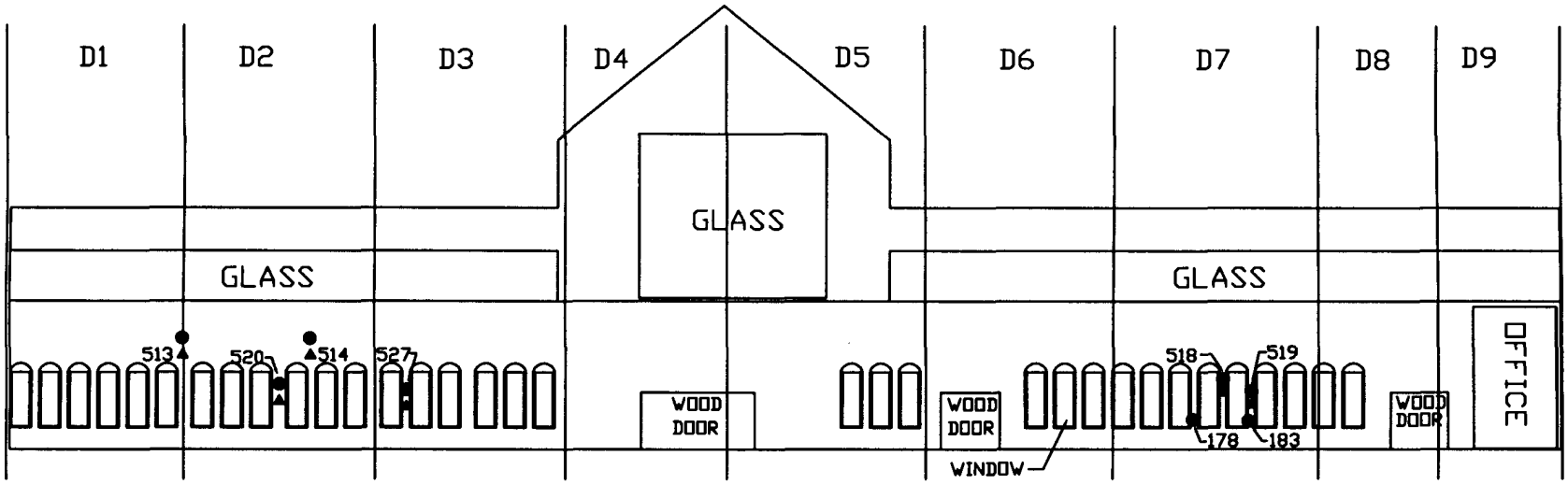
CHARLESTOWN BUILDING #105
PHASE I-SAMPLE LOCATIONS
NORTH WALL MATERIALS

BUILDING 105 SITE REMEDIATION
FORMER CHARLESTOWN NAVY YARD

STONE & WEBSTER BOSTON, MASS. | U.S. ARMY CORPS OF ENGINEERS

DATE: 6/28/00	CHK'D BY: ENH	REVISION: 1

[ENV/BOS5302]\HAZWASTE\USACE\BLDG_105\DWG&DTY\SAMPLE-LOCATION\PHASE1\PH-NORTHWALL.DWG



SCALE: 1"=40' (APPROX.)

NOTES:
1. POSITION: INTERIOR SOUTH WALL OF MAIN FORGE SHOP
2. SAMPLE LOCATIONS BASED UPON FIELD NOTES BY STONE & WEBSTER
3. PHASE II SAMPLES COLLECTED IN OCTOBER 1998
4. ALPHA-NUMERIC GRID DESIGNATION IS BASED UPON LABEL SYSTEM IDENTIFIED IN FIGURE 2

LEGEND:
● WIPE LOCATIONS
▲ BULK LOCATIONS
527 SAMPLE DESIGNATION NUMBER

FIGURE 7

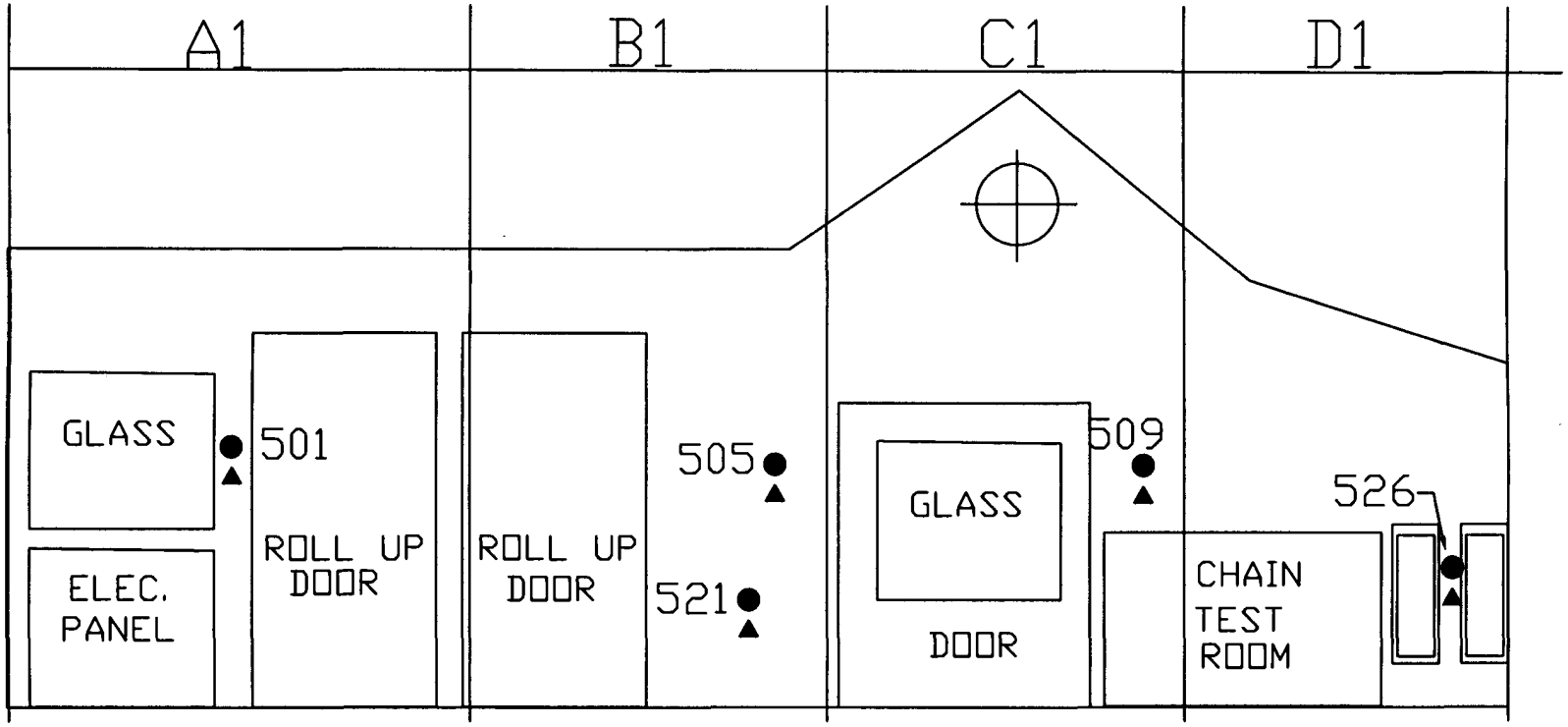
CHARLESTOWN BUILDING #105
SAMPLE LOCATIONS
SOUTH WALL MATERIALS

BUILDING 105 SITE REMEDIATION
FORMER CHARLESTOWN NAVY YARD

STONE & WEBSTER BOSTON, MASS. | U.S. ARMY CORPS OF ENGINEERS

DATE: 6/26/00 | CKD' BY: ENH | REVISION: 1

[ENV/BOSFS02]\HAZWASTE\USACE\BLDG_105\DWG&QTY\SAMPLE-LOCATION\PHI-SOUTHWALL.DWG



SCALE: 1"=75' (APPROX.)

NOTES:
1. POSITION: INTERIOR EAST WALL OF MAIN FORGE SHOP
2. SAMPLE LOCATIONS BASED UPON FIELD NOTES BY STONE & WEBSTER
3. PHASE II SAMPLES COLLECTED IN OCTOBER 1998
4. ALPHA-NUMERIC GRID DESIGNATION IS BASED UPON LABEL SYSTEM IDENTIFIED IN FIGURE 2

LEGEND:
● WIPE LOCATIONS
▲ BULK LOCATIONS
501 SAMPLE DESIGNATION NUMBER

FIGURE 8

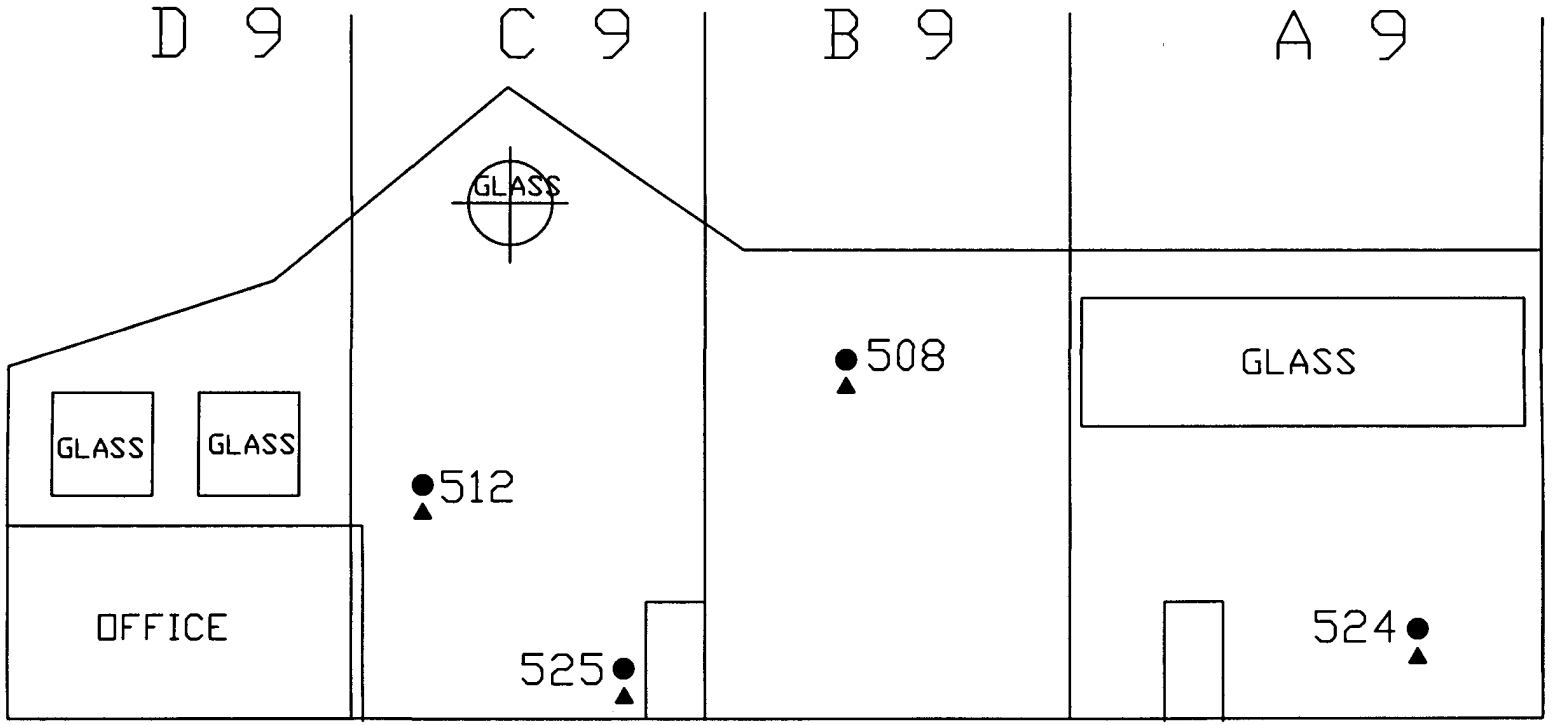
CHARLESTOWN BUILDING #105
PHASE I-SAMPLE LOCATIONS
EAST WALL MATERIALS

BUILDING 105 SITE REMEDIATION
FORMER CHARLESTOWN NAVY YARD

STONE & WEBSTER BOSTON, MASS. | U.S. ARMY CORPS OF ENGINEERS

DATE: 6/26/00 | CKD' BY: ENH | REVISION: 1

[ENV/BOSFS02]\HAZWASTE\USACE\BLDG_105\DWG&QTY\SAMPLE-LOCATION\PHASE1\PHI-EASTWALL.DWG



SCALE: 1"=75' (APPROX.)

NOTES:
1. POSITION: INTERIOR WEST WALL OF MAIN FORGE SHOP
2. SAMPLE LOCATIONS BASED UPON FIELD NOTES BY STONE & WEBSTER
3. PHASE II SAMPLES COLLECTED IN OCTOBER 1998
4. ALPHA-NUMERIC GRID DESIGNATION IS BASED UPON LABEL SYSTEM IDENTIFIED IN FIGURE 2

LEGEND:
- ● WIPE LOCATIONS
- ▲ BULK LOCATIONS
- 508 SAMPLE DESIGNATION NUMBER

FIGURE 9

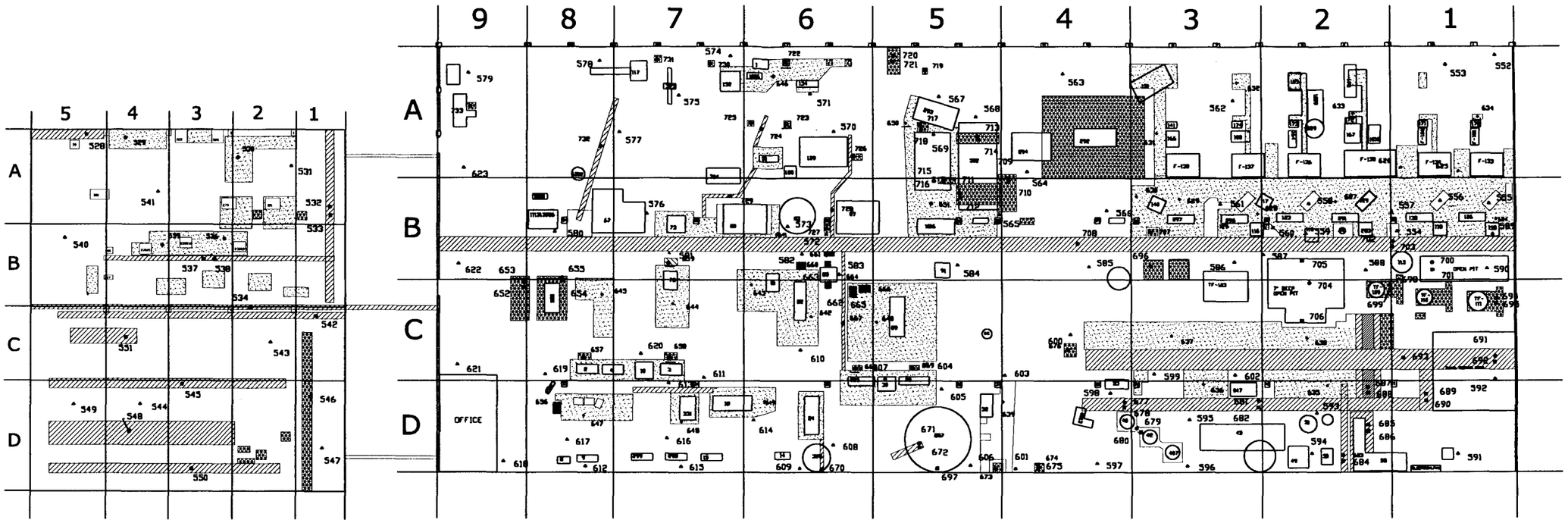
CHARLESTOWN BUILDING #105
PHASE I-SAMPLE LOCATIONS
WEST WALL MATERIALS

BUILDING 105 SITE REMEDIATION
FORMER CHARLESTOWN NAVY YARD

STONE & WEBSTER BOSTON, MASS. | U.S. ARMY CORPS OF ENGINEERS

DATE: 6/26/00	CKD' BY: ENH	REVISION: 1

[ENV/BOSFS02]\HAZWASTE\USACE\BLDG_105\DWG\ACTIVITY\SAMPLE-LOCATION\PCBLEVELS\PH-WESTWALL.DWG



LEGEND

- TRENCH
- STEEL PLATE COVERED TRENCH
- SOIL FLOOR
- CONCRETE FLOOR
- 616 SAMPLE DESIGNATION NUMBER
- ▲ CONCRETE FLOOR
- ● CONCRETE TRENCH FLOOR
- ■ CONCRETE TRENCH WALL
- ◆ SOIL FLOOR

SCALE: 1"=35' (APPROX.)

NOTES:

1. THE LOCATIONS OF VAULTS, TRENCHES AND PITS AND THE CLASSIFICATION OF FLOORING TYPE ARE APPROXIMATE. THE INFORMATION SHOWN IS BASED UPON BUILDING DRAWINGS THAT WERE MADE AVAILABLE BY THE NATIONAL PARK SERVICE (NPS) AND OBSERVATIONS MADE BY THE CORPS OF ENGINEERS AND STONE & WEBSTER.
2. INVENTORY OF PROCESS EQUIPMENT PROVIDED BY THE NPS.
3. SAMPLE LOCATIONS BASED UPON FIELD NOTES BY STONE & WEBSTER
4. PHASE I SAMPLES COLLECTED IN OCTOBER 1998
5. ALPHA-NUMERIC GRID DESIGNATION IS BASED UPON LABEL SYSTEM IDENTIFIED IN FIGURE 2

FIGURE 10

CHARLESTOWN BUILDING #105
PHASE I-SAMPLE LOCATIONS

CONCRETE FLOOR/TRENCHES/EARTHEN FLOOR

BUILDING 105 SITE REMEDIATION
FORMER CHARLESTOWN NAVY YARD

STONE & WEBSTER BOSTON, MASS. | U.S. ARMY CORPS OF ENGINEERS

DATE: 7/29/00	CKD' BY: ENH	REVISION: 1

[ENV/BOSFS02]\HAZWASTE\USACE\BLDG_105\DWG&QTY\SAMPLE-LOCATION\PHASE1\PHI-BULK.DWG

Table 10
Phase I Polychlorinated Biphenyls (USEPA Method 8082) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID											Aroclor 1016				Aroclor 1221				Aroclor 1232				Aroclor 1242				Aroclor 1248				Aroclor 1254				Aroclor 1260				Total PCBs
Number	Site	Building	Room Location	Task	Material	Location in Room	Sample Type	Depth (CM)	Quality Control	>8' <8'	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result
Non-Wall Wipe Samples >8 Feet - Main Forge Shop (µg/wipe)																																					
500	CH	105	MF	CH	CO	CE	WI	NA		>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		1.1	1	U		ND	1	U		1.1
502	CH	105	MF	CH	CO	CE	WI	NA		>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND
503	CH	105	MF	CH	CO	CE	WI	NA		>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND
506	CH	105	MF	CH	WD	CE	WI	NA		>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND
507	CH	105	MF	CH	WD	CE	WI	NA		>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND
510	CH	105	MF	CH	WD	CE	WI	NA		>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND
511	CH	105	MF	CH	WD	CE	WI	NA		>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND
511	CH	105	MF	CH	WD	CE	WI	NA	DP	>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND
515	CH	105	MF	CH	WD	CE	WI	NA		>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND
516	CH	105	MF	CH	WD	CE	WI	NA		>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		5.2	1	U		ND	1	U		5.2
517	CH	105	MF	CH	WD	CE	WI	NA		>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		1.5	1	U		ND	1	U		1.5
Wall Wipe Samples >8 Feet - Main Forge Shop (µg/wipe)																																					
501	CH	105	MF	CH	ACM	WA	WI	NA		>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND
504	CH	105	MF	CH	ACM	WA	WI	NA		>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND
505	CH	105	MF	CH	BR	WA	WI	NA		>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		1.3	1	U		ND	1	U		1.3
508	CH	105	MF	CH	BR	WA	WI	NA		>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND
509	CH	105	MF	CH	BR	WA	WI	NA		>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND
512	CH	105	MF	CH	BR	WA	WI	NA		>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND
513	CH	105	MF	CH	BR	WA	WI	NA		>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		1.2	1	U		ND	1	U		1.2
514	CH	105	MF	CH	WD	WA	WI	NA		>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		1.3	1	U		ND	1	U		1.3
518	CH	105	MF	CH	BR	WA	WI	NA		>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND
519	CH	105	MF	CH	WD	WA	WI	NA		>8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND
Wall Wipe Samples <8 Feet - Main Forge Shop (µg/wipe)																																					
520	CH	105	MF	CH	BR	WA	WI	NA		<8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		1.5	1	U		ND	1	U		1.5
520	CH	105	MF	CH	BR	WA	WI	NA	DP	<8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND
521	CH	105	MF	CH	BR	WA	WI	NA		<8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		1.2	1	U		ND	1	U		1.2
522	CH	105	MF	CH	BR	WA	WI	NA		<8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND
523	CH	105	MF	CH	BR	WA	WI	NA		<8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		1.2	1	U		ND	1	U		1.2
524	CH	105	MF	CH	BR	WA	WI	NA		<8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND
525	CH	105	MF	CH	BR	WA	WI	NA		<8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND
526	CH	105	MF	CH	WD	WA	WI	NA		<8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		2.8	1	U		ND	1	U		2.8
527	CH	105	MF	CH	WD	WA	WI	NA		<8'	ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND	1	U		ND
Bulk Concrete Samples - Main Forge Shop Floor (mg/kg)																																					
552	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.067	U		ND	0.067	U		ND	0.067	U		ND	0.067	U		ND	0.067	U		1	0.067			0.85	0.067			1.85
553	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		2.3	0.17			1.1	0.17			3.4
554	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		1.6	0.17			ND	0.17	U		1.6
555	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		1.5	0.17			ND	0.17	U		1.5
556	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.034	U	UJ	ND	0.034	U	UJ	ND	0.034	U	UJ	0.33	0.034		J	ND	0.034	U	UJ	0.18	0.034		J	0.11	0.034		J	0.62
557	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	1.7	U		ND	1.7	U		ND	1.7	U		ND	1.7	U		ND	1.7	U		3.9	1.7			ND	1.7	U		3.9
558	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.17	U	UJ	ND	0.17	U	UJ	ND	0.17	U	UJ	ND	0.17	U	UJ	ND	0.17	U	UJ	2	0.17		J	ND	0.17	U	UJ	2
559	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		5.4	0.67			ND	0.67	U		5.4
560	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		1.1	0.17			ND	0.17	U		1.1
561	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	3.3	U		ND	3.3	U		ND	3.3	U		ND	3.3	U		ND	3.3	U		28	3.3			ND	3.3	U		28
562	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.067	U		ND	0.067	U		ND	0.067	U		ND	0.067	U		ND	0.067	U		0.71	0.067			ND	0.067	U		0.71
563	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		5.3	0.33			2.7	0.33			8
564	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		5.7	0.67			ND	0.67	U		5.7

Table 10
Phase I Polychlorinated Biphenyls (USEPA Method 8082) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID											Aroclor 1016				Aroclor 1221				Aroclor 1232				Aroclor 1242				Aroclor 1248				Aroclor 1254				Aroclor 1260				Total PCBs
Number	Site	Building	Room Location	Task	Material	Location in Room	Sample Type	Depth (CM)	Quality Control	>8' <8'	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result
Bulk Concrete Samples - Main Forge Shop Floor (mg/kg) - Continued																																					
565	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		5.9	0.67			ND	0.67	U		5.9
566	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.033	U	UJ	ND	0.033	U	UJ	ND	0.033	U	UJ	ND	0.033	U	UJ	ND	0.033	U	UJ	0.37	0.033		J	ND	0.033	U	UJ	0.37
567	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.067	U		ND	0.067	U		ND	0.067	U		ND	0.067	U		ND	0.067	U		1	0.067			0.57	0.067			1.57
568	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		3.8	0.33			ND	0.33	U		3.8
569	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		1.4	0.17			ND	0.17	U		1.4
570	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.067	U		ND	0.067	U		ND	0.067	U		ND	0.067	U		ND	0.067	U		0.52	0.067			0.25	0.067			0.77
571	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.066	U		ND	0.066	U		ND	0.066	U		ND	0.066	U		ND	0.066	U		0.69	0.066			ND	0.066	U		0.69
572	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.068	U		ND	0.068	U		ND	0.068	U		ND	0.068	U		ND	0.068	U		0.74	0.068			ND	0.068	U		0.74
573	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		0.24	0.034			ND	0.034	U		0.24
574	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	130	U		ND	130	U		ND	130	U		ND	130	U		ND	130	U		1700	130			ND	130	U		1700
575	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	34	U		ND	34	U		ND	34	U		ND	34	U		ND	34	U		190	34			ND	34	U		190
576	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	3.4	U		ND	3.4	U		ND	3.4	U		ND	3.4	U		ND	3.4	U		13	3.4			ND	3.4	U		13
577	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	3.3	U		ND	3.3	U		ND	3.3	U		ND	3.3	U		ND	3.3	U		27	3.3			ND	3.3	U		27
578	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	33	U		ND	33	U		ND	33	U		ND	33	U		ND	33	U		140	33			ND	33	U		140
579	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		3.7	0.34			ND	0.34	U		3.7
580	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		4	0.34			ND	0.34	U		4
581	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	1.7	U		ND	1.7	U		ND	1.7	U		ND	1.7	U		ND	1.7	U		12	1.7			ND	1.7	U		12
582	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.034	U	UJ	ND	0.034	U	UJ	ND	0.034	U	UJ	ND	0.034	U	UJ	ND	0.034	U	UJ	0.51	0.034		J	ND	0.034	U	UJ	0.51
583	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		7.6	0.67			ND	0.67	U		7.6
584	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		6.5	0.67			ND	0.67	U		6.5
585	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	13	U		ND	13	U		ND	13	U		ND	13	U		ND	13	U		190	13			ND	13	U		190
586	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	3.3	U		ND	3.3	U		ND	3.3	U		ND	3.3	U		ND	3.3	U		20	3.3			ND	3.3	U		20
587	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		2.4	0.33			ND	0.33	U		2.4
588	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	1.7	U		ND	1.7	U		ND	1.7	U		ND	1.7	U		ND	1.7	U		9.7	1.7			ND	1.7	U		9.7
589	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	3.3	U		ND	3.3	U		ND	3.3	U		ND	3.3	U		ND	3.3	U		33	3.3			ND	3.3	U		33
590	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	1.7	U		ND	1.7	U		ND	1.7	U		ND	1.7	U		ND	1.7	U		12	1.7			ND	1.7	U		12
591	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		3.9	0.33			ND	0.33	U		3.9
592	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		1	0.17			ND	0.17	U		1
593	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	3.4	U		ND	3.4	U		ND	3.4	U		ND	3.4	U		ND	3.4	U		15	3.4			ND	3.4	U		15
594	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		1.9	0.17			ND	0.17	U		1.9
595	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	1.7	U		ND	1.7	U		ND	1.7	U		ND	1.7	U		ND	1.7	U		12	1.7			ND	1.7	U		12
596	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.14	U		ND	0.14	U		ND	0.14	U		ND	0.14	U		ND	0.14	U		1.5	0.14		J	ND	0.14	U		1.5
597	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		5.7	0.67			ND	0.67	U		5.7
598	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		3.8	0.33			ND	0.33	U		3.8
599	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	1.7	U		ND	1.7	U		ND	1.7	U		ND	1.7	U		ND	1.7	U		12	1.7			ND	1.7	U		12
600	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	3.3	U		ND	3.3	U		ND	3.3	U		ND	3.3	U		ND	3.3	U		24	3.3			ND	3.3	U		24
601	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	1.6	U		ND	1.6	U		ND	1.6	U		ND	1.6	U		ND	1.6	U		9.2	1.6			ND	1.6	U		9.2
602	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		4.7	0.67			ND	0.67	U		4.7
603	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.66	U		ND	0.66	U		ND	0.66	U		ND	0.66	U		ND	0.66	U		8.4	0.66			ND	0.66	U		8.4
604	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	3.3	U		ND	3.3	U		ND	3.3	U		ND	3.3	U		ND	3.3	U		15	3.3			ND	3.3	U		15
605	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		7.3	0.67			ND	0.67	U		7.3
606	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.18	U		ND	0.18	U		ND	0.18	U		ND	0.18	U		ND	0.18	U		1.9	0.18			1.3	0.18			3.2
607	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		8.3	0.67			ND	0.67	U		8.3
608	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		3.1	0.33			2.1	0.33			5.2
609	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		3.9	0.33			2.2	0.33			6.1
610	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	1.7	U		ND	1.7	U		ND	1.7	U		ND	1.7	U		ND	1.7	U		16	1.7			ND	1.7	U		16

Table 10
Phase I Polychlorinated Biphenyls (USEPA Method 8082) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID											Aroclor 1016				Aroclor 1221				Aroclor 1232				Aroclor 1242				Aroclor 1248				Aroclor 1254				Aroclor 1260				Total PCBs
Number	Site	Building	Room Location	Task	Material	Location in Room	Sample Type	Depth (CM)	Quality Control	>8' <8'	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result
Bulk Concrete Samples - Main Forge Shop Floor (mg/kg) - Continued																																					
611	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	3.3	U		ND	3.3	U		ND	3.3	U		ND	3.3	U		ND	3.3	U		14	3.3			ND	3.3	U		14
612	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		7.9	0.67			4.2	0.67			12.1
613	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.66	U		ND	0.66	U		ND	0.66	U		ND	0.66	U		ND	0.66	U		7.4	0.66			ND	0.66	U		7.4
614	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		0.1	0.034			ND	0.034	U		0.1
615	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		2.5	0.17			1.2	0.17			3.7
616	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.13	U		ND	0.13	U		ND	0.13	U		ND	0.13	U		ND	0.13	U		1.3	0.13		J	0.77	0.13		J	2.07
617	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		5.2	0.33		J	2.7	0.33		J	7.9
618	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.066	U		ND	0.066	U		ND	0.066	U		ND	0.066	U		ND	0.066	U		ND	0.066	U		0.62	0.066		J	0.62
619	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.27	U		ND	0.27	U		ND	0.27	U		ND	0.27	U		ND	0.27	U		3	0.27			ND	0.27	U		3
620	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.66	U		ND	0.66	U		ND	0.66	U		ND	0.66	U		ND	0.66	U		5.1	0.66			ND	0.66	U		5.1
621	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.43	U		ND	0.43	U		ND	0.43	U		ND	0.43	U		ND	0.43	U		5.3	0.43			ND	0.43	U		5.3
622	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	3.3	U		ND	3.3	U		ND	3.3	U		ND	3.3	U		ND	3.3	U		13	3.3			ND	3.3	U		13
623	CH	105	MF	CH	CO	FL	CR	0-1		<8'	ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		4.3	0.67			2.1	0.67			6.4
Bulk Concrete Samples - Main Forge Shop Trenches (mg/kg)																																					
652	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		0.38	0.033			0.21	0.033			0.59
653	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		4	0.34			4
654	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		1.2	0.17			0.44	0.17			1.64
655	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		1.7	0.17			0.79	0.17			2.49
662	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		0.54	0.17			0.44	0.17			0.98
663	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		0.19	0.034			ND	0.034	U		0.19
665	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		1.1	0.33			ND	0.33	U		1.1
670	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	1.7	U	UJ	ND	1.7	U	UJ	ND	1.7	U	UJ	ND	1.7	U	UJ	ND	1.7	U	UJ	2.3	1.7		J	ND	1.7	U	UJ	2.3
671	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.74	U		ND	0.74	U		ND	0.74	U		ND	0.74	U		ND	0.74	U		4.9	0.74			ND	0.74	U		4.9
672	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		0.43	0.034		J	0.34	0.034		J	0.77
675	CH	105	MF	CH	BR	TRW	CR	0-1		<8'	ND	0.44	U		ND	0.44	U		ND	0.44	U		ND	0.44	U		ND	0.44	U		ND	0.44	U		1.5	0.44			1.5
677	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.2	U	UJ	ND	0.2	U	UJ	ND	0.2	U	UJ	ND	0.2	U	UJ	ND	0.2	U	UJ	0.52	0.2		J	ND	0.2	U	UJ	0.52
678	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.33	U	UJ	ND	0.33	U	UJ	ND	0.33	U	UJ	ND	0.33	U	UJ	ND	0.33	U	UJ	1.6	0.33		J	ND	0.33	U	UJ	1.6
679	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		1.3	0.34			0.73	0.34			2.03
680	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		1.3	0.17			ND	0.17	U		1.3
681	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.7	U		ND	0.7	U		ND	0.7	U		ND	0.7	U		ND	0.7	U		5.1	0.7			2.4	0.7			7.5
682	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		1.4	0.17			ND	0.17	U		1.4
684	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.067	U		ND	0.067	U		ND	0.067	U		ND	0.067	U		ND	0.067	U		0.95	0.067			ND	0.067	U		0.95
685	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	19	U		ND	19	U		ND	19	U		ND	19	U		ND	19	U		200	19			ND	19	U		200
686	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	3.3	U		ND	3.3	U		ND	3.3	U		ND	3.3	U		ND	3.3	U		7.2	3.3			ND	3.3	U		7.2
687	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	3.5	U		ND	3.5	U		ND	3.5	U		ND	3.5	U		ND	3.5	U		31	3.5			ND	3.5	U		31
688	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	17	U		ND	17	U		ND	17	U		ND	17	U		ND	17	U		260	17			ND	17	U		260
689	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.073	U		ND	0.073	U		ND	0.073	U		ND	0.073	U		ND	0.073	U		0.61	0.073			ND	0.073	U		0.61
690	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		1.9	0.34			ND	0.34	U		1.9
691	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		18	1.8			ND	1.8	U		18
692	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.17	U	UJ	ND	0.17	U	UJ	ND	0.17	U	UJ	ND	0.17	U	UJ	ND	0.17	U	UJ	2.1	0.17		J	ND	0.17	U	UJ	2.1
693	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	17	U		ND	17	U		ND	17	U		ND	17	U		ND	17	U		99	17			ND	17	U		99
694	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.68	U		ND	0.68	U		ND	0.68	U		ND	0.68	U		ND	0.68	U		9.1	0.68			4	0.68			13.1
695	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		2.2	0.17			0.82	0.17			3.02
696	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	3.4	U		ND	3.4	U		ND	3.4	U		ND	3.4	U		ND	3.4	U		32	3.4			ND	3.4	U		32
697	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.7	U		ND	0.7	U		ND	0.7	U		ND	0.7	U		ND	0.7	U		4.8	0.7			ND	0.7	U		4.8
698	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	73	U		ND	73	U		ND	73	U		ND	73	U		ND	73	U		490	73			ND	73	U		490

Table 10
Phase I Polychlorinated Biphenyls (USEPA Method 8082) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID											Aroclor 1016				Aroclor 1221				Aroclor 1232				Aroclor 1242				Aroclor 1248				Aroclor 1254				Aroclor 1260				Total PCBs
Number	Site	Building	Room Location	Task	Material	Location in Room	Sample Type	Depth (CM)	Quality Control	A: >8'	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result
Bulk Concrete Samples - Main Forge Shop Trenches (mg/kg) - Continued																																					
699	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.66	U		ND	0.66	U		ND	0.66	U		ND	0.66	U		ND	0.66	U		7.8	0.66			ND	0.66	U		7.8
700	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	17	U		ND	17	U		ND	17	U		ND	17	U		ND	17	U		150	17			ND	17	U		150
701	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	17	U		ND	17	U		ND	17	U		ND	17	U		ND	17	U		95	17			ND	17	U		95
702	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	1.7	U		ND	1.7	U		ND	1.7	U		ND	1.7	U		ND	1.7	U		21	1.7			ND	1.7	U		21
703	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	83	U		ND	83	U		ND	83	U		ND	83	U		ND	83	U		500	83			ND	83	U		500
704	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		0.9	0.17			ND	0.17	U		0.9
705	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		0.57	0.033			0.22	0.033			0.79
706	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		0.18	0.033			ND	0.033	U		0.18
708	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	7.4	U	UJ	ND	7.4	U	UJ	ND	7.4	U	UJ	ND	7.4	U	UJ	ND	7.4	U	UJ	39	7.4		J	ND	7.4	U	UJ	39
709	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		0.42	0.034		J	0.21	0.034		J	0.63
710	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		4.2	0.34			1.7	0.34			5.9
711	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		1.6	0.17			ND	0.17	U		0.71	0.17			0.36	0.17			2.67
712	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		0.99	0.17			0.45	0.17			1.44
713	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.069	U		ND	0.069	U		ND	0.069	U		ND	0.069	U		ND	0.069	U		0.71	0.069			0.3	0.069			1.01
714	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		0.44	0.034			0.19	0.034			0.63
715	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		0.96	0.17			0.49	0.17			1.45
716	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.034	U	R	ND	0.034	U	R	ND	0.034	U	R	ND	0.034	U	R	ND	0.034	U	R	0.38	0.034		J	0.15	0.034		J	0.53
717	CH	105	MF	CH	SO	TRF	CR	0-1		<8'	ND	0.072	U		ND	0.072	U		ND	0.072	U		ND	0.072	U		ND	0.072	U		0.74	0.072			0.56	0.072			1.3
718	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		0.45	0.17			ND	0.17	U		0.45
720	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		0.26	0.034		J	0.3	0.034		J	0.56
721	CH	105	MF	CH	CO	TRW	CR	0-1		<8'	ND	0.18	U	UJ	ND	0.18	U	UJ	ND	0.18	U	UJ	ND	0.18	U	UJ	ND	0.18	U	UJ	0.72	0.18		J	0.47	0.18		J	1.19
Bulk Wood/Concrete/Brick Samples - Main Forge Shop Ceiling/Walls (mg/kg)																																					
500	CH	105	MF	CH	CO	CE	CR	0-1		>8'	ND	0.12	U		ND	0.12	U		ND	0.12	U		ND	0.12	U		ND	0.12	U		1.7	0.12			ND	0.12	U		1.7
500	CH	105	MF	CH	CO	CE	CR	1-5		>8'	ND	0.059	U		ND	0.059	U		ND	0.059	U		ND	0.059	U		ND	0.059	U		0.78	0.059			ND	0.059	U		0.78
501	CH	105	MF	CH	ACM	WA	CR	0-1		>8'	ND	0.079	U		ND	0.079	U		ND	0.079	U		ND	0.079	U		ND	0.079	U		0.45	0.079			ND	0.079	U		0.45
502	CH	105	MF	CH	CO	CE	CR	0-1		>8'	ND	0.056	U		ND	0.056	U		ND	0.056	U		ND	0.056	U		ND	0.056	U		0.25	0.056			ND	0.056	U		0.25
502	CH	105	MF	CH	CO	CE	CR	1-5		>8'	ND	0.039	U		ND	0.039	U		ND	0.039	U		ND	0.039	U		ND	0.039	U		0.17	0.039			ND	0.039	U		0.17
502	CH	105	MF	CH	CO	CE	CR	1-5	DP	>8'	ND	0.039	U		ND	0.039	U		ND	0.039	U		ND	0.039	U		ND	0.039	U		0.17	0.039			ND	0.039	U		0.17
503	CH	105	MF	CH	CO	CE	CR	0-1		>8'	ND	0.054	U		ND	0.054	U		ND	0.054	U		ND	0.054	U		ND	0.054	U		ND	0.054	U		ND	0.054	U		ND
504	CH	105	MF	CH	ACM	WA	CR	0-1		>8'	ND	0.035	U		ND	0.035	U		ND	0.035	U		ND	0.035	U		ND	0.035	U		0.09	0.035		J	ND	0.035	U		0.09
504	CH	105	MF	CH	ACM	WA	CR	0-1	DP	>8'	ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		0.17	0.033		J	0.11	0.033			0.28
505	CH	105	MF	CH	BR	WA	CR	0-1		>8'	ND	0.068	U		ND	0.068	U		ND	0.068	U		ND	0.068	U		ND	0.068	U		0.69	0.068			ND	0.068	U		0.69
506	CH	105	MF	CH	WD	CE	CR	0-1		>8'	ND	0.077	U		ND	0.077	U		ND	0.077	U		ND	0.077	U		ND	0.077	U		0.99	0.077			ND	0.077	U		0.99
506	CH	105	MF	CH	WD	CE	CR	1-5		>8'	ND	0.078	U		ND	0.078	U		ND	0.078	U		ND	0.078	U		ND	0.078	U		0.097	0.078			ND	0.078	U		0.097
507	CH	105	MF	CH	WD	CE	CR	0-1		>8'	ND	0.12	U		ND	0.12	U		ND	0.12	U		ND	0.12	U		ND	0.12	U		1.1	0.12		J	ND	0.12	U		1.1
507	CH	105	MF	CH	WD	CE	CR	1-5		>8'	ND	0.1	U		ND	0.1	U		ND	0.1	U		ND	0.1	U		ND	0.1	U		0.31	0.1		J	ND	0.1	U		0.31
508	CH	105	MF	CH	BR	WA	CR	0-1		>8'	ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		0.38	0.034			ND	0.034	U		0.38
509	CH	105	MF	CH	BR	WA	CR	0-1		>8'	ND	0.13	U		ND	0.13	U		ND	0.13	U		ND	0.13	U		ND	0.13	U		1.9	0.13			ND	0.13	U		1.9
510	CH	105	MF	CH	WD	CE	CR	0-1		>8'	ND	0.099	U		ND	0.099	U		ND	0.099	U		ND	0.099	U		ND	0.099	U		0.73	0.099			ND	0.099	U		0.73
511	CH	105	MF	CH	WD	CE	CR	0-1		>8'	ND	0.089	U		ND	0.089	U		ND	0.089	U		ND	0.089	U		ND	0.089	U		0.58	0.089			ND	0.089	U		0.58
512	CH	105	MF	CH	BR	WA	CR	0-1		>8'	ND	0.067	U		ND	0.067	U		ND	0.067	U		ND	0.067	U		ND	0.067	U		0.74	0.067			ND	0.067	U		0.74
512	CH	105	MF	CH	BR	WA	CR	1-5		>8'	ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		0.1	0.034			ND	0.034	U		0.1
513	CH	105	MF	CH	BR	WA	CR	0-1		>8'	ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		0.24	0.033			ND	0.033	U		0.24
513	CH	105	MF	CH	BR	WA	CR	1-5		>8'	ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND
514	CH	105	MF	CH	WD	WA	CR	0-1		>8'	ND	0.16	U		ND	0.16	U		ND	0.16	U		ND	0.16	U		ND	0.16	U		1.1	0.16			ND	0.16	U		1.1
514	CH	105	MF	CH	WD	WA	CR	1-5		>8'	ND	0.22	U		ND	0.22	U		ND	0.22	U		ND	0.22	U		ND	0.22	U		2.5	0.22		J	1.7	0.22		J	4.2

Table 10
Phase I Polychlorinated Biphenyls (USEPA Method 8082) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID											Aroclor 1016				Aroclor 1221				Aroclor 1232				Aroclor 1242				Aroclor 1248				Aroclor 1254				Aroclor 1260				Total PCBs
Number	Site	Building	Room Location	Task	Material	Location in Room	Sample Type	Depth (CM)	Quality Control	>8' <8'	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result
Bulk Wood/Concrete/Brick Samples - Main Forge Shop Ceiling/Walls (mg/kg) - Continued																																					
515	CH	105	MF	CH	WD	CE	CR	0-1		>8'	ND	0.084	U		ND	0.084	U		ND	0.084	U		ND	0.084	U		ND	0.084	U		0.75	0.084			ND	0.084	U		0.75
515	CH	105	MF	CH	WD	CE	CR	1-5		>8'	ND	0.097	U		ND	0.097	U		ND	0.097	U		ND	0.097	U		ND	0.097	U		0.2	0.097			ND	0.097	U		0.2
516	CH	105	MF	CH	WD	CE	CR	0-1		>8'	ND	0.28	U		ND	0.28	U		ND	0.28	U		ND	0.28	U		ND	0.28	U		4.3	0.28			2.7	0.28			7
517	CH	105	MF	CH	WD	CE	CR	0-1		>8'	ND	0.096	U		ND	0.096	U		ND	0.096	U		ND	0.096	U		ND	0.096	U		0.28	0.096			ND	0.096	U		0.28
518	CH	105	MF	CH	BR	WA	CR	0-1		>8'	ND	0.068	U		ND	0.068	U		ND	0.068	U		ND	0.068	U		ND	0.068	U		0.48	0.068		J	ND	0.068	U		0.48
518	CH	105	MF	CH	BR	WA	CR	1-5		>8'	ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		0.045	0.033			ND	0.033	U		0.045
519	CH	105	MF	CH	WD	WA	CR	0-1		>8'	ND	0.12	U		ND	0.12	U		ND	0.12	U		ND	0.12	U		ND	0.12	U		0.37	0.12			ND	0.12	U		0.37
519	CH	105	MF	CH	WD	WA	CR	1-5		>8'	ND	0.096	U		ND	0.096	U		ND	0.096	U		ND	0.096	U		ND	0.096	U		ND	0.096	U		ND	0.096	U		ND
520	CH	105	MF	CH	BR	WA	CR	0-1		<8'	ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		0.3	0.033			ND	0.033	U		0.3
520	CH	105	MF	CH	BR	WA	CR	1-5		<8'	ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		0.042	0.033			ND	0.033	U		0.042
521	CH	105	MF	CH	BR	WA	CR	0-1		<8'	ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		0.5	0.033			ND	0.033	U		0.5
522	CH	105	MF	CH	BR	WA	CR	0-1		<8'	ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND
522	CH	105	MF	CH	BR	WA	CR	1-5		<8'	ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND
523	CH	105	MF	CH	BR	WA	CR	0-1		<8'	ND	0.13	U		ND	0.13	U		ND	0.13	U		ND	0.13	U		ND	0.13	U		1.6	0.13		J	ND	0.13	U		1.6
523	CH	105	MF	CH	BR	WA	CR	1-5		<8'	ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		0.035	0.033			ND	0.033	U		0.035
524	CH	105	MF	CH	BR	WA	CR	0-1		<8'	ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		0.19	0.033			ND	0.033	U		0.19
525	CH	105	MF	CH	BR	WA	CR	0-1		<8'	ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		0.42	0.033			ND	0.033	U		0.42
526	CH	105	MF	CH	BR	WA	CR	0-1		<8'	ND	0.067	U		ND	0.067	U		ND	0.067	U		ND	0.067	U		ND	0.067	U		0.66	0.067		J	ND	0.067	U		0.66
526	CH	105	MF	CH	BR	WA	CR	0-1	DP	<8'	ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		0.36	0.033		J	ND	0.033	U		0.36
527	CH	105	MF	CH	WD	WA	CR	0-1		<8'	ND	0.066	U		ND	0.066	U		ND	0.066	U		ND	0.066	U		ND	0.066	U		0.64	0.066			ND	0.066	U		0.64
Bulk Soil Samples - Main Forge Shop Floor (mg/kg)																																					
624	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.036	U		ND	0.036	U		ND	0.036	U		ND	0.036	U		ND	0.036	U		0.45	0.036		J	ND	0.036	U		0.45
625	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		1.8	0.17			ND	0.17	U		1.8
626	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	3.4	U		ND	3.4	U		ND	3.4	U		ND	3.4	U		ND	3.4	U		9.7	3.4			ND	3.4	U		9.7
627	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		2.2	0.17			ND	0.17	U		2.2
628	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	34	U		ND	34	U		ND	34	U		ND	34	U		ND	34	U		85	34			ND	34	U		85
629	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		1.5	0.17			ND	0.17	U		1.5
630	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		4.8	0.34			ND	0.34	U		4.8
631	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		1.8	0.17			ND	0.17	U		1.8
632	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		0.52	0.033		J	0.31	0.033		J	0.83
633	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		4.5	0.34			ND	0.34	U		4.5
634	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		0.53	0.033			ND	0.033	U		0.53
635	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		ND
636	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		0.43	0.17			ND	0.17	U		0.43
637	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		0.04	0.037			ND	0.037	U		0.04
638	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	7	U		ND	7	U		ND	7	U		ND	7	U		ND	7	U		82	7			ND	7	U		82
639	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.18	U		ND	0.18	U		ND	0.18	U		ND	0.18	U		ND	0.18	U		0.52	0.18			0.37	0.18			0.89
640	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		1.5	0.17			ND	0.17	U		1.5
641	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		1.3	0.34			ND	0.34	U		1.3
642	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		0.73	0.17			ND	0.17	U		0.73
643	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		0.9	0.17			0.38	0.17			1.28
644	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		2.3	0.34			1	0.34			3.3
645	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	1.7	U		ND	1.7	U		ND	1.7	U		ND	1.7	U		ND	1.7	U		14	1.7			ND	1.7	U		14
646	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	3.4	U		ND	3.4	U		ND	3.4	U		ND	3.4	U		ND	3.4	U		40	3.4			ND	3.4	U		40
647	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		3.1	0.67			ND	0.67	U		3.1
648	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.067	U		ND	0.067	U		ND	0.067	U		ND	0.067	U		ND	0.067	U		0.94	0.067			ND	0.067	U		0.94

Table 10
Phase I Polychlorinated Biphenyls (USEPA Method 8082) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID											Aroclor 1016				Aroclor 1221				Aroclor 1232				Aroclor 1242				Aroclor 1248				Aroclor 1254				Aroclor 1260				Total PCBs
Number	Site	Building	Room Location	Task	Material	Location in Room	Sample Type	Depth (CM)	Quality Control	>8" <8'	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result
Bulk Soil Samples - Main Forge Shop Floor (mg/kg) - Continued																																					
649	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		0.89	0.17			ND	0.17	U		0.89
650	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		1.2	0.17			ND	0.17	U		1.2
651	CH	105	MF	CH	SO	FL	GR	0-10		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		1.2	0.17			ND	0.17	U		1.2
Bulk Soil Samples - Main Forge Shop Trenches (mg/kg)																																					
656	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.035	U		ND	0.035	U		ND	0.035	U		ND	0.035	U		ND	0.035	U		ND	0.035	U		0.099	0.035			0.099
657	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		0.18	0.17			0.18
658	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		8.2	0.67			3.3	0.67			11.5
659	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.68	U		ND	0.68	U		ND	0.68	U		ND	0.68	U		ND	0.68	U		4.5	0.68			2.1	0.68			6.6
660	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.35	U		ND	0.35	U		ND	0.35	U		ND	0.35	U		ND	0.35	U		1.8	0.35			1.2	0.35			3
661	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.19	U		ND	0.19	U		ND	0.19	U		ND	0.19	U		ND	0.19	U		1.5	0.19			1	0.19			2.5
664	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		4.5	0.33			ND	0.33	U		4.5
666	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		2.5	0.17			1.1	0.17			3.6
667	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	3.6	U		ND	3.6	U		ND	3.6	U		ND	3.6	U		ND	3.6	U		41	3.6			ND	3.6	U		41
668	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.66	U		ND	0.66	U		ND	0.66	U		ND	0.66	U		ND	0.66	U		8.4	0.66			3.5	0.66			11.9
669	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.18	U		ND	0.18	U		ND	0.18	U		ND	0.18	U		ND	0.18	U		0.68	0.18			ND	0.18	U		0.68
673	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.036	U		ND	0.036	U		ND	0.036	U		ND	0.036	U		ND	0.036	U		0.16	0.036			0.13	0.036			0.29
674	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		0.24	0.034			ND	0.034	U		0.24
676	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		0.98	0.17			ND	0.17	U		0.98
683	CH	105	MF	CH	SO	TRF	CR	0-10		<8'	ND	3.8	U		ND	3.8	U		ND	3.8	U		ND	3.8	U		ND	3.8	U		5.1	3.8			4.8	3.8			9.9
707	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		22	1.8			ND	1.8	U		22
719	CH	105	MF	CH	SO	TRF	CR	0-10		<8'	ND	2.3	U		ND	2.3	U		ND	2.3	U		ND	2.3	U		ND	2.3	U		13	2.3			9.2	2.3			22.2
722	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	1.7	U		ND	1.7	U		ND	1.7	U		ND	1.7	U		ND	1.7	U		13	1.7			6.9	1.7			19.9
723	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.74	U		ND	0.74	U		ND	0.74	U		ND	0.74	U		ND	0.74	U		8.8	0.74			ND	0.74	U		8.8
724	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.18	U		ND	0.18	U		ND	0.18	U		ND	0.18	U		ND	0.18	U		3	0.18			ND	0.18	U		3
725	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.07	U		ND	0.07	U		ND	0.07	U		ND	0.07	U		ND	0.07	U		ND	0.07	U		0.95	0.07		J	0.95
726	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.18	U		ND	0.18	U		ND	0.18	U		ND	0.18	U		ND	0.18	U		0.95	0.18			0.54	0.18			1.49
727	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.071	U		ND	0.071	U		ND	0.071	U		ND	0.071	U		ND	0.071	U		ND	0.071	U		0.48	0.071		J	0.48
728	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	3.8	U		ND	3.8	U		ND	3.8	U		ND	3.8	U		ND	3.8	U		31	3.8			ND	3.8	U		31
729	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.068	U		ND	0.068	U		ND	0.068	U		ND	0.068	U		ND	0.068	U		0.43	0.068			ND	0.068	U		0.43
730	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	190	U		ND	190	U		ND	190	U		ND	190	U		ND	190	U		690	190			ND	190	U		690
731	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	380	U		ND	380	U		ND	380	U		ND	380	U		ND	380	U		2700	380			ND	380	U		2700
732	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.36	U		ND	0.36	U		ND	0.36	U		ND	0.36	U		ND	0.36	U		2.6	0.36			ND	0.36	U		2.6
733	CH	105	MF	CH	SO	TRF	GR	0-10		<8'	ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		6.2	0.34			2.7	0.34			8.9
Bulk Concrete Samples - Round House / Blacksmith Shop (mg/kg)																																					
528	CH	105	BS	CH	CO	TRF	CR	0-1		<8'	ND	0.35	U		ND	0.35	U		ND	0.35	U		ND	0.35	U		ND	0.35	U		ND	0.35	U		ND	0.35	U		ND
531	CH	105	BS	CH	CO	FL	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		2.3	0.17			ND	0.17	U		2.3
532	CH	105	BS	CH	CO	TRF	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		0.27	0.17			ND	0.17	U		0.27
533	CH	105	BS	CH	CO	TRW	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND
534	CH	105	BS	CH	CO	TRW	CR	0-1		<8'	ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		ND	0.033	U		0.22	0.033		J	ND	0.033	U		0.22
537	CH	105	BS	CH	CO	TRF	CR	0-1		<8'	ND	0.069	U		ND	0.069	U		ND	0.069	U		ND	0.069	U		ND	0.069	U		0.89	0.069			ND	0.069	U		0.89
538	CH	105	BS	CH	CO	TRW	CR	0-1		<8'	ND	0.068	U		ND	0.068	U		ND	0.068	U		ND	0.068	U		ND	0.068	U		0.71	0.068			ND	0.068	U		0.71
540	CH	105	BS	CH	CO	FL	CR	0-1		<8'	ND	0.13	U		ND	0.13	U		ND	0.13	U		ND	0.13	U		ND	0.13	U		ND	0.13	U		1.6	0.13		J	1.6
541	CH	105	BS	CH	CO	FL	CR	0-1		<8'	ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		5.2	0.33			2.9	0.33			8.1
542	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND
543	CH	105	RH	CH	CO	FL	CR	0-1		<8'	ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		1.7	0.34			1.7
544	CH	105	RH	CH	CO	FL	CR	0-1		<8'	ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		ND	0.67	U		1.7	0.67			1.7

Table 10
Phase I Polychlorinated Biphenyls (USEPA Method 8082) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID											Aroclor 1016				Aroclor 1221				Aroclor 1232				Aroclor 1242				Aroclor 1248				Aroclor 1254				Aroclor 1260				Total PCBs
Number	Site	Building	Room Location	Task	Material	Location in Room	Sample Type	Depth (CM)	Quality Control	>8' <8'	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result
Bulk Concrete Samples - Round House / Blacksmith Shop (mg/kg) - Continued																																					
545	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		1.4	0.34			1.1	0.34			2.5
546	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.35	U		ND	0.35	U		ND	0.35	U		ND	0.35	U		ND	0.35	U		ND	0.35	U		2	0.35			2
547	CH	105	RH	CH	CO	FL	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		0.54	0.17			0.54
548	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		ND	0.34	U		1.5	0.34			1.5
548	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		0.87	0.17			1.6	0.17			2.47
549	CH	105	RH	CH	CO	FL	CR	0-1		<8'	ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		0.17	0.33	U		0.27	0.33			0.44
550	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		0.27	0.034			0.27
551	CH	105	MF	CH	CO	TRF	CR	0-1		<8'	ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		0.13	0.034			0.17	0.034			0.3
Bulk Soil Samples - Round House / Blacksmith Shop (mg/kg)																																					
529	CH	105	BS	CH	SO	FL	GR	0-10		<8'	ND	0.068	U		ND	0.068	U		ND	0.068	U		ND	0.068	U		ND	0.068	U		0.6	0.068		J	ND	0.068	U		0.6
530	CH	105	BS	CH	SO	FL	GR	0-10		<8'	ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		ND	0.33	U		4.1	0.33			ND	0.33	U		4.1
536	CH	105	BS	CH	SO	FL	GR	0-10	Analyzed Twice	<8'	ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		ND	0.17	U		1.6	0.17			ND	0.17	U		1.6
536	CH	105	BS	CH	SO	FL	GR	0-10		<8'	ND	0.067	U		ND	0.067	U		ND	0.067	U		ND	0.067	U		ND	0.067	U		0.69	0.067			ND	0.067	U		0.69
539	CH	105	BS	CH	SO	FL	GR	0-10		<8'	ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		ND	0.034	U		0.41	0.034			ND	0.034	U		0.41

Notes:
CH - Charlestown
MF - Main Forge Shop
BS - Blacksmith Shop
RH - Roundhouse
QC - Quality Control
NA - Not Applicable

CO - Concrete
WD - Wood
ACM - Asbestos Containing Material
BR - Brick
SO - Soil
DUP - Duplicate Sample

CE - Ceiling
WA - Wall
FL - Floor
TRW - Trench Wall
TRF - Trench Floor

WI - Wipe Sample
CR - Core Sample
GR - Grab Sample
CM - Centimeter

Data Qualifiers:
J - Estimated
U - Undetected
UJ - Undetected but Estimated
R - Rejected

µg/wipe - micrograms per 100 square centimeters
mg/kg - milligram per kilogram

Table 11
Phase I Polychlorinated Biphenyls Homologs (USEPA Method 1668) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID											Total Monochlorobiphenyls					Total Dichlorobiphenyls					Total Trichlorobiphenyls					Total Tetrachlorobiphenyls					Total Pentachlorobiphenyls				
Number	Site	Building	Room Location	Task	Material	Location in Room	Sample Type	Depth (CM)	Quality Control	>8' <8'	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier
Non-Wall Wipe Samples >8 Feet - Main Forge Shop																																		
506	CH	105	MF	CH	WD	CE	WI	NA		>8'	190	40	pg/wipe	B	U	1,600	40	pg/wipe	B	U	6,400	40	pg/wipe	B	U	6,400	40	pg/wipe	B		290,000	40	pg/wipe	B	
511	CH	105	MF	CH	WD	CE	WI	NA		>8'	400		pg/wipe	B	U	2,300		pg/wipe	B	U	12,000		pg/wipe	B		71,000		pg/wipe	B		390,000		pg/wipe	B	
516	CH	105	MF	CH	WD	CE	WI	NA		>8'	320	40	pg/wipe	B	U	5,600	40	pg/wipe	B		20,000	40	pg/wipe	B		330,000	40	pg/wipe	B		6,000,000	40	pg/wipe	B	
Wall Surface Wipe Samples >8 Feet - Main Forge Shop																																		
505	CH	105	MF	CH	BR	WA	WI	NA		>8'	280	40	pg/wipe	B	U	2,800	40	pg/wipe	B	U	14,000	40	pg/wipe	B		150,000	40	pg/wipe	B		690,000	40	pg/wipe	B	
513	CH	105	MF	CH	BR	WA	WI	NA		>8'	2,500	40	pg/wipe	B		8,600	40	pg/wipe	B		37,000	40	pg/wipe	B		360,000	40	pg/wipe	B		1,300,000	40	pg/wipe	B	
514	CH	105	MF	CH	WD	WA	WI	NA		>8'	400	40	pg/wipe	B	U	2,900	40	pg/wipe	B	U	12,000	40	pg/wipe	B		120,000	40	pg/wipe	B		520,000	40	pg/wipe	B	
519	CH	105	MF	CH	WD	WA	WI	NA		>8'	470		pg/wipe	B	U	4,200		pg/wipe	B	U	10,000		pg/wipe	B	U	60,000		pg/wipe	B		270,000		pg/wipe	B	
Wall Surface Wipe Samples <8 Feet - Main Forge Shop																																		
178	CH	105	MF	CH	BR	WA	WI	NA		<8'	820		pg/wipe	B		8,900	40	pg/wipe	B		120,000	40	pg/wipe	B		690,000	40	pg/wipe	B		1,400,000	40	pg/wipe	B	
520	CH	105	MF	CH	BR	WA	WI	NA		<8'	410	40	pg/wipe	B	U	4,500	40	pg/wipe	B		26,000	40	pg/wipe	B		370,000	40	pg/wipe	B		1,600,000	40	pg/wipe	B	
521	CH	105	MF	CH	BR	WA	WI	NA		<8'	220	40	pg/wipe	B	U	1,900	40	pg/wipe	B	U	7,900	40	pg/wipe	B	U	79,000	40	pg/wipe	B		350,000	40	pg/wipe	B	
522	CH	105	MF	CH	BR	WA	WI	NA		<8'	210	40	pg/wipe	B	U	1,800	40	pg/wipe	B	U	7,900	40	pg/wipe	B	U	46,000	40	pg/wipe	B		260,000	40	pg/wipe	B	
523	CH	105	MF	CH	BR	WA	WI	NA		<8'	750	40	pg/wipe	B		4,200	40	pg/wipe	B	U	21,000	40	pg/wipe	B		430,000	40	pg/wipe	B		4,500,000	40	pg/wipe	B	
523	CH	105	MF	CH	BR	WA	WI	NA	DP	<8'	1,000	40	pg/wipe	B		5,000	40	pg/wipe	B		22,000	40	pg/wipe	B		400,000	40	pg/wipe	B		5,800,000	40	pg/wipe	B	
524	CH	105	MF	CH	BR	WA	WI	NA		<8'	80	40	pg/wipe	B	U	1,600	40	pg/wipe	B	U	6,900	40	pg/wipe	B	U	30,000	40	pg/wipe	B		160,000	40	pg/wipe		
526	CH	105	MF	CH	WD	WA	WI	NA		<8'	150	40	pg/wipe	B	U	1,400	40	pg/wipe	B	U	6,300	40	pg/wipe	B	U	60,000	40	pg/wipe	B		280,000	40	pg/wipe	B	

Table 11
Phase I Polychlorinated Biphenyls Homologs (USEPA Method 1668) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID											Total Hexachlorobiphenyls					Total Heptachlorobiphenyls					Total Octachlorobiphenyls					Total Nonachlorobiphenyls					DecaCB					Total Congers	
Number	Site	Building	Room Location	Task	Material	Location in Room	Sample Type	Depth (CM)	Quality Control	>8' <8'	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Units
Non-Wall Wipe Samples >8 Feet - Main Forge Shop																																				
506	CH	105	MF	CH	WD	CE	WI	NA		>8'	320,000	40	pg/wipe			70,000	40	pg/wipe			12,000	40	pg/wipe			2,500	40	pg/wipe			1,200	40	pg/wipe			710,290	pg/wipe
511	CH	105	MF	CH	WD	CE	WI	NA		>8'	350,000		pg/wipe			120,000		pg/wipe			27,000		pg/wipe			2,500		pg/wipe			2,700		pg/wipe			977,900	pg/wipe
516	CH	105	MF	CH	WD	CE	WI	NA		>8'	6,500,000	40	pg/wipe			740,000	40	pg/wipe			94,000	40	pg/wipe			15,000	40	pg/wipe			8,900	40	pg/wipe			13,713,820	pg/wipe
Wall Surface Wipe Samples >8 Feet - Main Forge Shop																																				
505	CH	105	MF	CH	BR	WA	WI	NA		>8'	570,000	40	pg/wipe			110,000	40	pg/wipe			18,000	40	pg/wipe			3,100	40	pg/wipe			1,500	40	pg/wipe			1,559,680	pg/wipe
513	CH	105	MF	CH	BR	WA	WI	NA		>8'	860,000	40	pg/wipe			210,000	40	pg/wipe			69,000	40	pg/wipe			15,000	40	pg/wipe			6,900	40	pg/wipe			2,869,000	pg/wipe
514	CH	105	MF	CH	WD	WA	WI	NA		>8'	440,000	40	pg/wipe			130,000	40	pg/wipe			41,000	40	pg/wipe			7,700	40	pg/wipe			4,600	40	pg/wipe			1,278,600	pg/wipe
519	CH	105	MF	CH	WD	WA	WI	NA		>8'	240,000		pg/wipe			87,000		pg/wipe			24,000		pg/wipe			5,300		pg/wipe			6,300		pg/wipe			707,270	pg/wipe
Wall Surface Wipe Samples <8 Feet - Main Forge Shop																																				
178	CH	105	MF	CH	BR	WA	WI	NA		<8'	840,000	40	pg/wipe			150,000	40	pg/wipe			17,000	40	pg/wipe			2,800	401	pg/wipe			3,300	40	pg/wipe			3,232,820	pg/wipe
520	CH	105	MF	CH	BR	WA	WI	NA		<8'	1,000,000	40	pg/wipe			330,000	40	pg/wipe			100,000	40	pg/wipe			14,000	40	pg/wipe			6,600	40	pg/wipe			3,451,510	pg/wipe
521	CH	105	MF	CH	BR	WA	WI	NA		<8'	250,000	40	pg/wipe			43,000	40	pg/wipe			7,600	40	pg/wipe			1,400	40	pg/wipe			990	40	pg/wipe			742,010	pg/wipe
522	CH	105	MF	CH	BR	WA	WI	NA		<8'	290,000	40	pg/wipe			120,000	40	pg/wipe			33,000	40	pg/wipe			5,400	40	pg/wipe			2,900	40	pg/wipe			767,210	pg/wipe
523	CH	105	MF	CH	BR	WA	WI	NA		<8'	6,500,000	40	pg/wipe			1,500,000	40	pg/wipe			140,000	40	pg/wipe		J	12,000	40	pg/wipe		J	4,300	40	pg/wipe			13,112,250	pg/wipe
523	CH	105	MF	CH	BR	WA	WI	NA	DP	<8'	9,100,000	40	pg/wipe			2,200,000	40	pg/wipe			240,000	40	pg/wipe		J	2,800	40	pg/wipe		J	5,700	40	pg/wipe			17,776,500	pg/wipe
524	CH	105	MF	CH	BR	WA	WI	NA		<8'	150,000	40	pg/wipe			46,000	40	pg/wipe			10,000	40	pg/wipe			1,500	40	pg/wipe			880	40	pg/wipe			406,960	pg/wipe
526	CH	105	MF	CH	WD	WA	WI	NA		<8'	200,000	40	pg/wipe			45,000	40	pg/wipe			10,000	40	pg/wipe			1,500	40	pg/wipe			820	40	pg/wipe			605,170	pg/wipe

Notes:
CH - Charlestown
MF - Main Forge Shop
NA - Not Applicable

WD - Wood
BR - Brick
DP - Duplicate Sample

CE - Ceiling
WA - Wall
WI - Wipe Sample

pg/wipe - picograms per 100 square centimeters

Data Validator Qualifiers:
J - Estimated
U - Undetected
UJ - Undetected but Estimated
R - Rejected

Lab Qualifiers:
ND - Not Detected
v - Elevated detection limit due to chemical interference
B - Compound is also detected in the blank
E - Concentration exceeds calibration range. Value is estimate

Table 12
Phase I Polychlorinated Biphenyls World Health Organization (WHO) Congeners (USEPA Method 1668) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID											3,4,4',5-TetraCB (#81)					3,3',4,4'-TetraCB (#77)					2',3,4,4',5-PentaCB (#123)					2,3',4,4',5-PentaCB (#118)					2,3,4,4',5-PentaCB (#114)					2,3,3',4,4'-PentaCB (#105)					3,3',4,4',5-PentaCB (#126)				
Number	Site	Building	Room Location	Task	Material	Location in Room	Sample Type	Depth	Quality Control	>8' / <8'	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier
Non-Wall Wipe Samples >8 Feet - Main Forge Shop																																												
500	CH	105	MF	CH	CO	CE	WI	NA		>8'	130	40	pg/wipe			400	40	pg/wipe			ND	8,100	pg/wipe	v		18,000	40	pg/wipe		J	700	40	pg/wipe			11,000	40	pg/wipe			77	40	pg/wipe		
502	CH	105	MF	CH	CO	CE	WI	NA		>8'	ND	40	pg/wipe			57	40	pg/wipe			ND	640	pg/wipe	v		1,500	40	pg/wipe		J	59	40	pg/wipe			960	40	pg/wipe			ND	40	pg/wipe		
503	CH	105	MF	CH	CO	CE	WI	NA		>8'	ND	40	pg/wipe			110	40	pg/wipe			ND	1,000	pg/wipe	v		2,900	40	pg/wipe		J	120	40	pg/wipe			1,900	40	pg/wipe			ND	40	pg/wipe		
506	CH	105	MF	CH	WD	CE	WI	NA		>8'	490	40	pg/wipe			1,200	40	pg/wipe			ND	23,000	pg/wipe	v		56,000	40	pg/wipe	BE	J	1,900	40	pg/wipe			46,000	40	pg/wipe	E	J	320	40	pg/wipe		
507	CH	105	MF	CH	WD	CE	WI	NA		>8'	150	40	pg/wipe			460	40	pg/wipe			ND	7,300	pg/wipe	v		16,000	40	pg/wipe		J	760	40	pg/wipe			13,000	40	pg/wipe			86	40	pg/wipe		
510	CH	105	MF	CH	WD	CE	WI	NA		>8'	310	40	pg/wipe			830	40	pg/wipe			ND	6,700	pg/wipe	v		31,000	40	pg/wipe	B	J	1,100	40	pg/wipe			23,000	40	pg/wipe			150	40	pg/wipe		
511	CH	105	MF	CH	WD	CE	WI	NA		>8'	1,800	40	pg/wipe			560	40	pg/wipe			ND	23,000	pg/wipe	v		62,000	40	pg/wipe		J	2,800	40	pg/wipe			48,000	40	pg/wipe			390	40	pg/wipe		
515	CH	105	MF	CH	WD	CE	WI	NA		>8'	93	40	pg/wipe			240	40	pg/wipe			ND	4,900	pg/wipe	v		9,400	40	pg/wipe	B	J	400	40	pg/wipe			8,200	40	pg/wipe			52	40	pg/wipe		
516	CH	105	MF	CH	WD	CE	WI	NA		>8'	6,500	40	pg/wipe			7,200	40	pg/wipe			ND	290,000	pg/wipe	v		760,000	40	pg/wipe	E	J	17,000	40	pg/wipe			260,000	40	pg/wipe	E	J	4,400	40	pg/wipe		
517	CH	105	MF	CH	WD	CE	WI	NA		>8'	-	-	pg/wipe	-	-	430	40	pg/wipe			ND	11,000	pg/wipe	v		19,000	40	pg/wipe		J	870	40	pg/wipe			18,000	40	pg/wipe			150	40	pg/wipe		
Wall Wipe Samples >8 Feet - Main Forge Shop																																												
501	CH	105	MF	CH	ACM	WA	WI	NA		>8'	190	40	pg/wipe			530	40	pg/wipe			ND	9,700	pg/wipe	v		23,000	40	pg/wipe		J	1,000	40	pg/wipe			18,000	40	pg/wipe			140	40	pg/wipe		
504	CH	105	MF	CH	ACM	WA	WI	NA		>8'	400	40	pg/wipe			1,100	40	pg/wipe			ND	16,000	pg/wipe	v		37,000	40	pg/wipe		J	1,700	40	pg/wipe			27,000	40	pg/wipe			200	40	pg/wipe		
505	CH	105	MF	CH	BR	WA	WI	NA		>8'	1,300	40	pg/wipe			2,300	40	pg/wipe			ND	30,000	pg/wipe	v		110,000	40	pg/wipe	BE	J	4,100	40	pg/wipe			76,000	40	pg/wipe			400	40	pg/wipe		
508	CH	105	MF	CH	BR	WA	WI	NA		>8'	340	40	pg/wipe			900	40	pg/wipe			ND	8,900	pg/wipe	v		33,000	40	pg/wipe	B	J	1,100	40	pg/wipe			21,000	40	pg/wipe			120	40	pg/wipe		
508	CH	105	MF	CH	BR	WA	WI	NA	DP	>8'	490	40	pg/wipe			600	40	pg/wipe			ND	14,000	pg/wipe	v		36,000	40	pg/wipe		J	1,100	40	pg/wipe			16,000	40	pg/wipe			ND	150	pg/wipe	v	
509	CH	105	MF	CH	BR	WA	WI	NA		>8'	570	40	pg/wipe			930	40	pg/wipe			ND	11,000	pg/wipe	v		39,000	40	pg/wipe	B	J	1,400	40	pg/wipe			26,000	40	pg/wipe			240	40	pg/wipe		
512	CH	105	MF	CH	BR	WA	WI	NA		>8'	280	40	pg/wipe			720	40	pg/wipe			ND	7,100	pg/wipe	v		24,000	40	pg/wipe	B	J	860	40	pg/wipe			16,000	40	pg/wipe			93	40	pg/wipe		
513	CH	105	MF	CH	BR	WA	WI	NA		>8'	2,000	40	pg/wipe			4,800	40	pg/wipe			ND	64,000	pg/wipe	v		190,000	40	pg/wipe	BE	J	7,200	40	pg/wipe			120,000	40	pg/wipe	E	J	710	40	pg/wipe		
514	CH	105	MF	CH	WD	WA	WI	NA		>8'	830	40	pg/wipe			1,900	40	pg/wipe			ND	32,000	pg/wipe	v		85,000	40	pg/wipe	BE	J	3,200	40	pg/wipe			59,000	40	pg/wipe	E	J	410	40	pg/wipe		
518	CH	105	MF	CH	BR	WA	WI	NA		>8'	430	40	pg/wipe			1,100	40	pg/wipe			ND	13,000	pg/wipe	v		34,000	40	pg/wipe		J	1,600	40	pg/wipe			23,000	40	pg/wipe			170	40	pg/wipe		
519	CH	105	MF	CH	WD	WA	WI	NA		>8'	390	32	pg/wipe			950	40	pg/wipe			ND	7,100	pg/wipe	v		40,000	40	pg/wipe		J	1,200	40	pg/wipe			28,000	40	pg/wipe			250	40	pg/wipe		
Wall Wipe Samples <8 Feet - Main Forge Shop																																												
178	CH	105	MF	CH	BR	WA	WI	NA		<8'	2,700	40	pg/wipe			9,000	40	pg/wipe			ND	41,000	pg/wipe	v		150,000	40	pg/wipe	BE	J	5,800	40	pg/wipe			97,000	40	pg/wipe	E	J	470	40	pg/wipe		
183	CH	105	MF	CH	WD	WA	WI	NA		<8'	4,100	40	pg/wipe			21,000	40	pg/wipe			ND	42,000	pg/wipe			220,000	40	pg/wipe	BE	J	7,500	40	pg/wipe			110,000	40	pg/wipe	E	J	720	40	pg/wipe		
520	CH	105	MF	CH	BR	WA	WI	NA		<8'	3,100	40	pg/wipe			5,200	40	pg/wipe			ND	66,000	pg/wipe	v		230,000	40	pg/wipe	BE	J	7,700	40	pg/wipe			150,000	40	pg/wipe	E	J	850	40	pg/wipe		
521	CH	105	MF	CH	BR	WA	WI	NA		<8'	650	40	pg/wipe			1,100	40	pg/wipe			ND	22,000	pg/wipe	v		51,000	40	pg/wipe	BE	J	1,800	40	pg/wipe			30,000	40	pg/wipe			160	40	pg/wipe		
522	CH	105	MF	CH	BR	WA	WI	NA		<8'	550	40	pg/wipe			1,500	40	pg/wipe			ND	19,000	pg/wipe	v		47,000	40	pg/wipe	BE	J	1,500	40	pg/wipe			38,000	40	pg/wipe			300	40	pg/wipe		
523	CH	105	MF	CH	BR	WA	WI	NA		<8'	8,200	40	pg/wipe			15,000	40	pg/wipe			ND	380,000	pg/wipe	v		1,200,000	40	pg/wipe	BD	J	39,000	40	pg/wipe			920,000	40	pg/wipe			6,000	40	pg/wipe		
523	CH	105	MF	CH	BR	WA	WI	NA	DP	<8'	11,000	40	pg/wipe			22,000	40	pg/wipe			ND	320,000	pg/wipe	v		1,700,000	40	pg/wipe	BD	J	54,000	40	pg/wipe	E	J	#######	40	pg/wipe	E	J	9,000	40	pg/wipe		
524	CH	105	MF	CH	BR	WA	WI	NA		<8'	320	40	pg/wipe			880	40	pg/wipe			ND	6,600	pg/wipe	v		30,000	40	pg/wipe	B	J	1,300	40	pg/wipe			24,000	40	pg/wipe			160	40	pg/wipe		
525	CH	105	MF	CH	BR	WA	WI	NA		<8'	470	40	pg/wipe			1,200	40	pg/wipe			ND	5,300	pg/wipe	v		33,000	40	pg/wipe	B	J	1,200	40	pg/wipe			22,000	40	pg/wipe			130	40	pg/wipe		
526	CH	105	MF	CH	WD	WA	WI	NA		<8'	620	40	pg/wipe			1,200	40	pg/wipe			ND	17,000	pg/wipe	v		46,000	40	pg/wipe	BE	J	1,600	40	pg/wipe			30,000	40	pg/wipe			160	40	pg/wipe		
527	CH	105	MF	CH	WD	WA	WI	NA		<8'	480	40	pg/wipe			830	40	pg/wipe			ND	15,000	pg/wipe	v		33,000	40	pg/wipe	B	J	1,600	40	pg/wipe			22,000	40	pg/wipe			150	40	pg/wipe		

Table 12
Phase I Polychlorinated Biphenyls World Health Organization (WHO) Congeners (USEPA Method 1668) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID												2,3',4,4',5,5'-HexaCB (#167)					2,3,3',4,4',5-HexaCB (#156)					2,3,3',4,4',5'-HexaCB (#157)					3,3',4,4',5,5'-HexaCB (#169)					2,2',3,4,4',5,5'-HeptaCB (#180)					2,2',3,3',4,4',5-HeptaCB (#170)					2,3,3',4,4',5,5'-HeptaCB (#189)					Total WHO Congeners	
Number	Site	Building	Room Location	Task	Material	Location in Room	Sample Type	Depth	Quality Control	>8' <8'	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Units
Non-Wall Wipe Samples >8 Feet - Main Forge Shop																																																
500	CH	105	MF	CH	CO	CE	WI	NA		>8'	4,800	40	pg/wipe			1,900	40	pg/wipe			540	40	pg/wipe			ND	40	pg/wipe			3,800	40	pg/wipe			2,000	40	pg/wipe			48	40	pg/wipe			42,995	pg/wipe
502	CH	105	MF	CH	CO	CE	WI	NA		>8'	540	40	pg/wipe			300	40	pg/wipe			ND	76	pg/wipe	V		ND	40	pg/wipe			860	40	pg/wipe			500	40	pg/wipe			ND	40	pg/wipe			4,719	pg/wipe
503	CH	105	MF	CH	CO	CE	WI	NA		>8'	930	40	pg/wipe			630	40	pg/wipe			150	40	pg/wipe			ND	40	pg/wipe			1,200	40	pg/wipe			770	40	pg/wipe			ND	40	pg/wipe			8,600	pg/wipe
506	CH	105	MF	CH	WD	CE	WI	NA		>8'	22,000	40	pg/wipe			13,000	40	pg/wipe			3,000	40	pg/wipe			ND	40	pg/wipe			20,000	40	pg/wipe			12,000	40	pg/wipe			350	40	pg/wipe			175,060	pg/wipe
507	CH	105	MF	CH	WD	CE	WI	NA		>8'	7,000	40	pg/wipe			3,700	40	pg/wipe			930	40	pg/wipe			ND	40	pg/wipe			6,800	40	pg/wipe			4,300	40	pg/wipe			100	40	pg/wipe			52,826	pg/wipe
510	CH	105	MF	CH	WD	CE	WI	NA		>8'	11,000	40	pg/wipe			7,200	40	pg/wipe			1,700	40	pg/wipe			ND	40	pg/wipe			11,000	40	pg/wipe			7,100	40	pg/wipe			200	40	pg/wipe			93,760	pg/wipe
511	CH	105	MF	CH	WD	CE	WI	NA		>8'	30,000	40	pg/wipe			20,000	40	pg/wipe			5,100	40	pg/wipe			ND	40	pg/wipe			40,000	40	pg/wipe			31,000	40	pg/wipe			760	40	pg/wipe			241,850	pg/wipe
515	CH	105	MF	CH	WD	CE	WI	NA		>8'	3,900	40	pg/wipe			2,400	40	pg/wipe			500	40	pg/wipe			ND	40	pg/wipe			3,600	40	pg/wipe			2,200	40	pg/wipe			45	40	pg/wipe			30,790	pg/wipe
516	CH	105	MF	CH	WD	CE	WI	NA		>8'	290,000	40	pg/wipe	E	J	160,000	40	pg/wipe	E	J	26,000	40	pg/wipe			68	40	pg/wipe			120,000	40	pg/wipe	E	J	61,000	40	pg/wipe	E	J	1,900	40	pg/wipe			1,706,868	pg/wipe
517	CH	105	MF	CH	WD	CE	WI	NA		>8'	11,000	40	pg/wipe			6,200	40	pg/wipe			1,700	40	pg/wipe			ND	40	pg/wipe			12,000	40	pg/wipe			7,900	40	pg/wipe			190	40	pg/wipe			77,010	pg/wipe
Wall Wipe Samples >8 Feet - Main Forge Shop																																															
501	CH	105	MF	CH	ACM	WA	WI	NA		>8'	9,500	40	pg/wipe			4,800	40	pg/wipe			1,200	40	pg/wipe			ND	40	pg/wipe			13,000	40	pg/wipe			6,800	40	pg/wipe			170	40	pg/wipe			77,800	pg/wipe
504	CH	105	MF	CH	ACM	WA	WI	NA		>8'	11,000	40	pg/wipe			5,100	40	pg/wipe			1,200	40	pg/wipe			ND	40	pg/wipe			23,000	40	pg/wipe			10,000	40	pg/wipe			210	40	pg/wipe			116,810	pg/wipe
505	CH	105	MF	CH	BR	WA	WI	NA		>8'	34,000	40	pg/wipe			21,000	40	pg/wipe			4,800	40	pg/wipe			ND	40	pg/wipe			32,000	40	pg/wipe			22,000	40	pg/wipe			770	40	pg/wipe			306,370	pg/wipe
508	CH	105	MF	CH	BR	WA	WI	NA		>8'	9,600	40	pg/wipe			5,100	40	pg/wipe		J	1,200	40	pg/wipe			ND	40	pg/wipe			9,500	40	pg/wipe		J	4,800	40	pg/wipe		J	110	40	pg/wipe			85,870	pg/wipe
508	CH	105	MF	CH	BR	WA	WI	NA	DP	>8'	6,800	40	pg/wipe			3,000	40	pg/wipe		J	730	40	pg/wipe			ND	40	pg/wipe			4,800	40	pg/wipe		J	1,900	40	pg/wipe		J	68	40	pg/wipe			70,888	pg/wipe
509	CH	105	MF	CH	BR	WA	WI	NA		>8'	13,000	40	pg/wipe			8,200	40	pg/wipe			1,900	40	pg/wipe			120	40	pg/wipe			11,000	40	pg/wipe			7,800	40	pg/wipe			320	40	pg/wipe			109,550	pg/wipe
512	CH	105	MF	CH	BR	WA	WI	NA		>8'	7,100	40	pg/wipe			4,100	40	pg/wipe			870	40	pg/wipe			ND	40	pg/wipe			7,100	40	pg/wipe			3,600	40	pg/wipe			88	40	pg/wipe			64,091	pg/wipe
513	CH	105	MF	CH	BR	WA	WI	NA		>8'	50,000	40	pg/wipe	E	J	31,000	40	pg/wipe			7,000	40	pg/wipe			ND	40	pg/wipe			65,000	40	pg/wipe	E	J	33,000	40	pg/wipe			1,100	40	pg/wipe			507,010	pg/wipe
514	CH	105	MF	CH	WD	WA	WI	NA		>8'	29,000	40	pg/wipe			19,000	40	pg/wipe			4,200	40	pg/wipe			ND	40	pg/wipe			43,000	40	pg/wipe	E	J	25,000	40	pg/wipe			890	40	pg/wipe			269,530	pg/wipe
518	CH	105	MF	CH	BR	WA	WI	NA		>8'	11,000	40	pg/wipe			5,800	40	pg/wipe			1,400	40	pg/wipe			ND	40	pg/wipe			31,000	40	pg/wipe			17,000	40	pg/wipe			470	40	pg/wipe			125,870	pg/wipe
519	CH	105	MF	CH	WD	WA	WI	NA		>8'	18,000	40	pg/wipe			10,000	40	pg/wipe			3,200	40	pg/wipe			ND	40	pg/wipe			32,000	40	pg/wipe			19,000	40	pg/wipe			770	40	pg/wipe			152,810	pg/wipe
Wall Wipe Samples <8 Feet - Main Forge Shop																																															
178	CH	105	MF	CH	BR	WA	WI	NA		<8'	41,000	40	pg/wipe	E	J	25,000	40	pg/wipe			5,600	40	pg/wipe			ND	40	pg/wipe			41,000	40	pg/wipe	E	J	28,000	40	pg/wipe			950	40	pg/wipe			397,520	pg/wipe
183	CH	105	MF	CH	WD	WA	WI	NA		<8'	46,000	40	pg/wipe	E	J	26,000	40	pg/wipe			5,500	40	pg/wipe			ND	40	pg/wipe			72,000	40	pg/wipe	E	J	37,000	40	pg/wipe			1,100	40	pg/wipe			529,920	pg/wipe
520	CH	105	MF	CH	BR	WA	WI	NA		<8'	53,000	40	pg/wipe	E	J	29,000	40	pg/wipe			6,300	40	pg/wipe			ND	40	pg/wipe			100,000	40	pg/wipe	E	J	45,000	40	pg/wipe	E	J	1,200	40	pg/wipe			626,150	pg/wipe
521	CH	105	MF	CH	BR	WA	WI	NA		<8'	13,000	40	pg/wipe			7,800	40	pg/wipe			1,700	40	pg/wipe			ND	40	pg/wipe			13,000	40	pg/wipe			7,800	40	pg/wipe			260	40	pg/wipe			127,170	pg/wipe
522	CH	105	MF	CH	BR	WA	WI	NA		<8'	19,000	40	pg/wipe			12,000	40	pg/wipe			2,800	40	pg/wipe			ND	40	pg/wipe			39,000	40	pg/wipe			21,000	40	pg/wipe			600	40	pg/wipe			181,750	pg/wipe
523	CH	105	MF	CH	BR	WA	WI	NA		<8'	620,000	40	pg/wipe	E	J	450,000	40	pg/wipe	E	J	110,000	40	pg/wipe	E	J	61	40	pg/wipe			510,000	40	pg/wipe	E	J	450,000	40	pg/wipe	E	J	18,000	NA	pg/wipe			4,331,261	pg/wipe
523	CH	105	MF	CH	BR	WA	WI	NA	DP	<8'	870,000	40	pg/wipe	E	J	600,000	40	pg/wipe	E	J	140,000	40	pg/wipe	E	J	83	40	pg/wipe			680,000	40	pg/wipe	E	J	580,000	40	pg/wipe	E	J	22,000	40	pg/wipe			5,966,083	pg/wipe
524	CH	105	MF	CH	BR	WA	WI	NA		<8'	10,000	40	pg/wipe			5,800	40	pg/wipe			1,200	40	pg/wipe			ND	40	pg/wipe			15,000	40	pg/wipe			7,800	40	pg/wipe			190	40	pg/wipe			95,770	pg/wipe
525	CH	105	MF	CH	BR	WA	WI	NA		<8'	7,800	40	pg/wipe			4,300	40	pg/wipe			920	40	pg/wipe			ND	40	pg/wipe			9,800	40	pg/wipe			5,100	40	pg/wipe			130	40	pg/wipe			84,850	pg/wipe
526	CH	105	MF	CH	WD	WA	WI	NA		<8'	10,000	40	pg/wipe			5,800	40	pg/wipe			1,200	40	pg/wipe			ND	40	pg/wipe			13,000	40	pg/wipe			6,400	40	pg/wipe			190	40	pg/wipe			114,970	pg/wipe
527	CH	105	MF	CH	WD	WA	WI	NA		<8'	10,000	40	pg/wipe			6,600	40	pg/wipe			1,500	40	pg/wipe			ND	40	pg/wipe			14,000	40	pg/wipe			9,000	40	pg/wipe			280	40	pg/wipe			98,610	pg/wipe

Notes:
CH - Charlestown
MF - Main Forge Shop
NA - Not Applicable
WD - Wood
BR - Brick
ACM - Asbestos Containing Material
DP - Duplicate Sample
CE - Ceiling
WA - Wall
WI - Wipe Sample

Data Validator Qualifiers:
J - Estimated
U - Undetected
UJ - Undetected but Estimated
R - Rejected

Lab Qualifiers:
ND - Not Detected
v - Elevated detection limit due to chemical interference
B - Compound is also detected in the blank
E - Concentration exceeds calibration range. Value is estimated

pg/wipe - picograms per 100 square centimeters

Table 13
Phase I Polynuclear Aromatic Hydrocarbons (USEPA Method 8270C) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID										Acenaphthene					Acenaphthylene					Anthracene					Benzo(a)anthracene					Benzo(a)pyrene					Benzo(b)fluoranthene				
Number	Site	Bldg	Room	Task	Mtl	Loc	Type	Depth	>8'/<8'	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier
Bulk Concrete Samples - Main Forge Shop Floor																																						
552	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	ND	770	µg/kg	U		ND	770	µg/kg	U		ND	770	µg/kg	U		86	770	µg/kg	J		130	770	µg/kg	J		ND	770	µg/kg	U	
571	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	ND	3,300	µg/kg	U		ND	3,300	µg/kg	U		ND	3,300	µg/kg	U		ND	3,300	µg/kg	U		ND	3,300	µg/kg	U		ND	3,300	µg/kg	U	
582	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	ND	33,000	µg/kg	U		ND	33,000	µg/kg	U		ND	33,000	µg/kg	U		ND	33,000	µg/kg	U		ND	33,000	µg/kg	U		ND	33,000	µg/kg	U	
592	CH	105	MF	CH	CO	FL	CR	0-1CM	<8'	ND	51,000	µg/kg	U		ND	51,000	µg/kg	U		ND	51,000	µg/kg	U		ND	51,000	µg/kg	U		ND	51,000	µg/kg	U		ND	51,000	µg/kg	U	
602	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	ND	6,700	µg/kg	U		ND	6,700	µg/kg	U		ND	6,700	µg/kg	U		ND	6,700	µg/kg	U		ND	6,700	µg/kg	U		ND	6,700	µg/kg	U	
612	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	ND	33,000	µg/kg	U		ND	33,000	µg/kg	U		ND	33,000	µg/kg	U		ND	33,000	µg/kg	U		ND	33,000	µg/kg	U		ND	33,000	µg/kg	U	
622	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	ND	33,000	µg/kg	U		ND	33,000	µg/kg	U		ND	33,000	µg/kg	U	UJ	ND	33,000	µg/kg	U	UJ	ND	33,000	µg/kg	U	UJ	ND	33,000	µg/kg	U	UJ
Bulk Concrete Samples - Main Forge Shop Trenches																																						
652	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U	
662	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	ND	10,000	µg/kg	U		ND	10,000	µg/kg	U		ND	10,000	µg/kg	U		ND	10,000	µg/kg	U		ND	10,000	µg/kg	U		ND	10,000	µg/kg	U	
672	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	ND	3,400	µg/kg	U		ND	3,400	µg/kg	U		ND	3,400	µg/kg	U		ND	3,400	µg/kg	U		ND	3,400	µg/kg	U		ND	3,400	µg/kg	U	
682	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	ND	3,300	µg/kg	U		ND	3,300	µg/kg	U		ND	3,300	µg/kg	U		ND	3,300	µg/kg	U		ND	3,300	µg/kg	U		ND	3,300	µg/kg	U	
692	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	ND	14,000	µg/kg	U		ND	14,000	µg/kg	U		ND	14,000	µg/kg	U		ND	14,000	µg/kg	U		ND	14,000	µg/kg	U		ND	14,000	µg/kg	U	
702	CH	105	MF	CH	CO	TRF	CR	0-1 CM	<8'	ND	6,800	µg/kg	U		ND	6,800	µg/kg	U		ND	6,800	µg/kg	U		ND	6,800	µg/kg	U		ND	6,800	µg/kg	U		ND	6,800	µg/kg	U	
712	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	ND	17,000	µg/kg	U		ND	17,000	µg/kg	U		ND	17,000	µg/kg	U		ND	17,000	µg/kg	U		ND	17,000	µg/kg	U		ND	17,000	µg/kg	U	
Bulk Soil Samples - Main Forge Shop Floor																																						
632	CH	105	MF	CH	SO	FL	GR	0-10 CM	<8'	ND	6,700	µg/kg	U		ND	6,700	µg/kg	U		ND	6,700	µg/kg	U		860	6,700	µg/kg	J		760	6,700	µg/kg	J		930	6,700	µg/kg	J	
642	CH	105	MF	CH	SO	FL	GR	0-10 CM	<8'	ND	17,000	µg/kg	U		ND	17,000	µg/kg	U		ND	17,000	µg/kg	U		ND	17,000	µg/kg	U		ND	17,000	µg/kg	U		ND	17,000	µg/kg	U	
Bulk Soil Samples - Main Forge Shop Trenches																																						
722	CH	105	MF	CH	SO	TRF	GR	0-10 CM	<8'	12,000	6,800	µg/kg			520	6,800	µg/kg	J		23,000	6,800	µg/kg			32,000	3,800	µg/kg			19,000	6,800	µg/kg			35,000	6,800	µg/kg		
732	CH	105	MF	CH	SO	TRF	GR	0-10 CM	<8'	94	720	µg/kg	J		ND	720	µg/kg	U		220	720	µg/kg	J		430	720	µg/kg	J		360	720	µg/kg	J		520	720	µg/kg	J	

Table 13
Phase I Polynuclear Aromatic Hydrocarbons (USEPA Method 8270C) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID										Benzo(ghi)perylene						Benzo(k)fluoranthene						Chrysene						Dibenzo(a,h)anthracene						Fluoranthene						Fluorene					
Number	Site	Bldg	Room	Task	Mtl	Loc	Type	Depth	>8' <8'	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier		Result	Detection Limit	Units	Lab Qualifier	DV Qualifier		Result	Detection Limit	Units	Lab Qualifier	DV Qualifier		Result	Detection Limit	Units	Lab Qualifier	DV Qualifier		Result	Detection Limit	Units	Lab Qualifier	DV Qualifier		Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	
Bulk Concrete Samples - Main Forge Shop Floor																																											
552	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	ND	770	µg/kg	U			430	770	µg/kg	J			400	770	µg/kg	J			ND	770	µg/kg	U			670	770	µg/kg	J			ND	770	µg/kg	U		
571	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	ND	3,300	µg/kg	U			ND	3,300	µg/kg	U			310	3,300	µg/kg	J			ND	3,300	µg/kg	U			510	3,300	µg/kg	J			ND	3,300	µg/kg	U		
582	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	ND	33,000	µg/kg	U			ND	33,000	µg/kg	U			ND	33,000	µg/kg	U			ND	33,000	µg/kg	U			ND	33,000	µg/kg	U			ND	33,000	µg/kg	U		
592	CH	105	MF	CH	CO	FL	CR	0-1CM	<8'	ND	51,000	µg/kg	U			ND	51,000	µg/kg	U			3,800	51,000	µg/kg	J			ND	51,000	µg/kg	U			9,600	51,000	µg/kg	J			ND	51,000	µg/kg	U		
602	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	ND	6,700	µg/kg	U			ND	6,700	µg/kg	U			ND	6,700	µg/kg	U			ND	6,700	µg/kg	U			ND	6,700	µg/kg	U			ND	6,700	µg/kg	U		
612	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	ND	33,000	µg/kg	U			ND	33,000	µg/kg	U			ND	33,000	µg/kg	U			ND	33,000	µg/kg	U			2,200	33,000	µg/kg	J			ND	33,000	µg/kg	U		
622	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	ND	33,000	µg/kg	U	UJ		ND	33,000	µg/kg	U	UJ		ND	33,000	µg/kg	U	UJ		ND	33,000	µg/kg	U	UJ		ND	33,000	µg/kg	U	UJ		ND	33,000	µg/kg	U		UJ
Bulk Concrete Samples - Main Forge Shop Trenches																																											
652	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	ND	330	µg/kg	U			ND	330	µg/kg	U			ND	330	µg/kg	U			ND	330	µg/kg	U			64	330	µg/kg	J			ND	330	µg/kg	U		
662	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	ND	10,000	µg/kg	U			ND	10,000	µg/kg	U			ND	10,000	µg/kg	U			ND	10,000	µg/kg	U			ND	10,000	µg/kg	U			ND	10,000	µg/kg	U		
672	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	ND	3,400	µg/kg	U			ND	3,400	µg/kg	U			370	3,400	µg/kg	J			ND	3,400	µg/kg	U			ND	3,400	µg/kg	U			ND	3,400	µg/kg	U		
682	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	ND	3,300	µg/kg	U			ND	3,300	µg/kg	U			ND	3,300	µg/kg	U			ND	3,300	µg/kg	U			ND	3,300	µg/kg	U			ND	3,300	µg/kg	U		
692	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	ND	14,000	µg/kg	U			ND	14,000	µg/kg	U			ND	14,000	µg/kg	U			ND	14,000	µg/kg	U			ND	14,000	µg/kg	U			ND	14,000	µg/kg	U		
702	CH	105	MF	CH	CO	TRF	CR	0-1 CM	<8'	ND	6,800	µg/kg	U			ND	6,800	µg/kg	U			ND	6,800	µg/kg	U			ND	6,800	µg/kg	U			ND	6,800	µg/kg	U			ND	6,800	µg/kg	U		
712	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	ND	17,000	µg/kg	U			ND	17,000	µg/kg	U			ND	17,000	µg/kg	U			ND	17,000	µg/kg	U			1,500	17,000	µg/kg	J			ND	17,000	µg/kg	U		
Bulk Soil Samples - Main Forge Shop Floor																																											
632	CH	105	MF	CH	SO	FL	GR	0-10 CM	<8'	1,200	6,700	µg/kg	J			1,000	6,700	µg/kg	J			1,500	6,700	µg/kg	J			ND	6,700	µg/kg	U			2,400	6,700	µg/kg	J			ND	6,700	µg/kg	U		
642	CH	105	MF	CH	SO	FL	GR	0-10 CM	<8'	ND	17,000	µg/kg	U			ND	17,000	µg/kg	U			ND	17,000	µg/kg	U			ND	17,000	µg/kg	U			ND	17,000	µg/kg	U			ND	17,000	µg/kg	U		
Bulk Soil Samples - Main Forge Shop Trenches																																											
722	CH	105	MF	CH	SO	TRF	GR	0-10 CM	<8'	11,000	6,800	µg/kg				17,000	6,800	µg/kg				33,000	6,800	µg/kg				4,800	6,800	µg/kg	J			98,000	6,800	µg/kg				14,000	6,800	µg/kg			
732	CH	105	MF	CH	SO	TRF	GR	0-10 CM	<8'	230	720	µg/kg	J			280	720	µg/kg	J			640	720	µg/kg	J			77	720	µg/kg	J			950	720	µg/kg				ND	720	µg/kg	U		

Table 13
Phase I Polynuclear Aromatic Hydrocarbons (USEPA Method 8270C) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID										Indeno(1,2,3-cd)pyrene					Naphthalene					Phenanthrene					Pyrene					Total PAHs	
Number	Site	Bldg	Room	Task	Mtl	Loc	Type	Depth	>8' <8'	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Units
Bulk Concrete Samples - Main Forge Shop Floor																														
552	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	ND	770	µg/kg	U		ND	770	µg/kg	U		320	770	µg/kg	J		370	770	µg/kg	J		2,406	µg/kg
571	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	ND	3,300	µg/kg	U		ND	3,300	µg/kg	U		300	3,300	µg/kg	J		450	3,300	µg/kg	J	J	1,570	µg/kg
582	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	ND	33,000	µg/kg	U		ND	33,000	µg/kg	U		ND	33,000	µg/kg	U		ND	33,000	µg/kg	U		-	µg/kg
592	CH	105	MF	CH	CO	FL	CR	0-1CM	<8'	ND	51,000	µg/kg	U		6,000	51,000	µg/kg	J		26,000	51,000	µg/kg	J		5,700	51,000	µg/kg	J		51,100	µg/kg
602	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	ND	6,700	µg/kg	U		ND	6,700	µg/kg	U		ND	6,700	µg/kg	U		ND	6,700	µg/kg	U		-	µg/kg
612	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	ND	33,000	µg/kg	U		ND	33,000	µg/kg	U		3,000	33,000	µg/kg	J		2,000	33,000	µg/kg	J		7,200	µg/kg
622	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	ND	33,000	µg/kg	U	UJ	ND	33,000	µg/kg	U	UJ	ND	33,000	µg/kg	U		ND	33,000	µg/kg	U	UJ	-	µg/kg
Bulk Concrete Samples - Main Forge Shop Trenches																														
652	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	ND	330	µg/kg	U		ND	330	µg/kg	U		76	330	µg/kg	J		ND	330	µg/kg	U		140	µg/kg
662	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	ND	10,000	µg/kg	U		ND	10,000	µg/kg	U		ND	10,000	µg/kg	U		ND	10,000	µg/kg	U		-	µg/kg
672	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	ND	3,400	µg/kg	U		ND	3,400	µg/kg	U		490	3,400	µg/kg	J		1,000	3,400	µg/kg	J		1,860	µg/kg
682	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	ND	3,300	µg/kg	U		ND	3,300	µg/kg	U		ND	3,300	µg/kg	U		ND	3,300	µg/kg	U		-	µg/kg
692	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	ND	14,000	µg/kg	U		ND	14,000	µg/kg	U		1,200	14,000	µg/kg	J		ND	14,000	µg/kg	U		1,200	µg/kg
702	CH	105	MF	CH	CO	TRF	CR	0-1 CM	<8'	ND	6,800	µg/kg	U		ND	6,800	µg/kg	U		570	6,800	µg/kg	J		370	6,800	µg/kg	J		940	µg/kg
712	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	ND	17,000	µg/kg	U		ND	17,000	µg/kg	U		880	17,000	µg/kg	J		1,100	17,000	µg/kg	J		3,480	µg/kg
Bulk Soil Samples - Main Forge Shop Floor																														
632	CH	105	MF	CH	SO	FL	GR	0-10 CM	<8'	950	6,700	µg/kg	J		ND	6,700	µg/kg	U		2,500	6,700	µg/kg	J		2,000	6,700	µg/kg	J	J	14,100	µg/kg
642	CH	105	MF	CH	SO	FL	GR	0-10 CM	<8'	ND	17,000	µg/kg	U		ND	17,000	µg/kg	U		ND	17,000	µg/kg	U		ND	17,000	µg/kg	U		-	µg/kg
Bulk Soil Samples - Main Forge Shop Trenches																														
722	CH	105	MF	CH	SO	TRF	GR	0-10 CM	<8'	14,000	6,800	µg/kg			8,400	6,800	µg/kg			100,000	6,800	µg/kg			56,000	6,800	µg/kg			477,720	µg/kg
732	CH	105	MF	CH	SO	TRF	GR	0-10 CM	<8'	240	720	µg/kg	J		1,200	720	µg/kg			1,300	720	µg/kg			620	720	µg/kg	J		7,161	µg/kg

Notes:
CH - Charlestown
MF - Main Forge Shop

µg/kg - micrograms per kilogram

CE - Ceiling
WA - Wall
WI - Wipe Sample
CR - Core Sample
GR - Grab Sample

SO - Soil Sample
CO - Concrete Sample
DP - Duplicate Sample

Data Validator Qualifiers:
J - Estimated
U - Undetected
UJ - Undetected but Estimated
R - Rejected

Lab Qualifiers:
ND - Not Detected
v - Elevated detection limit due to chemical interference
B - Compound is also detected in the blank
E - Concentration exceeds calibration range. Value is estimated

Table 14
Phase I Metals (USEPA Method 6010A) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Masschusetts

Sample ID										Antimony				Arsenic				Barium				Beryllium				Cadmium				Lead				Nickel				Silver			
Number	Site	Building	Room Location	Task	Material	Location in Room	Sample Type	Depth		Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier
										(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)			
Bulk Concrete Samples - Main Forge Shop Floor																																							
552	CH	105	MF	CH	CO	FL	CR	0-1CM		1	1	N	J	7.6	1			45.3	20.2			0.35	0.5	B	J	1.4	0.2			86.2	0.3	N*	J	11.5	4			ND	0.5	U	
571	CH	105	MF	CH	CO	FL	CR	0-1CM		1.6	1	N		2.6	1			40.7	20			0.35	0.5	B	J	1.2	0.2	B	J	6.6	0.3	N*		14.8	4			ND	0.5	U	
582	CH	105	MF	CH	CO	FL	CR	0-1CM		1.6	1	N		3.6	1			161	20.3			0.45	0.51	B	J	0.42	0.2			23.9	0.3	N*		82.8	4.1			ND	0.51	U	
592	CH	105	MF	CH	CO	FL	CR	0-1CM		2	1			3.6	1			60.9	20.4			0.49	0.51	B	J	1.7	0.2			751	0.61			25.7	4.1			ND	0.51	U	
602	CH	105	MF	CH	CO	FL	CR	0-1CM		76.5	1			8.2	1			54	20.3			0.4	0.51	B	J	2.9	0.2			216	0.3			360	4.1			ND	0.51	U	
612	CH	105	MF	CH	CO	FL	CR	0-1CM		111	1			9.8	1			65	20.2			0.54	0.51			8.9	0.2			354	0.3			614	4			ND	0.51	U	
622	CH	105	MF	CH	CO	FL	CR	0-1CM		6.7	1			4.6	1			69.7	20.2			0.5	0.5	B	J	0.9	0.2			40	0.3			41.7	4			ND	0.5	U	
Bulk Concrete Samples - Main Forge Shop Trenches																																							
652	CH	105	MF	CH	CO	TRW	CR	0-1CM		0.73	1	BN	J	2.4	1			62.4	20.1			0.41	0.5	B	J	0.25	0.2			26.4	0.03	N	J	12.3	4			ND	0.5	U	
662	CH	105	MF	CH	CO	TRW	CR	0-1 CM		0.9	1	BN	J	5.2	1			92.4	20.3			0.45	0.51	B	J	0.34	0.2			34.8	0.3	N	J	64.9	4.1			ND	0.51	U	
672	CH	105	MF	CH	CO	TRW	CR	0-1 CM		8.5	1	N	J	3.4	1			47.3	20.3			0.32	0.51	B	J	2.1	0.2			117	0.3	N	J	22	4.1			ND	0.51	U	
682	CH	105	MF	CH	CO	TRW	CR	0-1 CM		1.9	1	N	J	4.9	1			58.7	20.3			0.45	0.51	B	J	1.2	0.2			12.2	0.3	N	J	10.4	4.1			ND	0.51	U	
692	CH	105	MF	CH	CO	TRW	CR	0-1 CM		0.92	1	BN	J	11.7	1			76.2	20.7			0.56	0.52			0.73	0.21			62.3	0.31	E	J	24.6	4.1	N*	J	ND	0.52	U	
702	CH	105	MF	CH	CO	TRF	CR	0-1 CM		3.2	1	N	J	2.9	1			39.7	20.6			0.64	0.51			0.68	0.21			34.3	0.31	N	J	43.9	4.1			ND	0.51	U	
712	CH	105	MF	CH	CO	TRW	CR	0-1 CM		9.1	1	N	J	3	1			92.5	20.4			0.5	0.51	B	J	0.29	0.2			13.1	0.31	E	J	11	4.1	N*	J	ND	0.51	U	
Bulk Soil Samples - Main Forge Shop Floor																																							
632	CH	105	MF	CH	SO	FL	GR	0-10CM		39.3	5.1			13.6	1			47.3	20.2			0.33	0.51	B	J	1.6	1			169	1.5			1110	4			ND	0.51	U	
642	CH	105	MF	CH	SO	FL	GR	0-10CM		25	1			27.3	1			173	20.2			ND	0.5	U		2.9	0.2			1010	0.3			2250	4			ND	0.5	U	
Bulk Soil Samples - Main Forge Shop Trenches																																							
722	CH	105	MF	CH	SO	TRF	GR	0-10 CM		279	10.3	N	J	32.4	1			76.3	20.6			0.4	0.52	B	J	2.5	2.1			765	3.1	E	J	1710	4.1	N*	J	ND	0.52	U	
732	CH	105	MF	CH	SO	TRF	GR	0-10 CM		20.7	5.4	N	J	23.7	1.1			114	21.7			0.32	0.54	B	J	1.8	1.1			481	1.6	N	J	3040	4.3			ND	1.1	U	

Notes:

CH - Charlestown
MF - Main Forge Shop
CO - Concrete
SO - Soil
CM - Centimeter
FL - Floor
TRW - Trench Wall
TRF - Trench Floor
CR - Core Sample
GR - Grab Sample

mg/kg - milligrams per kilogram

Data Validator Qualifiers:
J - Estimated
U - Undetected
UJ - Undetected but Estimated
R - Rejected

Lab Qualifiers:
ND - Not Detected
v - Elevated detection limit due to chemical interference
B - Compound is also detected in the blank
E - Concentration exceeds calibration range. Value is estimated

Table 15
Phase I Dioxins (USEPA Method 8290) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID										2378-TCDF					TOTAL TCDF					2378-TCDD					TOTAL TCDD					12378-PeCDF					23478-PeCDF					TOTAL PeCDF					12378-PeCDD					TOTAL PeCDD				
Number	Site	Building	Room Location	Task	Material	Location in Room	Sample Type	Depth	Age	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier
Bulk Concrete Samples - Main Forge Shop Floor																																																					
552	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	26	-	ng/kg			330	-	ng/kg			ND	2.1	ng/kg			11	-	ng/kg			ND	170	ng/kg	I	UJ	9.9	-	ng/kg			60	-	ng/kg			ND	4.9	ng/kg	I	UJ	3.5	-	ng/kg	J	
562	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	17	-	ng/kg			170	-	ng/kg			ND	2	ng/kg			2.7	-	ng/kg		U	8.8	-	ng/kg			13	-	ng/kg			120	-	ng/kg			2.3	-	ng/kg	J		7.8	-	ng/kg		
572	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	15	-	ng/kg			89	-	ng/kg			ND	1	ng/kg			2.2	-	ng/kg	B	U	ND	50	ng/kg	I	UJ	5.0	-	ng/kg			37	-	ng/kg			ND	3	ng/kg	I	UJ	ND	-	ng/kg		
582	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	7	-	ng/kg			70	-	ng/kg			ND	5	ng/kg			5.1	-	ng/kg	B	U	ND	30	ng/kg	I	UJ	ND	7	ng/kg	I	UJ	25	-	ng/kg			ND	4	ng/kg			ND	-	ng/kg		
592	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	23	-	ng/kg			200	-	ng/kg			ND	9	ng/kg			3.7	-	ng/kg	B	U	13	-	ng/kg			12	-	ng/kg			100	-	ng/kg			ND	9	ng/kg			ND	-	ng/kg		
602	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	80	-	ng/kg			870	-	ng/kg			5.5	-	ng/kg			57	-	ng/kg			77	-	ng/kg			48	-	ng/kg			490	-	ng/kg			ND	7	ng/kg	I	UJ	41	-	ng/kg		
612	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	47	44	ng/kg			320	-	ng/kg			ND	2	ng/kg			23	-	ng/kg			ND	73	ng/kg	I	UJ	42	-	ng/kg			380	-	ng/kg			ND	6	ng/kg			16	-	ng/kg		
622	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	24	-	ng/kg			160	-	ng/kg			ND	2	ng/kg			13	-	ng/kg			ND	15	ng/kg	I	UJ	19	-	ng/kg			160	-	ng/kg			ND	10	ng/kg	I	UJ	ND	-	ng/kg		
Bulk Concrete Samples - Main Forge Shop Trenches																																																				
652	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	2	-	ng/kg			39	-	ng/kg			ND	1	ng/kg			5	-	ng/kg	B	U	ND	16	ng/kg	I	UJ	2.1	-	ng/kg	J		7	-	ng/kg			ND	2	ng/kg	I	UJ	2.6	-	ng/kg	J	
662	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	10	-	ng/kg			220	-	ng/kg			ND	8	ng/kg			ND	-	ng/kg			ND	73	ng/kg	I	UJ	ND	21	ng/kg			17	-	ng/kg			ND	28	ng/kg			ND	-	ng/kg		
672	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	21	-	ng/kg			170	-	ng/kg			ND	6	ng/kg			14	-	ng/kg			15	-	ng/kg			21	-	ng/kg			170	-	ng/kg			4	-	ng/kg	J		26	-	ng/kg		
682	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	9.3	-	ng/kg			100	-	ng/kg			ND	3	ng/kg			3.3	-	ng/kg	B	U	12	-	ng/kg			12	-	ng/kg			57	-	ng/kg			ND	6	ng/kg			ND	-	ng/kg		
692	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	12	-	ng/kg			62	-	ng/kg			ND	8	ng/kg			2.9	-	ng/kg		U	3.8	-	ng/kg	J		11	-	ng/kg			51	-	ng/kg			ND	10	ng/kg			ND	-	ng/kg		
702	CH	105	MF	CH	CO	TRF	CR	0-1 CM	<8'	56	-	ng/kg			490	-	ng/kg			1.9	-	ng/kg			27	-	ng/kg			33	-	ng/kg			48	-	ng/kg			320	-	ng/kg			ND	4	ng/kg	I	UJ	ND	-	ng/kg		
712	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	64	-	ng/kg			530	-	ng/kg			3.3	-	ng/kg			110	-	ng/kg			31	-	ng/kg			80	-	ng/kg			370	-	ng/kg			ND	13	ng/kg	I	UJ	110	-	ng/kg		
Bulk Soil Samples - Main Forge Shop Floor																																																			
632	CH	105	MF	CH	SO	FL	GR	0-10 CM	<8'	10	-	ng/kg			92	-	ng/kg			-	2	ng/kg			7.9	-	ng/kg		U	-	84	ng/kg	I	UJ	11	-	ng/kg			60	-	ng/kg			ND	2	ng/kg	I	UJ	ND	-	ng/kg		
642	CH	105	MF	CH	SO	FL	GR	0-10 CM	<8'	64	-	ng/kg			760	-	ng/kg			1.2	-	ng/kg			32	-	ng/kg			61	-	ng/kg			56	-	ng/kg			560	-	ng/kg			ND	8	ng/kg	I	UJ	25	-	ng/kg		
Bulk Soil Samples - Main Forge Shop Trenches																																																			
722	CH	105	MF	CH	SO	TRF	GR	0-10 CM	<8'	32	-	ng/kg			250	-	ng/kg			-	2	ng/kg	1	UJ	38	-	ng/kg			-	110	ng/kg	I	UJ	39	-	ng/kg			420	-	ng/kg			ND	12	ng/kg	I	UJ	12	-	ng/kg		
732	CH	105	MF	CH	SO	TRF	GR	0-10 CM	<8'	24	-	ng/kg			230	-	ng/kg			-	2	ng/kg			7.5	-	ng/kg	B	U	-	880	ng/kg	I	UJ	17	-	ng/kg			64	-	ng/kg			ND	4	ng/kg	I	UJ	ND	-	ng/kg		

Table 15
Phase I Dioxins (USEPA Method 8290) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID											123478-HxCDF					123678-HxCDF					234678-HxCDF					123789-HxCDF					TOTAL HxCDF					123478-HxCDD					123678-HxCDD					123789-HxCDD					TOTAL HxCDD				
Number	Site	Building	Room Location	Task	Material	Location in Room	Sample Type	Depth	Age		Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier
Bulk Concrete Samples - Main Forge Shop Floor																																																								
552	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	8.2	-	ng/kg			6.2	-	ng/kg			4.5	-	ng/kg	J		ND	3.9	ng/kg			98	-	ng/kg			ND	3.2	ng/kg			3.3	-	ng/kg	J		ND	3.2	ng/kg		UJ	7.4	-	ng/kg		
562	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	8.4	-	ng/kg			ND	11	ng/kg	I	UJ	5.9	-	ng/kg			1.6	-	ng/kg	J		87	-	ng/kg			1.7	-	ng/kg	J		5.2	-	ng/kg			2.9	-	ng/kg	J	J	39	-	ng/kg		
572	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	4.3	-	ng/kg	J		1.8	-	ng/kg	JB	U	3.1	-	ng/kg	JB	U	ND	4	ng/kg			28	-	ng/kg			ND	5	ng/kg			ND	5	ng/kg			ND	6	ng/kg		UJ	7.8	-	ng/kg		
582	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	ND	7	ng/kg			ND	16	ng/kg	I	UJ	6.0	-	ng/kg			ND	10	ng/kg			41	-	ng/kg			ND	5	ng/kg			4.5	-	ng/kg	J		ND	8	ng/kg			4.5	-	ng/kg	J	
592	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	9.4	-	ng/kg			5.6	-	ng/kg			ND	12	ng/kg			ND	20	ng/kg			15	-	ng/kg			ND	5	ng/kg			ND	8	ng/kg			ND	12	ng/kg			13	-	ng/kg		
602	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	37	-	ng/kg			25	-	ng/kg			21	-	ng/kg			ND	11	ng/kg			270	-	ng/kg			ND	7	ng/kg			11	-	ng/kg			6.5	-	ng/kg			82	-	ng/kg		
612	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	23	-	ng/kg			ND	94	ng/kg	I	UJ	29	-	ng/kg			ND	10	ng/kg			530	-	ng/kg			ND	9	ng/kg			ND	11	ng/kg	I	UJ	ND	9	ng/kg			71	-	ng/kg		
622	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	22	-	ng/kg			7.3	-	ng/kg			11	-	ng/kg			ND	13	ng/kg			150	-	ng/kg			ND	7	ng/kg			7.6	-	ng/kg			ND	8	ng/kg			46	-	ng/kg		
Bulk Concrete Samples - Main Forge Shop Trenches																																																							
652	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	1.7	-	ng/kg	J		0.77	-	ng/kg	J		ND	1	ng/kg			ND	3	ng/kg	I	UJ	9.2	-	ng/kg			ND	1	ng/kg			ND	2	ng/kg			ND	2	ng/kg			ND	-	ng/kg		
662	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	ND	18	ng/kg			ND	23	ng/kg			ND	25	ng/kg			ND	41	ng/kg			ND	-	ng/kg			ND	38	ng/kg			ND	45	ng/kg			ND	45	ng/kg			ND	-	ng/kg		
672	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	23	-	ng/kg			11	-	ng/kg			15	-	ng/kg			9.9	-	ng/kg			170	-	ng/kg			ND	14	ng/kg			13	-	ng/kg			6.6	-	ng/kg			83	-	ng/kg		
682	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	4.7	-	ng/kg	J		5.3	-	ng/kg			ND	6	ng/kg			ND	7	ng/kg			34	-	ng/kg			ND	5	ng/kg			ND	6	ng/kg			ND	3	ng/kg			7.9	-	ng/kg		
692	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	13	-	ng/kg			ND	12	ng/kg			12	-	ng/kg			9.5	-	ng/kg			48	-	ng/kg			ND	14	ng/kg			ND	14	ng/kg			ND	17	ng/kg			ND	-	ng/kg		
702	CH	105	MF	CH	CO	TRF	CR	0-1 CM	<8'	49	-	ng/kg			22	-	ng/kg			20	-	ng/kg			17	-	ng/kg			230	-	ng/kg			2.4	-	ng/kg	J		3.1	-	ng/kg	J		2.2	-	ng/kg	J		30	-	ng/kg		
712	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	71	-	ng/kg			40	-	ng/kg			43	-	ng/kg			19	-	ng/kg			550	-	ng/kg			8.1	-	ng/kg			15	-	ng/kg			11	-	ng/kg			280	-	ng/kg		
Bulk Soil Samples - Main Forge Shop Floor																																																						
632	CH	105	MF	CH	SO	FL	GR	0-10 CM	<8'	6.5	-	ng/kg			4.6	-	ng/kg	J		4.8	-	ng/kg			2.1	-	ng/kg	J		71	-	ng/kg			ND	2	ng/kg			1.6	-	ng/kg	J		ND	2	ng/kg	I	UJ	14	-	ng/kg		
642	CH	105	MF	CH	SO	FL	GR	0-10 CM	<8'	33	-	ng/kg			22	-	ng/kg			19	-	ng/kg			14	-	ng/kg			240	-	ng/kg			ND	3	ng/kg		UJ	7.3	-	ng/kg			6.5	-	ng/kg			54	-	ng/kg		
Bulk Soil Samples - Main Forge Shop Trenches																																																					
722	CH	105	MF	CH	SO	TRF	GR	0-10 CM	<8'	55	-	ng/kg			31	-	ng/kg			25	-	ng/kg			15	-	ng/kg			290	-	ng/kg			6.7	-	ng/kg			12	-	ng/kg			5.4	-	ng/kg			120	-	ng/kg		
732	CH	105	MF	CH	SO	TRF	GR	0-10 CM	<8'	7.1	-	ng/kg			5.1	-	ng/kg			ND	8	ng/kg			ND	18	ng/kg			51	-	ng/kg			ND	7	ng/kg			ND	7	ng/kg			ND	7	ng/kg			12	-	ng/kg		

Table 15
Phase I Dioxins (USEPA Method 8290) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID										1234678-HpCDF					1234789-HpCDF					TOTAL HpCDF					1234678-HpCDD					TOTAL HpCDD					OCDF					OCDD					Total 2378-TCDD Equivalence	
Number	Site	Building	Room Location	Task	Material	Location in Room	Sample Type	Depth	>8' <8'	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Units
Bulk Concrete Samples - Main Forge Shop Floor																																													
552	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	45	-	ng/kg			ND	9.7	ng/kg			83	-	ng/kg			26	-	ng/kg			47	-	ng/kg			39	-	ng/kg			170	-	ng/kg			11	ng/kg
562	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	47	-	ng/kg			2.7	-	ng/kg	J		100	-	ng/kg			130	-	ng/kg			240	-	ng/kg			77	-	ng/kg			930	-	ng/kg			15	ng/kg
572	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	6.7	-	ng/kg			ND	7	ng/kg			6.7	-	ng/kg			12	-	ng/kg			24	-	ng/kg			6.9	-	ng/kg	J		140	-	ng/kg			5.3	ng/kg
582	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	19	-	ng/kg			ND	12	ng/kg			36	-	ng/kg			19	-	ng/kg			38	-	ng/kg			16	-	ng/kg			110	-	ng/kg			2.2	ng/kg
592	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	16	-	ng/kg			ND	16	ng/kg			42	-	ng/kg			ND	23	ng/kg	I	UJ	ND	-	ng/kg			22	-	ng/kg			130	-	ng/kg			11	ng/kg
602	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	88	-	ng/kg			ND	24	ng/kg			150	-	ng/kg			91	-	ng/kg			160	-	ng/kg			120	-	ng/kg			600	-	ng/kg			54	ng/kg
612	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	480	-	ng/kg			ND	11	ng/kg			800	-	ng/kg			170	-	ng/kg			320	-	ng/kg			310	-	ng/kg			1,200	-	ng/kg			39	ng/kg
622	CH	105	MF	CH	CO	FL	CR	0-1 CM	<8'	48	-	ng/kg			ND	12	ng/kg			110	-	ng/kg			160	-	ng/kg			270	-	ng/kg			88	-	ng/kg			1,300	-	ng/kg			20	ng/kg
Bulk Concrete Samples - Main Forge Shop Trenches																																													
652	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	4.4	-	ng/kg	J		ND	5	ng/kg			9.7	-	ng/kg			6.7	-	ng/kg			12	-	ng/kg			7.7	-	ng/kg	J		180	-	ng/kg			1.8	ng/kg
662	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	ND	41	ng/kg			ND	43	ng/kg			ND	-	ng/kg			ND	99	ng/kg			ND	-	ng/kg			ND	120	ng/kg			200	-	ng/kg			1.2	ng/kg
672	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	91	-	ng/kg			ND	16	ng/kg			190	-	ng/kg			120	-	ng/kg			230	-	ng/kg			100	-	ng/kg			1,600	-	ng/kg			27	ng/kg
682	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	12	-	ng/kg			ND	7	ng/kg			12	-	ng/kg			8.5	-	ng/kg			15	-	ng/kg			ND	6	ng/kg	I	UJ	120	-	ng/kg			8.9	ng/kg
692	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	17	-	ng/kg			ND	43	ng/kg			35	-	ng/kg			25	-	ng/kg			25	-	ng/kg			42	-	ng/kg			350	-	ng/kg			11	ng/kg
702	CH	105	MF	CH	CO	TRF	CR	0-1 CM	<8'	26	-	ng/kg			12	-	ng/kg			43	-	ng/kg			19	-	ng/kg			34	-	ng/kg			23	-	ng/kg			220	-	ng/kg			46	ng/kg
712	CH	105	MF	CH	CO	TRW	CR	0-1 CM	<8'	380	-	ng/kg			20	-	ng/kg			700	-	ng/kg			260	-	ng/kg			450	-	ng/kg			360	-	ng/kg			1,700	-	ng/kg			81	ng/kg
Bulk Soil Samples - Main Forge Shop Floor																																													
632	CH	105	MF	CH	SO	FL	GR	0-10 CM	<8'	39	-	ng/kg			2.2	-	ng/kg	J		77	-	ng/kg			35	-	ng/kg			63	-	ng/kg			43	-	ng/kg			290	-	ng/kg			10	ng/kg
642	CH	105	MF	CH	SO	FL	GR	0-10 CM	<8'	36	-	ng/kg			ND	22	ng/kg			60	-	ng/kg			41	-	ng/kg			78	-	ng/kg			33	-	ng/kg			200	-	ng/kg			50	ng/kg
Bulk Soil Samples - Main Forge Shop Trenches																																													
722	CH	105	MF	CH	SO	TRF	GR	0-10 CM	<8'	130	-	ng/kg			19	-	ng/kg			150	-	ng/kg			200	-	ng/kg			410	-	ng/kg			420	-	ng/kg			2,100	-	ng/kg			44	ng/kg
732	CH	105	MF	CH	SO	TRF	GR	0-10 CM	<8'	17	-	ng/kg			ND	15	ng/kg			35	-	ng/kg			34	-	ng/kg			66	-	ng/kg			27	-	ng/kg			330	-	ng/kg			13	ng/kg

Notes:

CH - Charlestown
MF - Main Forge Shop

CO - Concrete
SO - Soil
CM - Centimeter

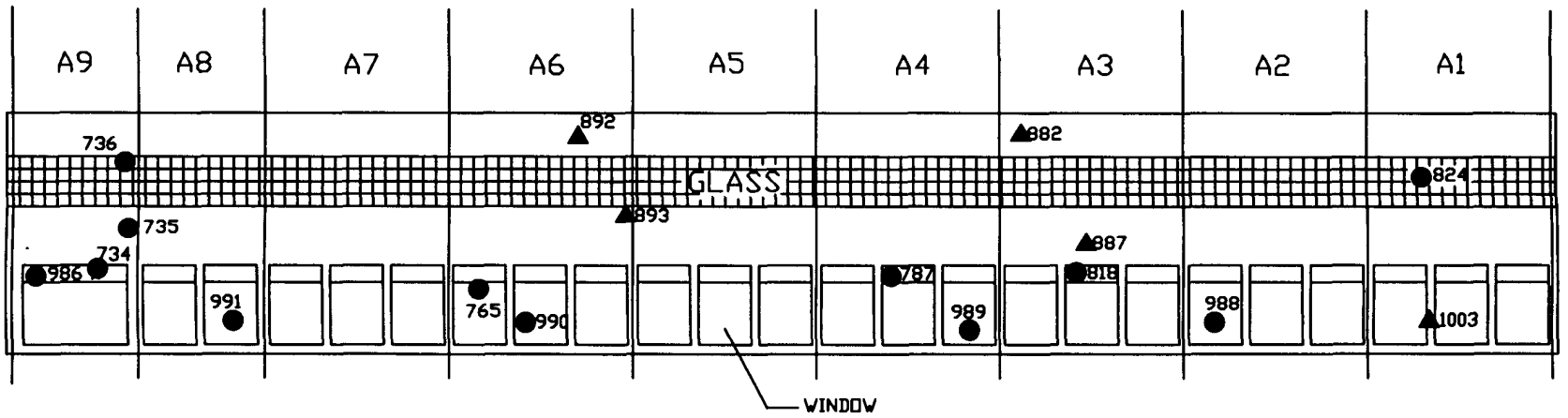
FL - Floor
TRW - Trench Wall
TRF - Trench Floor

CR - Core Sample
GR - Grab Sample

ng/kg - nanogram per kilogram

Data Validator Qualifiers:
J - Estimated
U - Undetected
UJ - Undetected but Estimated
R - Rejected

Lab Qualifiers:
ND - Not Detected
v - Elevated detection limit due to chemical interference
B - Compound is also detected in the blank
E - Concentration exceeds calibration range. Value is estimated



SCALE: 1" = 40' (APPROX.)

NOTES:
1. POSITION: INTERIOR NORTH WALL OF MAIN FORGE SHOP
2. SAMPLE LOCATIONS BASED UPON FIELD NOTES BY R.E. HAINES, GZA
3. PHASE II SAMPLES COLLECTED BETWEEN JANUARY AND MARCH 1999
4. ALPHA-NUMERIC GRID DESIGNATION IS BASED UPON LABEL SYSTEM IDENTIFIED IN FIGURE 2

LEGEND:
● WIPE LOCATIONS
▲ BULK LOCATIONS
893 SAMPLE DESIGNATION NUMBER

FIGURE 11

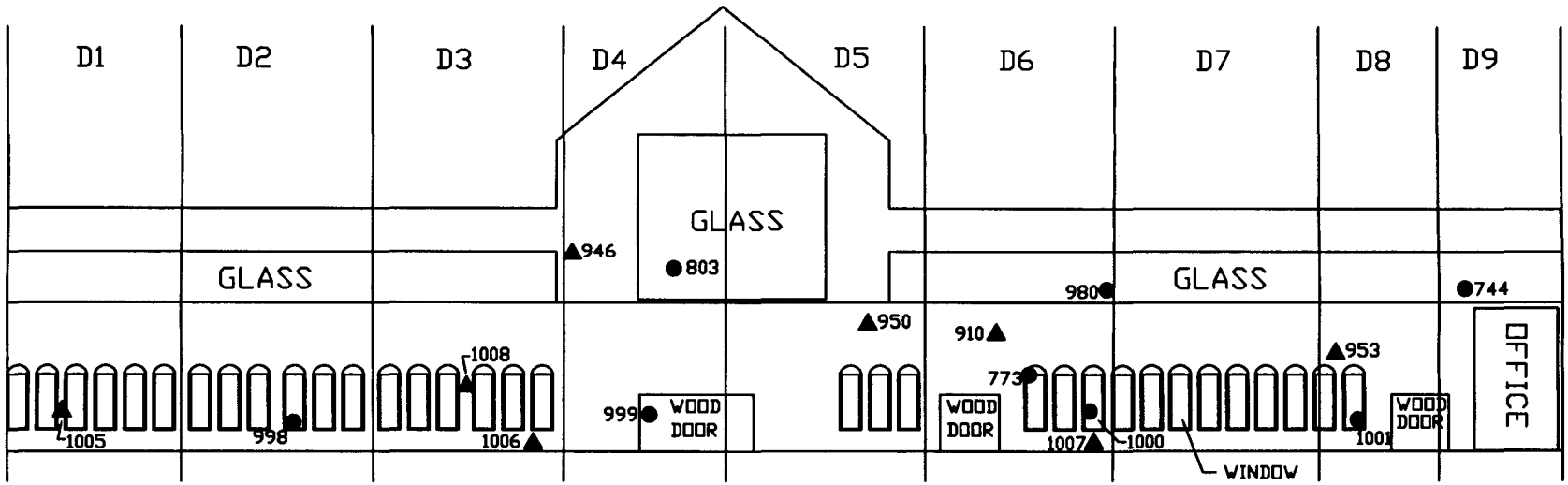
CHARLESTOWN BUILDING #105
PHASE II-SAMPLE LOCATIONS
NORTH WALL AND NON-WALL MATERIALS

BUILDING 105 SITE REMEDIATION
FORMER CHARLESTOWN NAVY YARD

STONE & WEBSTER BOSTON, MASS. | U.S. ARMY CORPS OF ENGINEERS

DATE: 8/28/00 | CKD' BY: ENH | REVISION: 1

[ENV/BOSFS02]\HAZWASTE\USACE\BLDG_105\DWG&QTY\SAMPLE-LOCATION\SL-NORTHWALL.DWG



SCALE: 1"=40' (APPROX.)

NOTES:

1. POSITION: INTERIOR SOUTH WALL OF MAIN FORGE SHOP
2. SAMPLE LOCATIONS BASED UPON FIELD NOTES BY R.E. HAINES, GZA
3. PHASE II SAMPLES COLLECTED BETWEEN JANUARY AND MARCH 1999
4. ALPHA-NUMERIC GRID DESIGNATION IS BASED UPON LABEL SYSTEM IDENTIFIED IN FIGURE 2

LEGEND:

● WIPE LOCATIONS

▲ BULK LOCATIONS

803 SAMPLE DESIGNATION NUMBER

FIGURE 12

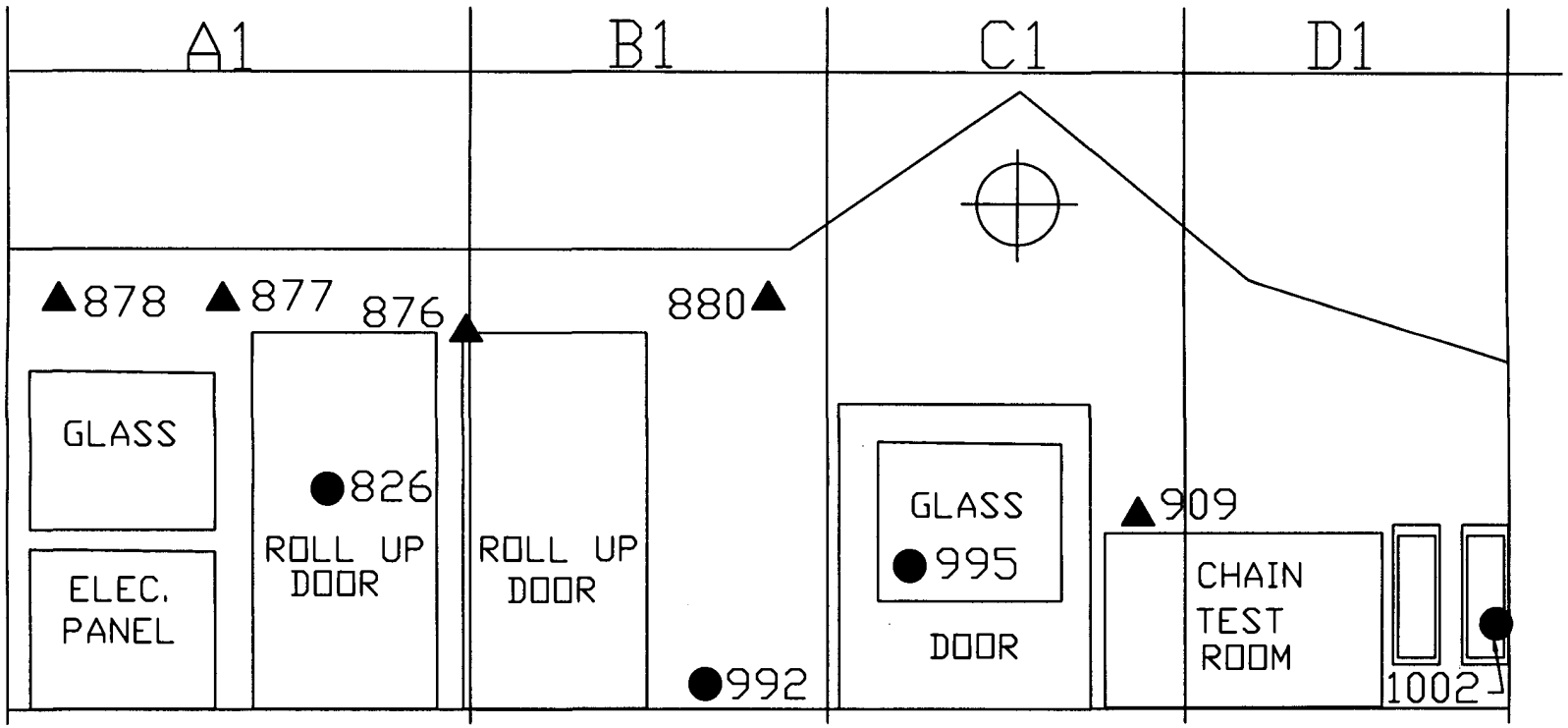
CHARLESTOWN BUILDING #105
PHASE II-SAMPLE LOCATIONS
SOUTH WALL AND NON-WALL MATERIALS

BUILDING 105 SITE REMEDIATION
FORMER CHARLESTOWN NAVY YARD

STONE & WEBSTER BOSTON, MASS. | U.S. ARMY CORPS OF ENGINEERS

DATE: 6/22/00 | CHK'D BY: ENH | REVISION: 1

[ENV/BOSFS02]\WAZWASTE\USACE\BLDG_105\DWG&GTY\SAMPLE-LOCATION\PHASE1\PH2-SOUTHWALL.DWG



SCALE: 1"=75' (APPROX.)

NOTES:

1. POSITION: INTERIOR EAST WALL OF MAIN FORGE SHOP
2. SAMPLE LOCATIONS BASED UPON FIELD NOTES BY R.E. HAINES, GZA
3. PHASE II SAMPLES COLLECTED BETWEEN JANUARY AND MARCH 1999
4. ALPHA-NUMERIC GRID DESIGNATION IS BASED UPON LABEL SYSTEM IDENTIFIED IN FIGURE 2

LEGEND:

● WIPE LOCATIONS

▲ BULK LOCATIONS

880 SAMPLE DESIGNATION NUMBER

FIGURE 13

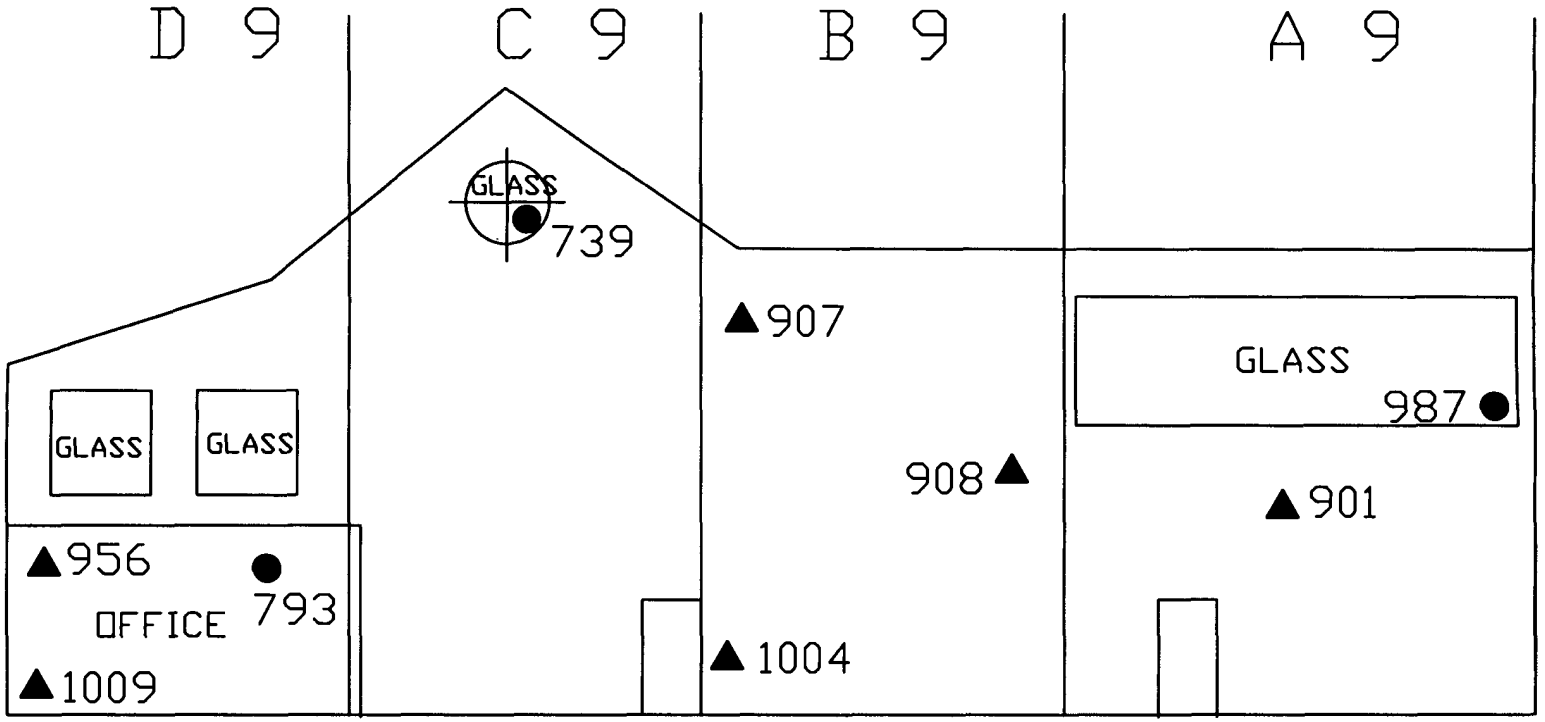
CHARLESTOWN BUILDING #105
PHASE II-SAMPLE LOCATIONS
EAST WALL AND NON-WALL MATERIALS

BUILDING 105 SITE REMEDIATION
FORMER CHARLESTOWN NAVY YARD

STONE & WEBSTER BOSTON, MASS. | U.S. ARMY CORPS OF ENGINEERS

DATE: 6/26/00 | CKD' BY: EMH | REVISION: 1

[DW/BOSFS02]\HAZWASTE\USACE\BLDG_105\DWGMSTR\SAMPLE-LOCATION\PHASEII\PH2-EASTWALL.DWG



SCALE: 1"=75' (APPROX.)

NOTES:
1. POSITION: INTERIOR WEST WALL OF MAIN FORGE SHOP
2. SAMPLE LOCATIONS BASED UPON FIELD NOTES BY R.E. HAINES, GZA
3. PHASE II SAMPLES COLLECTED BETWEEN JANUARY AND MARCH 1999
4. ALPHA-NUMERIC GRID DESIGNATION IS BASED UPON LABEL SYSTEM IDENTIFIED IN FIGURE 2

LEGEND:
- ● WIPE LOCATIONS
- ▲ BULK LOCATIONS
- 908 SAMPLE DESIGNATION NUMBER

FIGURE 14

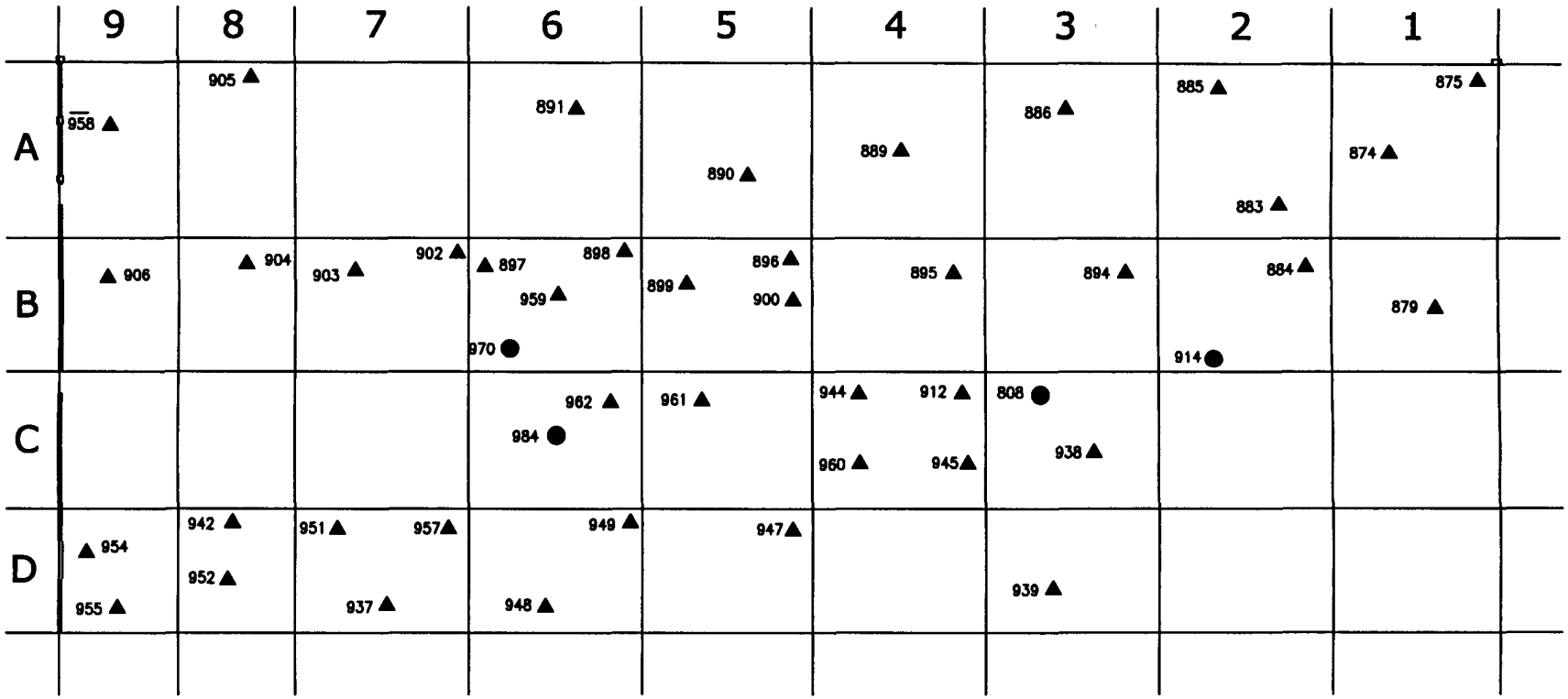
CHARLESTOWN BUILDING #105
PHASE II-SAMPLE LOCATIONS
WEST WALL AND NON-WALL MATERIALS

BUILDING 105 SITE REMEDIATION
FORMER CHARLESTOWN NAVY YARD

STONE & WEBSTER BOSTON, MASS. | U.S. ARMY CORPS OF ENGINEERS

DATE: 6/26/00 | CKD' BY: ENH | REVISION: 1

[DW/BOSP302]\HAZWASTE\USACE\BLDG_105\DWGADTY\SAMPLE-LOCATION\PHASE\PH2-WESTWALL.DWG



SCALE: 1" = 40' (APPROX.)

NOTES:

1. POSITION: PLAN VIEW – MAIN FORGE SHOP
2. SAMPLE LOCATIONS BASED UPON FIELD NOTES BY R.E. HAINES, GZA
3. PHASE II SAMPLES COLLECTED BETWEEN JANUARY AND MARCH 1999
4. ALPHA–NUMERIC GRID DESIGNATION IS BASED UPON LABEL SYSTEM IDENTIFIED IN FIGURE 2

LEGEND:

● WIPE LOCATIONS

▲ BULK LOCATIONS

895 SAMPLE DESIGNATION NUMBER

FIGURE 15

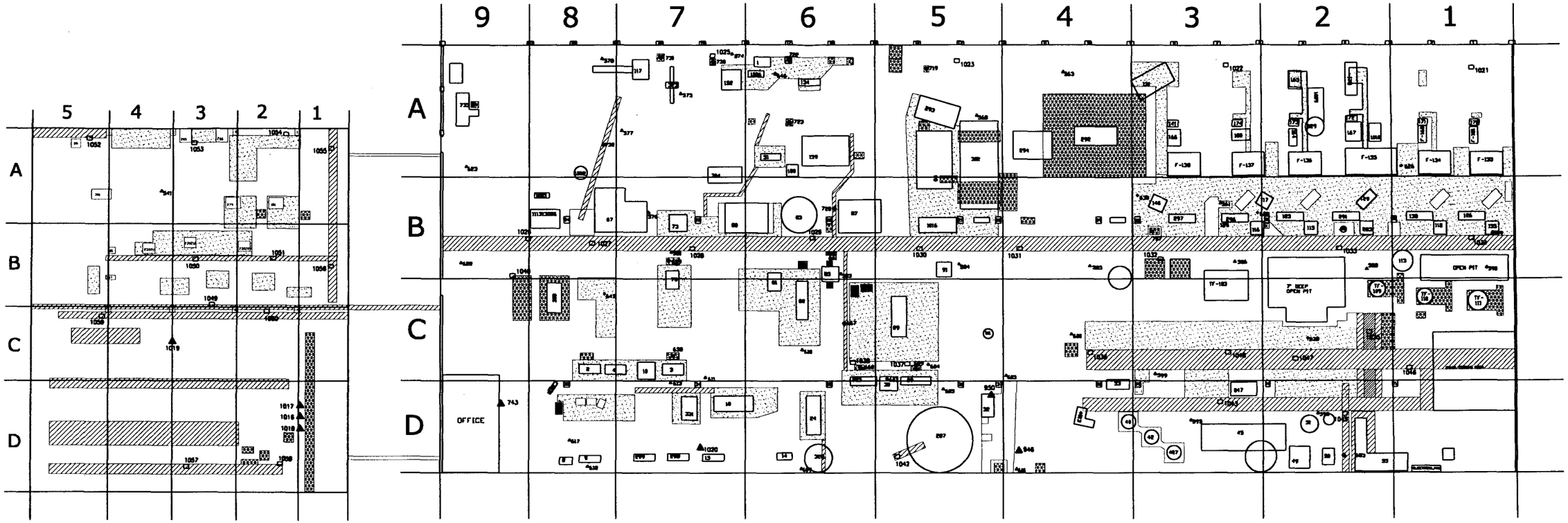
CHARLESTOWN BUILDING #105
PHASE II–SAMPLE LOCATIONS
CEILING/VERTICAL ROOF MATERIALS

BUILDING 105 SITE REMEDIATION
FORMER CHARLESTOWN NAVY YARD

STONE & WEBSTER BOSTON, MASS. | U.S. ARMY CORPS OF ENGINEERS

DATE: 6/26/00 | CKD' BY: ENH | REVISION: 1

[DW/BOSFS02]\HAZWASTE\USACE\BLDG_105\DWG&DTY\SAMPLE-LOCATION\PHASEII\PH2-CEILROOF.DWG



SCALE: 1"=33' (APPROX.)

LEGEND

- TRENCH
- STEEL PLATE COVERED TRENCH
- SOIL FLOOR
- CONCRETE FLOOR
- ▲ CONCRETE FLOOR CORE
- ● CONCRETE TRENCH FLOOR
- ▬ CONCRETE TRENCH WALL
- □ STEEL PLATE WIPE
- ◇ SOIL
- ▲ OTHER BULK
- 893 SAMPLE DESIGNATION NUMBER

NOTES:

1. THE LOCATIONS OF VAULTS, TRENCHES AND PITS AND THE CLASSIFICATION OF FLOORING TYPE ARE APPROXIMATE. THE INFORMATION SHOWN IS BASED UPON BUILDING DRAWINGS THAT WERE MADE AVAILABLE BY THE NATIONAL PARK SERVICE (NPS) AND OBSERVATIONS MADE BY THE CORPS OF ENGINEERS AND STONE & WEBSTER.
2. INVENTORY OF PROCESS EQUIPMENT PROVIDED BY NATIONAL PARK SERVICE.
3. SAMPLE LOCATIONS BASED UPON FIELD NOTES BY R.E. HAINES, GZA
4. PHASE II SAMPLES COLLECTED BETWEEN JANUARY AND MARCH 1999
5. ALPHA-NUMERIC GRID DESIGNATION IS BASED UPON LABEL SYSTEM IDENTIFIED IN FIGURE 2.

FIGURE 16A

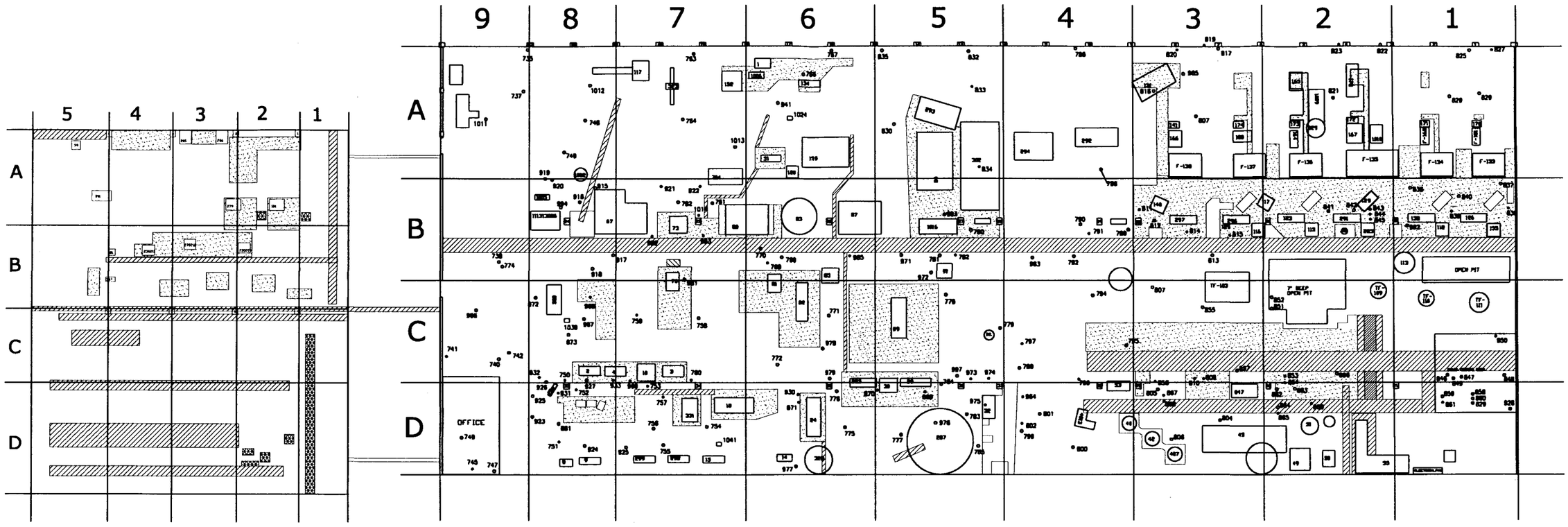
CHARLESTOWN BUILDING #105 PHASE II-SAMPLE LOCATIONS

SOIL/CONCRETE/STEEL PLATE/WOOD

BUILDING 105 SITE REMEDIATION
FORMER CHARLESTOWN NAVY YARD

STONE & WEBSTER BOSTON, MASS. | U.S. ARMY CORPS OF ENGINEERS

DATE: 7/31/00	CKD' BY: ENH	REVISION: 1



SCALE: 1"=40' (APPROX.)

LEGEND

- TRENCH
- STEEL PLATE COVERED TRENCH
- SOIL FLOOR
- CONCRETE FLOOR
- ● OVERHEAD PIPING WIPE SAMPLE
- ○ STRUCTURAL STEEL WIPE SAMPLE
- 893 SAMPLE DESIGNATION NUMBER

NOTES:

1. THE LOCATIONS OF VAULTS, TRENCHES AND PITS AND THE CLASSIFICATION OF FLOORING TYPE ARE APPROXIMATE. THE INFORMATION SHOWN IS BASED UPON BUILDING DRAWINGS THAT WERE MADE AVAILABLE BY THE NATIONAL PARK SERVICE (NPS) AND OBSERVATIONS MADE BY THE CORPS OF ENGINEERS AND STONE & WEBSTER.
2. INVENTORY OF PROCESS EQUIPMENT PROVIDED BY NATIONAL PARK SERVICE.
3. SAMPLE LOCATIONS BASED UPON FIELD NOTES BY R.E. HAINES, GZA
4. PHASE II SAMPLES COLLECTED BETWEEN JANUARY AND MARCH 1999
5. ALPHA-NUMERIC GRID DESIGNATION IS BASED UPON LABEL SYSTEM IDENTIFIED IN FIGURE 2.

FIGURE 16B

CHARLESTOWN BUILDING #105
PHASE II-SAMPLE LOCATIONS

OVERHEAD PIPING/STRUCTURAL STEEL

BUILDING 105 SITE REMEDIATION
FORMER CHARLESTOWN NAVY YARD

STONE & WEBSTER
BOSTON, MASS.

U.S. ARMY CORPS
OF ENGINEERS

DATE: 8/2/00	CKD' BY: ENH	REVISION: 1

Table 17
Phase II Polychlorinated Biphenyls (USEPA Method 8082) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID												Aroclor 1016					Aroclor 1221					Aroclor 1232					Aroclor 1242					Aroclor 1248					Aroclor 1254					Aroclor 1260					Total PCBs	
Number	Site	Building	Room	Task	Material Type	Location in Room	Sample Type	Depth (CM)	Quality Control	>8' <8'	Grid	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier		
Bulk Samples (0-1 cm), Porous Non-Walls >8 Feet - Main Forge Shop																																														
874	CH	105	MF	CH	CO	CE	CR	0-1		>8'	A1	ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		260	200	µg/kg			ND	200	µg/kg	U		260	µg/kg
875	CH	105	MF	CH	CO	CE	CR	0-1		>8'	A1	ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		250	200	µg/kg			ND	200	µg/kg	U		250	µg/kg
879	CH	105	MF	CH	CO	CE	CR	0-1		>8'	B1	ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		520	200	µg/kg			ND	200	µg/kg	U		520	µg/kg
883	CH	105	MF	CH	CO	CE	CR	0-1		>8'	A2	ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		460	200	µg/kg			410	200	µg/kg			870	µg/kg
884	CH	105	MF	CH	CO	CE	CR	0-1		>8'	B2	ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		600	200	µg/kg			580	200	µg/kg			1180	µg/kg
885	CH	105	MF	CH	CO	CE	CR	0-1		>8'	A2	ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		340	200	µg/kg			260	200	µg/kg			600	µg/kg
886	CH	105	MF	CH	CO	CE	CR	0-1		>8'	A3	ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		300	200	µg/kg			360	200	µg/kg			660	µg/kg
889	CH	105	MF	CH	CO	CE	CR	0-1		>8'	A4	ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		280	200	µg/kg			300	200	µg/kg			580	µg/kg
890	CH	105	MF	CH	CO	CE	CR	0-1		>8'	A5	ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		280	200	µg/kg			ND	200	µg/kg	U		280	µg/kg
891	CH	105	MF	CH	CO	CE	CR	0-1		>8'	A6	ND	39	µg/kg	U		ND	39	µg/kg	U		ND	39	µg/kg	U		ND	39	µg/kg	U		ND	39	µg/kg	U		190	39	µg/kg			190	39	µg/kg			380	µg/kg
894	CH	105	MF	CH	CO	CE	CR	0-1		>8'	B3	ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		240	200	µg/kg			200	200	µg/kg	U		440	µg/kg
895	CH	105	MF	CH	CO	CE	CR	0-1		>8'	B4	ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		270	200	µg/kg			230	200	µg/kg			500	µg/kg
896	CH	105	MF	CH	CO	CE	CR	0-1		>8'	B5	ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		320	200	µg/kg			ND	200	µg/kg	U		320	µg/kg
897	CH	105	MF	CH	CO	CE	CR	0-1		>8'	B6	ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		210	200	µg/kg			ND	200	µg/kg	U		210	µg/kg
898	CH	105	MF	CH	CO	CE	CR	0-1		>8'	B6	ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		210	200	µg/kg			ND	200	µg/kg	U		210	µg/kg
899	CH	105	MF	CH	WD	WA*	CR	0-1		>8'	B5	ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		460	270	µg/kg			400	270	µg/kg			860	µg/kg
900	CH	105	MF	CH	WD	CE	CR	0-1		>8'	B5	ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		450	270	µg/kg			ND	270	µg/kg	U		450	µg/kg
902	CH	105	MF	CH	CO	CE	CR	0-1		>8'	B7	ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		200	200	µg/kg			ND	200	µg/kg	U		200	µg/kg
903	CH	105	MF	CH	WD	WA*	CR	0-1		>8'	B7	ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		940	270	µg/kg			ND	270	µg/kg	U		940	µg/kg
904	CH	105	MF	CH	CO	CE	CR	0-1		>8'	B8	ND	39	µg/kg	U		ND	39	µg/kg	U		ND	39	µg/kg	U		ND	39	µg/kg	U		ND	39	µg/kg	U		190	39	µg/kg			130	39	µg/kg			190	µg/kg
905	CH	105	MF	CH	CO	CE	CR	0-1		>8'	A8	ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		280	200	µg/kg			ND	200	µg/kg	U		280	µg/kg
906	CH	105	MF	CH	CO	CE	CR	0-1		>8'	B9	ND	210	µg/kg	U		ND	210	µg/kg	U		ND	210	µg/kg	U		ND	210	µg/kg	U		ND	210	µg/kg	U		220	210	µg/kg			ND	210	µg/kg	U		220	µg/kg
912	CH	105	MF	CH	WD	WA*	CR	0-1	DP-1	>8'	C4	ND	280	µg/kg	U		ND	280	µg/kg	U		ND	280	µg/kg	U		ND	280	µg/kg	U		ND	280	µg/kg	U		630	280	µg/kg		J	ND	280	µg/kg	U		630	µg/kg
937	CH	105	MF	CH	WD	CE	CR	0-1		>8'	D7	ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		2500	270	µg/kg			2200	270	µg/kg			4700	µg/kg
938	CH	105	MF	CH	WD	CE	CR	0-1		>8'	C3	ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		530	270	µg/kg			ND	270	µg/kg	U		530	µg/kg
939	CH	105	MF	CH	WD	CE	CR	0-1		>8'	D3	ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		410	270	µg/kg			ND	270	µg/kg	U		410	µg/kg
942	CH	105	MF	CH	WD	CE	CR	0-1		>8'	D8	ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		240	180	µg/kg			280	180	µg/kg			520	µg/kg
944	CH	105	MF	CH	WD	CE	CR	0-1		>8'	C4	ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		340	270	µg/kg			ND	270	µg/kg	U		340	µg/kg
945	CH	105	MF	CH	WD	CE	CR	0-1		>8'	C4	ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		370	270	µg/kg			ND	270	µg/kg	U		370	µg/kg
947	CH	105	MF	CH	WD	CE	CR	0-1		>8'	D5	ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		1900	270	µg/kg			3200	270	µg/kg			5100	µg/kg
948	CH	105	MF	CH	WD	CE	CR	0-1		>8'	D6	ND	260	µg/kg	U		ND	260	µg/kg	U		ND	260	µg/kg	U		ND	260	µg/kg	U		ND	260	µg/kg	U		370	260	µg/kg			430	260	µg/kg			800	µg/kg
949	CH	105	MF	CH	WD	CE	CR	0-1		>8'	D6	ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		770	270	µg/kg			740	270	µg/kg			1510	µg/kg
951	CH	105	MF	CH	WD	CE	CR	0-1		>8'	D7	ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		580	270	µg/kg			560	270	µg/kg			1140	µg/kg
952	CH	105	MF	CH	WD	CE	CR	0-1		>8'	D8	ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		280	270	µg/kg			ND	270	µg/kg	U		280	µg/kg
954	CH	105	MF	CH	WD	CE	CR	0-1		>8'	D9	ND	54	µg/kg	U		ND	54	µg/kg	U		ND	54	µg/kg	U		ND	54	µg/kg	U		ND	54	µg/kg	U		150	54	µg/kg			130	54	µg/kg			280	µg/kg
955	CH	105	MF	CH	WD	CE	CR	0-1		>8'	D9	ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		290	270	µg/kg			ND	270	µg/kg	U		290	µg/kg
957	CH	105	MF	CH	WD	CE	CR	0-1		>8'	D7	ND	36	µg/kg	U		ND	36	µg/kg	U		ND	36	µg/kg	U		ND	36	µg/kg	U		ND	36	µg/kg	U		ND	36	µg/kg	U		ND	36	µg/kg	U		-	µg/kg
958	CH	105	MF	CH	CO	CE	CR	0-1		>8'	A9	ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		ND	200	µg/kg	U		310	200	µg/kg			260	200	µg/kg			570	µg/kg
959	CH	105	MF	CH	WD	WA*	CR	0-1		>8'	B6	ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		670	270	µg/kg			510	270	µg/kg			1180	µg/kg
960	CH	105	MF	CH	WD	CE	CR	0-1		>8'	C4	ND	280	µg/kg	U		ND	280	µg/kg	U		ND	280	µg/kg	U		ND	280	µg/kg	U		ND	280	µg/kg	U		770	280	µg/kg			720	280	µg/kg			1490	µg/kg
961	CH	105	MF	CH	WD	WA*	CR	0-1	DP-1	>8'	C5	ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		520	270	µg/kg		J	630	270	µg/kg		J	1150	µg/kg
961	CH	105	MF	CH	WD	WA*	CR	0-1		>8'	C5	ND	36	µg/kg	U		ND	36	µg/kg	U		ND	36	µg/kg	U		ND	36	µg/kg	U		ND	36	µg/kg	U		220	36	µg/kg		J	290	36	µg/kg		J	510	µg/kg
962	CH	105	MF	CH	WD	WA*	CR	0-1		>8'	C6	ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		1400	270	µg/kg			1300	270	µg/kg			2700	µg/kg
Wipe Samples, Non-Porous Non-Walls >8 Feet - Main Forge Shop																																														
734	CH	105	MF	CH	ST	WA	WI	NA		>8'	A9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.3	1	µg/wipe			ND	1	µg/wipe	U		1.3	µg/wipe
735	CH	105	MF	CH	ST	WA	WI	NA		>8'	A9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.1	1	µg/wipe			ND	1	µg/wipe	U		1.1	µg/wipe
737	CH	105	MF	CH	ST	CE	WI	NA		>8'	A9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
738	CH	105	MF	CH	ST	CE	WI	NA		>8'	B9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1	1	µg/wipe			ND	1	µg/wipe	U		1	µg/wipe
740	CH	105	MF	CH	ST	CE	WI	NA		>8'	C9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe

Table 17
Phase II Polychlorinated Biphenyls (USEPA Method 8082) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID												Aroclor 1016					Aroclor 1221					Aroclor 1232					Aroclor 1242					Aroclor 1248					Aroclor 1254					Aroclor 1260					Total PCBs	
Number	Site	Building	Room	Task	Material Type	Location in Room	Sample Type	Depth (CM)	Quality Control	>8' <8'	Grid	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier		
Wipe Samples, Non-Porous Non-Walls >8 Feet - Main Forge Shop - Continued																																														
741	CH	105	MF	CH	ST	CE	WI	NA		>8'	C9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
742	CH	105	MF	CH	ST	CE	WI	NA		>8'	C9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.2	1	µg/wipe			ND	1	µg/wipe	U		1.2	µg/wipe
743	CH	105	MF	CH	ST	CE	WI	NA		>8'	D9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
745	CH	105	MF	CH	ST	CE	WI	NA		>8'	D9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
746	CH	105	MF	CH	ST	CE	WI	NA		>8'	D9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
747	CH	105	MF	CH	ST	CE	WI	NA		>8'	D9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
748	CH	105	MF	CH	ST	CE	WI	NA		>8'	A8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
749	CH	105	MF	CH	ST	CE	WI	NA		>8'	A8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
750	CH	105	MF	CH	ST	CE	WI	NA		>8'	C8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		3	1	µg/wipe			2.5	1	µg/wipe			5.5	µg/wipe
751	CH	105	MF	CH	ST	CE	WI	NA		>8'	D8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.1	1	µg/wipe			1.1	µg/wipe
752	CH	105	MF	CH	ST	CE	WI	NA		>8'	D8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.2	1	µg/wipe			1.2	µg/wipe
753	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	D7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		9.5	1	µg/wipe			5.6	1	µg/wipe			15.1	µg/wipe
753	CH	105	MF	CH	ST	CE	WI	NA		>8'	D7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		8.6	1	µg/wipe			6.7	1	µg/wipe			15.3	µg/wipe
754	CH	105	MF	CH	ST	CE	WI	NA		>8'	D7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		4.6	1	µg/wipe			4.3	1	µg/wipe			8.9	µg/wipe
755	CH	105	MF	CH	ST	CE	WI	NA		>8'	D7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		7.9	1	µg/wipe			7.3	1	µg/wipe			15.2	µg/wipe
756	CH	105	MF	CH	ST	CE	WI	NA		>8'	D7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
757	CH	105	MF	CH	ST	CE	WI	NA		>8'	D7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.1	1	µg/wipe			ND	1	µg/wipe	U		1.1	µg/wipe
758	CH	105	MF	CH	ST	CE	WI	NA		>8'	C7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
759	CH	105	MF	CH	ST	CE	WI	NA		>8'	C7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
760	CH	105	MF	CH	ST	CE	WI	NA		>8'	C7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.2	1	µg/wipe			1.7	1	µg/wipe			3.9	µg/wipe
761	CH	105	MF	CH	ST	CE	WI	NA		>8'	B7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
762	CH	105	MF	CH	ST	CE	WI	NA		>8'	B7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
763	CH	105	MF	CH	ST	CE	WI	NA	DP-1	>8	A7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
763	CH	105	MF	CH	ST	CE	WI	NA		>8	A7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
764	CH	105	MF	CH	ST	CE	WI	NA		>8	A7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
765	CH	105	MF	CH	ST	CE	WI	NA		>8	A6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.4	1	µg/wipe			ND	1	µg/wipe	U		1.4	µg/wipe
766	CH	105	MF	CH	ST	CE	WI	NA		>8	A6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.2	1	µg/wipe			ND	1	µg/wipe	U		1.2	µg/wipe
767	CH	105	MF	CH	ST	CE	WI	NA		>8	A6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.5	1	µg/wipe			ND	1	µg/wipe	U		1.5	µg/wipe
768	CH	105	MF	CH	ST	CE	WI	NA		>8'	B6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.5	1	µg/wipe			ND	1	µg/wipe	U		1.5	µg/wipe
769	CH	105	MF	CH	ST	CE	WI	NA		>8'	B6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
770	CH	105	MF	CH	ST	CE	WI	NA		>8'	B6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
771	CH	105	MF	CH	ST	CE	WI	NA		>8'	C6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
772	CH	105	MF	CH	ST	CE	WI	NA		>8'	C6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2	1	µg/wipe			ND	1	µg/wipe	U		2	µg/wipe
774	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	B9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
774	CH	105	MF	CH	ST	CE	WI	NA		>8'	B9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
775	CH	105	MF	CH	ST	CE	WI	NA		>8'	D6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.2	1	µg/wipe			2.4	1	µg/wipe			4.6	µg/wipe
776	CH	105	MF	CH	ST	CE	WI	NA		>8'	D6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		3.1	1	µg/wipe		J	2.2	1	µg/wipe		J	5.3	µg/wipe
777	CH	105	MF	CH	ST	CE	WI	NA		>8'	D5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		5.7	1	µg/wipe			7.9	1	µg/wipe			13.6	µg/wipe
778	CH	105	MF	CH	ST	CE	WI	NA		>8'	C5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
779	CH	105	MF	CH	ST	CE	WI	NA		>8'	C5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
780	CH	105	MF	CH	ST	CE	WI	NA		>8'	B5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
781	CH	105	MF	CH	ST	CE	WI	NA		>8'	B5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
782	CH	105	MF	CH	ST	CE	WI	NA		>8'	B5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.6	1	µg/wipe			1.8	1	µg/wipe			4.4	µg/wipe
783	CH	105	MF	CH	ST	CE	WI	NA		>8'	D5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		4.1	1	µg/wipe			4.3	1	µg/wipe			8.4	µg/wipe
784	CH	105	MF	CH	ST	CE	WI	NA		>8'	D5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		11	1	µg/wipe			11	1	µg/wipe			22	µg/wipe
785	CH	105	MF	CH	ST	CE	WI	NA		>8'	D5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
786	CH	105	MF	CH	ST	CE	WI	NA	DP-1	>8'	A4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
786	CH	105	MF	CH	ST	CE	WI	NA		>8'	A4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.1	1	µg/wipe			ND	1	µg/wipe	U		1.1	µg/wipe
788	CH	105	MF	CH	ST	CE	WI	NA		>8'	A4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.1	1	µg/wipe			ND	1	µg/wipe	U		1.1	µg/wipe

Table 17
Phase II Polychlorinated Biphenyls (USEPA Method 8082) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID												Aroclor 1016					Aroclor 1221					Aroclor 1232					Aroclor 1242					Aroclor 1248					Aroclor 1254					Aroclor 1260					Total PCBs	
Number	Site	Building	Room	Task	Material Type	Location in Room	Sample Type	Depth (CM)	Quality Control	>8' <8'	Grid	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Units
Wipe Samples, Non-Porous Non-Walls >8 Feet - Main Forge Shop - Continued																																														
789	CH	105	MF	CH	ST	CE	WI	NA		>8'	B4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.1	1	µg/wipe			ND	1	µg/wipe	U		1.1	µg/wipe
790	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	B4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
790	CH	105	MF	CH	ST	CE	WI	NA		>8'	B4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
791	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	B4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		3.3	1	µg/wipe			2	1	µg/wipe			5.3	µg/wipe
791	CH	105	MF	CH	ST	CE	WI	NA		>8'	B4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.9	1	µg/wipe			2.2	1	µg/wipe			5.1	µg/wipe
792	CH	105	MF	CH	ST	CE	WI	NA		>8'	B4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
794	CH	105	MF	CH	ST	CE	WI	NA		>8'	C4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
795	CH	105	MF	CH	ST	CE	WI	NA		>8'	C4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2	1	µg/wipe			ND	1	µg/wipe	U		2	µg/wipe
796	CH	105	MF	CH	ST	CE	WI	NA		>8'	C4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
797	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	C4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
797	CH	105	MF	CH	ST	CE	WI	NA		>8'	C4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
798	CH	105	MF	CH	ST	CE	WI	NA		>8'	C4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.8	1	µg/wipe			ND	1	µg/wipe	U		-	µg/wipe
799	CH	105	MF	CH	ST	CE	WI	NA		>8'	D4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
800	CH	105	MF	CH	ST	CE	WI	NA		>8'	D4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
801	CH	105	MF	CH	ST	CE	WI	NA		>8'	D4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1	1	µg/wipe			ND	1	µg/wipe	U		1	µg/wipe
802	CH	105	MF	CH	ST	CE	WI	NA		>8'	D4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
804	CH	105	MF	CH	ST	CE	WI	NA		>8'	D3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
805	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	D3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
805	CH	105	MF	CH	ST	CE	WI	NA		>8'	D3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
806	CH	105	MF	CH	ST	CE	WI	NA		>8'	D3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.4	1	µg/wipe			ND	1	µg/wipe	U		2.4	µg/wipe
807	CH	105	MF	CH	ST	CE	WI	NA		>8'	C3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
808	CH	105	MF	CH	ST	CE	WI	NA		>8'	C3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
809	CH	105	MF	CH	ST	CE	WI	NA		>8'	C3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.1	1	µg/wipe			ND	1	µg/wipe	U		1.1	µg/wipe
810	CH	105	MF	CH	ST	CE	WI	NA		>8'	C3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		4.2	1	µg/wipe			ND	1	µg/wipe	U		4.2	µg/wipe
811	CH	105	MF	CH	ST	CE	WI	NA		>8'	B3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.3	1	µg/wipe			ND	1	µg/wipe	U		1.3	µg/wipe
812	CH	105	MF	CH	ST	CE	WI	NA		>8'	B3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
813	CH	105	MF	CH	ST	CE	WI	NA		>8'	B3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
814	CH	105	MF	CH	ST	CE	WI	NA		>8'	B3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		5.7	1	µg/wipe			ND	1	µg/wipe	U		5.7	µg/wipe
815	CH	105	MF	CH	ST	CE	WI	NA	DP-1	>8'	B3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.3	1	µg/wipe		J	ND	1	µg/wipe	U		2.3	µg/wipe
815	CH	105	MF	CH	ST	CE	WI	NA		>8'	B3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		4.4	1	µg/wipe		J	ND	1	µg/wipe	U		4.4	µg/wipe
816	CH	105	MF	CH	ST	CE	WI	NA		>8'	A3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.5	1	µg/wipe			ND	1	µg/wipe	U		2.5	µg/wipe
817	CH	105	MF	CH	ST	CE	WI	NA		>8'	A3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
819	CH	105	MF	CH	ST	CE	WI	NA		>8'	A3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
820	CH	105	MF	CH	ST	CE	WI	NA		>8'	A3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
821	CH	105	MF	CH	ST	CE	WI	NA		>8'	A2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
822	CH	105	MF	CH	ST	CE	WI	NA		>8'	A2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
823	CH	105	MF	CH	ST	CE	WI	NA		>8'	A2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
825	CH	105	MF	CH	ST	CE	WI	NA		>8'	A1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
827	CH	105	MF	CH	ST	CE	WI	NA		>8'	A1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.2	1	µg/wipe			1.9	1	µg/wipe			4.1	µg/wipe
828	CH	105	MF	CH	ST	CE	WI	NA		>8'	A1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.3	1	µg/wipe			ND	1	µg/wipe	U		1.3	µg/wipe
829	CH	105	MF	CH	ST	CE	WI	NA		>8'	A1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
830	CH	105	MF	CH	ST	CE	WI	NA		>8'	A5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1	1	µg/wipe			ND	1	µg/wipe	U		1	µg/wipe
832	CH	105	MF	CH	ST	CE	WI	NA		>8'	A5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
833	CH	105	MF	CH	ST	CE	WI	NA		>8'	A5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
834	CH	105	MF	CH	ST	CE	WI	NA		>8'	A5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.9	1	µg/wipe			ND	1	µg/wipe	U		1.9	µg/wipe
835	CH	105	MF	CH	ST	CE	WI	NA		>8'	A5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
836	CH	105	MF	CH	ST	CE	WI	NA		>8'	B1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		5.7	1	µg/wipe			ND	1	µg/wipe	U		5.7	µg/wipe
837	CH	105	MF	CH	ST	CE	WI	NA		>8'	B1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
838	CH	105	MF	CH	ST	CE	WI	NA		>8'	B1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		8.4	1	µg/wipe			8.5	1	µg/wipe			16.9	µg/wipe

Table 17
Phase II Polychlorinated Biphenyls (USEPA Method 8082) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID													Aroclor 1016					Aroclor 1221					Aroclor 1232					Aroclor 1242					Aroclor 1248					Aroclor 1254					Aroclor 1260					Total PCBs	
Number	Site	Building	Room	Task	Material Type	Location in Room	Sample Type	Depth (CM)	Quality Control	>8' <8'	Grid	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier		
Wipe Samples, Non-Porous Non-Walls >8 Feet - Main Forge Shop - Continued																																															
839	CH	105	MF	CH	ST	CE	WI	NA		>8'	B1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		3.7	1	µg/wipe			3	1	µg/wipe			6.7	µg/wipe
840	CH	105	MF	CH	ST	CE	WI	NA		>8'	B1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		6.8	1	µg/wipe			ND	1	µg/wipe	U		6.8	µg/wipe
841	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	B2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
841	CH	105	MF	CH	ST	CE	WI	NA		>8'	B2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
842	CH	105	MF	CH	ST	CE	WI	NA		>8'	B2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.6	1	µg/wipe			ND	1	µg/wipe	U		2.6	µg/wipe
843	CH	105	MF	CH	ST	CE	WI	NA		>8'	B2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		4.5	1	µg/wipe			3.5	1	µg/wipe			8	µg/wipe
844	CH	105	MF	CH	ST	CE	WI	NA		>8'	B2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		3.2	1	µg/wipe			2.8	1	µg/wipe			6	µg/wipe
845	CH	105	MF	CH	ST	CE	WI	NA		>8'	B2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		12	1	µg/wipe			ND	1	µg/wipe	U		12	µg/wipe
846	CH	105	MF	CH	ST	CE	WI	NA		>8'	C1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.1	1	µg/wipe			ND	1	µg/wipe	U		1.1	µg/wipe
847	CH	105	MF	CH	ST	CE	WI	NA		>8'	C1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
848	CH	105	MF	CH	ST	CE	WI	NA		>8'	C1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.3	1	µg/wipe			ND	1	µg/wipe	U		2.3	µg/wipe
849	CH	105	MF	CH	ST	CE	WI	NA		>8'	C1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.2	1	µg/wipe			ND	1	µg/wipe	U		1.2	µg/wipe
850	CH	105	MF	CH	ST	CE	WI	NA		>8'	C1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		5.9	1	µg/wipe			4.3	1	µg/wipe			10.2	µg/wipe
851	CH	105	MF	CH	ST	CE	WI	NA		>8'	C2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.7	1	µg/wipe			ND	1	µg/wipe	U		1.7	µg/wipe
852	CH	105	MF	CH	ST	CE	WI	NA		>8'	C2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.1	1	µg/wipe			ND	1	µg/wipe	U		1.1	µg/wipe
853	CH	105	MF	CH	ST	CE	WI	NA		>8'	C2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		6.2	1	µg/wipe			5.1	1	µg/wipe			11.3	µg/wipe
854	CH	105	MF	CH	ST	CE	WI	NA		>8'	C2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		4	1	µg/wipe			ND	1	µg/wipe	U		4	µg/wipe
855	CH	105	MF	CH	ST	CE	WI	NA		>8'	C3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
856	CH	105	MF	CH	ST	CE	WI	NA		>8'	C3	ND	4	µg/wipe	U		ND	4	µg/wipe	U		ND	4	µg/wipe	U		ND	4	µg/wipe	U		ND	4	µg/wipe	U		41	4	µg/wipe			ND	4	µg/wipe	U		41	µg/wipe
857	CH	105	MF	CH	ST	CE	WI	NA		>8'	C3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
858	CH	105	MF	CH	ST	CE	WI	NA		>8'	D1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
859	CH	105	MF	CH	ST	CE	WI	NA		>8'	D1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
860	CH	105	MF	CH	ST	CE	WI	NA		>8'	D1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.2	1	µg/wipe			ND	1	µg/wipe	U		1.2	µg/wipe
861	CH	105	MF	CH	ST	CE	WI	NA		>8'	D1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
862	CH	105	MF	CH	ST	CE	WI	NA		>8'	D2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.4	1	µg/wipe			ND	1	µg/wipe	U		2.4	µg/wipe
863	CH	105	MF	CH	ST	CE	WI	NA		>8'	D2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.8	1	µg/wipe			ND	1	µg/wipe	U		1.8	µg/wipe
864	CH	105	MF	CH	ST	CE	WI	NA		>8'	D2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.8	1	µg/wipe			ND	1	µg/wipe	U		1.8	µg/wipe
865	CH	105	MF	CH	ST	CE	WI	NA		>8'	D2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.1	1	µg/wipe			ND	1	µg/wipe	U		1.1	µg/wipe
866	CH	105	MF	CH	ST	CE	WI	NA	DP-1	>8'	D2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		3.4	1	µg/wipe		J	3.1	1	µg/wipe		J	6.5	µg/wipe
866	CH	105	MF	CH	ST	CE	WI	NA		>8'	D2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		7.2	1	µg/wipe		J	6.5	1	µg/wipe		J	13.7	µg/wipe
867	CH	105	MF	CH	ST	CE	WI	NA		>8'	D3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2	1	µg/wipe			ND	1	µg/wipe	U		2	µg/wipe
868	CH	105	MF	CH	ST	CE	WI	NA		>8'	D3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.9	1	µg/wipe			ND	1	µg/wipe	U		2.9	µg/wipe
869	CH	105	MF	CH	ST	CE	WI	NA		>8'	D5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
870	CH	105	MF	CH	ST	CE	WI	NA		>8'	D5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		4.4	1	µg/wipe			ND	1	µg/wipe	U		4.4	µg/wipe
871	CH	105	MF	CH	ST	CE	WI	NA		>8'	D6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
872	CH	105	MF	CH	ST	CE	WI	NA		>8'	C8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.2	1	µg/wipe			ND	1	µg/wipe	U		1.2	µg/wipe
873	CH	105	MF	CH	ST	CE	WI	NA	DP-1	>8'	C8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
873	CH	105	MF	CH	ST	CE	WI	NA		>8'	C8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
881	CH	105	MF	CH	ST	CE	WI	NA		>8'	D8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.5	1	µg/wipe			2.5	1	µg/wipe			5	µg/wipe
914	CH	105	MF	CH	ST	CE	WI	NA		>8'	B2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
915	CH	105	MF	CH	ST	CE	WI	NA		>8'	B8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
916	CH	105	MF	CH	ST	CE	WI	NA		>8'	B8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
917	CH	105	MF	CH	ST	CE	WI	NA		>8'	B8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
918	CH	105	MF	CH	ST	CE	WI	NA		>8'	B8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
919	CH	105	MF	CH	ST	CE	WI	NA		>8'	B8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
920	CH	105	MF	CH	ST	CE	WI	NA		>8'	B8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.3	1	µg/wipe			ND	1	µg/wipe	U		1.3	µg/wipe
921	CH	105	MF	CH	ST	CE	WI	NA		>8	B7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.3	1	µg/wipe			1.3	1	µg/wipe			2.6	µg/wipe
922	CH	105	MF	CH	ST	CE	WI	NA		>8	B7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.8	1	µg/wipe			1.1	1	µg/wipe			2.9	µg/wipe
923	CH	105	MF	CH	ST	CE	WI	NA		>8'	D8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		3.6	1	µg/wipe			1.7	1	µg/wipe			5.3	µg/wipe

Table 17
Phase II Polychlorinated Biphenyls (USEPA Method 8082) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID												Aroclor 1016					Aroclor 1221					Aroclor 1232					Aroclor 1242					Aroclor 1248					Aroclor 1254					Aroclor 1260					Total PCBs	
Number	Site	Building	Room	Task	Material Type	Location in Room	Sample Type	Depth (CM)	Quality Control	>8'	<8'	Grid	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier		
Wipe Samples, Non-Porous Non-Walls >8 Feet - Main Forge Shop - Continued																																															
924	CH	105	MF	CH	ST	CE	WI	NA		>8'	D8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		3.7	1	µg/wipe			3	1	µg/wipe			6.7	µg/wipe
925	CH	105	MF	CH	ST	CE	WI	NA		>8'	D8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		4.8	1	µg/wipe			3.4	1	µg/wipe			8.2	µg/wipe
926	CH	105	MF	CH	ST	CE	WI	NA		>8'	C8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		11	1	µg/wipe			7.2	1	µg/wipe			18.2	µg/wipe
927	CH	105	MF	CH	ST	CE	WI	NA		>8'	C8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
928	CH	105	MF	CH	ST	CE	WI	NA		>8	D1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
929	CH	105	MF	CH	ST	CE	WI	NA		>8	D1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
930	CH	105	MF	CH	ST	CE	WI	NA		>8'	D6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.7	1	µg/wipe			1.2	1	µg/wipe			2.9	µg/wipe
931	CH	105	MF	CH	ST	CE	WI	NA	DP-1	>8'	D8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
931	CH	105	MF	CH	ST	CE	WI	NA		>8'	D8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
932	CH	105	MF	CH	ST	CE	WI	NA		>8'	C8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		4.8	1	µg/wipe			3.5	1	µg/wipe			8.3	µg/wipe
933	CH	105	MF	CH	ST	CE	WI	NA		>8'	C8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		3.3	1	µg/wipe			2.6	1	µg/wipe			5.9	µg/wipe
941	CH	105	MF	CH	ST	CE	WI	NA		>8'	A6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
963	CH	105	MF	CH	ST	CE	WI	NA		>8'	B4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
964	CH	105	MF	CH	ST	CE	WI	NA		>8'	D4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1	1	µg/wipe			ND	1	µg/wipe	U		1	µg/wipe
965	CH	105	MF	CH	ST	CE	WI	NA		>8'	A3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.3	1	µg/wipe			ND	1	µg/wipe	U		1.3	µg/wipe
966	CH	105	MF	CH	ST	CE	WI	NA		>8'	C9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
967	CH	105	MF	CH	ST	CE	WI	NA		>8'	C8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
968	CH	105	MF	CH	ST	CE	WI	NA		>8'	C8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.5	1	µg/wipe			2.5	1	µg/wipe			5	µg/wipe
969	CH	105	MF	CH	ST	CE	WI	NA		>8'	C7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		3.2	1	µg/wipe			3	1	µg/wipe			6.2	µg/wipe
970	CH	105	MF	CH	ST	WA*	WI	NA		>8'	B6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		3.5	1	µg/wipe			ND	1	µg/wipe	U		3.5	µg/wipe
971	CH	105	MF	CH	ST	CE	WI	NA		>8'	B5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
972	CH	105	MF	CH	ST	CE	WI	NA		>8'	B5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1	1	µg/wipe			ND	1	µg/wipe	U		1	µg/wipe
973	CH	105	MF	CH	ST	CE	WI	NA		>8'	C5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1	1	µg/wipe			ND	1	µg/wipe	U		1	µg/wipe
974	CH	105	MF	CH	ST	CE	WI	NA		>8'	C5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.9	1	µg/wipe			ND	1	µg/wipe	U		2.9	µg/wipe
975	CH	105	MF	CH	ST	CE	WI	NA		>8'	D5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		4.8	1	µg/wipe			5.9	1	µg/wipe			10.7	µg/wipe
976	CH	105	MF	CH	ST	CE	WI	NA		>8'	D5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		4.2	1	µg/wipe			4.2	1	µg/wipe			8.4	µg/wipe
977	CH	105	MF	CH	ST	CE	WI	NA	DP-1	>8'	D6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.6	1	µg/wipe			ND	1	µg/wipe	U		1.6	µg/wipe
977	CH	105	MF	CH	ST	CE	WI	NA		>8'	D6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.3	1	µg/wipe			ND	1	µg/wipe	U		1.3	µg/wipe
978	CH	105	MF	CH	ST	CE	WI	NA		>8'	C6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.4	1	µg/wipe			ND	1	µg/wipe	U		2.4	µg/wipe
979	CH	105	MF	CH	ST	CE	WI	NA		>8'	C6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2	1	µg/wipe			1.6	1	µg/wipe			3.6	µg/wipe
981	CH	105	MF	CH	ST	CE	WI	NA		>8'	B7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
982	CH	105	MF	CH	ST	CE	WI	NA		>8'	B7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.6	1	µg/wipe			2.4	1	µg/wipe			5	µg/wipe
983	CH	105	MF	CH	ST	CE	WI	NA		>8'	B7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		5.4	1	µg/wipe			4.2	1	µg/wipe			9.6	µg/wipe
984	CH	105	MF	CH	ST	WA*	WI	NA		>8'	C6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.1	1	µg/wipe			ND	1	µg/wipe	U		2.1	µg/wipe
985	CH	105	MF	CH	ST	CE	WI	NA		>8'	B6	ND	2	µg/wipe	U		ND	2	µg/wipe	U		ND	2	µg/wipe	U		ND	2	µg/wipe	U		ND	2	µg/wipe	U		23	2	µg/wipe			14	2	µg/wipe			37	µg/wipe
1011	CH	105	MF	CH	ST	CE	WI	NA		>8'	A9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
1012	CH	105	MF	CH	ST	CE	WI	NA		>8'	A8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.3	1	µg/wipe			ND	1	µg/wipe	U		1.3	µg/wipe
1013	CH	105	MF	CH	ST	CE	WI	NA		>8'	A7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.5	1	µg/wipe			ND	1	µg/wipe	U		1.5	µg/wipe
1014	CH	105	MF	CH	ST	CE	WI	NA		>8'	B7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.8	1	µg/wipe			2.3	1	µg/wipe			4.1	µg/wipe
Bulk Samples (0-1 cm), Porous Walls >8 Feet - Main Forge Shop																																															
876	CH	105	MF	CH	AS	WA	CR	0-1		>8'	A1	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		640	170	µg/kg			ND	170	µg/kg	U		640	µg/kg
877	CH	105	MF	CH	BR	WA	CR	0-1		>8'	A1	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		320	170	µg/kg			ND	170	µg/kg	U		320	µg/kg
878	CH	105	MF	CH	BR	WA	CR	0-1		>8'	A1	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		550	170	µg/kg			ND	170	µg/kg	U		550	µg/kg
880	CH	105	MF	CH	AS	WA	CR	0-1		>8'	B1	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		230	170	µg/kg			ND	170	µg/kg	U		230	µg/kg
882	CH	105	MF	CH	BR	WA	CR	0-1		>8'	A3	ND	35	µg/kg	U		ND	35	µg/kg	U		ND	35	µg/kg	U		ND	35	µg/kg	U		ND	35	µg/kg	U		53	35	µg/kg			55	35	µg/kg			108	µg/kg
887	CH	105	MF	CH	AS	WA	CR	0-1		>8'	A3	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		200	170	µg/kg			ND	170	µg/kg	U		200	µg/kg
892	CH	105	MF	CH	AS	WA	CR	0-1		>8'	A6	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		270	170	µg/kg			ND	170	µg/kg	U		270	µg/kg
893	CH	105	MF	CH	BR	WA	CR	0-1		>8'	A6	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		210	170	µg/kg			200	170	µg/kg			410	µg/kg
901	CH	105	MF	CH	BR	WA	CR	0-1		>8'	A9	ND	34	µg/kg	U		ND	34	µg/kg	U		ND	34	µg/kg	U		ND	34	µg/kg	U		ND	34	µg/kg	U		71	34	µg/kg			ND	34	µg/kg	U		71	µg/kg

Table 17
Phase II Polychlorinated Biphenyls (USEPA Method 8082) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID												Aroclor 1016					Aroclor 1221					Aroclor 1232					Aroclor 1242					Aroclor 1248					Aroclor 1254					Aroclor 1260					Total PCBs	
Number	Site	Building	Room	Task	Material Type	Location in Room	Sample Type	Depth (CM)	Quality Control	>8' <8'	Grid	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier		
Bulk Samples (0-1 cm), Porous Walls >8 Feet - Main Forge Shop - Continued																																														
907	CH	105	MF	CH	BR	WA	CR	0-1		>8'	B9	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		470	170	µg/kg			ND	170	µg/kg	U		470	µg/kg
908	CH	105	MF	CH	BR	WA	CR	0-1		>8'	B9	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		390	170	µg/kg			ND	170	µg/kg	U		390	µg/kg
909	CH	105	MF	CH	BR	WA	CR	0-1		>8'	C1	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		350	170	µg/kg			ND	170	µg/kg	U		350	µg/kg
910	CH	105	MF	CH	WD	WA	CR	0-1		>8'	D6	ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		ND	270	µg/kg	U		360	270	µg/kg			310	270	µg/kg			670	µg/kg
912	CH	105	MF	CH	WD	WA	CR	0-1		>8'	C4	ND	37	µg/kg	U		ND	37	µg/kg	U		ND	37	µg/kg	U		ND	37	µg/kg	U		ND	37	µg/kg	U		210	37	µg/kg		J	ND	37	µg/kg	U		210	µg/kg
946	CH	105	MF	CH	PL	WA	CR	0-1		>8'	D4	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		490	170	µg/kg			ND	170	µg/kg	U		490	µg/kg
950	CH	105	MF	CH	BR	WA	CR	0-1		>8'	D5	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		300	170	µg/kg			450	170	µg/kg			750	µg/kg
953	CH	105	MF	CH	BR	WA	CR	0-1		>8'	D8	ND	53	µg/kg	U		ND	53	µg/kg	U		ND	53	µg/kg	U		ND	53	µg/kg	U		ND	53	µg/kg	U		140	53	µg/kg			150	53	µg/kg			290	µg/kg
956	CH	105	MF	CH	AS	WA	CR	0-1		>8'	D9	ND	53	µg/kg	U		ND	53	µg/kg	U		ND	53	µg/kg	U		ND	53	µg/kg	U		ND	53	µg/kg	U		100	53	µg/kg			180	53	µg/kg			280	µg/kg
Wipe Samples, Non-Porous Walls >8 Feet - Main Forge Shop																																														
736	CH	105	MF	CH	GL	WA	WI	NA		>8'	A9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
739	CH	105	MF	CH	GL	WA	WI	NA		>8'	C9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
744	CH	105	MF	CH	GL	WA	WI	NA		>8'	D9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
773	CH	105	MF	CH	GL	WA	WI	NA	DP	>8'	D6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
773	CH	105	MF	CH	GL	WA	WI	NA		>8'	D6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
787	CH	105	MF	CH	ST	WA	WI	NA		>8'	A4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
793	CH	105	MF	CH	AS	WA	WI	NA		>8'	D9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
803	CH	105	MF	CH	GL	WA	WI	NA		>8'	D4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
818	CH	105	MF	CH	ST	WA	WI	NA		>8'	A3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.5	1	µg/wipe			2.6	1	µg/wipe			5.1	µg/wipe
824	CH	105	MF	CH	GL	WA	WI	NA	DP	>8'	A1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
824	CH	105	MF	CH	GL	WA	WI	NA		>8'	A1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
826	CH	105	MF	CH	ST	WA	WI	NA		>8'	A1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
980	CH	105	MF	CH	GL	WA	WI	NA		>8'	D6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
986	CH	105	MF	CH	ST	WA	WI	NA		>8'	A9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
987	CH	105	MF	CH	GL	WA	WI	NA		>8'	A9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
Bulk Samples (0-1 cm), Porous Walls <8 Feet - Main Forge Shop																																														
1003	CH	105	MF	CH	BR	WA	CR	0-1		<8'	A1	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		630	170	µg/kg			ND	170	µg/kg	U		630	µg/kg
1004	CH	105	MF	CH	BR	WA	CR	0-1		<8'	B9	ND	34	µg/kg	U		ND	34	µg/kg	U		ND	34	µg/kg	U		ND	34	µg/kg	U		ND	34	µg/kg	U		180	34	µg/kg			ND	34	µg/kg	U		180	µg/kg
1005	CH	105	MF	CH	WD	WA	CR	0-1		<8'	D1	ND	540	µg/kg	U		ND	540	µg/kg	U		ND	540	µg/kg	U		ND	540	µg/kg	U		ND	540	µg/kg	U		2300	540	µg/kg			ND	540	µg/kg	U		2300	µg/kg
1006	CH	105	MF	CH	WD	WA	CR	0-1		<8'	D3	ND	540	µg/kg	U		ND	540	µg/kg	U		ND	540	µg/kg	U		ND	540	µg/kg	U		ND	540	µg/kg	U		760	540	µg/kg			ND	540	µg/kg	U		760	µg/kg
1007	CH	105	MF	CH	WD	WA	CR	0-1		<8'	D6	ND	280	µg/kg	U		ND	280	µg/kg	U		ND	280	µg/kg	U		ND	280	µg/kg	U		ND	280	µg/kg	U		1300	280	µg/kg			ND	280	µg/kg	U		1300	µg/kg
1008	CH	105	MF	CH	BR	WA	CR	0-1		<8'	D3	ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		270	180	µg/kg			ND	180	µg/kg	U		270	µg/kg
1009	CH	105	MF	CH	BR	WA	CR	0-1		<8'	D9	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		420	170	µg/kg			220	170	µg/kg			640	µg/kg
Wipe Samples, Non-Porous Walls <8 Feet - Main Forge Shop																																														
988	CH	105	MF	CH	ST	WA	WI	NA		<8'	A2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.9	1	µg/wipe			ND	1	µg/wipe	U		1.9	µg/wipe
989	CH	105	MF	CH	ST	WA	WI	NA		<8'	A4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
990	CH	105	MF	CH	ST	WA	WI	NA		<8'	A6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.2	1	µg/wipe			ND	1	µg/wipe	U		2.2	µg/wipe
991	CH	105	MF	CH	ST	WA	WI	NA		<8'	A8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
992	CH	105	MF	CH	ST	WA	WI	NA	DP-1	<8'	B1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		10	1	µg/wipe			ND	1	µg/wipe	U		10	µg/wipe
992	CH	105	MF	CH	ST	WA	WI	NA		<8'	B1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		14	1	µg/wipe			ND	1	µg/wipe	U		14	µg/wipe
993	CH	105	MF	CH	ST	WA	WI	NA		<8'	B5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
994	CH	105	MF	CH	ST	WA	WI	NA		<8'	B8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		3.8	1	µg/wipe			ND	1	µg/wipe	U		3.8	µg/wipe
995	CH	105	MF	CH	GL	WA	WI	NA		<8'	C1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.1	1	µg/wipe			ND	1	µg/wipe	U		1.1	µg/wipe
996	CH	105	MF	CH	ST	WA	WI	NA		<8'	C2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		3	1	µg/wipe			ND	1	µg/wipe	U		3	µg/wipe
997	CH	105	MF	CH	ST	WA	WI	NA	DP-1	<8'	C5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		6.3	1	µg/wipe			ND	1	µg/wipe	U		6.3	µg/wipe
997	CH	105	MF	CH	ST	WA	WI	NA		<8'	C5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		6.4	1	µg/wipe			ND	1	µg/wipe	U		6.4	µg/wipe
998	CH	105	MF	CH	GL	WA	WI	NA	DP-1	<8'	D2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.5	1	µg/wipe			ND	1	µg/wipe	U		1.5	µg/wipe
998	CH	105	MF	CH	GL	WA	WI	NA		<8'	D2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.1	1	µg/wipe			ND	1	µg/wipe	U		1.1	µg/wipe
999	CH	105	MF	CH	GL	WA	WI	NA		<8'	D4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe

Table 17
Phase II Polychlorinated Biphenyls (USEPA Method 8082) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID													Aroclor 1016					Aroclor 1221					Aroclor 1232					Aroclor 1242					Aroclor 1248					Aroclor 1254					Aroclor 1260					Total PCBs	
Number	Site	Building	Room	Task	Material Type	Location in Room	Sample Type	Depth (CM)	Quality Control	>8' <8'	Grid	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier		
Wipe Samples, Non-Porous Walls <8 Feet - Main Forge Shop Continued																																															
1000	CH	105	MF	CH	GL	WA	WI	NA		<8'	D6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
1001	CH	105	MF	CH	GL	WA	WI	NA		<8'	D8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
1002	CH	105	MF	CH	GL	WA	WI	NA		<8'	D1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
Bulk Concrete Samples (1-5 cm) - Main Forge Shop Floor																																															
561	CH	105	MF	CH	CO	FL	CR	1-5	DP-1	<8'	B3	ND	850	µg/kg	U		ND	850	µg/kg	U		ND	850	µg/kg	U		ND	850	µg/kg	U		ND	850	µg/kg	U		6600	850	µg/kg			ND	850	µg/kg	U		6600	µg/kg
561	CH	105	MF	CH	CO	FL	CR	1-5		<8'	B3	ND	850	µg/kg	U		ND	850	µg/kg	U		ND	850	µg/kg	U		ND	850	µg/kg	U		ND	850	µg/kg	U		9800	850	µg/kg			ND	850	µg/kg	U		9800	µg/kg
563	CH	105	MF	CH	CO	FL	CR	1-5		<8'	A4	ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		3200	680	µg/kg			ND	680	µg/kg	U		3200	µg/kg
574	CH	105	MF	CH	CO	FL	CR	1-5		<8'	A7	ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		26000	17000	µg/kg			ND	17000	µg/kg	U		26000	µg/kg
575	CH	105	MF	CH	CO	FL	CR	1-5		<8'	A7	ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		200000	34000	µg/kg			ND	34000	µg/kg	U		200000	µg/kg
576	CH	105	MF	CH	CO	FL	CR	1-5		<8'	B7	ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		6600	680	µg/kg			3800	680	µg/kg			10400	µg/kg
577	CH	105	MF	CH	CO	FL	CR	1-5		<8'	A7	ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		7100	670	µg/kg			ND	670	µg/kg	U		7100	µg/kg
578	CH	105	MF	CH	CO	FL	CR	1-5		<8'	A8	ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		170000	34000	µg/kg			ND	34000	µg/kg	U		170000	µg/kg
581	CH	105	MF	CH	CO	FL	CR	1-5		<8'	B7	ND	840	µg/kg	U		ND	840	µg/kg	U		ND	840	µg/kg	U		ND	840	µg/kg	U		ND	840	µg/kg	U		11000	840	µg/kg			5300	840	µg/kg			16300	µg/kg
583	CH	105	MF	CH	CO	FL	CR	1-5		<8'	B6	ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		4100	680	µg/kg			ND	680	µg/kg	U		4100	µg/kg
584	CH	105	MF	CH	CO	FL	CR	1-5		<8'	B5	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		1200	170	µg/kg			510	170	µg/kg			1710	µg/kg
585	CH	105	MF	CH	CO	FL	CR	1-5		<8'	B4	ND	840	µg/kg	U		ND	840	µg/kg	U		ND	840	µg/kg	U		ND	840	µg/kg	U		ND	840	µg/kg	U		5100	840	µg/kg			ND	840	µg/kg	U		5100	µg/kg
586	CH	105	MF	CH	CO	FL	CR	1-5		<8'	B3	ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		6400	670	µg/kg			ND	670	µg/kg	U		6400	µg/kg
588	CH	105	MF	CH	CO	FL	CR	1-5	DP	<8'	B2	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		350	170	µg/kg			ND	170	µg/kg	U		350	µg/kg
588	CH	105	MF	CH	CO	FL	CR	1-5		<8'	B2	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		540	170	µg/kg			ND	170	µg/kg	U		540	µg/kg
589	CH	105	MF	CH	CO	FL	CR	1-5		<8'	B1	ND	850	µg/kg	U		ND	850	µg/kg	U		ND	850	µg/kg	U		ND	850	µg/kg	U		ND	850	µg/kg	U		8900	850	µg/kg			4300	850	µg/kg			13200	µg/kg
590	CH	105	MF	CH	CO	FL	CR	1-5		<8'	B1	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	,170	µg/kg	U		ND	170	µg/kg	U		2100	170	µg/kg			ND	170	µg/kg	U		2100	µg/kg
593	CH	105	MF	CH	CO	FL	CR	1-5		<8'	D2	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		2500	170	µg/kg			ND	170	µg/kg	U		2500	µg/kg
595	CH	105	MF	CH	CO	FL	CR	1-5		<8'	D3	ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		4800	340	µg/kg			ND	340	µg/kg	U		4800	µg/kg
599	CH	105	MF	CH	CO	FL	CR	1-5		<8'	C3	ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		5400	340	µg/kg			ND	340	µg/kg	U		5400	µg/kg
600	CH	105	MF	CH	CO	FL	CR	1-5		<8'	C4	ND	6600	µg/kg	U		ND	6600	µg/kg	U		ND	6600	µg/kg	U		ND	6600	µg/kg	U		ND	6600	µg/kg	U		78000	6600	µg/kg			ND	6600	µg/kg	U		78000	µg/kg
601	CH	105	MF	CH	CO	FL	CR	1-5		<8'	D4	ND	660	µg/kg	U		ND	660	µg/kg	U		ND	660	µg/kg	U		ND	660	µg/kg	U		ND	660	µg/kg	U		8400	660	µg/kg			ND	660	µg/kg	U		8400	µg/kg
603	CH	105	MF	CH	CO	FL	CR	1-5		<8'	C4	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		2100	170	µg/kg			1100	170	µg/kg			3200	µg/kg
604	CH	105	MF	CH	CO	FL	CR	1-5		<8'	C5	ND	840	µg/kg	U		ND	840	µg/kg	U		ND	840	µg/kg	U		ND	840	µg/kg	U		ND	840	µg/kg	U		13000	840	µg/kg			5600	840	µg/kg			18600	µg/kg
605	CH	105	MF	CH	CO	FL	CR	1-5		<8'	D5	ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		2000	670	µg/kg			ND	670	µg/kg	U		2000	µg/kg
607	CH	105	MF	CH	CO	FL	CR	1-5		<8'	C5	ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		3100	680	µg/kg			ND	680	µg/kg	U		3100	µg/kg
609	CH	105	MF	CH	CO	FL	CR	1-5		<8'	D6	ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		2200	680	µg/kg			ND	680	µg/kg	U		2200	µg/kg
610	CH	105	MF	CH	CO	FL	CR	1-5		<8'	C6	ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		4200	340	µg/kg			1900	340	µg/kg			6100	µg/kg
611	CH	105	MF	CH	CO	FL	CR	1-5		<8'	C7	ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		3400	340	µg/kg			1800	340	µg/kg			5200	µg/kg
612	CH	105	MF	CH	CO	FL	CR	1-5		<8'	D8	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		2600	170	µg/kg			1500	170	µg/kg			4100	µg/kg
613	CH	105	MF	CH	CO	FL	CR	1-5		<8'	D7	ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		5100	670	µg/kg			ND	670	µg/kg	U		5100	µg/kg
617	CH	105	MF	CH	CO	FL	CR	1-5		<8'	D8	ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		3200	670	µg/kg			ND	670	µg/kg	U		3200	µg/kg
622	CH	105	MF	CH	CO	FL	CR	1-5	DP-1	<8'	B9	ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		6700	670	µg/kg			4400	670	µg/kg			11100	µg/kg
622	CH	105	MF	CH	CO	FL	CR	1-5		<8'	B9	ND	840	µg/kg	U		ND	840	µg/kg	U		ND	840	µg/kg	U		ND	840	µg/kg	U		ND	840	µg/kg	U		8000	840	µg/kg			4000	840	µg/kg			12000	µg/kg
623	CH	105	MF	CH	CO	FL	CR	1-5		<8'	A9	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		460	170	µg/kg			ND	170	µg/kg	U		460	µg/kg
Bulk Concrete Samples (5-10 cm) - Main Forge Shop Floor																																															
561	CH	105	MF	CH	CO	FL	CR	5-10	DP-1	<8'	B3	ND	850	µg/kg	U		ND	850	µg/kg	U		ND	850	µg/kg	U		ND	850	µg/kg	U		ND	850	µg/kg	U		6900	850	µg/kg			ND	850	µg/kg	U		6900	µg/kg
561	CH	105	MF	CH	CO	FL	CR	5-10		<8'	B3	ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		5200	340	µg/kg			ND	340	µg/kg	U		5200	µg/kg
574	CH	105	MF	CH	CO	FL	CR	5-10		<8'	A7	ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		19000	3400	µg/kg			ND	3400	µg/kg	U		19000	µg/kg
575	CH	105	MF	CH	CO	FL	CR	5-10		<8'	A7	ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		230000	34000	µg/kg			ND	34000	µg/kg	U		230000	µg/kg
576	CH	105	MF	CH	CO	FL	CR	5-10		<8'	B7	ND	350	µg/kg	U		ND	350	µg/kg	U		ND	350	µg/kg	U		ND	350	µg/kg	U		ND	350	µg/kg	U		4100	350	µg/kg			ND	350	µg/kg	U		4100	µg/kg
577	CH	105	MF	CH	CO	FL	CR	5-10		<8'	A7	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		420	170	µg/kg			ND	170	µg/kg	U		420	µg/kg
578	CH	105	MF	CH	CO	FL	CR	5-10		<8'	A8	ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		110000	34000	µg/kg			ND	34000	µg/kg	U		110000	µg/kg
581	CH	105	MF	CH	CO	FL	CR	5-10		<8'	B7	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		1800	170	µg/kg			ND	170	µg/kg	U		1800	µg/kg
585	CH	105	MF	CH	CO	FL	CR	5-10		<8'	B4	ND	34	µg/kg	U		ND	34	µg/kg	U		ND	34	µg/kg	U		ND	34	µg/kg	U		ND	34	µg/kg	U		110	34	µg/kg			ND	34	µg/kg	U		110	µg/kg

Table 17
Phase II Polychlorinated Biphenyls (USEPA Method 8082) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID													Aroclor 1016					Aroclor 1221					Aroclor 1232					Aroclor 1242					Aroclor 1248					Aroclor 1254					Aroclor 1260					Total PCBs	
Number	Site	Building	Room	Task	Material Type	Location in Room	Sample Type	Depth (CM)	Quality Control	A > 8'	A < 8'	Grid	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier		
Bulk Concrete Samples (5-10 cm) - Main Forge Shop Floor - Continued																																																
586	CH	105	MF	CH	CO	FL	CR	5-10			<8'	B3	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		1700	170	µg/kg			ND	170	µg/kg	U		1700	µg/kg
589	CH	105	MF	CH	CO	FL	CR	5-10			<8'	B1	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		550	170	µg/kg			320	170	µg/kg			870	µg/kg
590	CH	105	MF	CH	CO	FL	CR	5-10			<8'	B1	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		340	170	µg/kg			ND	170	µg/kg	U		340	µg/kg
593	CH	105	MF	CH	CO	FL	CR	5-10			<8'	D2	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		1500	170	µg/kg			ND	170	µg/kg	U		1500	µg/kg
595	CH	105	MF	CH	CO	FL	CR	5-10			<8'	D3	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		1900	170	µg/kg			ND	170	µg/kg	U		1900	µg/kg
599	CH	105	MF	CH	CO	FL	CR	5-10			<8'	C3	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		200	170	µg/kg			ND	170	µg/kg	U		200	µg/kg
600	CH	105	MF	CH	CO	FL	CR	5-10			<8'	C4	ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U		4100	330	µg/kg			ND	330	µg/kg	U		4100	µg/kg
604	CH	105	MF	CH	CO	FL	CR	5-10			<8'	C5	ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		3600	340	µg/kg			ND	340	µg/kg	U		3600	µg/kg
610	CH	105	MF	CH	CO	FL	CR	5-10			<8'	C6	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		550	170	µg/kg			ND	170	µg/kg	U		550	µg/kg
611	CH	105	MF	CH	CO	FL	CR	5-10			<8'	C7	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		1800	170	µg/kg			1000	170	µg/kg			2800	µg/kg
612	CH	105	MF	CH	CO	FL	CR	5-10			<8'	D8	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		1500	170	µg/kg			770	170	µg/kg			2270	µg/kg
622	CH	105	MF	CH	CO	FL	CR	5-10	DP-1		<8'	B9	ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		4700	340	µg/kg			2400	340	µg/kg			7100	µg/kg
622	CH	105	MF	CH	CO	FL	CR	5-10			<8'	B9	ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		ND	340	µg/kg	U		5100	340	µg/kg			2600	340	µg/kg			7700	µg/kg
Bulk Soil Samples (10-20 cm) - Main Forge Shop Floor																																																
626	CH	105	MF	CH	SO	FL	GR	10-20			<8'	A1	ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		2100	180	µg/kg			ND	180	µg/kg	U		2100	µg/kg
628	CH	105	MF	CH	SO	FL	GR	10-20			<8'	B3	ND	8900	µg/kg	U		ND	8900	µg/kg	U		ND	8900	µg/kg	U		ND	8900	µg/kg	U		ND	8900	µg/kg	U		56000	8900	µg/kg			ND	8900	µg/kg	U		56000	µg/kg
630	CH	105	MF	CH	SO	FL	GR	10-20			<8'	B3	ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		2500	180	µg/kg			1900	180	µg/kg			4400	µg/kg
638	CH	105	MF	CH	SO	FL	GR	10-20			<8'	C2	ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		2500	180	µg/kg			3100	180	µg/kg			5600	µg/kg
645	CH	105	MF	CH	SO	FL	GR	10-20			<8'	C8	ND	350	µg/kg	U	UJ	ND	350	µg/kg	U	UJ	ND	350	µg/kg	U	UJ	ND	350	µg/kg	U	UJ	ND	350	µg/kg	U	UJ	4600	350	µg/kg		J	ND	350	µg/kg	U	UJ	4600	µg/kg
646	CH	105	MF	CH	SO	FL	GR	10-20			<8'	A6	ND	8700	µg/kg	U		ND	8700	µg/kg	U		ND	8700	µg/kg	U		ND	8700	µg/kg	U		ND	8700	µg/kg	U		51000	8700	µg/kg			ND	8700	µg/kg	U		51000	µg/kg
Wipe Samples - Main Forge Shop Steel Plates																																																
1021	CH	105	MF	CH	ST	FL	WI	Top				A1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		11	1	µg/wipe			8.4	1	µg/wipe			19.4	µg/wipe
1022	CH	105	MF	CH	ST	FL	WI	Top				A3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		3	1	µg/wipe			2.1	1	µg/wipe			5.1	µg/wipe
1023	CH	105	MF	CH	ST	FL	WI	Top				A5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		3.8	1	µg/wipe			3.1	1	µg/wipe			6.9	µg/wipe
1024	CH	105	MF	CH	ST	FL	WI	Bot.				A6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		8.7	1	µg/wipe			5.7	1	µg/wipe			14.4	µg/wipe
1025	CH	105	MF	CH	ST	FL	WI	Top				A7	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		120	10	µg/wipe			ND	10	µg/wipe	U		120	µg/wipe
1026	CH	105	MF	CH	ST	FL	WI	Top				B9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		9	1	µg/wipe			6.8	1	µg/wipe			15.8	µg/wipe
1027	CH	105	MF	CH	ST	FL	WI	Top				B8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		13	1	µg/wipe			11	1	µg/wipe			24	µg/wipe
1028	CH	105	MF	CH	ST	FL	WI	Bot.				B7	ND	4	µg/wipe	U		ND	4	µg/wipe	U		ND	4	µg/wipe	U		ND	4	µg/wipe	U		ND	4	µg/wipe	U		27	4	µg/wipe			21	4	µg/wipe			48	µg/wipe
1029	CH	105	MF	CH	ST	FL	WI	Top				B6	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		6.8	1	µg/wipe			4.7	1	µg/wipe			11.5	µg/wipe
1030	CH	105	MF	CH	ST	FL	WI	Top				B5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		12	1	µg/wipe			8.5	1	µg/wipe			20.5	µg/wipe
1031	CH	105	MF	CH	ST	FL	WI	Top				B4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		16	1	µg/wipe			ND	1	µg/wipe	U		16	µg/wipe
1032	CH	105	MF	CH	ST	FL	WI	Bot.				B3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	µg/wipe
1033	CH	105	MF	CH	ST	FL	WI	Top				B2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		13	1	µg/wipe			ND	1	µg/wipe	U		13	µg/wipe
1034	CH	105	MF	CH	ST	FL	WI	Top				B1	ND	5	µg/wipe	U		ND	5	µg/wipe	U		ND	5	µg/wipe	U		ND	5	µg/wipe	U		ND	5	µg/wipe	U		39	5	µg/wipe			ND	5	µg/wipe	U		39	µg/wipe
1035	CH	105	MF	CH	ST	FL	WI	Top				C2	ND	5	µg/wipe	U		ND	5	µg/wipe	U		ND	5	µg/wipe	U		ND	5	µg/wipe	U		ND	5	µg/wipe	U		41	5	µg/wipe			ND	5	µg/wipe	U		41	µg/wipe
1036	CH	105	MF	CH	ST	FL	WI	Bot.				C4	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.2	1	µg/wipe			ND	1	µg/wipe	U		2.2	µg/wipe
1037	CH	105	MF	CH	ST	FL	WI	Top				C5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		13	1	µg/wipe			7.8	1	µg/wipe			20.8	µg/wipe
1038	CH	105	MF	CH	ST	FL	WI	Top				C6	ND	2	µg/wipe	U		ND	2	µg/wipe	U		ND	2	µg/wipe	U		ND	2	µg/wipe	U		ND	2	µg/wipe	U		20	2	µg/wipe			ND	2	µg/wipe	U		20	µg/wipe
1039	CH	105	MF	CH	ST	FL	WI	Top				C8	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		4.2	1	µg/wipe			2.8	1	µg/wipe			7	µg/wipe
1040	CH	105	MF	CH	ST	FL	WI	Bot.				B9	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.1	1	µg/wipe			ND	1	µg/wipe	U		1.1	µg/wipe
1041	CH	105	MF	CH	ST	FL	WI	Top				D7	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	µg/wipe
1042	CH	105	MF	CH	ST	FL	WI	Top				D5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		3.2	1	µg/wipe			2.4	1	µg/wipe			5.6	µg/wipe
1043	CH	105	MF	CH	ST	FL	WI	Top				D3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		15	1	µg/wipe			ND	1	µg/wipe	U		15	µg/wipe
1045	CH	105	MF	CH	ST	FL	WI	Bot.				D2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.8	1	µg/wipe			1.6	1	µg/wipe			4.4	µg/wipe
1046	CH	105	MF	CH	ST	TR	WI	Top				C1	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		75	10	µg/wipe			ND	10	µg/wipe	U		75	µg/wipe
1047	CH	105	MF	CH	ST	TR	WI	Top				C2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		5.5	1	µg/wipe			ND	1	µg/wipe	U		5.5	µg/wipe
1048	CH	105	MF	CH	ST	TR	WI	Top				C3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		10	1	µg/wipe			ND	1	µg/wipe	U		10	µg/wipe

Table 17
Phase II Polychlorinated Biphenyls (USEPA Method 8082) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID													Aroclor 1016					Aroclor 1221					Aroclor 1232					Aroclor 1242					Aroclor 1248					Aroclor 1254					Aroclor 1260					Total PCBs	
Number	Site	Building	Room	Task	Material Type	Location in Room	Sample Type	Depth (CM)	Quality Control	<8' >8'	Grid	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier		
Bulk Concrete Samples (1-5 cm) - Main Forge Shop Trenches																																															
681	CH	105	MF	CH	CO	TRF	CR	1-5		<8'	D3	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		-	µg/kg
685	CH	105	MF	CH	CO	TRF	CR	1-5		<8'	D2	ND	8600	µg/kg	U		ND	8600	µg/kg	U		ND	8600	µg/kg	U		ND	8600	µg/kg	U		ND	8600	µg/kg	U		85000	8600	µg/kg			ND	8600	µg/kg	U		85000	µg/kg
686	CH	105	MF	CH	CO	TRW	CR	1-5		<8'	D2	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		850	170	µg/kg			ND	170	µg/kg	U		850	µg/kg
687	CH	105	MF	CH	CO	TRF	CR	1-5		<8'	D2	ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		370	180	µg/kg			ND	180	µg/kg	U		370	µg/kg
688	CH	105	MF	CH	CO	TRW	CR	1-5		<8'	D2	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		900	170	µg/kg			ND	170	µg/kg	U		900	µg/kg
691	CH	105	MF	CH	CO	TRF	CR	1-5		<8'	C1	ND	38	µg/kg	U		ND	38	µg/kg	U		ND	38	µg/kg	U		ND	38	µg/kg	U		ND	38	µg/kg	U		72	38	µg/kg			ND	38	µg/kg	U		72	µg/kg
693	CH	105	MF	CH	CO	TRF	CR	1-5		<8'	C1	ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		18000	3400	µg/kg			ND	3400	µg/kg	U		18000	µg/kg
694	CH	105	MF	CH	CO	TRF	CR	1-5		<8'	C1	ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U		4000	330	µg/kg			1800	330	µg/kg			5800	µg/kg
696	CH	105	MF	CH	CO	TRF	CR	1-5		<8'	B3	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		330	170	µg/kg			ND	170	µg/kg	U		330	µg/kg
698	CH	105	MF	CH	CO	TRF	CR	1-5		<8'	C2	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		860	170	µg/kg			550	170	µg/kg			1410	µg/kg
699	CH	105	MF	CH	CO	TRW	CR	1-5		<8'	C2	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		280	170	µg/kg			ND	170	µg/kg	U		280	µg/kg
700	CH	105	MF	CH	CO	TRF	CR	1-5		<8'	B1	ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		21000	3400	µg/kg			ND	3400	µg/kg	U		21000	µg/kg
701	CH	105	MF	CH	CO	TRW	CR	1-5		<8'	B1	ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		9300	680	µg/kg			ND	680	µg/kg	U		9300	µg/kg
702	CH	105	MF	CH	CO	TRF	CR	1-5	DP-1	<8'	B1	ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		620	180	µg/kg		J	ND	180	µg/kg	U		620	µg/kg
702	CH	105	MF	CH	CO	TRF	CR	1-5		<8'	B1	ND	140	µg/kg	U		ND	140	µg/kg	U		ND	140	µg/kg	U		ND	140	µg/kg	U		ND	140	µg/kg	U		1800	140	µg/kg		J	ND	140	µg/kg	U		1800	µg/kg
703	CH	105	MF	CH	CO	TRW	CR	1-5		<8'	B1	ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		ND	670	µg/kg	U		8100	670	µg/kg			ND	670	µg/kg	U		8100	µg/kg
708	CH	105	MF	CH	CO	TRF	CR	1-5		<8'	B4	ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		2800	180	µg/kg			ND	180	µg/kg	U		2800	µg/kg
Bulk Concrete Samples (5-10 cm) - Main Forge Shop Trenches																																															
685	CH	105	MF	CH	CO	TRF	CR	5-10		<8'	D2	ND	3500	µg/kg	U		ND	3500	µg/kg	U		ND	3500	µg/kg	U		ND	3500	µg/kg	U		ND	3500	µg/kg	U		23000	3500	µg/kg			ND	3500	µg/kg	U		23000	µg/kg
687	CH	105	MF	CH	CO	TRF	CR	5-10		<8'	D2	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		1100	170	µg/kg			ND	170	µg/kg	U		1100	µg/kg
688	CH	105	MF	CH	CO	TRW	CR	5-10		<8'	D2	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		2100	170	µg/kg			ND	170	µg/kg	U		2100	µg/kg
691	CH	105	MF	CH	CO	TRF	CR	5-10		<8'	C1	ND	190	µg/kg	U		ND	190	µg/kg	U		ND	190	µg/kg	U		ND	190	µg/kg	U		ND	190	µg/kg	U		410	190	µg/kg			ND	190	µg/kg	U		410	µg/kg
693	CH	105	MF	CH	CO	TRF	CR	5-10		<8'	C1	ND	1700	µg/kg	U		ND	1700	µg/kg	U		ND	1700	µg/kg	U		ND	1700	µg/kg	U		ND	1700	µg/kg	U		7900	1700	µg/kg			3400	1700	µg/kg			11300	µg/kg
694	CH	105	MF	CH	CO	TRF	CR	5-10		<8'	C1	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		810	170	µg/kg			370	170	µg/kg			1180	µg/kg
696	CH	105	MF	CH	CO	TRF	CR	5-10		<8'	B3	ND	34	µg/kg	U		ND	34	µg/kg	U		ND	34	µg/kg	U		ND	34	µg/kg	U		ND	34	µg/kg	U		98	34	µg/kg			ND	34	µg/kg	U		98	µg/kg
698	CH	105	MF	CH	CO	TRF	CR	5-10		<8'	C2	ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		190	180	µg/kg			ND	180	µg/kg	U		190	µg/kg
700	CH	105	MF	CH	CO	TRF	CR	5-10		<8'	B1	ND	1700	µg/kg	U		ND	1700	µg/kg	U		ND	1700	µg/kg	U		ND	1700	µg/kg	U		ND	1700	µg/kg	U		8600	1700	µg/kg			ND	1700	µg/kg	U		8600	µg/kg
701	CH	105	MF	CH	CO	TRW	CR	5-10		<8'	B1	ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		6400	3400	µg/kg			ND	3400	µg/kg	U		6400	µg/kg
702	CH	105	MF	CH	CO	TRF	CR	5-10	DP-1	<8'	B1	ND	70	µg/kg	U		ND	70	µg/kg	U		ND	70	µg/kg	U		ND	70	µg/kg	U		ND	70	µg/kg	U		700	70	µg/kg		J	ND	70	µg/kg	U		700	µg/kg
702	CH	105	MF	CH	CO	TRF	CR	5-10		<8'	B1	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		300	170	µg/kg		J	ND	170	µg/kg	U		300	µg/kg
703	CH	105	MF	CH	CO	TRW	CR	5-10		<8'	B1	ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		4300	3400	µg/kg			ND	3400	µg/kg	U		4300	µg/kg
708	CH	105	MF	CH	CO	TRF	CR	5-10		<8'	B4	ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		1900	180	µg/kg			780	180	µg/kg			2680	µg/kg
Bulk Soil Samples (10-20 cm) - Main Forge Shop Trenches																																															
658	CH	105	MF	CH	SO	TRF	GR	10-20		<8'	C7	ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		ND	170	µg/kg	U		1700	170	µg/kg			ND	170	µg/kg	U		1700	µg/kg
659	CH	105	MF	CH	SO	TRF	GR	10-20		<8'	B7	ND	660	µg/kg	U	UJ	ND	660	µg/kg	U	UJ	ND	660	µg/kg	U	UJ	ND	660	µg/kg	U	UJ	ND	660	µg/kg	U	UJ	6300	660	µg/kg		J	ND	660	µg/kg	U	UJ	6300	µg/kg
667	CH	105	MF	CH	SO	TRF	GR	10-20		<8'	C6	ND	900	µg/kg	U	UJ	ND	900	µg/kg	U	UJ	ND	900	µg/kg	U	UJ	ND	900	µg/kg	U	UJ	ND	900	µg/kg	U	UJ	11000	900	µg/kg		J	ND	900	µg/kg	U	UJ	11000	µg/kg
668	CH	105	MF	CH	SO	TRF	GR	10-20		<8'	C6	ND	830	µg/kg	U		ND	830	µg/kg	U		ND	830	µg/kg	U		ND	830	µg/kg	U		ND	830	µg/kg	U		7800	830	µg/kg			ND	830	µg/kg	U		7800	µg/kg
683	CH	105	MF	CH	SO	TRF	GR	10-20		<8'	D2	ND	9200	µg/kg	U		ND	9200	µg/kg	U		ND	9200	µg/kg	U		ND	9200	µg/kg	U		ND	9200	µg/kg	U		51000	9200	µg/kg			ND	9200	µg/kg	U		51000	µg/kg
707	CH	105	MF	CH	SO	TRF	GR	10-20		<8'	B3	ND	210	µg/kg	U		ND	210	µg/kg	U		ND	210	µg/kg	U		ND	210	µg/kg	U		ND	210	µg/kg	U		3100	210	µg/kg			ND	210	µg/kg	U		3100	µg/kg
719	CH	105	MF	CH	SO	TRF	GR	10-20		<8'	A5	ND	1000	µg/kg	U		ND	1000	µg/kg	U		ND	1000	µg/kg	U		ND	1000	µg/kg	U		ND	1000	µg/kg	U		8400	1000	µg/kg			7300	1000	µg/kg			15700	µg/kg
722	CH	105	MF	CH	SO	TRF	GR	10-20		<8'	A6	ND	860	µg/kg	U		ND	860	µg/kg	U		ND	860	µg/kg	U		ND	860	µg/kg	U		ND	860	µg/kg	U		8100	860	µg/kg			ND	860	µg/kg	U		8100	µg/kg
723	CH	105	MF	CH	SO	TRF	GR	10-20		<8'	A6	ND	980	µg/kg	U		ND	980	µg/kg	U		ND	980	µg/kg	U		ND	980	µg/kg	U		ND	980	µg/kg	U		6300	980	µg/kg			ND	980	µg/kg	U		6300	µg/kg
728	CH	105	MF	CH	SO	TRF	GR	10-20	DP	<8'	B6	ND	350	µg/kg	U		ND	350	µg/kg	U		ND	350	µg/kg	U		ND	350	µg/kg	U		ND	350	µg/kg	U		4300	350	µg/kg	U		ND	350	µg/kg	U		4300	µg/kg
728	CH	105	MF	CH	SO	TRF	GR	10-20		<8'	B6	ND	350	µg/kg	U		ND	350	µg/kg	U		ND	350	µg/kg	U		ND	350	µg/kg	U		ND	350	µg/kg	U		3500	350	µg/kg			ND	350	µg/kg	U		3500	µg/kg
730	CH	105	MF	CH	SO	TRF	GR	10-20	DP	<8'	A7	ND	190000	µg/kg	U		ND	190000	µg/kg	U		ND	190000	µg/kg	U		ND	190000	µg/kg	U		ND	190000	µg/kg	U		580000	190000	µg/kg			ND	190000	µg/kg	U		580000	µg/kg
730	CH	105	MF	CH	SO	TRF	GR	10-20		<8'	A7	ND	190000	µg/kg	U		ND	190000	µg/kg	U		ND	190000	µg/kg	U		ND	190000	µg/kg	U		ND	190000	µg/kg	U		850000	190000	µg/kg			ND	190000	µg/kg	U		850000	µg/kg
731	CH	105	MF	CH	SO	TRF	GR	10-20		<8'	A7	ND	190000	µg/kg	U		ND	190000	µg/kg	U		ND	190000	µg/kg	U		ND	190000	µg/kg	U		ND	190000	µg/kg	U		1400000	190000	µg/kg			ND	190000	µg/kg	U		1400000	µg/kg
733	CH	105	MF	CH	SO	TRF	GR	10-20		<8'	A9	ND	380	µg/kg	U		ND	380	µg/kg	U		ND	380	µg/kg	U		ND	380	µg/kg	U		ND	380	µg/kg	U		3500	380	µg/kg			ND	380	µg/kg	U		3500	µg/kg

Table 17
Phase II Polychlorinated Biphenyls (USEPA Method 8082) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID													Aroclor 1016					Aroclor 1221					Aroclor 1232					Aroclor 1242					Aroclor 1248					Aroclor 1254					Aroclor 1260					Total PCBs	
Number	Site	Building	Room	Task	Material Type	Location in Room	Sample Type	Depth (CM)	Quality Control	>8' <8'	Grid	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier		
Bulk Concrete Sample (1-5 cm) - Blacksmith Shop Floors																																																
541	CH	105	BS	CH	CO	FL	CR	1-5		<8'	A4	ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		ND	680	µg/kg	U		4000	680	µg/kg	U		ND	680	µg/kg	U		4000	µg/kg
Wipe Samples - Blacksmith Shop Steel Plates																																															
1049	CH	105	BS	CH	ST	FL	WI	Bot.			B3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.2	1	µg/wipe			ND	1	µg/wipe	U		2.2	µg/wipe
1050	CH	105	BS	CH	ST	FL	WI	Top			B3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.5	1	µg/wipe			1.5	µg/wipe
1051	CH	105	BS	CH	ST	FL	WI	Top			B2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		3.2	1	µg/wipe			3.5	1	µg/wipe			6.7	µg/wipe
1052	CH	105	BS	CH	ST	FL	WI	Top			A5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1	1	µg/wipe			1	1	µg/wipe			2	µg/wipe
1053	CH	105	BS	CH	ST	FL	WI	Bot.			A3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.2	1	µg/wipe			1.2	µg/wipe
Wipe Samples - Blacksmith Shop Steel Plates - Cpntinued																																															
1054	CH	105	BS	CH	ST	FL	WI	Top			A2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		2.4	1	µg/wipe			2.1	1	µg/wipe			4.5	µg/wipe
1055	CH	105	BS	CH	ST	FL	WI	Top			A1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
1056	CH	105	BS	CH	ST	FL	WI	Top			B1	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.5	1	µg/wipe			1.8	1	µg/wipe			3.3	µg/wipe
Bulk Samples - Round House Floor																																															
1016	CH	105	RH	CH	WD	FL	CR	0-1		<8'	D1	ND	110	µg/kg	U		ND	110	µg/kg	U		ND	110	µg/kg	U		ND	110	µg/kg	U		ND	110	µg/kg	U		ND	110	µg/kg	U		170	110	µg/kg			170	µg/kg
1017	CH	105	RH	CH	WD	FL	CR	0-1		<8'	D1	ND	550	µg/kg	U		ND	550	µg/kg	U		ND	550	µg/kg	U		ND	550	µg/kg	U		ND	550	µg/kg	U		ND	550	µg/kg	U		2300	550	µg/kg			2300	µg/kg
1018	CH	105	RH	CH	WD	FL	CR	0-1		<8'	D1	ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		1600	180	µg/kg			1600	µg/kg
1019	CH	105	RH	CH	WD	FL	CR	0-1		<8'	C4	ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		1000	180	µg/kg			1700	180	µg/kg			2700	µg/kg
1020	CH	105	RH	CH	WD	FL	CR	0-1		<8'	D7	ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		ND	180	µg/kg	U		260	180	µg/kg			260	µg/kg
Wipe Samples - Round House Steel Plates																																															
1057	CH	105	RH	CH	ST	FL	WI	Bot.			D3	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		-	µg/wipe
1058	CH	105	RH	CH	ST	FL	WI	Top			D2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.8	1	µg/wipe			1.8	µg/wipe
1059	CH	105	RH	CH	ST	FL	WI	Top			C5	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		3.7	1	µg/wipe			3.7	µg/wipe
1060	CH	105	RH	CH	ST	FL	WI	Top			C2	ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		ND	1	µg/wipe	U		1.2	1	µg/wipe			1.2	µg/wipe

Notes:

CH - Charlestown
MF - Main Forge Shop
BS - Blacksmith Shop
RH - Roundhouse
QC - Quality Control
NA - Not Applicable
DUP - Duplicate Sample

CO - Concrete
WD - Wood
AS - Asbestos
BR - Brick
SO - Soil
ST - Steel
PL - Plaster
GL - Glass

CE - Ceiling
FL - Floor
TRW - Trench Wall
TRF - Trench Floor
WA - Wall
WA* - Vertical Ceiling

WI - Wipe
CR - Core
GR - Grab
CM - Centimeter

Data Qualifiers
J - Estimated
U - Undetected
UJ - Undetected but Estimated
R - Rejected

µg/wipe - micrograms per 100 square centimeters
µg/kg - micrograms per kilogram

Table 18
Phase II Polychlorinated Biphenyls Homologs (USEPA Method 1668) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID													Total Monochlorobiphenyls					Total Dichlorobiphenyls					Total Trichlorobiphenyls					Total Tetrachlorobiphenyls					Total Pentachlorobiphenyls				
Number	Site	Building	Room	Task	Material	Location in Room	Sample Type	Depth (CM)	Quality Control	>8' <8'	Grid		Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier
Bulk Concrete Sample (0-1 cm), Porous Non-Walls >8 Feet - Main Forge Shop																																					
890	CH	105	MF	CH	CO	CE	CR	0-1		>8'	A5		11000	20	pg/g			12000	20	pg/g			3200	20	pg/g			18000	20	pg/g			95000	20	pg/g		
Wipe Samples, Non-Porous Non-Walls >8 Feet - Main Forge Shop																																					
740	CH	105	MF	CH	ST	CE	WI	NA		>8'	C9		5300	40	pg/wi		U	3800	40	pg/wi		U	14000	40	pg/wi		J	45000	40	pg/wi			310000	40	pg/wi		
760	CH	105	MF	CH	ST	CE	WI	NA		>8'	C7		7200	40	pg/wi			3800	40	pg/wi		U	16000	40	pg/wi		J	94000	40	pg/wi			840000	40	pg/wi		
790	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	B4		440	40	pg/wi		U	1400	40	pg/wi		U	6600	40	pg/wi		J	19000	40	pg/wi			150000	40	pg/wi		
790	CH	105	MF	CH	ST	CE	WI	NA		>8'	B4		1700	40	pg/wi		U	2100	40	pg/wi		U	8000	40	pg/wi		J	22000	40	pg/wi			220000	40	pg/wi		
810	CH	105	MF	CH	ST	CE	WI	NA		>8'	C3		370	40	pg/wi			8800	40	pg/wi			44000	40	pg/wi			440000	40	pg/wi			2400000	40	pg/wi		
830	CH	105	MF	CH	ST	CE	WI	NA		>8'	A5		ND	40	pg/wi			1100	40	pg/wi			4200	40	pg/wi			48000	40	pg/wi			320000	40	pg/wi		
850	CH	105	MF	CH	ST	CE	WI	NA		>8'	C1		420	40	pg/wi			6300	40	pg/wi			28000	40	pg/wi			300000	40	pg/wi			1900000	40	pg/wi		
870	CH	105	MF	CH	ST	CE	WI	NA		>8'	D5		580	40	pg/wi			5800	40	pg/wi			24000	40	pg/wi			340000	40	pg/wi			2500000	40	pg/wi		
930	CH	105	MF	CH	ST	CE	WI	NA		>8'	D6		ND	40	pg/wi			1400	40	pg/wi			3400	40	pg/wi			25000	40	pg/wi			140000	40	pg/wi		
Bulk Concrete Sample (0-1 cm), Porous Wall >8 Feet - Main Forge Shop																																					
910	CH	105	MF	CH	WD	WA	CR	0-1		>8'	D6		52	40	pg/g			530	40	pg/g			3900	40	pg/g			20000	40	pg/g			130000	40	pg/g		
Wipe Samples, Non-Porous Walls >8 Feet - Main Forge Shop																																					
736	CH	105	MF	CH	GL	WA	WI	NA		>8'	A9		220	40	pg/wi			1600	40	pg/wi			6100	40	pg/wi			46000	40	pg/wi			270000	40	pg/wi		
980	CH	105	MF	CH	GL	WA	WI	NA		>8'	D6		88	40	pg/wi			1500	40	pg/wi			4000	40	pg/wi			6200	40	pg/wi			18000	40	pg/wi		
Bulk Concrete Samples, Porous Walls <8 Feet - Main Forge Shop																																					
1007	CH	105	MF	CH	WD	WA	CR	0-1		<8'	D6		150	2.1	pg/g			2000	2.1	pg/g			7200	2.1	pg/g			47000	2.1	pg/g			360000	2.1	pg/g		
Wipe Samples, Non-Porous Walls <8 Feet - Main Forge Shop																																					
1000	CH	105	MF	CH	GL	WA	WI	NA		<8'	D6		100	40	pg/wi			1100	40	pg/wi			3000	40	pg/wi			14000	40	pg/wi			60000	40	pg/wi		
Bulk Soil Samples (10-20 cm) - Main Forge Shop																																					
628	CH	105	MF	CH	SO	FL	GR	10-20		<8'	B3		47000	2000	pg/g		J	110000	2000	pg/g		J	430000	2000	pg/g		J	4100000	2000	pg/g		J	17000000	2000	pg/g		J
Wipe Samples - Main Forge Shop Steel Plates																																					
1030	CH	105	MF	CH	ST	FL	WI	Top			B5		2300	40	pg/wi			15000	40	pg/wi			94000	40	pg/wi			970000	40	pg/wi			4900000	40	pg/wi		
1046	CH	105	MF	CH	ST	TR	WI	Top			C1		4400	40	pg/wi			50000	40	pg/wi			310000	40	pg/wi			5400000	40	pg/wi			15000000	40	pg/wi		D
Bulk Concrete Samples (1-5 cm) - Main Forge Shop Trenches																																					
702	CH	105	MF	CH	CO	TRF	CR	1-5		<8'	B1		ND	210	pg/g			730	210	pg/g			8600	210	pg/g			100000	210	pg/g			510000	210	pg/g		
Bulk Concrete Samples (5-10 cm) - Main Forge Shop Trenches																																					
702	CH	105	MF	CH	CO	TRF	CR	5-10		<8'	B1		ND	230	pg/g			1200	230	pg/g			8300	230	pg/g			100000	230	pg/g			470000	230	pg/g		
Bulk Soil Sample (10-20 cm) - Main Forge Shop Trenches																																					
728	CH	105	MF	CH	SO	TRF	GR	10-20		<8'	B6		240	86	pg/g		J	13000	86	pg/g			87000	86	pg/g			350000	86	pg/g			1400000	86	pg/g		

Table 18
Phase II Polychlorinated Biphenyls Homologs (USEPA Method 1668) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID												Total Hexachlorobiphenyls					Total Heptachlorobiphenyls					Total Octachlorobiphenyls					Total Nonachlorobiphenyls					DecaCB					Total Congers	
Number	Site	Building	Room	Task	Material	Location in Room	Sample Type	Depth (CM)	Quality Control	>8' <8'	Grid	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Unit
Bulk Concrete Sample (0-1 cm), Porous Non-Walls >8 Feet - Main Forge Shop																																				
890	CH	105	MF	CH	CO	CE	CR	0-1		>8'	A5	83000	20	pg/g			22000	20	pg/g			4600	20	pg/g			1000	20	pg/g			670	20	pg/g			250470	pg/g
Wipe Samples, Non-Porous Non-Walls >8 Feet - Main Forge Shop																																				
740	CH	105	MF	CH	ST	CE	WI	NA		>8'	C9	180000	40	pg/wi		J	50000	40	pg/wi		J	22000	40	pg/wi		J	3100	40	pg/wi		J	1900	40	pg/wi			635100	pg/wi
760	CH	105	MF	CH	ST	CE	WI	NA		>8'	C7	570000	40	pg/wi		J	140000	40	pg/wi		J	58000	40	pg/wi		J	7500	40	pg/wi		J	9000	40	pg/wi			1745500	pg/wi
790	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	B4	110000	40	pg/wi		J	21000	40	pg/wi		J	7100	40	pg/wi		J	740	40	pg/wi		J	320	40	pg/wi			316600	pg/wi
790	CH	105	MF	CH	ST	CE	WI	NA		>8'	B4	140000	40	pg/wi		J	29000	40	pg/wi		J	8700	40	pg/wi		J	690	40	pg/wi		J	530	40	pg/wi			432720	pg/wi
810	CH	105	MF	CH	ST	CE	WI	NA		>8'	C3	1800000	40	pg/wi			480000	40	pg/wi			100000	40	pg/wi			25000	40	pg/wi			7700	40	pg/wi			5305870	pg/wi
830	CH	105	MF	CH	ST	CE	WI	NA		>8'	A5	230000	40	pg/wi			55000	40	pg/wi			8100	40	pg/wi			2200	40	pg/wi			1900	40	pg/wi			622500	pg/wi
850	CH	105	MF	CH	ST	CE	WI	NA		>8'	C1	950000	40	pg/wi			370000	40	pg/wi			57000	40	pg/wi			14000	40	pg/wi			4500	40	pg/wi			3630220	pg/wi
870	CH	105	MF	CH	ST	CE	WI	NA		>8'	D5	1200000	40	pg/wi			290000	40	pg/wi			40000	40	pg/wi			11000	40	pg/wi			18000	40	pg/wi			4429380	pg/wi
930	CH	105	MF	CH	ST	CE	WI	NA		>8'	D6	64000	40	pg/wi			18000	40	pg/wi			1900	40	pg/wi			400	40	pg/wi			750	40	pg/wi			251450	pg/wi
Bulk Concrete Sample (0-1 cm), Porous Wall >8 Feet - Main Forge Shop																																				
910	CH	105	MF	CH	WD	WA	CR	0-1		>8'	D6	120000	40	pg/g			62000	40	pg/g			40000	40	pg/g		J	4300	40	pg/g			3600	40	pg/g			384382	pg/g
Wipe Samples, Non-Porous Walls >8 Feet - Main Forge Shop																																				
736	CH	105	MF	CH	GL	WA	WI	NA		>8'	A9	130000	40	pg/wi			41000	40	pg/wi			9200	40	pg/wi			1100	40	pg/wi			1100	40	pg/wi		J	506320	pg/wi
980	CH	105	MF	CH	GL	WA	WI	NA		>8'	D6	11000	40	pg/wi			3700	40	pg/wi			580	40	pg/wi			130	40	pg/wi			250	40	pg/wi			45448	pg/wi
Bulk Concrete Samples, Porous Walls <8 Feet - Main Forge Shop																																				
1007	CH	105	MF	CH	WD	WA	CR	0-1		<8'	D6	150000	2.1	pg/g			70000	2.1	pg/g			31000	2.1	pg/g		J	4500	2.1	pg/g			2000	2.1	pg/g			673850	pg/g
Wipe Samples, Non-Porous Walls <8 Feet - Main Forge Shop																																				
1000	CH	105	MF	CH	GL	WA	WI	NA		<8'	D6	41000	40	pg/wi			28000	40	pg/wi			9900	40	pg/wi			1100	40	pg/wi			990	40	pg/wi		J	159190	pg/wi
Bulk Soil Samples (10-20 cm) - Main Forge Shop																																				
628	CH	105	MF	CH	SO	FL	GR	10-20		<8'	B3	7500000	2000	pg/g		J	9700000	2000	pg/g		J	160000	2	pg/g			15000	2	pg/g			4600	2	pg/g			3.9E+07	pg/g
Wipe Samples - Main Forge Shop Steel Plates																																				
1030	CH	105	MF	CH	ST	FL	WI	Top			B5	2700000	40	pg/wi			880000	40	pg/wi			150000	40	pg/wi			22000	40	pg/wi			18000	40	pg/wi		J	9751300	pg/wi
1046	CH	105	MF	CH	ST	TR	WI	Top			C1	9300000	40	pg/wi	D		3000000	40	pg/wi			310000	40	pg/wi			37000	40	pg/wi			28000	40	pg/wi			3.3E+07	pg/wi
Bulk Concrete Samples (1-5 cm) - Main Forge Shop Trenches																																				
702	CH	105	MF	CH	CO	TRF	CR	1-5		<8'	B1	200000	210	pg/g			33000	210	pg/g			1800	210	pg/g			ND	210	pg/g			ND	210	pg/g			854130	pg/g
Bulk Concrete Samples (5-10 cm) - Main Forge Shop Trenches																																				
702	CH	105	MF	CH	CO	TRF	CR	5-10		<8'	B1	210000	230	pg/g			33000	230	pg/g			1200	230	pg/g			ND	230	pg/g			ND	230	pg/g			823700	pg/g
Bulk Soil Sample (10-20 cm) - Main Forge Shop Trenches																																				
728	CH	105	MF	CH	SO	TRF	GR	10-20		<8'	B6	1100000	86	pg/g			260000	86	pg/g			36000	86	pg/g			6800	86	pg/g			3400	86	pg/g			3256440	pg/g

Notes:

CH - Charlestown
MF - Main Forge Shop
QC - Quality Control
NA - Not Applicable
DUP - Duplicate Sample

pg/g = picogram per gram
pg/wi = picogram per wipe (100 cm^2)

CO - Concrete
SO - Soil
ST - Steel
GL - Glass
WD - Wood

CE - Ceiling
FL - Floor
TRF - Trench Floor
WA - Wall

WI - Wipe
CR - Core
GR - Grab
CM - Centimeter

DV Qualifier:
U - Undetected
J - Estimated
UJ - Undetected but estimated
R - Rejected

Lab Qualifier
B - Compound is also detected in the blank
E - Concentration exceeds calibration range
F - Reported value estimated due to an interference
D - Compound quantitated using a second dilution

Table 19
Phase II Polychlorinated Biphenyls World Health Organization (WHO) Congeners (USEPA Method 1668) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID													3,4,4',5-TetraCB (#81)					3,3',4,4'-TetraCB (#77)					2',3,4,4',5-PentaCB (#123)					2,3',4,4',5-PentaCB (#118)					2,3,4,4',5-PentaCB (#114)					2,3,3',4,4'-PentaCB (#105)					3,3',4,4',5-PentaCB (#126)				
Number	Site	Building	Room	Task	Material Type	Location in Room	Sample Type	Depth (CM)	Quality Control	As >8'	Grid		Result	Detection Limit	Unit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Unit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Unit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Unit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Unit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Unit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Unit	Lab Qualifier	DV Qualifier
Bulk Concrete Sample (0-1 cm), Porous Non-Walls >8 Feet - Main Forge Shop																																															
890	CH	105	MF	CH	CO	CE	CR	0-1		>8'	A5		280	20	pg/g			500	20	pg/g			1100	20	pg/g			19000	20	pg/g			490	20	pg/g			15000	20	pg/g			190	20	pg/g		
Wipe Samples, Non-Porous Non-Walls >8 Feet - Main Forge Shop																																															
740	CH	105	MF	CH	ST	CE	WI	NA		>8'	C9		170	40	pg/sample			710	40	pg/sample			21000	40	pg/sample			23000	40	pg/sample	B		1500	40	pg/sample			23000	40	pg/sample			120	40	pg/sample		
760	CH	105	MF	CH	ST	CE	WI	NA		>8'	C7		480	40	pg/sample			1900	40	pg/sample			26000	40	pg/sample			140000	40	pg/sample	B		5200	40	pg/sample			70000	40	pg/sample			350	40	pg/sample		
790	CH	105	MF	CH	ST	CE	WI	NA		>8'	B4		120	40	pg/sample			500	40	pg/sample			8700	40	pg/sample			31000	40	pg/sample	B	J	870	40	pg/sample		J	25000	40	pg/sample			89	40	pg/sample		
790	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	B4		73	40	pg/sample			320	40	pg/sample			8900	40	pg/sample			17000	40	pg/sample	B	J	350	40	pg/sample		J	15000	40	pg/sample			79	40	pg/sample		
810	CH	105	MF	CH	ST	CE	WI	NA		>8'	C3		4500	40	pg/sample			8600	40	pg/sample			26000	40	pg/sample			610000	40	pg/sample	BE	J	22000	40	pg/sample			320000	40	pg/sample	E	J	2600	40	pg/sample		
830	CH	105	MF	CH	ST	CE	WI	NA		>8'	A5		670	40	pg/sample			1400	40	pg/sample			ND	2400	pg/sample			86000	40	pg/sample	BE	J	2600	40	pg/sample			42000	40	pg/sample	E	J	250	40	pg/sample		
850	CH	105	MF	CH	ST	CE	WI	NA		>8'	C1		2700	40	pg/sample			4100	40	pg/sample			ND	15000	pg/sample			290000	40	pg/sample	BE	J	10000	40	pg/sample			120000	40	pg/sample			1500	40	pg/sample		
870	CH	105	MF	CH	ST	CE	WI	NA		>8'	D5		2700	40	pg/sample			4600	40	pg/sample			45000	40	pg/sample	EF	J	280000	40	pg/sample	EFB	J	11000	40	pg/sample			120000	40	pg/sample	E	J	970	40	pg/sample		
930	CH	105	MF	CH	ST	CE	WI	NA		>8'	D6		200	40	pg/sample			740	40	pg/sample			ND	1100	pg/sample			25000	40	pg/sample	B		680	40	pg/sample			11000	40	pg/sample			110	40	pg/sample		
Bulk Concrete Sample (0-1 cm), Porous Wall >8 Feet - Main Forge Shop																																															
910	CH	105	MF	CH	WD	WA	CR	0-1		>8'	D6		110	2	pg/g			420	2	pg/g			3400	2	pg/g			24000	2	pg/g	B		1100	2	pg/g			19000	2	pg/g	B		130	2	pg/g		
Wipe Samples, Non-Porous Walls >8 Feet - Main Forge Shop																																															
736	CH	105	MF	CH	GL	WA	WI	NA		>8'	A9		420	40	pg/sample			1000	40	pg/sample			8300	40	pg/sample			35000	40	pg/sample	B		1100	40	pg/sample			25000	40	pg/sample			210	40	pg/sample		
980	CH	105	MF	CH	GL	WA	WI	NA		>8'	D6		ND	40	pg/sample			79	40	pg/sample			ND	250	pg/sample			4500	40	pg/sample	B		110	40	pg/sample			1900	40	pg/sample			ND	40	pg/sample		
Bulk Concrete Samples, Porous Walls <8 Feet - Main Forge Shop																																															
1007	CH	105	MF	CH	WD	WA	CR	0-1		<8'	D6		280	2.1	pg/g			560	2.1	pg/g			1200	2.1	pg/g			34000	2.1	pg/g	B		1000	2.1	pg/g			16000	2.1	pg/g	B		61	2.1	pg/g		
Wipe Samples, Non-Porous Walls <8 Feet - Main Forge Shop																																															
1000	CH	105	MF	CH	GL	WA	WI	NA		<8'	D6		140	40	pg/sample			260	40	pg/sample			4000	40	pg/sample			9100	40	pg/sample	B		400	40	pg/sample			7500	40	pg/sample			83	40	pg/sample		
Bulk Soil Samples (10-20 cm) - Main Forge Shop																																															
628	CH	105	MF	CH	SO	FL	GR	10-20		<8'	B3		27000	2000	pg/g		J	33000	2000	pg/g		J	ND	180000	pg/g		UJ	2200000	2000	pg/g		J	63000	2000	pg/g		J	1000000	2000	pg/g		J	6600	2000	pg/g		J
Wipe Samples - Main Forge Shop Steel Plates																																															
1030	CH	105	MF	CH	ST	FL	WI	Top		<8'	B5		8200	40	pg/sample			13000	40	pg/sample			150000	40	pg/sample			760000	40	pg/sample	EB	J	31000	40	pg/sample			530000	40	pg/sample	E	J	2900	40	pg/sample		
1046	CH	105	MF	CH	ST	TR	WI	Top		<8'	C1		42000	40	pg/sample	E	J	62000	40	pg/sample	E	J	390000	400	pg/sample	FD	J	3500000	400	pg/sample	EDB	J	140000	400	pg/sample	D		2800000	400	pg/sample	ED	J	15000	400	pg/sample	D	
Bulk Concrete Samples (1-5 cm) - Main Forge Shop Trenches																																															
702	CH	105	MF	CH	CO	TRR	CR	1-5		<8'	B1		720	210	pg/g			850	210	pg/g			19000	210	pg/g	F	J	56000	210	pg/g			2100	210	pg/g			35000	210	pg/g			ND	210	pg/g		
Bulk Concrete Samples (5-10 cm) - Main Forge Shop Trenches																																															
702	CH	105	MF	CH	CO	TRR	CR	5-10		<8'	B1		960	230	pg/g			1000	230	pg/g			4100	230	pg/g	F	J	64000	230	pg/g			2400	230	pg/g			41000	230	pg/g			ND	230	pg/g		
Bulk Soil Sample (10-20 cm) - Main Forge Shop Trenches																																															
728	CH	105	MF	CH	SO	TRR	GR	10-20		<8'	B6		3900	86	pg/g			6600	86	pg/g		J	14000	86	pg/g	F	J	260000	86	pg/g	E	J	12000	86	pg/g			210000	86	pg/g	E	J	1500	86	pg/g		J

Table 19
Phase II Polychlorinated Biphenyls World Health Organization (WHO) Congeners (USEPA Method 1668) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID													2,3',4,4',5,5'-HexaCB (#167)					2,3,3',4,4',5-HexaCB (#156)					2,3,3',4,4',5'-HexaCB (#157)					3,3',4,4',5,5'-HexaCB (#169)					2,2',3,4,4',5,5'-HeptaCB (#180)					2,2',3,3',4,4',5-HeptaCB (#170)					2,3,3',4,4',5,5'-HeptaCB (#189)				
Number	Site	Building	Room	Task	Material Type	Location in Room	Sample Type	Depth (CM)	Quality Control	>8' <8	Grid		Result	Detection Limit	Unit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Unit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Unit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Unit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Unit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Unit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Unit	Lab Qualifier	DV Qualifier
Bulk Concrete Sample (0-1 cm), Porous Non-Wall >8 Feet																																															
890	CH	105	MF	CH	CO	CE	CR	0-1		>8'	A5		6800	20	pg/g			4200	20	pg/g			1000	20	pg/g			ND	20	pg/g			6900	20	pg/g			4800	20	pg/g			200	20	pg/g		
Wipe Samples, Non-Porous Non-Wall Surfaces >8 Feet - Main Forge Shop																																															
740	CH	105	MF	CH	ST	CE	WI	NA		>8'	C9		11000	40	pg/sample			7200	40	pg/sample			1400	40	pg/sample			ND	40	pg/sample			15000	40	pg/sample			8700	40	pg/sample			100	40	pg/sample		
760	CH	105	MF	CH	ST	CE	WI	NA		>8'	C7		32000	40	pg/sample			19000	40	pg/sample			4000	40	pg/sample			ND	40	pg/sample			42000	40	pg/sample			23000	40	pg/sample			300	40	pg/sample		
790	CH	105	MF	CH	ST	CE	WI	NA		>8'	B4		9100	40	pg/sample			4600	40	pg/sample			960	40	pg/sample			ND	40	pg/sample			7800	40	pg/sample			4500	40	pg/sample			53	40	pg/sample		
790	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	B4		6500	40	pg/sample			3500	40	pg/sample			700	40	pg/sample			ND	40	pg/sample			5600	40	pg/sample			3200	40	pg/sample			ND	40	pg/sample		
810	CH	105	MF	CH	ST	CE	WI	NA		>8'	C3		140000	40	pg/sample	E	J	83000	40	pg/sample	E	J	19000	40	pg/sample			ND	40	pg/sample			150000	40	pg/sample	E	J	92000	40	pg/sample	E	J	2900	40	pg/sample		J
830	CH	105	MF	CH	ST	CE	WI	NA		>8'	A5		15000	40	pg/sample			8400	40	pg/sample			1800	40	pg/sample			ND	40	pg/sample			15000	40	pg/sample			9300	40	pg/sample			270	40	pg/sample		J
850	CH	105	MF	CH	ST	CE	WI	NA		>8'	C1		67000	40	pg/sample	E	J	48000	40	pg/sample	E	J	10000	40	pg/sample			ND	40	pg/sample			120000	40	pg/sample	E	J	86000	40	pg/sample	E	J	3500	40	pg/sample		J
870	CH	105	MF	CH	ST	CE	WI	NA		>8'	D5		67000	40	pg/sample	E	J	36000	40	pg/sample			7800	40	pg/sample			ND	40	pg/sample			85000	40	pg/sample	E	J	57000	40	pg/sample	E	J	1500	40	pg/sample		J
930	CH	105	MF	CH	ST	CE	WI	NA		>8'	D6		3700	40	pg/sample			2000	40	pg/sample			430	40	pg/sample			ND	40	pg/sample			5100	40	pg/sample			3000	40	pg/sample			82	40	pg/sample		J
Bulk Concrete Sample (0-1 cm), Porous Wall >8 Feet - Main Forge Shop																																														
910	CH	105	MF	CH	WD	WA	CR	0-1		>8'	D6		10000	2	pg/g			7000	2	pg/g			1700	2	pg/g			9.8	2	pg/g			20000	2	pg/g			14000	2	pg/g			150	2	pg/g		
Wipe Samples, Non-Porous Walls >8 Feet - Main Forge Shop																																														
736	CH	105	MF	CH	GL	WA	WI	NA		>8'	A9		7500	40	pg/sample			3500	40	pg/sample			800	40	pg/sample			ND	40	pg/sample			11000	40	pg/sample			7500	40	pg/sample			160	40	pg/sample		
980	CH	105	MF	CH	GL	WA	WI	NA		>8'	D6		780	40	pg/sample			590	40	pg/sample			130	40	pg/sample			ND	40	pg/sample			1300	40	pg/sample			900	40	pg/sample			ND	40	pg/sample		
Bulk Concrete Samples, Porous Walls <8 Feet - Main Forge Shop																																														
1007	CH	105	MF	CH	WD	WA	CR	0-1		<8'	D6		6300	2.1	pg/g			3600	2.1	pg/g			640	2.1	pg/g			2.8	2.1	pg/g			22000	2.1	pg/g			11000	2.1	pg/g			67	2.1	pg/g		
Wipe Samples, Non-Porous Walls <8 Feet - Main Forge Shop																																														
1000	CH	105	MF	CH	GL	WA	WI	NA		<8'	D6		2900	40	pg/sample			1800	40	pg/sample			390	40	pg/sample			ND	40	pg/sample			9700	40	pg/sample			8100	40	pg/sample			320	40	pg/sample		
Bulk Soil Samples (10-20 cm) - Main Forge Shop																																														
628	CH	105	MF	CH	SO	FL	GR	10-20		<8'	B3		450000	2000	pg/g		J	280000	2000	pg/g		J	56000	2000	pg/g		J	ND	2000	pg/g		UJ	280000	2000	pg/g		J	250000	2000	pg/g		J	9600	2000	pg/g		J
Wipe Samples - Main Forge Shop Steel Plates																																														
1030	CH	105	MF	CH	ST	FL	WI	Top		<8'	B5		190000	40	pg/sample	E	J	120000	40	pg/sample	E	J	28000	40	pg/sample			ND	40	pg/sample			250000	40	pg/sample	E	J	210000	40	pg/sample	E	J	6200	40	pg/sample		
1046	CH	105	MF	CH	ST	TR	WI	Top		<8'	C1		690000	400	pg/sample	ED	J	340000	400	pg/sample	D		86000	400	pg/sample	D		ND	400	pg/sample	D		750000	40	pg/sample	E	J	680000	40	pg/sample	E	J	29000	40	pg/sample		
Bulk Concrete Samples (1-5 cm) - Main Forge Shop Trenches																																														
702	CH	105	MF	CH	CO	TRF	CR	1-5		<8'	B1		12000	210	pg/g			8400	210	pg/g			1900	210	pg/g			ND	210	pg/g			9000	210	pg/g			8400	210	pg/g			360	210	pg/g		
Bulk Concrete Samples (5-10 cm) - Main Forge Shop Trenches																																														
702	CH	105	MF	CH	CO	TRF	CR	5-10		<8'	B1		14000	230	pg/g			9400	230	pg/g			2300	230	pg/g			ND	230	pg/g			9200	230	pg/g			9000	230	pg/g			390	230	pg/g		
Bulk Soil Sample (10-20 cm) - Main Forge Shop Trenches																																														
728	CH	105	MF	CH	SO	TRF	GR	10-20		<8'	B6		80000	86	pg/g			50000	86	pg/g			13000	86	pg/g			ND	86	pg/g			79000	86	pg/g			64000	86	pg/g			2700	86	pg/g		

Notes:
CH - Charlestown
MF - Main Forge Shop
QC - Quality Control
NA - Not Applicable
DUP - Duplicate Sample

CO - Concrete
SO - Soil
ST - Steel
GL - Glass
WD - Wood

CE - Ceiling
FL - Floor
TRF - Trench Floor
WA - Wall

WI - Wipe
CR - Core
GR - Grab
CM - Centimeter

DV Qualifier:
U - Undetected
J - Estimated
UJ - Undetected but estimated
R - Rejected

Lab Qualifier
B - Compound is also detected in the blank
E - Concentration exceeds calibration range
F - Reported value estimated due to an interference
D - Compound quantitated using a second dilution

pg/g = picogram per gram
pg/wi = picogram per wipe (100 cm^2)

Table 20
Phase II Polynuclear Aromatic Hydrocarbons (USEPA Method 8270) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID												Acenaphthene					Acenaphthylene					Anthracene					Benzo(a)anthracene					Benzo(a)pyrene					Benzo(b)fluoranthene					Benzo(ghi)perylene					Benzo(k)fluoranthene					Chrysene				
Number	Side	Bldg	Room	Task	Mtl	Loc	Type	Depth	QC	>8' <8'	Grid	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier
Bulk Concrete Samples (0-1 cm), Porous Non-Walls >8 Feet - Main Forge Shop																																																										
890	CH	105	MF	CH	CO	CE	CR	0-1 CM		>8'	A5	ND	4,000	µg/kg	U		ND	4,000	µg/kg	U		2,700	4,000	µg/kg	J		3,100	4,000	µg/kg	J		ND	4,000	µg/kg	U		ND	4,000	µg/kg	JU		ND	4,000	µg/kg	U		ND	4,000	µg/kg	U		4,200	4,000	µg/kg		
900	CH	105	MF	CH	WD	CE	CR	0-1 CM		>8'	B5	ND	710	µg/kg	U		ND	710	µg/kg	U		ND	710	µg/kg	U		ND	710	µg/kg	U		ND	710	µg/kg	U	UJ	ND	710	µg/kg	U	UJ	ND	710	µg/kg	U	UJ	ND	710	µg/kg	U	UJ	ND	710	µg/kg	U	
958	CH	105	MF	CH	CO	CE	CR	0-1 CM		>8'	A9	ND	2,000	µg/kg	U		ND	2,000	µg/kg	U		980	2,000	µg/kg	J		ND	2,000	µg/kg	U		ND	2,000	µg/kg	U		ND	2,000	µg/kg	U		ND	2,000	µg/kg	U		ND	2,000	µg/kg	U		1,100	2,000	µg/kg	J	
960	CH	105	MF	CH	WD	CE	CR	0-1 CM		>8'	C4	ND	5,500	µg/kg	U		ND	5,500	µg/kg	U		ND	5,500	µg/kg	U		ND	5,500	µg/kg	U		ND	5,500	µg/kg	U		ND	5,500	µg/kg	U		ND	5,500	µg/kg	U		ND	5,500	µg/kg	U		ND	5,500	µg/kg	U	
Wipe Samples, Non-Porous Non-Walls >8 Feet - Main Forge Shop																																																										
740	CH	105	MF	CH	ST	CE	WI	NA		>8'	C9	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		2.6	10	µg/wipe	J		3.1	10	µg/wipe	J		1.1	10	µg/wipe	J		2.6	10	µg/wipe	J		4.9	10	µg/wipe	J	
750	CH	105	MF	CH	ST	CE	WI	NA		>8'	C8	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	
760	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	C7	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		1.1	10	µg/wipe	J	
760	CH	105	MF	CH	ST	CE	WI	NA		>8'	C7	ND	10	µg/wipe	U		ND	10	µg/wipe	U		0.55	10	µg/wipe	J		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		1.2	10	µg/wipe	J	
770	CH	105	MF	CH	ST	CE	WI	NA		>8'	B6	ND	10	µg/wipe	U		1.3	10	µg/wipe	J		0.64	10	µg/wipe	J		2.2	10	µg/wipe	J		0.69	10	µg/wipe	J		5.1	5.1	µg/wipe	J		1.6	10	µg/wipe	J		4.7	10	µg/wipe	J		6.2	10	µg/wipe	J	
780	CH	105	MF	CH	ST	CE	WI	NA		>8'	B5	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		1.4	10	µg/wipe	J	
790	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	B4	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		1.2	10	µg/wipe	J	
790	CH	105	MF	CH	ST	CE	WI	NA		>8'	B4	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		1.2	10	µg/wipe	J	
800	CH	105	MF	CH	ST	CE	WI	NA		>8'	D4	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	
810	CH	105	MF	CH	ST	CE	WI	NA		>8'	C3	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	UJ	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		0.84	10	µg/wipe	J	J
820	CH	105	MF	CH	ST	CE	WI	NA		>8'	A3	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		0.73	10	µg/wipe	J		0.52	10	µg/wipe	J		0.85	10	µg/wipe	J		ND	10	µg/wipe	U		1	10	µg/wipe	J		1.1	10	µg/wipe	J	
830	CH	105	MF	CH	ST	CE	WI	NA		>8'	A5	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	
850	CH	105	MF	CH	ST	CE	WI	NA		>8'	C1	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	UJ	ND	10	µg/wipe	U	UJ	ND	10	µg/wipe	U	UJ	ND	10	µg/wipe	U	UJ	0.61	10	µg/wipe	J	
860	CH	105	MF	CH	ST	CE	WI	NA		>8'	D1	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	
870	CH	105	MF	CH	ST	CE	WI	NA		>8'	D5	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	UJ	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	UJ
920	CH	105	MF	CH	ST	CE	WI	NA		>8'	B8	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	UJ	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	UJ
930	CH	105	MF	CH	ST	CE	WI	NA		>8'	D6	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	UJ	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	UJ
1011	CH	105	MF	CH	ST	CE	WI	NA		>8'	A9	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	
1012	CH	105	MF	CH	ST	CE	WI	NA		>8'	A8	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	
Bulk Concrete Samples (0-1 cm), Porous Walls >8 Feet - Main Forge Shop																																																								
880	CH	105	MF	CH	AS	WA	CR	0-1 CM		>8'	B1	ND	520	µg/kg	U		ND	520	µg/kg	U		ND	520	µg/kg	U		ND	520	µg/kg	U		ND	520	µg/kg	U		ND	520	µg/kg	U	UJ	ND	520	µg/kg	U		ND	520	µg/kg	U		ND	520	µg/kg	U	
950	CH	105	MF	CH	BR	WA	CR	0-1 CM		>8'	D5	ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U	
Wipe Samples, Non-Porous Walls >8 Feet - Main Forge Shop																																																							
970	CH	105	MF	CH	ST	WA	WI	NA		>8'	B6	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	UJ	ND	10	µg/wipe	U	UJ	ND	10	µg/wipe	U	UJ	ND	10	µg/wipe	U	UJ	ND	10	µg/wipe	U	UJ	0.54	10	µg/wipe	J	
980	CH	105	MF	CH	GL	WA	WI	NA		>8'	D6	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	UJ	ND	10	µg/wipe	U	UJ	ND	10	µg/wipe	U	UJ	ND	10	µg/wipe	U	UJ	ND	10	µg/wipe	U	UJ	ND	10	µg/wipe	U	
Bulk Concrete Sample (0-1 cm), Porous Walls <8 Feet - Main Forge Shop																																																						
1007	CH	105	MF	CH	WD	WA	CR	0-1 CM		<8'	D6	ND	5600	µg/kg	U		ND	5600	µg/kg	U		ND	5600	µg/kg	U		ND	5600	µg/kg	U	UJ	ND	5600	µg/kg	U	UJ	ND	5600	µg/kg	U	UJ	ND	5600	µg/kg	U	UJ	ND	5600	µg/kg	U		ND	5600	µg/kg	U	
Wipe Samples, Non-Porous Walls <8 Feet - Main Forge Shop																																																						
990	CH	105	MF	CH	ST	WA	WI	NA		<8'	A6	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		0.7	10	µg/wipe	J	
1000	CH	105	MF	CH	GL	WA	WI	NA		<8'	D6	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	
Bulk Concrete Samples (1-5 cm) - Main Forge Shop Floor																																																						
563	CH	105	MF	CH	CO	FL	CR	1-5 CM		<8'	A4	ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U	
586	CH	105	MF	CH	CO	FL	CR	1-5 CM		<8'	B3	ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U	
622	CH	105	MF	CH	CO	FL	CR	1-5 CM	DP	<8'	B9	ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U	
622	CH	105	MF	CH	CO	FL	CR	1-5 CM		<8'	B9	ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U	
Bulk Concrete Samples (5-10 cm) - Main Forge Shop Floor																																																						
586	CH	105	MF	CH	CO	FL	CR	5-10 CM		<8'	B3	ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U	
622	CH	105	MF	CH	CO	FL	CR	5-10 CM	DP	<8'	B9	ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U	
622	CH	105	MF	CH	CO	FL	CR	5-10 CM		<8'	B9	ND	100000	µg/kg	U		ND	100000	µg/kg	U		ND	100000	µg/kg	U		ND	100000	µg/kg	U		ND	100000	µg/kg	U		ND	100000	µg/kg	U		ND	100000	µg/kg	U		ND	100000	µg/kg	U		ND	100000	µg/kg	U	
Bulk Soil Samples (10-20 cm), Main Forge Shop Floor																																																					
628	CH	105	MF	CH	SO	FL	GR	10-20 CM		<8'	B3	ND	7100	µg/kg	U		ND	7100	µg/kg	U		ND	7100	µg/kg	U		ND	7100	µg/kg	U		ND	7100	µg/kg	U		700	7100	µg/kg	J		ND	7100	µg/kg	U		ND	7100	µg/kg	U		ND	7100	µg/kg	U	
Wipe Samples - Main Forge Shop Steel Plates																																																						
1030	CH	105	MF	CH	ST	FL	WI	Top			B5	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		0.68	10	µg/wipe	J		1	10	µg/wipe	J		ND	10	µg/wipe	U		1.1	10	µg/wipe	J		1.7	10	µg/wipe	J	
1040	CH	105	MF	CH	ST	FL	WI	Bot.			B9	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	
1046	CH	105	MF	CH	ST	TR	WI	Top			C1	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	
Bulk Concrete Samples (1-5 cm) - Main Forge Shop Trenches																																																					
702	CH	105	MF	CH	CO	TRF	CR	1-5 CM		<8'	B1	ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U	
688	CH	105	MF	CH	CO	TRW	CR	1-5 CM		<8'	D2	ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U	
Bulk Concrete Sample (5-10 cm) - Main Forge Shop Trenches																																																					
688	CH	105	MF	CH	CO	TRW	CR	5-10 CM		<8'	D2	ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U	
Bulk Soil Sample (10-20 cm) - Main Forge Shop Trenches																																																					
728	CH	105	MF	CH	SO	TRF	GR	10-20 CM		<8'	B6	ND	8700	µg/kg	U		ND	8700	µg/kg	U		ND	8700	µg/kg	U		ND	8700	µg/kg	U		ND	8700	µg/kg	U		ND	8700	µg/kg	U		ND	8700	µg/kg	U		ND	8700	µg/kg	U		ND	8700	µg/kg	U	
Bulk Concrete Samples (1-5 cm) - Blacksmith Shop Floor																																																						
541	CH	105	BS	CH	CO	FL	CR	1-5 CM	DP	<8'	A4	ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U	
541	CH	105	BS	CH	CO	FL	CR	1-5 CM		<8'	A4	ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U	

Table 20
Phase II Polynuclear Aromatic Hydrocarbons (USEPA Method 8270) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID												Dibenzo(a,h)anthracene					Fluoranthene					Fluorene					Indeno(1,2,3-cd)pyrene					Naphthalene					Phenanthrene					Pyrene					Total PAHs	
Number	Site	Bldg	Room	Task	Mtl	Loc	Type	Depth	QC	>8'/<8'	Grid	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Units
Bulk Concrete Samples (0-1 cm), Porous Non-Walls >8 Feet - Main Forge Shop																																															
890	CH	105	MF	CH	CO	CE	CR	0-1 CM		>8'	A5	ND	4,000	µg/kg	U		35,000	4,000	µg/kg			ND	4,000	µg/kg	U		ND	4,000	µg/kg	U		ND	4,000	µg/kg	U		#####	4,000	µg/kg			#####	4,000	µg/kg			72,000	µg/kg
900	CH	105	MF	CH	WD	CE	CR	0-1 CM		>8'	B5	ND	710	µg/kg	U	UJ	ND	710	µg/kg	U		ND	710	µg/kg	U		ND	710	µg/kg	U	UJ	ND	710	µg/kg	U		ND	710	µg/kg	U		ND	710	µg/kg	U		-	µg/kg
958	CH	105	MF	CH	CO	CE	CR	0-1 CM		>8'	A9	ND	2,000	µg/kg	U		7,700	2,000	µg/kg			ND	2,000	µg/kg	U		ND	2,000	µg/kg	U		ND	2,000	µg/kg	U		5,700	2,000	µg/kg			3,200	2,000	µg/kg			18,680	µg/kg
960	CH	105	MF	CH	WD	CE	CR	0-1 CM		>8'	C4	ND	5,500	µg/kg	U		1,300	5,500	µg/kg	J		ND	5,500	µg/kg	U		ND	5,500	µg/kg	U		ND	5,500	µg/kg	U		1100	5,500	µg/kg	J		ND	5,500	µg/kg	U		2,400	µg/kg
Wipe Samples, Non-Porous Non-Walls >8 Feet - Main Forge Shop																																															
740	CH	105	MF	CH	ST	CE	WI	NA		>8'	C9	ND	10	µg/wipe	U		4.1	10	µg/wipe	J		ND	10	µg/wipe	U		0.94	10	µg/wipe	J		ND	10	µg/wipe	U		1.2	10	µg/wipe	J		2.8	10	µg/wipe	J		23.34	µg/wipe
750	CH	105	MF	CH	ST	CE	WI	NA		>8'	C8	ND	10	µg/wipe	U		1.2	10	µg/wipe	J		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		1.3	10	µg/wipe	J		ND	10	µg/wipe	U		2.5	µg/wipe
760	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	C7	ND	10	µg/wipe	U		2.6	10	µg/wipe	J		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		2.1	10	µg/wipe	J		1	10	µg/wipe	J		6.8	µg/wipe
760	CH	105	MF	CH	ST	CE	WI	NA		>8'	C7	ND	10	µg/wipe	U		3.3	10	µg/wipe	J		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		2.8	10	µg/wipe	J		1.3	10	µg/wipe	J		9.15	µg/wipe
770	CH	105	MF	CH	ST	CE	WI	NA		>8'	B6	0.57	10	µg/wipe	J		13	10	µg/wipe			ND	10	µg/wipe	U		1.5	10	µg/wipe	J		0.96	10	µg/wipe	J		11	10	µg/wipe			6.7	10	µg/wipe	J		56.16	µg/wipe
780	CH	105	MF	CH	ST	CE	WI	NA		>8'	B5	ND	10	µg/wipe	U		2.4	10	µg/wipe	J		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		1.2	10	µg/wipe	J		1.2	10	µg/wipe	J		6.2	µg/wipe
790	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	B4	ND	10	µg/wipe	U		2.7	10	µg/wipe	J		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		1.5	10	µg/wipe	J	J	1.5	10	µg/wipe	J		6.9	µg/wipe
790	CH	105	MF	CH	ST	CE	WI	NA		>8'	B4	ND	10	µg/wipe	U		2	10	µg/wipe	J		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		0.88	10	µg/wipe	J	J	1.2	10	µg/wipe	J		5.28	µg/wipe
800	CH	105	MF	CH	ST	CE	WI	NA		>8'	D4	ND	10	µg/wipe	U		0.8	10	µg/wipe	J		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		0.66	10	µg/wipe	J		ND	10	µg/wipe	U		1.46	µg/wipe
810	CH	105	MF	CH	ST	CE	WI	NA		>8'	C3	ND	10	µg/wipe	U		3.2	10	µg/wipe	J		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		2.2	10	µg/wipe	J	J	0.68	10	µg/wipe	J	J	6.92	µg/wipe
820	CH	105	MF	CH	ST	CE	WI	NA		>8'	A3	ND	10	µg/wipe	U		2.4	10	µg/wipe	J		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		1.1	10	µg/wipe	J		1.5	10	µg/wipe	J		9.2	µg/wipe
830	CH	105	MF	CH	ST	CE	WI	NA		>8'	A5	ND	10	µg/wipe	U		3.3	10	µg/wipe	J		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		2.8	10	µg/wipe	J		0.51	10	µg/wipe	J		6.61	µg/wipe
850	CH	105	MF	CH	ST	CE	WI	NA		>8'	C1	ND	10	µg/wipe	U	UJ	2.1	10	µg/wipe	J		ND	10	µg/wipe	U		ND	10	µg/wipe	U	UJ	ND	10	µg/wipe	U		1.4	10	µg/wipe	J		1.4	10	µg/wipe	J		5.51	µg/wipe
860	CH	105	MF	CH	ST	CE	WI	NA		>8'	D1	ND	10	µg/wipe	U		0.63	10	µg/wipe	J		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		0.63	µg/wipe
870	CH	105	MF	CH	ST	CE	WI	NA		>8'	D5	ND	10	µg/wipe	U		4.2	10	µg/wipe	J		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		3	10	µg/wipe	J		2.6	10	µg/wipe	J	J	9.8	µg/wipe
920	CH	105	MF	CH	ST	CE	WI	NA		>8'	B8	ND	10	µg/wipe	U		1.3	10	µg/wipe	J		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		1.1	10	µg/wipe	J		0.57	10	µg/wipe	J	J	2.97	µg/wipe
930	CH	105	MF	CH	ST	CE	WI	NA		>8'	D6	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	UJ	-	µg/wipe
1011	CH	105	MF	CH	ST	CE	WI	NA		>8'	A9	ND	10	µg/wipe	U		1.1	10	µg/wipe	J		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		0.89	10	µg/wipe	J		ND	10	µg/wipe	U		1.99	µg/wipe
1012	CH	105	MF	CH	ST	CE	WI	NA		>8'	A8	ND	10	µg/wipe	U		0.54	10	µg/wipe	J		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		0.53	10	µg/wipe	J		ND	10	µg/wipe	U		1.07	µg/wipe
Bulk Concrete Samples (0-1 cm), Porous Walls >8 Feet - Main Forge Shop																																															
880	CH	105	MF	CH	AS	WA	CR	0-1 CM		>8'	B1	ND	520	µg/kg	U		ND	520	µg/kg	U		ND	520	µg/kg	U		ND	520	µg/kg	U		ND	520	µg/kg	U		ND	520	µg/kg	U		ND	520	µg/kg	U		-	µg/kg
950	CH	105	MF	CH	BR	WA	CR	0-1 CM		>8'	D5	ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U		ND	330	µg/kg	U		-	µg/kg
Wipe Samples, Non-Porous Walls >8 Feet - Main Forge Shop																																															
970	CH	105	MF	CH	ST	WA	WI	NA		>8'	B6	ND	10	µg/wipe	U	UJ	2.7	10	µg/wipe	J		ND	10	µg/wipe	U		ND	10	µg/wipe	U	UJ	ND	10	µg/wipe	U		1.5	10	µg/wipe	J		2.3	10	µg/wipe	J		7.04	µg/wipe
980	CH	105	MF	CH	GL	WA	WI	NA		>8'	D6	ND	10	µg/wipe	U	UJ	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U	UJ	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		-	µg/wipe
Bulk Concrete Sample (0-1 cm), Porous Walls <8 Feet - Main Forge Shop																																															
1007	CH	105	MF	CH	WD	WA	CR	0-1 CM		<8'	D6	ND	5600	µg/kg	U	UJ	3600	5600	µg/kg	J		ND	5600	µg/kg	U		ND	5600	µg/kg	U	UJ	ND	5600	µg/kg	U		2300	5600	µg/kg	J		3300	5600	µg/kg	J		9200	µg/kg
Wipe Samples, Non-Porous Walls <8 Feet - Main Forge Shop																																															
990	CH	105	MF	CH	ST	WA	WI	NA		<8'	A6	ND	10	µg/wipe	U		1.7	10	µg/wipe	J		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		1.4	10	µg/wipe	J		0.55	10	µg/wipe	J		4.35	µg/wipe
1000	CH	105	MF	CH	GL	WA	WI	NA		<8'	D6	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		-	µg/wipe
Bulk Concrete Samples (1-5 cm) - Main Forge Shop Floor																																															
563	CH	105	MF	CH	CO	FL	CR	1-5 CM		<8'	A4	ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		1600	3400	µg/kg	J		ND	3400	µg/kg	U		1600	µg/kg
586	CH	105	MF	CH	CO	FL	CR	1-5 CM		<8'	B3	ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		1600	3400	µg/kg	J		ND	3400	µg/kg	U		1600	µg/kg
622	CH	105	MF	CH	CO	FL	CR	1-5 CM	DP	<8'	B9	ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		-	µg/kg
622	CH	105	MF	CH	CO	FL	CR	1-5 CM		<8'	B9	ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		ND	17000	µg/kg	U		-	µg/kg
Bulk Concrete Samples (5-10 cm) - Main Forge Shop Floor																																															
586	CH	105	MF	CH	CO	FL	CR	5-10 CM		<8'	B3	ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		ND	3400	µg/kg	U		-	µg/kg
622	CH	105	MF	CH	CO	FL	CR	5-10 CM	DP	<8'	B9	ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		-	µg/kg
622	CH	105	MF	CH	CO	FL	CR	5-10 CM		<8'	B9	ND	100000	µg/kg	U		ND	100000	µg/kg	U		ND	100000	µg/kg	U		ND	100000	µg/kg	U		ND	100000	µg/kg	U		ND	100000	µg/kg	U		ND	100000	µg/kg	U		-	µg/kg
Bulk Soil Samples (10-20 cm), Main Forge Shop Floor																																															
628	CH	105	MF	CH	SO	FL	GR	10-20 CM		<8'	B3	ND	7100	µg/kg	U		ND	7100	µg/kg	U		ND	7100	µg/kg	U		ND	7100	µg/kg	U		ND	7100	µg/kg	U		6900	7100	µg/kg	J		ND	7100	µg/kg	U		7600	µg/kg
Wipe Samples - Main Forge Shop Steel Plates																																															
1030	CH	105	MF	CH	ST	FL	WI	Top			B5	ND	10	µg/wipe	U		2.4	10	µg/wipe	J		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		2	10	µg/wipe	J		1.3	10	µg/wipe	J		10.18	µg/wipe
1040	CH	105	MF	CH	ST	FL	WI	Bot.			B9	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		-	µg/wipe
1046	CH	105	MF	CH	ST	TR	WI	Top			C1	ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		ND	10	µg/wipe	U		1.3	10	µg/wipe	J		ND	10	µg/wipe	U		1.3	µg/wipe
Bulk Concrete Samples (1-5 cm) - Main Forge Shop Trenches																																															
702	CH	105	MF	CH	CO	TRF	CR	1-5 CM		<8'	B1	ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U		-	µg/kg
688	CH	105	MF	CH	CO	TRW	CR	1-5 CM		<8'	D2	ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		ND	34000	µg/kg	U		3200	34000	µg/kg	J		ND	34000	µg/kg	U		3200	µg/kg
Bulk Concrete Sample (5-10 cm) - Main Forge Shop Trenches																																															
688	CH	105	MF	CH	CO	TRW	CR	5-10 CM		<8'	D2	ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U		ND	14000	µg/kg	U		3600	14000	µg/kg	J		ND	14000	µg/kg	U		3600	µg/kg
Bulk Soil Sample (10-20 cm) - Main Forge Shop Trenches																																															
728	CH	105	MF	CH	SO	TRF	GR	10-20 CM		<8'	B6	ND	8700	µg/kg	U		ND	8700	µg/kg	U		ND	8700	µg/kg	U		ND	8700	µg/kg	U		ND	8700	µg/kg	U		ND	8700	µg/kg	U		ND	8700	µg/kg	U		-	µg/kg
Bulk Concrete Samples (1-5 cm) - Blacksmith Shop Floor																																															
541	CH	105	BS	CH	CO	FL	CR	1-5 CM	DP	<8'	A4	ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		-	µg/kg
541	CH	105	BS	CH	CO	FL	CR	1-5 CM		<8'	A4	ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		ND	6800	µg/kg	U		-	µg/kg

Notes:

CH - Charlestown
MF - Main Forge Shop
BS - Blacksmith Shop
QC - Quality Control
NA - Not Applicable
ND - Not Detected
DP - Duplicate Sample

CO - Concrete
SO - Soil
ST - Steel
GL - Glass
WD - Wood
AS - Asbestos

CE - Ceiling
FL - Floor
WA - Wall
TRF- Trench Floor
TRF - Trench Wall

WI - Wipe
CR - Core
GR - Grab
CM - Centimeter

DV Qualifier:
U - Undetected
J - Estimated
UJ - Undetected but estimated
R - Rejected

µg/kg - micrograms per kilogram
µg/wipe - micrograms per 100 square centimeters

Table 21
Phase II Metals (USEPA Method 6010A) Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID													Antimony					Arsenic					Barium					Beryllium					Cadmium					Lead					Nickel					Silver				
Number	Site	Bldg	Room	Task	Mtl	Loc	Type	Depth	QC	>8/<8	Grid	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier
Bulk Concrete Samples (0-1 cm), Porous Non-Wall Surfaces >8 Feet																																																		
890	CH	105	MF	CH	CO	CE	CR	0-1 CM		>8'	A5	12.2	1.2	mg/kg			1.7	1.2	mg/kg			13.2	24	mg/kg	BN*	J	0.06	0.6	mg/kg	B	U	0.46	0.24	mg/kg			19	0.36	mg/kg			2.3	4.8	mg/kg	B	J	ND	0.6	mg/kg	U	
900	CH	105	MF	CH	WD	CE	CR	0-1 CM		>8'	B5	0.47	1.1	mg/kg	B	U	0.65	1.1	mg/kg	B	J	23	21.6	mg/kg			ND	0.54	mg/kg	U		28.5	0.22	mg/kg			2570	1.6	mg/kg	*	J	1.8	4.3	mg/kg	B	J	ND	0.54	mg/kg		
958	CH	105	MF	CH	CO	CE	CR	0-1 CM		>8'	A9	9.1	1.2	mg/kg			2.4	1.2	mg/kg			6.2	24	mg/kg	B		0.08	0.6	mg/kg	B		0.18	0.24	mg/kg	B		47.3	0.36	mg/kg			1.7	4.8	mg/kg	B		ND	0.6	mg/kg	U	
960	CH	105	MF	CH	WD	CE	CR	0-1 CM		>8'	C4	4120	11.1	mg/kg	*	J	13.4	1.1	mg/kg			22.4	22.2	mg/kg			ND	0.55	mg/kg	U		24	0.22	mg/kg	*	J	3400	3.3	mg/kg	*	J	2.1	4.4	mg/kg	B	J	0.21	0.55	mg/kg	B	J
Wipe Samples, Non-Porous Non-Wall Surfaces >8 Feet - Main Forge Shop																																																		
740	CH	105	MF	CH	ST	CE	WI	NA		>8'	C9	445	0.5	µg/wipe			5.4	0.5	µg/wipe			32.6	10	µg/wipe			ND	0.25	µg/wipe	U		0.88	0.25	µg/wipe			1220	1.5	µg/wipe			11.2	2	µg/wipe			0.06	0.5	µg/wipe	B	J
750	CH	105	MF	CH	ST	CE	WI	NA		>8'	C8	45	0.5	µg/wipe			2.2	0.5	µg/wipe			24.5	10	µg/wipe			ND	0.25	µg/wipe	U		0.53	0.25	µg/wipe			482	0.75	µg/wipe			29.1	2	µg/wipe	B	J	0.08	0.5	µg/wipe	B	J
770	CH	105	MF	CH	ST	CE	WI	NA		>8'	B6	64.2	0.5	µg/wipe			2.5	0.5	µg/wipe			4.1	10	µg/wipe	B	J	ND	0.25	µg/wipe	U		2.8	0.25	µg/wipe			473	0.75	µg/wipe			17.6	2	µg/wipe	B	J	0.12	0.5	µg/wipe	B	J
780	CH	105	MF	CH	ST	CE	WI	NA		>8'	B5	1470	2.5	µg/wipe			6.7	0.5	µg/wipe			23.1	10	µg/wipe			ND	0.25	µg/wipe	U		1.3	0.25	µg/wipe			325	0.3	µg/wipe			63.9	2	µg/wipe			0.15	0.5	µg/wipe	B	J
790	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	B4	530	1	µg/wipe		J	2	0.5	µg/wipe		J	0.98	10	µg/wipe	B	J	ND	0.25	µg/wipe	U		0.64	0.25	µg/wipe		J	112	0.15	µg/wipe			1.9	2	µg/wipe	B	J	ND	0.5	µg/wipe	U	
790	CH	105	MF	CH	ST	CE	WI	NA		>8'	B4	268	0.5	µg/wipe		J	1	0.5	µg/wipe		J	0.66	10	µg/wipe	B	U	ND	0.25	µg/wipe	U		0.32	0.25	µg/wipe		J	93.1	0.15	µg/wipe			1.2	2	µg/wipe	B	J	ND	0.5	µg/wipe	U	
800	CH	105	MF	CH	ST	CE	WI	NA		>8'	D4	150	0.5	µg/wipe			0.4	0.5	µg/wipe	B	J	0.9	10	µg/wipe	B	J	ND	0.25	µg/wipe	U		0.22	0.25	µg/wipe	B	J	438	0.3	µg/wipe			0.34	2	µg/wipe	B	J	ND	0.5	µg/wipe	U	
810	CH	105	MF	CH	ST	CE	WI	NA		>8'	C3	31.6	0.5	µg/wipe			9.7	0.5	µg/wipe			10	10	µg/wipe	B	J	ND	0.25	µg/wipe	U		2.4	0.25	µg/wipe			817	0.75	µg/wipe			207	2	µg/wipe			0.1	0.5	µg/wipe	B	J
820	CH	105	MF	CH	ST	CE	WI	NA		>8'	A3	456	0.5	µg/wipe			2.4	0.5	µg/wipe			11.3	10	µg/wipe			ND	0.25	µg/wipe	U		0.45	0.25	µg/wipe			513	0.75	µg/wipe			15.4	2	µg/wipe			0.06	0.5	µg/wipe	B	J
830	CH	105	MF	CH	ST	CE	WI	NA		>8'	A5	3080	5	µg/wipe			5.8	0.5	µg/wipe			4.4	10	µg/wipe	B	J	ND	0.25	µg/wipe	U		2.7	0.25	µg/wipe			2480	1.5	µg/wipe			6.9	2	µg/wipe			0.09	0.5	µg/wipe	B	J
840	CH	105	MF	CH	ST	CE	WI	NA		>8'	B1	105	0.5	µg/wipe			1.7	0.5	µg/wipe			4.5	10	µg/wipe	B	J	ND	0.25	µg/wipe	U		2.6	0.25	µg/wipe			52.4	0.15	µg/wipe			26.3	2	µg/wipe			0.08	0.5	µg/wipe	B	J
850	CH	105	MF	CH	ST	CE	WI	NA		>8'	C1	174	0.5	µg/wipe			2.9	0.5	µg/wipe			47.8	10	µg/wipe			ND	0.25	µg/wipe	U		6.3	0.25	µg/wipe			323	0.3	µg/wipe			29.6	2	µg/wipe			0.32	0.5	µg/wipe	B	J
860	CH	105	MF	CH	ST	CE	WI	NA		>8'	D1	344	0.5	µg/wipe			4.9	0.5	µg/wipe			89.4	10	µg/wipe			ND	0.25	µg/wipe	U		0.51	0.25	µg/wipe		U	1600	1.5	µg/wipe			2.6	2	µg/wipe			0.04	0.5	µg/wipe	B	U
870	CH	105	MF	CH	ST	CE	WI	NA		>8'	D5	549	2.5	µg/wipe			12.1	0.5	µg/wipe			144	10	µg/wipe			0.04	0.25	µg/wipe	B	J	9.4	0.25	µg/wipe			794	0.75	µg/wipe			193	2	µg/wipe			0.57	0.5	µg/wipe		
920	CH	105	MF	CH	ST	CE	WI	NA		>8'	B8	116	0.5	µg/wipe			3.8	0.5	µg/wipe			134	10	µg/wipe			ND	0.25	µg/wipe	U		1.4	0.25	µg/wipe			230	0.15	µg/wipe			65.5	2	µg/wipe			0.14	0.5	µg/wipe	B	J
930	CH	105	MF	CH	ST	CE	WI	NA		>8'	D6	71.7	0.5	µg/wipe			0.53	0.5	µg/wipe			3.8	10	µg/wipe	B	J	ND	0.25	µg/wipe	U		3.2	0.25	µg/wipe			31	0.15	µg/wipe			6.5	2	µg/wipe			ND	0.5	µg/wipe	U	
1011	CH	105	MF	CH	ST	CE	WI	NA		>8'	A9	485	0.5	µg/wipe			1.4	0.5	µg/wipe			2.9	10	µg/wipe	B	J	0.01	0.25	µg/wipe	B	U	2.3	0.25	µg/wipe			1140	0.75	µg/wipe	E	J	0.22	2	µg/wipe	B	J	0.03	0.5	µg/wipe	B	J
1012	CH	105	MF	CH	ST	CE	WI	NA		>8'	A8	1350	2.5	µg/wipe			3.2	0.5	µg/wipe			1.4	10	µg/wipe	B	J	ND	0.25	µg/wipe	U		1.4	0.25	µg/wipe			360	0.75	µg/wipe	E	J	2.6	2	µg/wipe			0.11	0.5	µg/wipe	B	J
Bulk Concrete Samples (0-1 cm), Porous Walls >8 Feet, Porous - Main Forge Shop																																																	
880	CH	105	MF	CH	AS	WA	CR	0-1 CM		>8'	B1	567	1	mg/kg			12.2	1	mg/kg			136	20.9	mg/kg	N*	J	0.3	0.52	mg/kg	B	U	8.1	0.21	mg/kg			361	0.31	mg/kg			271	4.2	mg/kg			0.34	0.52	mg/kg	B	J
950	CH	105	MF	CH	BR	WA	CR	0-1 CM		>8'	D5	675	1	mg/kg	*	J	6	1	mg/kg			15.2	20.2	mg/kg	B	J	0.22	0.5	mg/kg	B	U	0.23	0.2	mg/kg	*	J	36.8	0.3	mg/kg	*	J	4.4	4	mg/kg			ND	0.5	mg/kg	U	
Wipe Samples, Non-Porous Walls >8 Feet - Main Forge Shop																																																	
970	CH	105	MF	CH	ST	WA	WI	NA		>8'	B6	7.2	0.5	µg/wipe			7.3	0.5	µg/wipe			5.6	10	µg/wipe	B	J	ND	0.25	µg/wipe	U		5.8	0.25	µg/wipe			58.9	0.15	µg/wipe			21.4	2	µg/wipe			0.11	0.5	µg/wipe	B	J
980	CH	105	MF	CH	GL	WA	WI	NA		>8'	D6	2.6	0.5	µg/wipe			2	0.5	µg/wipe			10.2	10	µg/wipe			ND	0.25	µg/wipe	U		0.13	0.25	µg/wipe	B	U	57.8	0.15	µg/wipe			1.2	2	µg/wipe	B	J	ND	0.5	µg/wipe	U	
Bulk Concrete Samples (0-1 cm), Porous Walls <8 Feet - Main Forge Shop																																																	
1007	CH	105	MF	CH	WD	WA	CR	0-1 CM		<8'	D6	68.8	1.1	mg/kg			14.8	1.1	mg/kg			5220	225	mg/kg			ND	0.56	mg/kg	U		10.7	0.22	mg/kg			48800	33.7	mg/kg			22.3	4.5	mg/kg			0.88	0.56	mg/kg		
Wipe Samples, Non-Porous Walls <8 Feet - Main Forge Shop																																																	
990	CH	105	MF	CH	ST	WA	WI	NA		<8'	A6	3.6	0.5	µg/wipe			1.1	0.5	µg/wipe			27.7	10	µg/wipe			0.02	0.25	µg/wipe	B	U	0.65	0.25	µg/wipe			990	0.75	µg/wipe	E	J	14.6	2	µg/wipe			0.06	0.5	µg/wipe	B	J
1000	CH	105	MF	CH	GL	WA	WI	NA		<8'	D6	1.2	0.5	µg/wipe			0.55	0.5	µg/wipe			3.5	10	µg/wipe	B	J	0.01	0.25	µg/wipe	B	U	0.48	0.25	µg/wipe			24.6	0.15	µg/wipe	E	J	1.6	2	µg/wipe	B	J	0.02	0.5	µg/wipe	B	J
Bulk Concrete Samples (1-5 cm) - Main Forge Shop Floor																																																	
563	CH	105	MF	CH	CO	FL	CR	1-5 CM		<8'	A4	0.74	1	mg/kg	BN	J	4.9	1	mg/kg			46.9	20.3	mg/kg			0.53	0.51	mg/kg		U	0.29	0.2	mg/kg			6.4	0.3	mg/kg			12	4.1	mg/kg			ND	0.51	mg/kg	U	
586	CH	105	MF	CH	CO	FL	CR	1-5 CM		<8'	B3	0.63	1.1	mg/kg	BN	J	4.3	1.1	mg/kg			45.4	21.9	mg/kg			0.36	0.55	mg/kg	B	J	0.16	0.22	mg/kg	B	J	5.7	0.33	mg/kg			9.8	4.4	mg/kg			ND	0.55	mg/kg	U	
622	CH	105	MF	CH	CO	FL	CR	1-5 CM	DP-1	<8'	B9	0.48	1	mg/kg	BN	J	3.5	1	mg/kg			68.7	20.3	mg/kg			0.35	0.51	mg/kg	B	J	0.16	0.2	mg/kg	B	J	4.8	0.3	mg/kg			11.5	4.1	mg/kg			ND	0.51	mg/kg	U	
622	CH	105	MF	CH	CO	FL	CR	1-5 CM		<8'	B9	0.57	1	mg/kg	BN	J	3.7	1	mg/kg			71.3	20.4	mg/kg			0.35	0.51	mg/kg	B	J	0.23	0.2	mg/kg			7.6	0.31	mg/kg			13.4	4.1	mg/kg			ND	0.51	mg/kg	U	
Bulk Concrete Samples (5-10 cm) - Main Forge Shop Floor																																																	
586	CH	105	MF	CH	CO	FL	CR	5-10 CM		<8'	B3	0.6	1.2	mg/kg	BN	J	4.1	1.2	mg/kg			66.6	23.1	mg/kg			0.39	0.58	mg/kg	B	J	0.15	0.23	mg/kg	B	J	5.3	0.35	mg/kg			12.7	4.6	mg/kg			ND	0.58	mg/kg	U	
622	CH	105	MF	CH	CO	FL	CR	5-10 CM	DP-1	<8'	B9	0.74	1	mg/kg	BN	J	3.6	1	mg/kg			63.8	20.4	mg/kg			0.47	0.51	mg/kg	B	J	0.17	0.2	mg/kg	B	J	7.2	0.31	mg/kg			12.7	4.1	mg/kg			ND	0.51	mg/kg	U	
622	CH	105	MF	CH	CO	FL	CR	5-10 CM		<8'	B9	0.67	1	mg/kg	BN	J	3.9	1	mg/kg			67.9	20.4	mg/kg			0.42	0.51	mg/kg	B	J	0.13	0.2	mg/kg	B	J	4.9	0.31	mg/kg			11.7	4.1	mg/kg			ND	0.51	mg/kg	U	
Bulk Soil Sample (10-20 cm) - Main Forge Shop Floor																																																	
628	CH	105	MF	CH	SO	FL	GR	10-20 CM		<8'	B3	87.7	5.4	mg/kg	N*	J	13.6	1.1	mg/kg	E	J	39.6	21.5	mg/kg	E	J	0.42	0.54	mg/kg	B	J	1.1	1.1	mg/kg			1010	1.6	mg/kg	*	J	920	4.3	mg/kg	E*	J	0.44	0.54	mg/kg	B	U
Wipe Samples - Main Forge Shop Steelplates																																																	
1030	CH	105	MF	CH	ST	FL	WI	Top			B5	217	2.5	µg/wipe			21.5	0.5	µg/wipe			143	10	µg/wipe			0.17	0.25	µg/wipe	B	U	8.3	1.25	µg/wipe	E	J	1230	0.75	µg/wipe			964	2	µg/wipe			0.29	0.5	µg/wipe		
1040	CH	105	MF	CH	ST	FL	WI	Bot.			B9	13.5	0.5	µg/wipe			2.1	0.5	µg/wipe			35.3	10	µg/wipe			0.04	0.25	µg/wipe	B	U	0.42	0.25	µg/wipe	E	J	246	0.15	µg/wipe			9.3	2	µg/wipe			ND	0.5	µg/wipe	U	
1046	CH	105	MF	CH	ST	TR	WI	Top			C1	107	1	µg/wipe			7.7	0.5	µg/wipe			23.9	10	µg/wipe			0.07	0.25	µg/wipe	B	U	11	0.5	µg/wipe	E	J	714	0.75	µg/wipe			400	2	µg/wipe			1.3	0.5	µg/wipe		
Bulk Concrete Samples (1-5 cm) - Main Forge Shop Trenches																																																	
702	CH	105	MF	CH	CO	TRF	CR	1-5 CM		<8'	B1	0.99	1.1	mg/kg	BN	J	3.1	1.1	mg/kg			33	21.1	mg/kg			0.67	0.53	mg/kg			0.25	0.21	mg/kg			17.3	0.32	mg/kg			18	4.2	mg/kg			ND	0.53	mg/kg	U	
688	CH	105	MF	CH	CO	TRW	CR	1-5 CM		<8'	D2	0.75	1	mg/kg	BN	J	12.2	1	mg/kg			82.3	20.8	mg/kg			0.5	0.52	mg/kg	B	J	0.17	0.21	mg/kg	B	J	8.8	0.31	mg/kg			12.3	4.2	mg/kg			ND	0.52	mg/kg	U	
Bulk Concrete Samples (5-10 cm) - Main Forge Shop Trenches																																																	
688	CH	105	MF	CH	CO	TRW	CR	5-10 CM		<8'	D2	0.48	1	mg/kg	BN	J	11.1	1	mg/kg			72.8	20.7	mg/kg			0.46	0.52	mg/kg	B	J	0.17	0.21	mg/kg	B	J	7.4	0.31	mg/kg			13.6	4.1	mg/kg			ND	0.52	mg/kg	U	
Bulk Soil Samples (10-20 cm) - Main Forge Shop Trenches																																																	
728	CH	105	MF	CH	SO	TRF	GR	10-20 CM		<8'	B6	49.4	5.3	mg/kg	N*	J	29.8	1.1	mg/kg	E	J	70.1	21.1	mg/kg	E	J	0.06	0.53	mg/kg	B	U	5.9	1.1	mg/kg			346	1.6	mg/kg	*	J	2800	4.2	mg/kg	E*	J	0.36	0.53	mg/kg	B	U
Bulk Concrete Samples (1-5 cm) - Blacksmith Shop Floors																																																	
541	CH	105	BS	CH	CO	FL	CR	1-5 CM	DP	<8'	A4	0.77	1	mg/kg	BN*	J	4.1	1	mg/kg	E	J	71.6	20.6	mg/kg	E	J	0.26	0.52	mg/kg	B	J	ND	0.21	mg/kg		U	3.9	0.31	mg/kg	*	J	17.2	4.1	mg/kg	E*	J	ND	0.52	mg/kg	U	
541	CH	105	BS	CH	CO	FL	CR	1-5 CM		<8'	A4	1.2	1	mg/kg	N*	J	4.1	1	mg/kg	E	J	71.9	20.6	mg/kg	E	J	0.29	0.51	mg/kg	B	J	ND	0.21	mg/kg		U	4.9	0.31	mg/kg	*	J	15.8	4.1	mg/kg	E*	J	ND	0.51	mg/kg	U	

Notes:

CH - Charlestown
MF - Main Forge Shop
BS - Blacksmith Shop
QC - Quality Control
NA - Not Applicable
ND - Not Detected
DP - Duplicate Sample

CO - Concrete
SO - Soil
ST - Steel
GL - Glass
WD - Wood
AS - Asbestos

CE - Ceiling
FL - Floor
WA - Wall
TRF- Trench Floor
TRF - Trench Wall

Data Qualifiers
J - Estimated
U - Undetected
UJ - Undetected but Estimated
R - Rejected

Lab Qualifiers
B - Estimated
E - Concentration exceeds calibration range
N - MS and MSD exceeds the 75-125% control limit
* - Value outside QC limits

µg/kg - micrograms per kilogram
µg/wipe - micrograms per 100 square centimeters

Table 22
Phase II Dioxins (USEPA Method 8290)
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID													2378-TCDF					TOTAL TCDF					2378-TCDD					TOTAL TCDD					12378-PeCDF					23478-PeCDF					TOTAL PeCDF					12378-PeCDD					TOTAL PeCDD				
Number	Site	Bldg	Room	Task	Mtl	Loc	Type	Depth	QC	>8'/<8'	Grid	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier
Bulk Concrete Samples (0-1 cm), Porous Non-Walls >8 Feet - Main Forge Shop																																																										
890	CH	105	MF	CH	CO	CE	CR	0-1 CM		>8'	A5	97	-	ng/kg			480	-	ng/kg			0.85	-	ng/kg	J		17	-	ng/kg			ND	260	ng/kg		UJ	54	-	ng/kg			430	-	ng/kg			ND	3.6	ng/kg		UJ	24	-	ng/kg		
900	CH	105	MF	CH	WD	CE	CR	0-1 CM		>8'	B5	33	-	ng/kg			230	-	ng/kg			0.27	-	ng/kg	J		6.3	-	ng/kg			47	-	ng/kg			29	-	ng/kg			190	-	ng/kg			ND	1.2	ng/kg			2.9	-	ng/kg	J	
958	CH	105	MF	CH	CO	CE	CR	0-1 CM		>8'	A9	87	-	ng/kg			500	-	ng/kg			0.72	-	ng/kg	J		16	-	ng/kg			130	-	ng/kg			56	-	ng/kg			490	-	ng/kg			ND	3.7	ng/kg			22	-	ng/kg		
960	CH	105	MF	CH	WD	CE	CR	0-1 CM		>8'	C4	370	-	ng/kg			2000	-	ng/kg			3.2	-	ng/kg			78	-	ng/kg			420	-	ng/kg			160	-	ng/kg			1500	-	ng/kg			ND	15	ng/kg	I	UJ	100	-	ng/kg		
Wipe Samples, Non-Porous Non-Walls >8 Feet - Main Forge Shop																																																									
740	CH	105	MF	CH	ST	CE	WI	NA		>8'	C9	0.29	-	ng/sa			2.3	-	ng/sa			0.0038	-	ng/sa	J		0.16	-	ng/sa			0.25	-	ng/sa			0.11	-	ng/sa			0.92	-	ng/sa			ND	0.017	ng/sa			0.038	-	ng/sa	J	
750	CH	105	MF	CH	ST	CE	WI	NA		>8'	C8	0.28	-	ng/sa			1.5	-	ng/sa			0.0035	-	ng/sa	J		0.05	-	ng/sa			0.27	-	ng/sa			0.16	-	ng/sa			1.3	-	ng/sa			ND	0.014	ng/sa			0.037	-	ng/sa	J	
760	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	C7	0.31	-	ng/sa			3	-	ng/sa			0.006	-	ng/sa	J		0.18	-	ng/sa	J		0.33	-	ng/sa		J	0.16	-	ng/sa			1.5	-	ng/sa			ND	0.022	ng/sa			0.042	-	ng/sa	J	J
760	CH	105	MF	CH	ST	CE	WI	NA		>8'	C7	0.25	-	ng/sa			1.9	-	ng/sa			0.004	-	ng/sa	J		0.13	-	ng/sa			0.58	-	ng/sa		J	0.12	-	ng/sa			1.5	-	ng/sa			ND	0.022	ng/sa			0.02	-	ng/sa	J	J
770	CH	105	MF	CH	ST	CE	WI	NA		>8'	B6	0.24	-	ng/sa			1.4	-	ng/sa			ND	0.0052	ng/sa	J		0.0092	-	ng/sa	J		ND	0.088	ng/sa	I	UJ	0.13	-	ng/sa			0.52	-	ng/sa			ND	0.0083	ng/sa			ND	-	ng/sa		
780	CH	105	MF	CH	ST	CE	WI	NA		>8'	B5	0.18	-	ng/sa			1.2	-	ng/sa			0.0024	-	ng/sa	J		0.043	-	ng/sa			ND	0.32	ng/sa	I	UJ	0.11	-	ng/sa			0.57	-	ng/sa			0.013	-	ng/sa	J		0.064	-	ng/sa		
790	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	B4	0.04	-	ng/sa	J		0.21	-	ng/sa	J		ND	0.0018	ng/sa			0.0014	-	ng/sa	J	J	ND	0.1	ng/sa	I	UJ	0.02	-	ng/sa	J	J	0.12	-	ng/sa	J		ND	0.0033	ng/sa			ND	-	ng/sa		UJ
790	CH	105	MF	CH	ST	CE	WI	NA		>8'	B4	0.17	-	ng/sa	J		1	-	ng/sa	J		ND	0.0042	ng/sa			0.011	-	ng/sa		J	ND	0.17	ng/sa	I	UJ	0.093	-	ng/sa		J	0.4	-	ng/sa	J		ND	0.01	ng/sa			0.011	-	ng/sa	J	J
800	CH	105	MF	CH	ST	CE	WI	NA		>8'	D4	0.18	-	ng/sa			1.2	-	ng/sa			ND	0.0063	ng/sa			0.012	-	ng/sa			0.025	-	ng/sa	J		0.16	-	ng/sa			0.91	-	ng/sa			ND	0.02	ng/sa			0.012	-	ng/sa	J	
810	CH	105	MF	CH	ST	CE	WI	NA		>8'	C3	1.2	-	ng/sa			8.3	-	ng/sa			ND	0.025	ng/sa			0.058	-	ng/sa			ND	5	ng/sa	I	UJ	1.3	-	ng/sa			7.5	-	ng/sa			ND	0.13	ng/sa	I	UJ	0.38	-	ng/sa	J	
820	CH	105	MF	CH	ST	CE	WI	NA		>8'	A3	0.25	-	ng/sa			1.5	-	ng/sa			ND	0.006	ng/sa			0.032	-	ng/sa			0.25	-	ng/sa			0.15	-	ng/sa			1.3	-	ng/sa			ND	0.015	ng/sa			0.046	-	ng/sa	J	
830	CH	105	MF	CH	ST	CE	WI	NA		>8'	A5	0.19	-	ng/sa			0.97	-	ng/sa			ND	0.004	ng/sa			0.0041	-	ng/sa	J		ND	0.77	ng/sa	I	UJ	0.068	-	ng/sa			0.43	-	ng/sa			ND	0.008	ng/sa			ND	-	ng/sa		
850	CH	105	MF	CH	ST	CE	WI	NA		>8'	C1	0.28	-	ng/sa			2.5	-	ng/sa			0.025	-	ng/sa			0.079	-	ng/sa			ND	0.57	ng/sa	I	UJ	0.24	-	ng/sa			1.6	-	ng/sa			ND	0.025	ng/sa			0.032	-	ng/sa	J	
860	CH	105	MF	CH	ST	CE	WI	NA		>8'	D1	0.31	-	ng/sa			2.9	-	ng/sa			0.0042	-	ng/sa	J		0.11	-	ng/sa			ND	0.79	ng/sa	I	UJ	0.18	-	ng/sa			1.4	-	ng/sa			ND	0.014	ng/sa			0.029	-	ng/sa	J	
870	CH	105	MF	CH	ST	CE	WI	NA		>8'	D5	0.78	-	ng/sa			6.8	-	ng/sa			ND	0.02	ng/sa			0.14	-	ng/sa			ND	2	ng/sa	I	UJ	0.36	-	ng/sa			2.3	-	ng/sa			ND	0.057	ng/sa	I	UJ	ND	-	ng/sa		
920	CH	105	MF	CH	ST	CE	WI	NA		>8'	B8	0.079	-	ng/sa			0.44	-	ng/sa			ND	0.0039	ng/sa			ND	-	ng/sa			ND	0.22	ng/sa	I	UJ	0.041	-	ng/sa	J		0.27	-	ng/sa			ND	0.0048	ng/sa			ND	-	ng/sa		
930	CH	105	MF	CH	ST	CE	WI	NA		>8'	D6	0.033	-	ng/sa			0.26	-	ng/sa			ND	0.0032	ng/sa			0.0036	-	ng/sa	J		ND	0.16	ng/sa	I	UJ	0.025	-	ng/sa	J		0.18	-	ng/sa			ND	0.0035	ng/sa			ND	-	ng/sa		
1011	CH	105	MF	CH	ST	CE	WI	NA		>8'	A9	0.076	-	ng/sa			0.49	-	ng/sa			ND	0.0056	ng/sa			0.0084	-	ng/sa	J	U	ND	0.2	ng/sa	I	UJ	0.032	-	ng/sa	J		0.15	-	ng/sa			ND	0.0056	ng/sa			ND	-	ng/sa		
1012	CH	105	MF	CH	ST	CE	WI	NA		>8'	A8	0.11	-	ng/sa			0.58	-	ng/sa			ND	0.0056	ng/sa			ND	-	ng/sa			0.086	-	ng/sa			0.048	-	ng/sa	J		0.38	-	ng/sa			ND	0.0064	ng/sa			0.0049	-	ng/sa	J	
Bulk Concrete Samples (0-1 cm), Porous Walls >8 Feet - Main Forge Shop																																																									
880	CH	105	MF	CH	AS	WA	CR	0-1 CM		>8'	B1	47	-	ng/kg			280	-	ng/kg			0.57	-	ng/kg	J		17	-	ng/kg			ND	160	ng/kg		UJ	22	-	ng/kg			170	-	ng/kg			ND	1.7	ng/kg		UJ	5.3	-	ng/kg		
950	CH	105	MF	CH	BR	WA	CR	0-1 CM		>8'	D5	240	-	ng/kg			970	-	ng/kg			1	-	ng/kg			20	-	ng/kg			ND	300	ng/kg	I	UJ	90	-	ng/kg			530	-	ng/kg			ND	4.8	ng/kg			ND	-	ng/kg		
Wipe Samples, Non-Porous Walls >8 Feet - Main Forge Shop																																																								
970	CH	105	MF	CH	ST	WA	WI	NA		>8'	B6	0.55	-	ng/sa	J		3.4	-	ng/sa			0.0068	-	ng/sa	J		0.21	-	ng/sa	J		0.15	-	ng/sa	J		1.2	-	ng/sa	J		ND	0.042	ng/sa			0.28	-	ng/sa		
980	CH	105	MF	CH	GL	WA	WI	NA		>8'	D6	0.034	-	ng/sa			0.11	-	ng/sa			ND	0.0018	ng/sa			ND	-	ng/sa			0.012	-	ng/sa	J		0.022	-	ng/sa	J		0.077	-	ng/sa			ND	0.0057	ng/sa			ND	-	ng/sa		
Bulk Concrete Sample (0-1 cm), Porous Walls <8 Feet - Main Forge Shop																																																								
1007	CH	105	MF	CH	WD	WA	CR	0-1 CM		<8'	D6	130	-	ng/kg			990	-	ng/kg			3	-	ng/kg			70	-	ng/kg			ND	140	ng/kg	I	UJ	75	-	ng/kg			180	-	ng/kg			ND	8.8	ng/kg	I	UJ	48	-	ng/kg		
Wipe Sample, Non-Porous Walls <8 Feet - Main Forge Shop																																																							
990	CH	105	MF	CH	ST	WA	WI	NA		<8'	A6	0.28	-	ng/sa			3.3	-	ng/sa			0.0059	-	ng/sa	J		0.2	-	ng/sa			ND	0.83	ng/sa	I	UJ	0.12	-	ng/sa			1	-	ng/sa			ND	0.018	ng/sa			0.044	-	ng/sa	J	
1000	CH	105	MF	CH	GL	WA	WI	NA		<8'	D6	0.11	-	ng/sa			0.18	-	ng/sa			ND	0.005	ng/sa			ND	-	ng/sa			0.017	-	ng/sa	J		0.0094	-	ng/sa	J		0.031	-	ng/sa	J		ND	0.015	ng/sa			ND	-	ng/sa		
Bulk Concrete Sample (1-5 cm) - Main Forge Shop Floor																																																								
563	CH	105	MF	CH	CO	FL	CR	1-5 CM		<8'	A4	28	-	ng/kg			130	-	ng/kg			ND	1.5	ng/kg			4.7	-	ng/kg			ND	3	ng/kg		UJ	6.6	-	ng/kg			6.6	-	ng/kg			ND	1.9	ng/kg			ND	-	ng/kg		
586	CH	105	MF	CH	CO	FL	CR	1-5 CM		<8'	B3	37	-	ng/kg			330	-	ng/kg			ND	0.77	ng/kg			9.8	-	ng/kg			30	-	ng/kg			18	-	ng/kg			150	-	ng/kg			ND	3.1	ng/kg			ND	-	ng/kg		
622	CH	105	MF	CH	CO	FL	CR	1-5 CM	DP	<8'	B9	12	-	ng/kg			100	-	ng/kg			ND	2.8	ng/kg			3.3	-	ng/kg	J		ND	18	ng/kg			ND	16	ng/kg			ND	15	ng/kg			ND	-	ng/kg		
622	CH	105	MF	CH	CO	FL	CR	1-5 CM		<8'	B9	15	-	ng/kg			68	-	ng/kg			ND	6.3	ng/kg			13	-	ng/kg	J		ND	43	ng/kg		UJ	ND	14	ng/kg			27	-	ng/kg			ND	33	ng/kg			ND	-	ng/kg		
Bulk Concrete Samples (5-10 cm) - Main Forge Shop Floor																																																							
586	CH	105	MF	CH	CO	FL	CR	5-10 CM		<8'	B3	2.8	-	ng/kg			26	-	ng/kg			ND	0.87	ng/kg			0.85	-	ng/kg	J		24	-	ng/kg			5	-	ng/kg			29	-	ng/kg			ND	2.2	ng/kg			ND	-	ng/kg		
622	CH	105	MF	CH	CO	FL	CR	5-10 CM	DP	<8'	B9	13	-	ng/kg	J		76	-	ng/kg	J		ND	3.3	ng/kg			12	-	ng/kg			ND	16	ng/kg	I	UJ	ND	12	ng/kg	I	UJ	19	-	ng/kg			ND	8.6	ng/kg			ND	-	ng/kg		
622	CH	105	MF	CH	CO	FL	CR	5-10 CM		<8'	B9	7.7	-	ng/kg	J		30	-	ng/kg	J		ND	5.4	ng/kg			8.8	-	ng/kg			ND	21	ng/kg	I	UJ	ND	15	ng/kg			17	-	ng/kg			ND	10	ng/kg			ND	-	ng/kg		
Bulk Soil Sample (10-20 cm) - Main Forge Shop Floor																																																							
628	CH	105	MF	CH	SO	FL	GR	10-20 CM		<8'	B3	370	-	ng/kg			2300	-	ng/kg			2.7	-	ng/kg			34	-	ng/kg			83	-	ng/kg			170	-	ng/kg			760	-	ng/kg			ND	11	ng/kg		UJ	11	-	ng/kg		
Wipe Samples - Main Forge Shop Steel Plates																																																							
1030	CH	105	MF	CH	ST	FL	WI	Top			B5	0.8	-	ng/sa			5.2	-	ng/sa			0.009	-	ng/sa	J		0.24	-	ng/sa	J		0.78	-	ng/sa	J		0.4	-	ng/sa	J		2.9	-	ng/sa	J		ND	0.054	ng/sa	I	UJ	0.12	-	ng/sa		
1040	CH	105	MF	CH	ST	FL	WI	Bot.			B9	0.045	-	ng/sa			0.3	-	ng/sa			ND	0.0037	ng/sa			0.0054	-	ng/sa	J		ND	0.2	ng/sa	I	UJ	0.023	-	ng/sa	J		0.13	-	ng/sa	J		ND	0.012	ng/sa			ND	-	ng/sa		
1046	CH	105	MF	CH	ST	TR	WI	Top			C1	2.4	-	ng/sa			20	-	ng/sa			ND	0.025	ng/sa	I	UJ	0.76	-	ng/sa			1.1	-	ng/sa			1.5	-	ng/sa			11	-	ng/sa			ND	0.14	ng/sa	I	UJ	0.27	-	ng/sa		
Bulk Concrete Samples (1-5 cm) - Main Forge Shop Trenches																																																							
702	CH	105	MF	CH	CO	TRF	CR	1-5 CM		<8'	B1	ND	0.86	ng/kg			0.66	-	ng/kg	J		ND	0.59	ng/kg			ND	-	ng/kg			ND	1.1	ng/kg			ND	0.86	ng/kg			ND	-	ng/kg			ND	0.73	ng/kg			ND	-	ng/kg		
688	CH	105	MF	CH	CO	TRW	CR	1-5 CM		<8'	D2	ND	5.1	ng/kg			ND	-	ng/kg			ND	4.2	ng/kg			ND	-	ng/kg			ND	4.1	ng/kg			ND	5	ng/kg			ND	-	ng/kg			ND	4.5	ng/kg			ND	-	ng/kg		
Bulk Concrete Sample (5-10 cm) - Main Forge Shop Trenches																																																							
688	CH	105	MF	CH	CO	TRW	CR	5-10 CM		<8'	D2	9.1	-	ng/kg			33	-	ng/kg			ND	4.9	ng/kg			ND	-	ng/kg			ND	7.4	ng/kg			ND	7.5	ng/kg			6.4	-	ng/kg			ND	5.2	ng/kg			ND	-	ng/kg		
Bulk Soil Sample (10-20 cm) - Main Forge Shop Trench																																																							
728	CH	105	MF	CH	SO	TRF	GR	10-20 CM		<8'	B6	61	-	ng/kg	J		380	-	ng/kg			0.78	-	ng/kg	J		19	-	ng/kg			21	-	ng/kg			32	-	ng/kg			170	-	ng/kg			ND	2.2	ng/kg		UJ	13	-	ng/kg		

Table 22
Phase II Dioxins (USEPA Method 8290)
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID													123478-HxCDF					123678-HxCDF					234678-HxCDF					123789-HxCDF					TOTAL HxCDF					123478-HxCDD					123678-HxCDD					123789-HxCDD					TOTAL HxCDD				
Number	Site	Bldg	Room	Task	Mtl	Loc	Type	Depth	QC	>8'/<8'	Grid	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier
Bulk Concrete Samples (0-1 cm), Porous Non-Walls >8 Feet - Main Forge Shop																																																														
890	CH	105	MF	CH	CO	CE	CR	0-1 CM		>8'	A5	37	-	ng/kg			29	-	ng/kg			14	-	ng/kg			4.4	-	ng/kg	J		200	-	ng/kg			1.7	-	ng/kg	J		3.7	-	ng/kg	J		2.6	-	ng/kg	J		28	-	ng/kg		
900	CH	105	MF	CH	WD	CE	CR	0-1 CM		>8'	B5	6	-	ng/kg			8.5	-	ng/kg			11	-	ng/kg			1.6	-	ng/kg	J		130	-	ng/kg			ND	0.86	ng/kg			1.1	-	ng/kg	J		0.8	-	ng/kg	J		5.8	-	ng/kg		
958	CH	105	MF	CH	CO	CE	CR	0-1 CM		>8'	A9	33	-	ng/kg			22	-	ng/kg			21	-	ng/kg			4.4	-	ng/kg	J		210	-	ng/kg			1.5	-	ng/kg	J		3.2	-	ng/kg	J		2.3	-	ng/kg	J		29	-	ng/kg		
960	CH	105	MF	CH	WD	CE	CR	0-1 CM		>8'	C4	92	-	ng/kg			65	-	ng/kg			36	-	ng/kg			ND	17	ng/kg	I	UJ	600	-	ng/kg			5.3	-	ng/kg			10	-	ng/kg			7.8	-	ng/kg			110	-	ng/kg		
Wipe Samples, Non-Porous Non-Walls >8 Feet - Main Forge Shop																																																													
740	CH	105	MF	CH	ST	CE	WI	NA		>8'	C9	0.052	-	ng/sa			0.036	-	ng/sa	J		0.031	-	ng/sa	J		0.0099	-	ng/sa	J		0.34	-	ng/sa			ND	0.0077	ng/sa			0.01	-	ng/sa	J		ND	0.0065	ng/sa			0.045	-	ng/sa	J	
750	CH	105	MF	CH	ST	CE	WI	NA		>8'	C8	0.086	-	ng/sa			0.061	-	ng/sa			0.041	-	ng/sa	J		0.013	-	ng/sa	J		0.56	-	ng/sa			ND	0.0079	ng/sa			0.015	-	ng/sa	J		0.011	-	ng/sa	J		0.086	-	ng/sa		
760	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	C7	0.093	-	ng/sa			0.068	-	ng/sa			0.058	-	ng/sa			ND	0.024	ng/sa			0.86	-	ng/sa			0.0076	-	ng/sa	J	J	0.027	-	ng/sa	J	J	0.011	-	ng/sa	J		0.18	-	ng/sa		
760	CH	105	MF	CH	ST	CE	WI	NA		>8'	C7	0.072	-	ng/sa			0.042	-	ng/sa	J		0.036	-	ng/sa	J		0.023	-	ng/sa	J		0.61	-	ng/sa			ND	0.0062	ng/sa			0.015	-	ng/sa	J	J	0.0072	-	ng/sa	J		0.12	-	ng/sa		
770	CH	105	MF	CH	ST	CE	WI	NA		>8'	B6	0.067	-	ng/sa			0.043	-	ng/sa	J		0.024	-	ng/sa	J		0.013	-	ng/sa	J		0.39	-	ng/sa			ND	0.0061	ng/sa			0.0083	-	ng/sa	J		ND	0.0075	ng/sa			0.055	-	ng/sa		
780	CH	105	MF	CH	ST	CE	WI	NA		>8'	B5	0.05	-	ng/sa			0.031	-	ng/sa	J		0.025	-	ng/sa	J		0.0082	-	ng/sa	J		0.39	-	ng/sa			ND	0.008	ng/sa			0.0065	-	ng/sa	J		ND	0.0053	ng/sa			0.035	-	ng/sa	J	
790	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	B4	0.012	-	ng/sa	J	J	0.0087	-	ng/sa	J	J	0.0067	-	ng/sa	JB	UJ	ND	0.0044	ng/sa		UJ	0.079	-	ng/sa		J	ND	0.0034	ng/sa			ND	0.0038	ng/sa			ND	0.0035	ng/sa			ND	-	ng/sa		UJ
790	CH	105	MF	CH	ST	CE	WI	NA		>8'	B4	0.049	-	ng/sa	J	J	0.033	-	ng/sa	J	J	0.02	-	ng/sa	J	J	0.0068	-	ng/sa	J	J	0.3	-	ng/sa		J	ND	0.0066	ng/sa			ND	0.0089	ng/sa			ND	0.0051	ng/sa			0.064	-	ng/sa		J
800	CH	105	MF	CH	ST	CE	WI	NA		>8'	D4	0.086	-	ng/sa			0.054	-	ng/sa			0.049	-	ng/sa	J		0.014	-	ng/sa	J		0.62	-	ng/sa			ND	0.014	ng/sa			0.023	-	ng/sa	J		0.013	-	ng/sa	J	J	0.1	-	ng/sa		
810	CH	105	MF	CH	ST	CE	WI	NA		>8'	C3	0.65	-	ng/sa			0.52	-	ng/sa			0.42	-	ng/sa			0.1	-	ng/sa			5.4	-	ng/sa			0.036	-	ng/sa	J		0.049	-	ng/sa	J		0.027	-	ng/sa	J		0.46	-	ng/sa		
820	CH	105	MF	CH	ST	CE	WI	NA		>8'	A3	0.081	-	ng/sa			0.069	-	ng/sa			0.037	-	ng/sa	J		0.011	-	ng/sa	J		0.64	-	ng/sa			ND	0.0068	ng/sa			0.011	-	ng/sa	J		ND	0.0045	ng/sa			0.04	-	ng/sa	J	
830	CH	105	MF	CH	ST	CE	WI	NA		>8'	A5	0.046	-	ng/sa	J		0.029	-	ng/sa	J		0.021	-	ng/sa	JB	U	0.0052	-	ng/sa	J		0.2	-	ng/sa			ND	0.0066	ng/sa			ND	0.014	ng/sa			ND	0.0065	ng/sa			0.0095	-	ng/sa	J	
850	CH	105	MF	CH	ST	CE	WI	NA		>8'	C1	0.12	-	ng/sa			0.12	-	ng/sa			0.087	-	ng/sa			0.018	-	ng/sa	J		1.3	-	ng/sa			0.01	-	ng/sa	J		0.017	-	ng/sa	J		0.012	-	ng/sa	J		0.091	-	ng/sa		
860	CH	105	MF	CH	ST	CE	WI	NA		>8'	D1	0.085	-	ng/sa			0.072	-	ng/sa			0.039	-	ng/sa	J		0.015	-	ng/sa	J		0.68	-	ng/sa			ND	0.0099	ng/sa			ND	0.012	ng/sa			0.0084	-	ng/sa	J		0.071	-	ng/sa		
870	CH	105	MF	CH	ST	CE	WI	NA		>8'	D5	0.22	-	ng/sa			0.18	-	ng/sa			0.17	-	ng/sa			ND	0.072	ng/sa	I	UJ	1.9	-	ng/sa			ND	0.036	ng/sa			ND	0.069	ng/sa			ND	0.033	ng/sa			0.22	-	ng/sa		
920	CH	105	MF	CH	ST	CE	WI	NA		>8'	B8	0.015	-	ng/sa	J		0.014	-	ng/sa	J		0.016	-	ng/sa	JB	U	0.0045	-	ng/sa	J		0.15	-	ng/sa			ND	0.0044	ng/sa			0.0053	-	ng/sa	J		ND	0.0044	ng/sa			0.019	-	ng/sa	J	
930	CH	105	MF	CH	ST	CE	WI	NA		>8'	D6	0.0097	-	ng/sa	J		0.0086	-	ng/sa	J		0.013	-	ng/sa	JB	U	ND	0.0041	ng/sa			0.12	-	ng/sa			ND	0.0036	ng/sa			ND	0.0079	ng/sa			ND	0.0029	ng/sa			ND	-	ng/sa		
1011	CH	105	MF	CH	ST	CE	WI	NA		>8'	A9	0.012	-	ng/sa	J		0.0086	-	ng/sa	J		0.0093	-	ng/sa	JB	U	ND	0.012	ng/sa			0.069	-	ng/sa			ND	0.0041	ng/sa			ND	0.0045	ng/sa			ND	0.0037	ng/sa			0.0079	-	ng/sa	J	
1012	CH	105	MF	CH	ST	CE	WI	NA		>8'	A8	0.025	-	ng/sa	J		0.017	-	ng/sa	J		0.014	-	ng/sa	JB	U	ND	0.01	ng/sa			0.14	-	ng/sa			ND	0.0071	ng/sa			ND	0.011	ng/sa			ND	0.0062	ng/sa			0.019	-	ng/sa	J	
Bulk Concrete Samples (0-1 cm), Porous Walls >8 Feet - Main Forge Shop																																																													
880	CH	105	MF	CH	AS	WA	CR	0-1 CM		>8'	B1	13	-	ng/kg			10	-	ng/kg			6.4	-	ng/kg			1.6	-	ng/kg	J		90	-	ng/kg			0.72	-	ng/kg	J		4	-	ng/kg	J		1.3	-	ng/kg	J		16	-	ng/kg		
950	CH	105	MF	CH	BR	WA	CR	0-1 CM		>8'	D5	16	-	ng/kg			10	-	ng/kg			12	-	ng/kg			0	5.1	ng/kg	I	UJ	150	-	ng/kg			1.3	-	ng/kg	J		2.9	-	ng/kg	J		1.3	-	ng/kg	J		20	-	ng/kg		
Wipe Samples, Non-Porous Walls >8 Feet - Main Forge Shop																																																												
970	CH	105	MF	CH	ST	WA	WI	NA		>8'	B6	0.069	-	ng/sa			0.046	-	ng/sa	J		0.033	-	ng/sa	J		0.011	-	ng/sa	J		0.41	-	ng/sa			0.032	-	ng/sa	J		0.053	-	ng/sa	J		0.11	-	ng/sa			0.5	-	ng/sa		
980	CH	105	MF	CH	GL	WA	WI	NA		>8'	D6	0.016	-	ng/sa	J		0.014	-	ng/sa	J		0.012	-	ng/sa	JB	U	ND	0.0076	ng/sa			0.17	-	ng/sa			ND	0.0042	ng/sa			ND	0.0069	ng/sa			ND	0.0049	ng/sa			0.0032	-	ng/sa	J	
Bulk Concrete Sample (0-1 cm), Porous Walls <8 Feet - Main Forge Shop																																																												
1007	CH	105	MF	CH	WD	WA	CR	0-1 CM		<8'	D6	28	-	ng/kg			15	-	ng/kg			16	-	ng/kg			ND	8.4	ng/kg			310	-	ng/kg			2.9	-	ng/kg	J		9.1	-	ng/kg			4.5	-	ng/kg	J		97	-	ng/kg		
Wipe Sample, Non-Porous Walls <8 Feet - Main Forge Shop																																																												
990	CH	105	MF	CH	ST	WA	WI	NA		<8'	A6	0.077	-	ng/sa			0.061	-	ng/sa			0.047	-	ng/sa	J		0.011	-	ng/sa	J		0.69	-	ng/sa			ND	0.01	ng/sa			0.018	-	ng/sa	J		0.0081	-	ng/sa	J		0.037	-	ng/sa	J	
1000	CH	105	MF	CH	GL	WA	WI	NA		<8'	D6	ND	0.008	ng/sa			0.003	-	ng/sa	JB	U	ND	0.0079	ng/sa			0.0051	-	ng/sa	JB	U	0.0081	-	ng/sa	JB	U	ND	0.013	ng/sa			ND	0.03	ng/sa			ND	0.014	ng/sa			ND	-	ng/sa		
Bulk Concrete Sample (1-5 cm) - Main Forge Shop Floor																																																												
563	CH	105	MF	CH	CO	FL	CR	1-5 CM		<8'	A4	8.3	-	ng/kg			2.3	-	ng/kg	J		ND	6.3	ng/kg			ND	6.4	ng/kg			57	-	ng/kg			ND	4.6	ng/kg			7.3	-	ng/kg			ND	4.6	ng/kg			37	-	ng/kg		
586	CH	105	MF	CH	CO	FL	CR	1-5 CM		<8'	B3	16	-	ng/kg			9	-	ng/kg			5.3	-	ng/kg			ND	6	ng/kg	I	UJ	100	-	ng/kg			ND	2.8	ng/kg			ND	3.6	ng/kg			ND	2	ng/kg			ND	-	ng/kg		
622	CH	105	MF	CH	CO	FL	CR	1-5 CM	DP	<8'	B9	ND	16	ng/kg	I	UJ	ND	51	ng/kg	I	UJ	ND	12	ng/kg	I	UJ	ND	22	ng/kg	I	UJ	43	-	ng/kg			ND	13	ng/kg			ND	20	ng/kg			ND	14	ng/kg			7.9	-	ng/kg	J	J
622	CH	105	MF	CH	CO	FL	CR	1-5 CM		<8'	B9	13	-	ng/kg			ND	31	ng/kg	I	UJ	ND	18	ng/kg			ND	19	ng/kg			42	-	ng/kg			ND	9.6	ng/kg			ND	31	ng/kg			ND	8.3	ng/kg			34	-	ng/kg		J
Bulk Concrete Samples (5-10 cm) - Main Forge Shop Floor																																																												
586	CH	105	MF	CH	CO	FL	CR	5-10 CM		<8'	B3	ND	2.1	ng/kg			ND	1.3	ng/kg			1.2	-	ng/kg	J		ND	1.4	ng/kg			7.1	-	ng/kg			ND	1.5	ng/kg			ND	2	ng/kg			ND	1.7	ng/kg			ND	-	ng/kg		
622	CH	105	MF	CH	CO	FL	CR	5-10 CM	DP	<8'	B9	9.8	-	ng/kg	J		ND	42	ng/kg	I	UJ	ND	10	ng/kg	I	UJ	ND	17	ng/kg	I	UJ	33	-	ng/kg			ND	7.6	ng/kg			ND	10	ng/kg			ND	8.3	ng/kg			ND	-	ng/kg		
622	CH	105	MF	CH	CO	FL	CR	5-10 CM		<8'	B9	14	-	ng/kg			ND	40	ng/kg	I	UJ	ND	32	ng/kg			ND	16	ng/kg			26	-	ng/kg			ND	11	ng/kg			ND	10	ng/kg			ND	9.4	ng/kg			ND	-	ng/kg		
Bulk Soil Sample (10-20 cm) - Main Forge Shop Floor																																																												
628	CH	105	MF	CH	SO	FL	GR	10-20 CM		<8'	B3	140	-	ng/kg			67	-	ng/kg			59	-	ng/kg			46	-	ng/kg			610	-	ng/kg			2.6	-	ng/kg	J		5.7	-	ng/kg			4.3	-	ng/kg	J		41	-	ng/kg		
Wipe Samples - Main Forge Shop Steel Plates																																																												
1030	CH	105	MF	CH	ST	FL	WI	Top			B5	0.23	-	ng/sa			0.17	-	ng/sa			0.099	-	ng/sa			ND	0.078	ng/sa	I	UJ	1.8	-	ng/sa			0.021	-	ng/sa	J		0.055	-	ng/sa			0.031	-	ng/sa	J		0.47	-	ng/sa		
1040	CH	105	MF	CH	ST	FL	WI	Bot.			B9	0.017	-	ng/sa	J		0.009	-	ng/sa	J		0.01	-	ng/sa	J		ND	0.015	ng/sa			0.1	-	ng/sa	J		ND	0.009	ng/sa			ND	0.018	ng/sa			ND	0.011	ng/sa			ND	-	ng/sa		
1046	CH	105	MF	CH	ST	TR	WI	Top			C1	0.82	-	ng/sa			0.59	-	ng/sa			0.38	-	ng/sa			ND	0.14	ng/sa	I	UJ	6.7	-	ng/sa			0.069	-	ng/sa			0.11	-	ng/sa			ND	0.038	ng/sa			0.51	-	ng/sa		
Bulk Concrete Samples (1-5 cm) - Main Forge Shop Trenches																																																												
702	CH	105	MF	CH	CO	TRF	CR	1-5 CM		<8'	B1	ND	1	ng/kg			ND	0.51	ng/kg			ND	1.5	ng/kg			ND	1.6	ng/kg			ND	-	ng/kg			ND	0.6	ng/kg			0	0.81	ng/kg			ND	0.77	ng/kg			ND	-	ng/kg		
688	CH	105	MF	CH	CO	TRW	CR	1-5 CM		<8'	D2	ND	4.5	ng/kg			4.2	-	ng/kg	J		ND	4.7	ng/kg			ND	4.6	ng/kg			4.2	-	ng/kg	J		ND	3.8	ng/kg			0	6.8	ng/kg			ND	5.5	ng/kg			ND	-	ng/kg		
Bulk Concrete Sample (5-10 cm) - Main Forge Shop Trenches																																																												
688	CH	105	MF	CH	CO	TRW	CR	5-10 CM		<8'	D2	ND	7.4	ng/kg			ND	4.6	ng/kg			ND	9.1	ng/kg			ND	8.8	ng/kg			ND	-	ng/kg			ND	8.4	ng/kg			0	11	ng/kg			ND	6.9	ng/kg			ND	-	ng/kg		
Bulk Soil Sample (10-20 cm) - Main Forge Shop Trench																																																												
728	CH	105	MF	CH	SO	TRF	GR	10-20 CM		<8'	B6	29	-	ng/kg			17	-	ng/kg			16	-	ng/kg			7.9	-	ng/kg			170	-	ng/kg			1.8	-	ng/kg	J		4.6	-	ng/kg	J		2.4	-	ng/kg	J		31	-	ng/kg		

Table 22
Phase II Dioxins (USEPA Method 8290)
Former Charlestown Navy Yard, Boston, Massachusetts

Sample ID												1234678-HpCDF					1234789-HpCDF					TOTAL HpCDF					1234678-HpCDD					TOTAL HpCDD					OCDF					OCDD					Total 2378-TCDD Equivalence	
Number	Site	Bldg	Room	Task	Mtl	Loc	Type	Depth	QC	>8'/<8'	Grid	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Detection Limit	Units	Lab Qualifier	DV Qualifier	Result	Units
Bulk Concrete Samples (0-1 cm), Porous Non-Walls >8 Feet - Main Forge Shop																																															
890	CH	105	MF	CH	CO	CE	CR	0-1 CM		>8'	A5	70	-	ng/kg			ND	5.5	ng/kg	I	UJ	78	-	ng/kg			19	-	ng/kg			36	-	ng/kg			9	-	ng/kg	J		65	-	ng/kg			48	ng/kg
900	CH	105	MF	CH	WD	CE	CR	0-1 CM		>8'	B5	10	-	ng/kg			0	2.1	ng/kg			17	-	ng/kg			7	-	ng/kg			14	-	ng/kg			5.4	-	ng/kg	J		40	-	ng/kg			24	ng/kg
958	CH	105	MF	CH	CO	CE	CR	0-1 CM		>8'	A9	36	-	ng/kg			2.3	-	ng/kg	J		52	-	ng/kg			21	-	ng/kg			43	-	ng/kg			7.5	-	ng/kg	J		93	-	ng/kg			53	ng/kg
960	CH	105	MF	CH	WD	CE	CR	0-1 CM		>8'	C4	75	-	ng/kg			6.4	-	ng/kg			110	-	ng/kg			25	-	ng/kg			60	-	ng/kg			10	-	ng/kg			49	-	ng/kg			1.6E+02	ng/kg
Wipe Samples, Non-Porous Non-Walls >8 Feet - Main Forge Shop																																															
740	CH	105	MF	CH	ST	CE	WI	NA		>8'	C9	ND	0.32	ng/sa	I	UJ	ND	0.0085	ng/sa			0.031	-	ng/sa	J		0.02	-	ng/sa	J		0.039	-	ng/sa	J		0.014	-	ng/sa	J		0.047	-	ng/sa	J		0.11	ng/sa
750	CH	105	MF	CH	ST	CE	WI	NA		>8'	C8	0.13	-	ng/sa			0.0083	-	ng/sa			0.24	-	ng/sa			0.08	-	ng/sa			0.15	-	ng/sa			0.11	-	ng/sa			0.44	-	ng/sa			0.15	ng/sa
760	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	C7	0.28	-	ng/sa			ND	0.033	ng/sa			0.53	-	ng/sa	J		0.19	-	ng/sa			0.36	-	ng/sa		J	0.28	-	ng/sa		J	1.1	-	ng/sa			0.17	ng/sa
760	CH	105	MF	CH	ST	CE	WI	NA		>8'	C7	0.18	-	ng/sa			ND	0.033	ng/sa			0.31	-	ng/sa	J		0.13	-	ng/sa			0.24	-	ng/sa			0.16	-	ng/sa		J	0.72	-	ng/sa			0.14	ng/sa
770	CH	105	MF	CH	ST	CE	WI	NA		>8'	B6	0.078	-	ng/sa			ND	0.025	ng/sa			0.11	-	ng/sa			0.042	-	ng/sa	J		0.083	-	ng/sa			0.039	-	ng/sa	J		0.19	-	ng/sa			0.11	ng/sa
780	CH	105	MF	CH	ST	CE	WI	NA		>8'	B5	0.031	-	ng/sa	J		ND	0.0078	ng/sa			0.031	-	ng/sa	J		0.011	-	ng/sa	J		0.024	-	ng/sa	J		0.006	-	ng/sa	J		0.031	-	ng/sa	JB	U	0.094	ng/sa
790	CH	105	MF	CH	ST	CE	WI	NA	DP	>8'	B4	0.0091	-	ng/sa	J	J	ND	0.0071	ng/sa			0.0091	-	ng/sa	J	J	ND	0.022	ng/sa		UJ	ND	-	ng/sa		UJ	ND	0.005	ng/sa			0.01	-	ng/sa	JB	UJ	0.017	ng/sa
790	CH	105	MF	CH	ST	CE	WI	NA		>8'	B4	0.035	-	ng/sa	J	J	ND	0.011	ng/sa			0.035	-	ng/sa		J	0.012	-	ng/sa	J	J	0.024	-	ng/sa	J	J	ND	0.017	ng/sa			0.039	-	ng/sa	JB	J	0.075	ng/sa
800	CH	105	MF	CH	ST	CE	WI	NA		>8'	D4	0.11	-	ng/sa			ND	0.012	ng/sa		UJ	0.22	-	ng/sa			0.61	-	ng/sa			0.92	-	ng/sa			0.2	-	ng/sa			3.7	-	ng/sa			0.13	ng/sa
810	CH	105	MF	CH	ST	CE	WI	NA		>8'	C3	0.48	-	ng/sa			0.036	-	ng/sa	J		0.76	-	ng/sa			0.099	-	ng/sa			0.2	-	ng/sa			0.064	-	ng/sa	J		0.22	-	ng/sa			0.96	ng/sa
820	CH	105	MF	CH	ST	CE	WI	NA		>8'	A3	0.48	-	ng/sa			ND	0.018	ng/sa			0.78	-	ng/sa			0.088	-	ng/sa			0.16	-	ng/sa			0.24	-	ng/sa			0.62	-	ng/sa			0.14	ng/sa
830	CH	105	MF	CH	ST	CE	WI	NA		>8'	A5	0.041	-	ng/sa	J		0.0055	-	ng/sa	J		0.047	-	ng/sa	J		0.053	-	ng/sa			0.097	-	ng/sa			0.022	-	ng/sa	J		0.4	-	ng/sa			0.064	ng/sa
850	CH	105	MF	CH	ST	CE	WI	NA		>8'	C1	0.44	-	ng/sa			0.016	-	ng/sa	J		0.69	-	ng/sa			0.16	-	ng/sa			0.32	-	ng/sa			0.22	-	ng/sa			0.95	-	ng/sa			0.22	ng/sa
860	CH	105	MF	CH	ST	CE	WI	NA		>8'	D1	0.26	-	ng/sa			ND	0.014	ng/sa			0.26	-	ng/sa			0.13	-	ng/sa			0.21	-	ng/sa			0.034	-	ng/sa	J		0.56	-	ng/sa			0.15	ng/sa
870	CH	105	MF	CH	ST	CE	WI	NA		>8'	D5	0.41	-	ng/sa			0.044	-	ng/sa	J		0.74	-	ng/sa	J		0.23	-	ng/sa			0.45	-	ng/sa			0.32	-	ng/sa			1.2	-	ng/sa			0.32	ng/sa
920	CH	105	MF	CH	ST	CE	WI	NA		>8'	B8	0.072	-	ng/sa			ND	0.0052	ng/sa			0.12	-	ng/sa			0.064	-	ng/sa			0.11	-	ng/sa			0.059	-	ng/sa	J		0.43	-	ng/sa			0.035	ng/sa
930	CH	105	MF	CH	ST	CE	WI	NA		>8'	D6	0.032	-	ng/sa	J		ND	0.0059	ng/sa			0.032	-	ng/sa	J		0.026	-	ng/sa	J		0.046	-	ng/sa	J		0.022	-	ng/sa	J		0.29	-	ng/sa			0.020	ng/sa
1011	CH	105	MF	CH	ST	CE	WI	NA		>8'	A9	0.015	-	ng/sa	J		ND	0.012	ng/sa			0.015	-	ng/sa	J		0.026	-	ng/sa	J		0.046	-	ng/sa	J		0.007	-	ng/sa	J		0.17	-	ng/sa			0.027	ng/sa
1012	CH	105	MF	CH	ST	CE	WI	NA		>8'	A8	0.023	-	ng/sa	J		ND	0.0075	ng/sa			0.023	-	ng/sa	J		0.023	-	ng/sa	J		-0.039	-	ng/sa	J		ND	0.022	ng/sa			0.12	-	ng/sa			0.045	ng/sa
Bulk Concrete Samples (0-1 cm), Porous Walls >8 Feet - Main Forge Shop																																															
880	CH	105	MF	CH	AS	WA	CR	0-1 CM		>8'	B1	180	-	ng/kg			1.7	-	ng/kg	J		180	-	ng/kg			61	-	ng/kg			100	-	ng/kg			99	-	ng/kg			330	-	ng/kg			23	ng/kg
950	CH	105	MF	CH	BR	WA	CR	0-1 CM		>8'	D5	26	-	ng/kg			2.9	-	ng/kg	J		40	-	ng/kg			9.7	-	ng/kg			19	-	ng/kg	J		7.8	-	ng/kg	J		33	-	ng/kg			75	ng/kg
Wipe Samples, Non-Porous Walls >8 Feet - Main Forge Shop																																														
970	CH	105	MF	CH	ST	WA	WI	NA		>8'	B6	0.11	-	ng/sa			0.011	-	ng/sa	J		0.17	-	ng/sa			0.24	-	ng/sa			0.45	-	ng/sa	J		0.04	-	ng/sa	J		0.35	-	ng/sa			0.18	ng/sa
980	CH	105	MF	CH	GL	WA	WI	NA		>8'	D6	0.18	-	ng/sa			ND	0.012	ng/sa			0.25	-	ng/sa			0.018	-	ng/sa	J		0.037	-	ng/sa	J		0.034	-	ng/sa	J		0.088	-	ng/sa	J	U	0.021	ng/sa
Bulk Concrete Sample (0-1 cm), Porous Walls <8 Feet - Main Forge Shop																																														
1007	CH	105	MF	CH	WD	WA	CR	0-1 CM		<8'	D6	75	-	ng/kg			ND	7.8	ng/kg			140	-	ng/kg			56	-	ng/kg			100	-	ng/kg			49	-	ng/kg			230	-	ng/kg			63	ng/kg
Wipe Sample, Non-Porous Walls <8 Feet - Main Forge Shop																																														
990	CH	105	MF	CH	ST	WA	WI	NA		<8'	A6	0.19	-	ng/sa			ND	0.027	ng/sa			0.19	-	ng/sa			0.1	-	ng/sa			0.19	-	ng/sa			0.16	-	ng/sa			0.57	-	ng/sa			0.12	ng/sa
1000	CH	105	MF	CH	GL	WA	WI	NA		<8'	D6	ND	0.1	ng/sa	I	UJ	ND	0.019	ng/sa			N	-	ng/sa			0.0089	-	ng/sa	J		0.0089	-	ng/sa	J		0.017	-	ng/sa	J		0.094	-	ng/sa	J	U	0.018	ng/sa
Bulk Concrete Sample (1-5 cm) - Main Forge Shop Floor																																														
563	CH	105	MF	CH	CO	FL	CR	1-5 CM		<8'	A4	19	-	ng/kg			ND	7.3	ng/kg			51	-	ng/kg			200	-	ng/kg			310	-	ng/kg			37	-	ng/kg			1100	-	ng/kg			10	ng/kg
586	CH	105	MF	CH	CO	FL	CR	1-5 CM		<8'	B3	24	-	ng/kg			7.6	-	ng/kg			57	-	ng/kg			18	-	ng/kg			32	-	ng/kg			22	-	ng/kg			120	-	ng/kg			18	ng/kg
622	CH	105	MF	CH	CO	FL	CR	1-5 CM	DP	<8'	B9	28	-	ng/kg			ND	31	ng/kg			69	-	ng/kg			75	-	ng/kg		J	120	-	ng/kg		J	36	-	ng/kg		J	410	-	ng/kg			2.3	ng/kg
622	CH	105	MF	CH	CO	FL	CR	1-5 CM		<8'	B9	23	-	ng/kg			ND	28	ng/kg			49	-	ng/kg			140	-	ng/kg		J	230	-	ng/kg		J	250	-	ng/kg		J	580	-	ng/kg			4.7	ng/kg
Bulk Concrete Samples (5-10 cm) - Main Forge Shop Floor																																														
586	CH	105	MF	CH	CO	FL	CR	5-10 CM		<8'	B3	4.5	-	ng/kg	J		ND	2	ng/kg			14	-	ng/kg			3.8	-	ng/kg	JB	U	3.8	-	ng/kg	JB	U	5.5	-	ng/kg	J		27	-	ng/kg	B	U	4.2	ng/kg
622	CH	105	MF	CH	CO	FL	CR	5-10 CM	DP	<8'	B9	22	-	ng/kg			ND	13	ng/kg			53	-	ng/kg			35	-	ng/kg			60	-	ng/kg			34	-	ng/kg		J	230	-	ng/kg			2.9	ng/kg
622	CH	105	MF	CH	CO	FL	CR	5-10 CM		<8'	B9	21	-	ng/kg			ND	32	ng/kg			55	-	ng/kg			38	-	ng/kg			71	-	ng/kg			70	-	ng/kg		J	260	-	ng/kg			2.9	ng/kg
Bulk Soil Sample (10-20 cm) - Main Forge Shop Floor																																														
628	CH	105	MF	CH	SO	FL	GR	10-20 CM		<8'	B3	79	-	ng/kg			34	-	ng/kg			180	-	ng/kg			45	-	ng/kg			92	-	ng/kg			64	-	ng/kg			460	-	ng/kg			163	ng/kg
Wipe Samples - Main Forge Shop Steel Plates																																														
1030	CH	105	MF	CH	ST	FL	WI	Top			B5	0.5	-	ng/sa			ND	0.058	ng/sa	I	UJ	0.9	-	ng/sa			0.33	-	ng/sa			0.62	-	ng/sa			0.35	-	ng/sa			2.5	-	ng/sa			0.40	ng/sa
1040	CH	105	MF	CH	ST	FL	WI	Bot.			B9	ND	0.059	ng/sa	I	UJ	ND	0.02	ng/sa			0.13	-	ng/sa			0.087	-	ng/sa			0.14	-	ng/sa			0.12	-	ng/sa			0.74	-	ng/sa			0.021	ng/sa
1046	CH	105	MF	CH	ST	TR	WI	Top			C1	1.1	-	ng/sa			ND	0.13	ng/sa	I	UJ	1.1	-	ng/sa			0.55	-	ng/sa			1.2	-	ng/sa			0.51	-	ng/sa			3.1	-	ng/sa			1.3	ng/sa
Bulk Concrete Samples (1-5 cm) - Main Forge Shop Trenches																																														
702	CH	105	MF	CH	CO	TRF	CR	1-5 CM		<8'	B1	ND	0.98	ng/kg			ND	0.75	ng/kg			ND	-	ng/kg			ND	1.6	ng/kg			ND	-	ng/kg			ND	1.5	ng/kg			8.7	-	ng/kg	J	U	0.00087	ng/kg
688	CH	105	MF	CH	CO	TRW	CR	1-5 CM		<8'	D2	ND	13	ng/kg			ND	14	ng/kg			ND	-	ng/kg			6.4	-	ng/kg	J		6.4	-	ng/kg	J		ND	24	ng/kg			70	-	ng/kg			0.49	ng/kg
Bulk Concrete Sample (5-10 cm) - Main Forge Shop Trenches																																														
688	CH	105	MF	CH	CO	TRW	CR	5-10 CM		<8'	D2	ND	12	ng/kg			ND	11	ng/kg			ND	-	ng/kg			ND	12	ng/kg		UJ	ND	-	ng/kg			23	-	ng/kg			110	-	ng/kg			0.94	ng/kg
Bulk Soil Sample (10-20 cm) - Main Forge Shop Trench																																														
728	CH	105	MF	CH	SO	TRF	GR	10-20 CM		<8'	B6	37	-	ng/kg		J	6.8	-	ng/kg			68	-	ng/kg			34	-	ng/kg			62	-	ng/kg			46	-	ng/kg			330	-	ng/kg		J	33	ng/kg

Notes:
CH - Charlestown
MF - Main Forge Shop
QC - Quality Control
NA - Not Applicable
ND - Not Detected
DP - Duplicate Sample

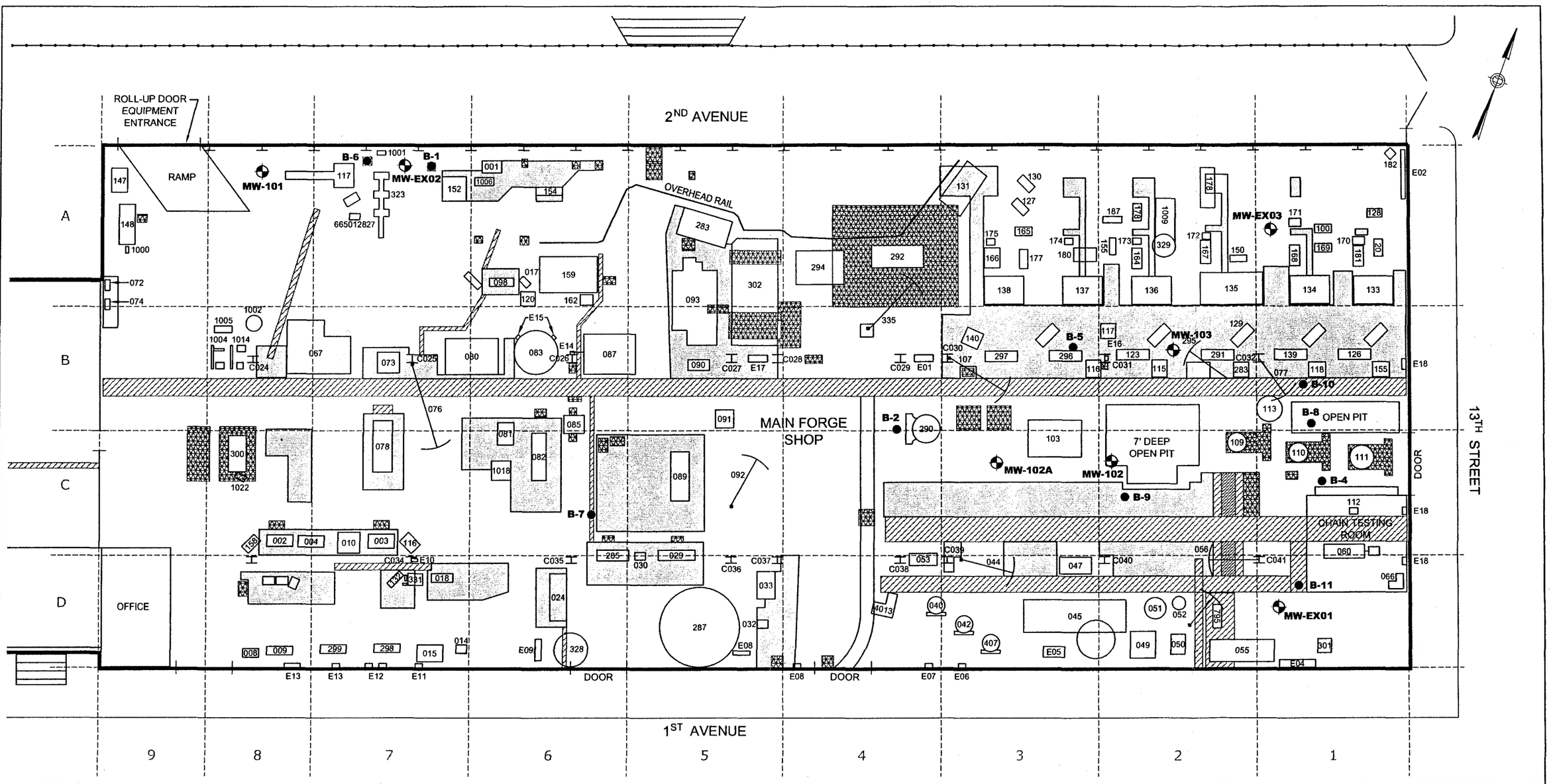
CO - Concrete
SO - Soil
ST - Steel
GL - Glass
WD - Wood
AS - Asbestos
BR - Brick

CE - Ceiling
FL - Floor
WA - Wall
TRF - Trench Floor
TRF - Trench Wall

DV Qualifier:
U - Undetected
J - Estimated
UJ - Undetected but estimated
R - Rejected

Lab Qualifiers:
ND - Not Detected
J - Below PQL
! - Outside Control Limits
I - Interference
B - Less than 5 times higher than method blank levels

ng/sa - nanogram per 100 cm^2
ng/kg - nanogram per kilogram



LEGEND:

- TRENCH
- STEEL PLATE COVERED TRENCH
- SOIL FLOOR
- CONCRETE FLOOR
- CRANE / DAVIT
- C028 COLUMN
- E06 ELECTRICAL PANEL
- MW-EX03 / MW-103 EXISTING MONITORING WELL LOCATION MONITORING WELL INSTALLED BY STONE & WEBSTER
- B-11 MONITORING WELL INSTALLED BY STONE & WEBSTER

NOTES:

1. THE LOCATIONS OF VAULTS, TRENCHES AND PITS AND THE CLASSIFICATION OF FLOORING TYPES ARE APPROXIMATE. THE INFORMATION SHOWN IS BASED UPON BUILDING DRAWINGS THAT WERE MADE AVAILABLE BY THE NATIONAL PARKS SERVICE (NPS) AND OBSERVATIONS MADE BY U.S. ARMY CORPS OF ENGINEERS AND STONE & WEBSTER PERSONNEL.
2. INVENTORY OF PROCESS EQUIPMENT PROVIDED BY THE NPS. THE 3-DIGIT EQUIPMENT NUMBERS ARE FROM THE LAST 3 DIGITS OF THE MACHINES' NAVY IDENTIFICATION NUMBERS.
3. PHASE II INVESTIGATION SAMPLES COLLECTED BY STONE & WEBSTER BETWEEN JANUARY AND MARCH 1999.

0 25 50 FEET
1" = 25'-0"

FIGURE 21
SUBSURFACE INVESTIGATION SOIL BORING AND MONITORING WELL LOCATIONS

BUILDING NO. 105
FORMER CHARLESTOWN NAVY YARD
BOSTON, MASSACHUSETTS

INTERIM EVALUATION-II REPORT

STONE & WEBSTER INC.
STOUGHTON, MASSACHUSETTS

U.S ARMY CORPS
OF ENGINEERS

15 May 2002

\\Bosfs02\env\Hazwaste\USACE\BLDG_105\DWG&QTYS\Interim Evaluation II\Figure 21.dwg

Table 23
Subsurface Investigation Polychlorinated Biphenyls (USEPA Method 8082) Soil Sample Results
Former Charlestown Navy Yard, Boston, Massachusetts

Analysis	Aroclor 1016				Aroclor 1221				Aroclor 1232				Aroclor 1242				Aroclor 1248				Aroclor 1254				Aroclor 1260				Total PCBs
	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result
Units:	(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				mg/kg
CH105MFCHSOBO1CMP																													
0-1 ft	ND	0.77	U		ND	0.77	U		ND	0.77	U		ND	0.77	U		ND	0.77	U		5.3	0.77			ND	0.77	U		5.30
0-1 DP	ND	0.76	U		ND	0.76	U		ND	0.76	U		ND	0.76	U		ND	0.76	U		6.4	0.76			ND	0.76	U		6.4
1-2 ft	ND	0.19	U		ND	0.19	U		ND	0.19	U		ND	0.19	U		ND	0.19	U		2	0.19			ND	0.19	U		2
2-4 ft	ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		1.9	0.37	U		ND	0.37	U		1.9
CH105MFCHSOBO2CMP																													
0-1 ft	ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND
0-1 DP	ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND
1-2 ft	ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		0.27	0.037		J	ND	0.037	U		0.27
CH105MFCHSOBO4CMP																													
0-1 ft	ND	3.6	U		ND	3.6	U		ND	3.6	U		ND	3.6	U		ND	3.6	U		21	3.6			ND	3.6	U		21
1-2 ft	ND	2	U		ND	2	U		ND	2	U		ND	2	U		ND	2	U		9	2			ND	2	U		9
2-4 ft	ND	7.5	U		ND	7.5	U		ND	7.5	U		ND	7.5	U		ND	7.5	U		49	7.5			ND	7.5	U		49
2-4 DP	ND	7.4	U		ND	7.4	U		ND	7.4	U		ND	7.4	U		ND	7.4	U		47	7.4			ND	7.4	U		47
CH105MFCHSOBO5CMP																													
0-1 ft	ND	35	U		ND	35	U		ND	35	U		ND	35	U		ND	35	U		100	35			ND	35	U		100
1-2 ft	ND	1.4	U		ND	1.4	U		ND	1.4	U		ND	1.4	U		ND	1.4	U		14	1.4			ND	1.4	U		14
CH105MFCHSOBO6CMP																													
0-1 ft	ND	37	U		ND	37	U		ND	37	U		ND	37	U		ND	37	U		300	37			ND	37	U		300
1-2 ft	ND	37	U		ND	37	U		ND	37	U		ND	37	U		ND	37	U		410	37			ND	37	U		410
2-4 ft	ND	37	U		ND	37	U		ND	37	U		ND	37	U		ND	37	U		410	37			ND	37	U		410
4-6 ft	ND	37	U		ND	37	U		ND	37	U		ND	37	U		ND	37	U		370	37			ND	37	U		370
CH105MFCHSOBO7CMP																													
0-1 ft	ND	3.6	U		ND	3.6	U		ND	3.6	U		ND	3.6	U		ND	3.6	U		36	3.6			ND	3.6	U		36
0-1 DP	ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		22	1.8			ND	1.8	U		22
1-2 ft	ND	0.38	U		ND	0.38	U		ND	0.38	U		ND	0.38	U		ND	0.38	U		5.1	0.38			ND	0.38	U		5.1
2-4 ft	ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		5.8	0.37			ND	0.37	U		5.8
4-6 ft	ND	0.75	U		ND	0.75	U		ND	0.75	U		ND	0.75	U		ND	0.75	U		11	0.75			ND	0.75	U		11
CH105MFCHSOBO8CMP																													
0-1 ft	ND	0.038	U		ND	0.038	U		ND	0.038	U		ND	0.038	U		ND	0.038	U		0.039	0.038			ND	0.038	U		0.039
CH105MFCHSOBO9CMP																													
0-1 ft	ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		5.7	1.8			ND	1.8	U		5.7
1-2 ft	ND	0.75	U		ND	0.75	U		ND	0.75	U		ND	0.75	U		ND	0.75	U		4.4	0.75			ND	0.75	U		4.4
2-4 ft	ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		4.3	0.37			ND	0.37	U		4.3
4-6 ft	ND	0.27	U		ND	0.27	U		ND	0.27	U		ND	0.27	U		ND	0.27	U		1.5	0.27			ND	0.27	U		1.5
4-6 ft DP	ND	0.24	U		ND	0.24	U		ND	0.24	U		ND	0.24	U		ND	0.24	U		2	0.24			ND	0.24	U		2
6-8 ft	ND	0.041	U		ND	0.041	U		ND	0.041	U		ND	0.041	U		ND	0.041	U		0.29	0.041			ND	0.041	U		0.29
CH105MFCHSOBO10CMP																													
0-2 ft	ND	0.8	U		ND	0.8	U		ND	0.8	U		ND	0.8	U		ND	0.8	U		8.4	0.8			ND	0.8	U		8.4
2-3 ft	ND	0.79	U		ND	0.79	U		ND	0.79	U		ND	0.79	U		ND	0.79	U		9.4	0.79			ND	0.79	U		9.4
CH105MFCHSOBO11CMP																													
0-1 ft	ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		1.7	0.37			ND	0.37	U		1.7
1-2 ft	ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		2.5	0.37			ND	0.37	U		2.5
2-4 ft	ND	0.41	U		ND	0.41	U		ND	0.41	U		ND	0.41	U		ND	0.41	U		2.1	4.1			ND	0.41	U		2.1
CH105MFCHSOMW101CMP																													
0-1 ft	ND	0.04	U		ND	0.04	U		ND	0.04	U		ND	0.04	U		ND	0.04	U		ND	0.04	U		0.055	0.04		J	0.055
1-2 ft	ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND
2-4 ft	ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND
4-6 ft	ND	0.04	U		ND	0.04	U		ND	0.04	U		ND	0.04	U		ND	0.04	U		ND	0.04	U		ND	0.04	U		ND
CH105MFCHSOMW102ACMP																													
0-1 ft	ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		0.091	0.037		J	0.055	0.037		J	0.146
0-1 DP	ND	0.036	U		ND	0.036	U		ND	0.036	U		ND	0.036	U		ND	0.036	U		0.075	0.036		J	0.053	0.036		J	0.128
1-2 ft	ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND
2-4 ft	ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND
CH105MFCHSOMW102CMP																													
0-1 ft	ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND
CH105MFCHSOMW103CMP																													
0-1 ft	ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		0.52	0.037			ND	0.037	U		0.52
1-2 ft	ND	0.036	U		ND	0.036	U		ND	0.036	U		ND	0.036	U		ND	0.036	U		0.42	0.036			ND	0.036	U		0.42
2-4 ft	ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND	0.037	U		ND
4-6 ft	ND	0.044	U		ND	0.044	U		ND	0.044	U		ND	0.044	U		ND	0.044	U		0.067	0.044			ND	0.044	U		0.067
6-8 ft	ND	0.041	U		ND	0.041	U		ND	0.041	U		ND	0.041	U		ND	0.041	U		0.058	0.041			ND	0.041	U		0.058
CH105MFCHSOMW104CMP																													
0-1 ft	ND	0.04	U		ND	0.04	U		ND	0.04	U		ND	0.04	U		ND	0.04	U		ND	0.04	U		ND	0.04	U		ND
1-2 ft	ND	0.039	U		ND	0.039	U		ND	0.039	U		ND	0.039	U		ND	0.039	U		ND	0.039	U		ND	0.039	U		ND
2-4 ft	ND	0.04	U		ND	0.04	U		ND	0.04	U		ND	0.04	U		ND	0.04	U		ND	0.04	U		ND	0.04	U		ND
4-6 ft	ND	0.038	U		ND	0.038	U		ND	0.038	U		ND	0.038	U		ND	0.038	U		ND	0.038	U		ND	0.038	U		ND
6-10 ft	ND	0.036	U		ND	0.036	U		ND	0.036	U		ND	0.036	U		ND	0.036	U		ND	0.036	U		ND	0.036	U		ND

Notes:
CH - Charlestown
MF - Main Forge Shop
ND - Not Detected
DP - Duplicate Sample
SO - Soil Sample
B - Soil Boring
MW - Monitoring Well Boring

Data Qualifiers
J - Estimated
U - Undetected
UJ - Undetected but Estimated
R - Rejected

mg/kg - milligrams per kilogram

Table 24
Subsurface Investigation Total Petroleum Hydrocarbons and Metals Soil Sample Results - Building 105
Former Charlestown Navy Yard, Boston, Massachusetts

Method	8015B								METALS, Method 6010B																													
Analysis	TPH - GRO				EPH - DRO				Antimony				Arsenic				Barium				Beryllium				Cadmium				Lead				Nickel				Silver			
	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier
Units:	(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)			
CH105MFCHSOBO1CMP																																								
0-1 ft	5	1.2		J	3200	170			11.1	1.2	N	J	9.5	1.2			72.1	23.3			0.58	0.58			0.16	0.23	B	U	83.3	0.35	N*	J	35.8	4.7	*	J	ND	0.58	U	
0-1 DP	2.3	1.2		J	4700	350			0.85	1.2	BN	UJ	10.1	1.2			77.6	23			0.76	0.58			0.1	0.23	B	U	96.2	0.35	N*	J	39.3	4.6	*	J	ND	0.58	U	
1-2 ft	6.7	1.1			2800	170			0.55	1.1	BN	UJ	7.7	1.1			69.3	22.5			0.54	0.56	B	J	0.32	0.22			247	0.34	N*	J	41.8	4.5	*	J	ND	0.56	U	
CH105MFCHSOBO7CMP																																								
0-1 ft	2.1	1.1			2800	160			2.5	2.2	N	UJ	11.3	1.1			40.2	21.7			0.73	0.54			0.2	0.43	B	J	90.1	0.65	N*	J	714	4.3	*	J	ND	0.54	U	
1-2 ft	91	5.8			970	170			1.1	1.2	BN	UJ	5.1	1.2			45.9	23			0.85	0.58			ND	0.23	U		21.7	0.35	N*	J	117	4.6	*	J	0.08	0.58	U	
CH105MFCHSOBO8CMP																																								
0-1 ft	140	110			1000	170			0.56	1.1	BN	UJ	4.2	1.1			58.0	23.0			0.84	0.57			ND	0.23	U		28.2	0.34	N*	J	12.8	4.6	*	J	0.08	0.57	U	
CH105MFCHSOMW101CMP																																								
0-1 ft	ND	0.12	U		430	36			2.3	2.4	B	J	13.8	1.2			45.0	24.2			0.14	0.61	B	J	ND	1.2	U		168	0.73	N	J	554	4.8			0.52	0.61	B	J
1-2 ft	ND	0.11	U		540	34			3.2	5.7	B	J	19.4	1.1			74.2	22.7			0.2	0.57	B	J	ND	2.3	U		261	1.7	N	J	812	4.5			0.55	0.57	B	J
2-4 ft	40	5.6			400	34			0.48	1.1	B	J	2.6	1.1			46.5	22.4			0.56	0.56	B	J	ND	0.22	U		9.2	0.34	N	J	14.5	4.5			ND	0.56	U	
4-6 ft	7	1.2			150	18			0.97	1.2	B	J	5.3	1.2			81.4	24.4			1.1	0.61			ND	0.24	U		11.1	0.37	N	J	30.1	4.9			ND	0.61	U	
CH105MFCHSOMW102ACMP																																								
0-1 ft	ND	0.11	U		390	68			45.4	2.3			17	1.1			71.6	22.6			0.44	0.56	B	J	6.8	0.45		J	460	0.68			687	4.5		J	0.7	0.56		J
0-1 DP	ND	0.11	U		340	33			41.4	2.2			10.8	1.1			61.8	22.1			0.33	0.55	B	J	3.8	0.44		J	437	0.66			403	4.4		J	5.3	0.55		J
1-2 ft	ND	0.11	U		150	17			7.6	1.1			8.1	1.1			48.0	22.3			0.52	0.56	B	J	2.8	0.22			211	0.33			151	4.5			0.17	0.56	B	J
2-4 ft	0.15	0.11			23	3.3			1.1	1.1			4.6	1.1			36.5	22.3			0.64	0.56			ND	0.22	U		25.2	0.33			22.7	4.5			ND	0.56	U	
CH105MFCHSOMW102CMP																																								
0-1 ft	ND	0.11	U		240	17			4.8	1.1			12.9	1.1			170	22.4			0.42	0.56	B	J	65.6	0.22			14400	16.8	N	J	159	4.5			0.55	0.56	B	J
CH105MFCHSOMW103CMP																																								
0-1 ft	87	5.5			4100	330			4.3	2.2	N	J	8.7	1.1			54.3	22.2			0.34	0.55	B	J	0.63	0.44			196	0.67	N*	J	342	4.4	*	J	ND	0.55	U	
1-2 ft	580	110			19000	1400			2.8	2.2	N	UJ	11.6	1.1			60.7	22			0.37	0.55	B	J	0.94	0.44			373	0.66	N*	J	367	4.4	*	J	ND	0.55	U	
2-4 ft	17	1.1			690	67			0.69	1.1	BN	UJ	3.6	1.1			36.0	22.5			0.66	0.56			ND	0.22	U		10.6	0.34	N*	U	21.4	4.5	*	J	ND	0.56	U	
4-6 ft	15	1.3			270	40			1	1.3	BN	UJ	4.0	1.3			29.5	26.7			0.67	0.67			ND	0.27	U		13	0.4	N*	U	19.2	5.3	*	J	ND	0.67	U	
6-8 ft	27	6.2			230	37			1.1	1.2	BN	UJ	8.2	1.2			67.1	24.9			1.00	0.62			ND	0.25	U		11.2	0.37	N*	U	35.1	5	*	J	ND	0.62	U	
CH105MFCHSOMW104CMP																																								
0-1 ft	ND	0.12	U		95	72			36.2	1.2			11.7	1.2			90.0	24.2			0.68	0.6			0.06	0.24	B	J	858	0.72			202	4.8			0.28	0.6	B	J
1-2 ft	ND	0.12	U		33	3.5			6.0	1.2			12.0	1.2			90.8	23.5			1.1	0.59			0.37	0.23			163	0.35			68.3	4.7			ND	0.59	U	
2-4 ft	0.56	0.3			5.6	3.6			1.7	1.2			11.9	1.2			79.1	24.3			0.99	0.61			ND	0.49	U		70.3	0.36			32.8	4.9			ND	0.61	U	
4-6 ft	190	57			1200	170			0.78	1.1	B	J	6	1.1			36	22.9			0.47	0.57	B	J	ND	0.46	U		7.4	0.34			17.8	4.6			ND	0.57	U	
6-10 ft	260	55			980	170			0.37	1.1	B	J	3.1	1.1			33.6	22			0.48	0.55	B	J	ND	0.22	U		6.3	0.33			15.4	4.4			ND	0.55	U	

Notes:
CH - Charlestown
MF - Main Forge Shop
ND - Not Detected
DP - Duplicate Sample
SO - Soil Sample
B - Soil Boring
MW - Monitoring Well Boring

Data Qualifiers
J - Estimated
U - Undetected
UJ - Undetected but Estimated
R - Rejected

mg/kg - milligrams per kilogram

Lab Qualifiers:
B - Estimated
N - MS and MSD exceeds the 75%-125% control limit
* - Value outside QC limits

Table 25
Subsurface Investigation Polynuclear Aromatic Hydrocarbons (USEPA Method 8270C) Soil Sample Results
Former Charlestown Navy Yard, Boston, Massachusetts

Analysis	Acenaphthene				Acenaphthylene				Anthracene				Benzon (a) anthracene				Benzo (a) pyrene				Benzo (b) fluoranthene				Benzo (ghi) perylene				Benzo (k) fluoranthene			
	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier
Units:	(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)			
CH105MFCHSOBO1CMP																																
0-1 ft	ND	1.9	U		ND	1.9	U		ND	1.9	U		ND	1.9	U		ND	1.9	U		ND	1.9	U		0.29	1.9	J	J	ND	1.9	U	
0-1 DP	ND	3.8	U		ND	3.8	U		ND	3.8	U		2.6	3.8	J		2.4	3.8	J		2.3	3.8	J		1.3	3.8	J	J	2.3	3.8	J	
1-2 ft	ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U	
CH105MFCHSOBO7CMP																																
0-1 ft	ND	3.6	U		ND	3.6	U		ND	3.6	U		ND	3.6	U		ND	3.6	U		ND	3.6	U	U	ND	3.6	U		ND	3.6	U	
1-2 ft	ND	0.76	U		ND	0.76	U		ND	0.76	U		ND	0.76	U		ND	0.76	U		ND	0.76	U		ND	0.76	U		ND	0.76	U	
CH105MFCHSOBO8CMP																																
0-1 ft	ND	0.38	U		ND	0.38	U		ND	0.38	U		ND	0.38	U		ND	0.38	U		ND	0.38	U		ND	0.38	U		ND	0.38	U	
CH105MFCHSOMW101CMP																																
0-1 ft	ND	2	U		ND	2	U		ND	2	U	UJ	0.7	-	J		ND	2	U		ND	2	U		0.93	-	J		ND	2	U	
1-2 ft	ND	1.5	U	UJ	ND	1.5	U	UJ	ND	1.5	U	UJ	ND	1.5	U	UJ	ND	1.5	U		ND	1.5	U		0.19	-	J		ND	1.5	U	
2-4 ft	ND	0.37	U		ND	0.37	U		ND	0.37	U	UJ	ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U	
4-6 ft	ND	0.4	U		ND	0.4	U		ND	0.4	U		ND	0.4	U		ND	0.4	U		ND	0.4	U		ND	0.4	U		ND	0.4	U	
CH105MFCHSOMW102ACMP																																
0-1 ft	ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U	
0-1 DP	ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U	
1-2 ft	ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U	
2-4 ft	ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U	
CH105MFCHSOMW102CMP																																
0-1 ft	ND	1.8	U		ND	1.8	U		ND	1.8	U	UJ	ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U	
CH105MFCHSOMW103CMP																																
0-1 ft	ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U	
1-2 ft	ND	18	U		ND	18	U		ND	18	U		ND	18	U		ND	18	U		ND	18	U		ND	18	U		ND	18	U	
2-4 ft	ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U	
4-6 ft	ND	0.44	U		ND	0.44	U		ND	0.44	U		ND	0.44	U		ND	0.44	U		ND	0.44	U		ND	0.44	U		ND	0.44	U	
6-8 ft	ND	0.41	U		ND	0.41	U		ND	0.41	U		ND	0.41	U		ND	0.41	U		ND	0.41	U		ND	0.41	U		ND	0.41	U	
CH105MFCHSOMW104CMP																																
0-1 ft	ND	2	U		ND	2	U		ND	2	U		ND	2	U		ND	2	U		ND	2	U		ND	2	U		ND	2	U	
1-2 ft	ND	0.39	U		ND	0.39	U		ND	0.39	U		ND	0.39	U		ND	0.39	U		ND	0.39	U		ND	0.39	U		ND	0.39	U	
2-4 ft	ND	2	U		ND	2	U		ND	2	U		ND	2	U		ND	2	U		ND	2	U		ND	2	U		ND	2	U	
4-6 ft	ND	1.9	U		ND	1.9	U		ND	1.9	U		ND	1.9	U		ND	1.9	U		ND	1.9	U		ND	1.9	U		ND	1.9	U	
6-10 ft	ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U	

Table 25
Subsurface Investigation Polynuclear Aromatic Hydrocarbons (USEPA Method 8270C) Soil Sample Results
Former Charlestown Navy Yard, Boston, Massachusetts

Analysis	Chrysene				Dibenzo (a,h) anthracene				Fluoranthene				Flouerne				Indeno (1,2,3-cd) pyrene				Naphthalene				Phenanthrene				Pyrene			
	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier
Units:	(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)			
CH105MFCHSOBO1CMP																																
0-1 ft	ND	1.9	U		ND	1.9	U		ND	1.9	U		ND	1.9	U		0.27	1.9	J	J	ND	1.9	U		ND	1.9	U		ND	1.9	U	
0-1 DP	3.3	3.8	J		ND	3.8	U		6.5	3.8			ND	3.8	U		1.3	3.8	J	J	ND	3.8	U		3.7	3.8	J		4.9	3.8		
1-2 ft	ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U	
CH105MFCHSOBO7CMP																																
0-1 ft	ND	3.6	U		ND	3.6	U		ND	3.6	U		ND	3.6	U		ND	3.6	U		ND	3.6	U		ND	3.6	U		ND	3.6	U	
1-2 ft	ND	0.76	U		ND	0.76	U		ND	0.76	U		0.47	0.76	J		ND	0.76	U		ND	0.76	U		0.65	0.76	J		ND	0.76	U	
CH105MFCHSOBO8CMP																																
0-1 ft	ND	0.38	U		ND	0.38	U		ND	0.38	U		ND	0.38	U		ND	0.38	U		ND	0.38	U		0.15	0.38	J		ND	0.38	U	
CH105MFCHSOMW101CMP																																
0-1 ft	0.8	-	J		ND	2	U		1.7	-	J	J	ND	2	U		0.55	-	J		ND	2	U		1.7	-	J	J	1	-	J	
1-2 ft	ND	1.5	U	UJ	ND	1.5	U		ND	1.5	U	UJ	ND	1.5	U	UJ	0.15	-	J		0.96	-	J		ND	1.5	U	UJ	ND	1.5	U	UJ
2-4 ft	ND	0.37	U		ND	0.37	U		ND	0.37	U	UJ	ND	0.37	U		ND	0.37	U		ND	0.37	U		0.26	0.37	J	J	ND	0.37	U	
4-6 ft	ND	0.4	U		ND	0.4	U		ND	0.4	U		ND	0.4	U		ND	0.4	U		ND	0.4	U		ND	0.4	U		ND	0.4	U	
CH105MFCHSOMW102ACMP																																
0-1 ft	ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U	
0-1 DP	ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U	
1-2 ft	ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		0.14	-			ND	0.37	U	
2-4 ft	ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U		ND	0.37	U	
CH105MFCHSOMW102CMP																																
0-1 ft	ND	1.8	U		ND	1.8	U		ND	1.8	U	UJ	ND	1.8	U		ND	1.8	U		ND	1.8	U		ND	1.8	U	UJ	ND	1.8	U	
CH105MFCHSOMW103CMP																																
0-1 ft	ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	3.7	U		ND	4.2	U		ND	3.7	U		ND	3.7	U	
1-2 ft	ND	18	U		ND	18	U		ND	18	U		ND	18	U		ND	18	U		ND	18	U		ND	18	U		ND	18	U	
2-4 ft	ND	0.37	U		ND	0.37	U		ND	0.37	U		0.2	0.37	J		ND	0.37	U		0.26	0.37	J		0.35	0.37	J		ND	0.37	U	
4-6 ft	ND	0.44	U		ND	0.44	U		ND	0.44	U		ND	0.44	U		ND	0.44	U		0.27	0.44	J		0.19	0.44	J		ND	0.44	U	
6-8 ft	ND	0.41	U		ND	0.41	U		ND	0.41	U		ND	0.41	U		ND	0.41	U		ND	0.41	U		ND	0.41	U		ND	0.41	U	
CH105MFCHSOMW104CMP																																
0-1 ft	ND	2	U		ND	2	U		ND	2	U		ND	2	U		ND	2	U		ND	2	U		ND	2	U		ND	2	U	
1-2 ft	ND	0.39	U		ND	0.39	U		ND	0.39	U		ND	0.39	U		ND	0.39	U		ND	0.39	U		ND	0.39	U		ND	0.39	U	
2-4 ft	ND	2	U		ND	2	U		ND	2	U		ND	2	U		ND	2	U		ND	2	U		ND	2	U		ND	2	U	
4-6 ft	ND	1.9	U		ND	1.9	U		ND	1.9	U		ND	1.9	U		ND	1.9	U		ND	1.9	U		1.5	1.9	J		ND	1.9	U	
6-10 ft	ND	1.8	U		ND	1.8	U		ND	1.8	U		0.77	1.8	J		ND	1.8	U		ND	1.8	U		1.4	1.8	J		ND	1.8	U	

Notes:
CH - Charlestown
MF - Main Forge Shop
ND - Not Detected
DP - Duplicate Sample
SO - Soil Sample
B - Soil Boring
MW - Monitoring Well Boring

Data Qualifiers
J - Estimated
U - Undetected
UJ - Undetected but Estimated
R - Rejected

mg/kg - milligrams per kilogram

Lab Qualifiers
B - Estimated
N - Spiked analyte recovery is outside stated control limits.
I - Interference
* - Relative percent difference is outside stated control limits.

Table 26
Subsurface Investigation Volatile Organic Compounds (USEPA Method 8260B) Soil Sample Results
Former Charlestown Navy Yard, Boston, Massachusetts

Analysis	Acetone				Benzene				Bromodichloromethane				Bromoform				Bromomenthane				2-Butanone				Carbon disulfide			
	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier
Units:	(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)			
CH105MFCHSOBO1CMP																												
0-1 ft	ND	0.023	U		ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.012	U	R	ND	0.023	U		ND	0.0058	U	
0-1 DP	ND	0.023	U		ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.012	U	R	ND	0.023	U		ND	0.0058	U	
1-2 ft	ND	0.023	U		ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.011	U	R	ND	0.023	U		ND	0.0056	U	
CH105MFCHSOBO7CMP																												
0-1 ft	ND	0.022	U		ND	0.005	U		ND	0.005	U		ND	0.005	U		ND	0.011	U	R	ND	0.022	U		ND	0.0054	U	
1-2 ft	ND	0.023	U		ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.012	U	R	ND	0.023	U		ND	0.0058	U	
CH105MFCHSOBO8CMP																												
0-1 ft	ND	0.023	U	J	ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.011	U	R	ND	0.023	U		ND	0.0057	U	
CH105MFCHSOMW101CMP																												
0-1 ft	ND	0.024	U	R	ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.012	U	UJ	ND	0.024	U		ND	0.0061	U	
1-2 ft	ND	0.023	U	R	ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.011	U	UJ	ND	0.023	U		ND	0.0057	U	
2-4 ft	0.009	-	J	J	ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.011	U	UJ	ND	0.022	U		ND	0.0056	U	
4-6 ft	0.033	-		J	ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.012	U	UJ	ND	0.024	U		ND	0.0061	U	
CH105MFCHSOMW102ACMP																												
0-1 ft	ND	0.023	U		ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.011	U	R	ND	0.023	U		ND	0.0056	U	
0-1 DP	0.003	-	J		ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.011	U	R	ND	0.022	U		ND	0.0055	U	
1-2 ft	ND	0.022	U		ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.011	U	R	ND	0.022	U		ND	0.0056	U	
2-4 ft	0.004	-	J		ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.011	U	R	ND	0.022	U		ND	0.0056	U	
CH105MFCHSOMW102CMP																												
0-1 ft	ND	0.022	U	R	ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.011	U	UJ	ND	0.022	U		ND	0.0056	U	
CH105MFCHSOMW103CMP																												
0-1 ft	ND	0.022	J	U	ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.011	U	R	ND	0.022	U		ND	0.0055	U	
1-2 ft	ND	0.022	U		ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.011	U	R	ND	0.022	U		ND	0.0055	U	
2-4 ft	ND	0.022	J	U	ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.011	U	R	ND	0.022	U		ND	0.0055	U	
4-6 ft	ND	0.027	J	U	ND	0.007	U		ND	0.007	U		ND	0.007	U		ND	0.013	U	R	ND	0.027	U		ND	0.0067	U	
6-8 ft	ND	0.025	J	U	ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.012	U	R	ND	0.025	U		ND	0.0062	U	
CH105MFCHSOMW104CMP																												
0-1 ft	ND	0.024	U		ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.012	U	R	ND	0.024	U		ND	0.006	U	
1-2 ft	0.004	-	J		ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.012	U	R	ND	0.023	U		ND	0.0059	U	
2-4 ft	0.003	-	J		ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.012	U	R	ND	0.024	U		ND	0.0061	U	
4-6 ft	ND	0.023	U		ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.011	U	R	ND	0.023	U		ND	0.0057	U	
6-10 ft	0.003	-	J		ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.011	U	R	ND	0.022	U		ND	0.0055	U	

Table 26
Subsurface Investigation Volatile Organic Compounds (USEPA Method 8260B) Soil Sample Results
Former Charlestown Navy Yard, Boston, Massachusetts

Analysis	Carbon tetrachloride				Chlorobenzene				Dibromochloromethane				Chloroethane				Chloroform				Chloromethane				1,1-Dichloroethane			
	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier
Units:	(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)			
CH105MFCHSOBO1CMP																												
0-1 ft	ND	0.006	U		ND	0.006	U		ND	0.0058	U		ND	0.012	U	UJ	ND	0.006	U		ND	0.012	U		ND	0.006	U	
0-1 DP	ND	0.006	U		ND	0.006	U		ND	0.0058	U		ND	0.012	U	UJ	ND	0.006	U		ND	0.012	U		ND	0.006	U	
1-2 ft	ND	0.006	U		ND	0.006	U		ND	0.0056	U		ND	0.011	U	UJ	ND	0.006	U		ND	0.011	U		ND	0.006	U	
CH105MFCHSOBO7CMP																												
0-1 ft	ND	0.005	U		ND	0.005	U		ND	0.0054	U		ND	0.011	U	UJ	ND	0.005	U		ND	0.011	U		ND	0.005	U	
1-2 ft	ND	0.006	U		ND	0.006	U		ND	0.0058	U		ND	0.012	U	UJ	ND	0.006	U		ND	0.012	U		ND	0.006	U	
CH105MFCHSOBO8CMP																												
0-1 ft	ND	0.006	U		ND	0.006	U		ND	0.0057	U		ND	0.011	U	UJ	ND	0.006	U		ND	0.011	U		ND	0.006	U	
CH105MFCHSOMW101CMP																												
0-1 ft	ND	0.006	U		ND	0.006	U		ND	0.0061	U		ND	0.012	U	UJ	ND	0.006	U		ND	0.012	U		ND	0.006	U	
1-2 ft	ND	0.006	U		ND	0.006	U		ND	0.0057	U		ND	0.011	U	UJ	ND	0.006	U		ND	0.011	U		ND	0.006	U	
2-4 ft	ND	0.006	U		ND	0.006	U		ND	0.0056	U		ND	0.011	U	UJ	ND	0.006	U		ND	0.011	U		ND	0.006	U	
4-6 ft	ND	0.006	U		ND	0.006	U		ND	0.0061	U		ND	0.012	U	UJ	ND	0.006	U		ND	0.012	U		ND	0.006	U	
CH105MFCHSOMW102ACMP																												
0-1 ft	ND	0.006	U		ND	0.006	U		ND	0.0056	U		ND	0.011	U	UJ	ND	0.006	U		ND	0.011	U		ND	0.006	U	
0-1 DP	ND	0.006	U		ND	0.006	U		ND	0.0055	U		ND	0.011	U	UJ	ND	0.006	U		ND	0.011	U		ND	0.006	U	
1-2 ft	ND	0.006	U		ND	0.006	U		ND	0.0056	U		ND	0.011	U	UJ	ND	0.006	U		ND	0.011	U		ND	0.006	U	
2-4 ft	ND	0.006	U		ND	0.006	U		ND	0.0056	U		ND	0.011	U	UJ	ND	0.006	U		ND	0.011	U		ND	0.006	U	
CH105MFCHSOMW102CMP																												
0-1 ft	ND	0.006	U		ND	0.006	U		ND	0.0056	U		ND	0.011	U	UJ	ND	0.006	U		ND	0.011	U		ND	0.006	U	
CH105MFCHSOMW103CMP																												
0-1 ft	ND	0.006	U		ND	0.006	U		ND	0.0055	U		ND	0.011	U	UJ	ND	0.006	U		ND	0.011	U		ND	0.006	U	
1-2 ft	ND	0.006	U		ND	0.006	U		ND	0.0055	U		ND	0.011	U	UJ	ND	0.006	U		ND	0.011	U		ND	0.006	U	
2-4 ft	ND	0.006	U		ND	0.006	U		ND	0.0056	U		ND	0.011	U	UJ	ND	0.006	U		ND	0.011	U		ND	0.006	U	
4-6 ft	ND	0.007	U		ND	0.007	U		ND	0.0067	U		ND	0.013	U	UJ	ND	0.007	U		ND	0.013	U		ND	0.007	U	
6-8 ft	ND	0.006	U		ND	0.006	U		ND	0.0062	U		ND	0.012	U	UJ	ND	0.006	U		ND	0.012	U		ND	0.006	U	
CH105MFCHSOMW104CMP																												
0-1 ft	ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.012	U	UJ	ND	0.006	U		ND	0.012	U		ND	0.006	U	
1-2 ft	ND	0.006	U		ND	0.006	U		ND	0.0059	U		ND	0.012	U	UJ	ND	0.006	U		ND	0.012	U		ND	0.006	U	
2-4 ft	ND	0.006	U		ND	0.006	U		ND	0.0061	U		ND	0.012	U	UJ	ND	0.006	U		ND	0.012	U		ND	0.006	U	
4-6 ft	ND	0.006	U		ND	0.006	U		ND	0.0057	U		ND	0.011	U	UJ	ND	0.006	U		ND	0.011	U		ND	0.006	U	
6-10 ft	ND	0.006	U		ND	0.006	U		ND	0.0055	U		ND	0.011	U	UJ	ND	0.006	U		ND	0.011	U		ND	0.006	U	

Table 26
Subsurface Investigation Volatile Organic Compounds (USEPA Method 8260B) Soil Sample Results
Former Charlestown Navy Yard, Boston, Massachusetts

Analysis	1,2-Dichloroethane				1,1-Dichloroethene				1,2-Dichloroethene (total)				1,2-Dichloropropane				cis-1,3-Dichloropropane				trans-1,3-Dichloropropene				Ethylbenzene			
	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier
Units:	(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)			
CH105MFCHSOBO1CMP																												
0-1 ft	ND	0.006	U		ND	0.006	U		ND	0.0058	U		ND	0.0058	U		ND	0.0058	U		ND	0.0058	U		ND	0.0058	U	
0-1 DP	ND	0.006	U		ND	0.006	U		ND	0.0058	U		ND	0.0058	U		ND	0.0058	U		ND	0.0058	U		ND	0.0058	U	
1-2 ft	ND	0.006	U		ND	0.006	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U	
CH105MFCHSOBO7CMP																												
0-1 ft	ND	0.005	U		ND	0.005	U		ND	0.0054	U		ND	0.0054	U		ND	0.0054	U		ND	0.0054	U		ND	0.0054	U	
1-2 ft	ND	0.006	U		ND	0.006	U		ND	0.0058	U		ND	0.0058	U		ND	0.0058	U		ND	0.0058	U		ND	0.0058	U	
CH105MFCHSOBO8CMP																												
0-1 ft	ND	0.006	U		ND	0.006	U		ND	0.0057	U		ND	0.0057	U		ND	0.0057	U		ND	0.0057	U		ND	0.0057	U	
CH105MFCHSOMW101CMP																												
0-1 ft	ND	0.006	U		ND	0.006	U		ND	0.0061	U		ND	0.0061	U		ND	0.0061	U		ND	0.0061	U		ND	0.0061	U	
1-2 ft	ND	0.006	U		ND	0.006	U		ND	0.0057	U		ND	0.0057	U		ND	0.0057	U		ND	0.0057	U		ND	0.0057	U	
2-4 ft	ND	0.006	U		ND	0.006	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U	
4-6 ft	ND	0.006	U		ND	0.006	U		ND	0.0061	U		ND	0.0061	U		ND	0.0061	U		ND	0.0061	U		ND	0.0061	U	
CH105MFCHSOMW102ACMP																												
0-1 ft	ND	0.006	U		ND	0.006	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U	
0-1 DP	ND	0.006	U		ND	0.006	U		ND	0.0055	U		ND	0.0055	U		ND	0.0055	U		ND	0.0055	U		ND	0.0055	U	
1-2 ft	ND	0.006	U		ND	0.006	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U	
2-4 ft	ND	0.006	U		ND	0.006	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U	
CH105MFCHSOMW102CMP																												
0-1 ft	ND	0.006	U		ND	0.006	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U	
CH105MFCHSOMW103CMP																												
0-1 ft	ND	0.006	U		ND	0.006	U		ND	0.0055	U		ND	0.0055	U		ND	0.0055	U		ND	0.0055	U		ND	0.0055	U	
1-2 ft	ND	0.006	U		ND	0.006	U		ND	0.0055	U		ND	0.0055	U		ND	0.0055	U		ND	0.0055	U		ND	0.0055	U	
2-4 ft	ND	0.006	U		ND	0.006	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U	
4-6 ft	ND	0.007	U		ND	0.007	U		ND	0.0067	U		ND	0.0067	U		ND	0.0067	U		ND	0.0067	U		ND	0.0067	U	
6-8 ft	ND	0.006	U		ND	0.006	U		ND	0.0062	U		ND	0.0062	U		ND	0.0062	U		ND	0.0062	U		ND	0.0062	U	
CH105MFCHSOMW104CMP																												
0-1 ft	ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.006	U	
1-2 ft	ND	0.006	U		ND	0.006	U		ND	0.0059	U		ND	0.0059	U		ND	0.0059	U		ND	0.0059	U		ND	0.0059	U	
2-4 ft	ND	0.006	U		ND	0.006	U		ND	0.0061	U		ND	0.0061	U		ND	0.0061	U		ND	0.0061	U		ND	0.0061	U	
4-6 ft	ND	0.006	U		ND	0.006	U		ND	0.0057	U		ND	0.0057	U		ND	0.0057	U		ND	0.0057	U		ND	0.0057	U	
6-10 ft	ND	0.006	U		ND	0.006	U		ND	0.0055	U		ND	0.0055	U		ND	0.0055	U		ND	0.0055	U		ND	0.0055	U	

Table 26
Subsurface Investigation Volatile Organic Compounds (USEPA Method 8260B) Soil Sample Results
Former Charlestown Navy Yard, Boston, Massachusetts

Analysis	2-Hexanone				Methylene Chloride				4-Methyl-2-pentanone				Styrene				1,1,2,2-Tetrachloroethane				Tetrachloroethene				Toluene			
	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier
Units:	(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)			
CH105MFCHSOBO1CMP																												
0-1 ft	ND	0.023	U		ND	0.0058	U		ND	0.023	U		ND	0.0058	U		ND	0.0058	U		ND	0.0058	U		ND	0.0058	U	
0-1 DP	ND	0.023	U		ND	0.0058	U		ND	0.023	U		ND	0.0058	U		ND	0.0058	U		ND	0.0058	U		ND	0.0058	U	
1-2 ft	ND	0.023	U		ND	0.0056	U		ND	0.023	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U	
CH105MFCHSOBO7CMP																												
0-1 ft	ND	0.022	U		ND	0.0054	U		ND	0.022	U		ND	0.0054	U		ND	0.0054	U		ND	0.0054	U		ND	0.0054	U	
1-2 ft	ND	0.023	U		ND	0.0058	U		ND	0.023	U		ND	0.0058	U		ND	0.0058	U		ND	0.0058	U		ND	0.0058	U	
CH105MFCHSOBO8CMP																												
0-1 ft	ND	0.023	U		ND	0.0057	U		ND	0.023	U		ND	0.0057	U		ND	0.0057	U		ND	0.0057	U		ND	0.0057	U	
CH105MFCHSOMW101CMP																												
0-1 ft	ND	0.024	U	UJ	ND	0.0061	U		ND	0.024	U	UJ	ND	0.0061	U		ND	0.0061	U		ND	0.0061	U		ND	0.0061	U	
1-2 ft	ND	0.023	U	UJ	ND	0.0057	U		ND	0.023	U	UJ	ND	0.0057	U		ND	0.0057	U		ND	0.0057	U		ND	0.0057	U	
2-4 ft	ND	0.022	U	UJ	ND	0.0056	U		ND	0.022	U	UJ	ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U	
4-6 ft	ND	0.024	U	UJ	ND	0.0061	U		ND	0.024	U	UJ	ND	0.0061	U		ND	0.0061	U		ND	0.0061	U		ND	0.0061	U	
CH105MFCHSOMW102ACMP																												
0-1 ft	ND	0.023	U		ND	0.0056	U		ND	0.023	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U	
0-1 DP	ND	0.022	U		ND	0.0055	U		ND	0.022	U		ND	0.0055	U		ND	0.0055	U		ND	0.0055	U		ND	0.0055	U	
1-2 ft	ND	0.022	U		ND	0.0056	U		ND	0.022	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U	
2-4 ft	ND	0.022	U		ND	0.0056	U		ND	0.022	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U	
CH105MFCHSOMW102CMP																												
0-1 ft	ND	0.022	U	UJ	ND	0.0056	U		ND	0.022	U	UJ	ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U	
CH105MFCHSOMW103CMP																												
0-1 ft	ND	0.022	U		ND	0.0055	U		ND	0.022	U		ND	0.0055	U		ND	0.0055	U		ND	0.0055	U		ND	0.0055	U	
1-2 ft	ND	0.022	U		ND	0.0055	U		ND	0.022	U		ND	0.0055	U		ND	0.0055	U		ND	0.0055	U		ND	0.0055	U	
2-4 ft	ND	0.022	U		ND	0.0056	U		ND	0.022	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.0056	U	
4-6 ft	ND	0.027	U		ND	0.0067	U		ND	0.027	U		ND	0.0067	U		ND	0.0067	U		0.003	-	J		ND	0.0067	U	
6-8 ft	ND	0.025	U		ND	0.0062	U		ND	0.025	U		ND	0.0062	U		ND	0.0062	U		ND	0.0062	U		ND	0.0062	U	
CH105MFCHSOMW104CMP																												
0-1 ft	ND	0.024	U		ND	0.006	U		ND	0.024	U		ND	0.006	U		ND	0.006	U		0.0029	-	J		ND	0.006	U	
1-2 ft	ND	0.023	U		ND	0.0059	U		ND	0.023	U		ND	0.0059	U		ND	0.0059	U		ND	0.0059	U		ND	0.0059	U	
2-4 ft	ND	0.024	U		ND	0.0061	U		ND	0.024	U		ND	0.0061	U		ND	0.0061	U		ND	0.0061	U		ND	0.0061	U	
4-6 ft	ND	0.023	U		ND	0.0057	U		ND	0.023	U		ND	0.0057	U		ND	0.0057	U		ND	0.0057	U		ND	0.0057	U	
6-10 ft	ND	0.022	U		ND	0.0055	U		ND	0.022	U		ND	0.0055	U		ND	0.0055	U		ND	0.0055	U		ND	0.0055	U	

Table 26
Subsurface Investigation Volatile Organic Compounds (USEPA Method 8260B) Soil Sample Results
Former Charlestown Navy Yard, Boston, Massachusetts

Analysis	1,1,1-Trichloroethane				1,1,2-Trichloroethane				Trichloroethene				Vinyl chloride				Xylenes (total)			
	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier
Units:		(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)				(mg/kg)		
CH105MFCHSOBO1CMP																				
0-1 ft	ND	0.0058	U		ND	0.0058	U		ND	0.0058	U		ND	0.012	U		ND	0.0058	U	
0-1 DP	ND	0.0058	U		ND	0.0058	U		ND	0.0058	U		ND	0.012	U		ND	0.0058	U	
1-2 ft	ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.011	U		ND	0.0056	U	
CH105MFCHSOBO7CMP																				
0-1 ft	ND	0.0054	U		ND	0.0054	U		ND	0.0054	U		ND	0.011	U		ND	0.0054	U	
1-2 ft	ND	0.0058	U		ND	0.0058	U		ND	0.0058	U		ND	0.012	U		ND	0.0054	U	
CH105MFCHSOBO8CMP																				
0-1 ft	ND	0.0057	U		ND	0.0057	U		ND	0.0057	U		ND	0.011	U		ND	0.0057	U	
CH105MFCHSOMW101CMP																				
0-1 ft	ND	0.0061	U		ND	0.0061	U		ND	0.0061	U		ND	0.012	U		ND	0.0061	U	
1-2 ft	ND	0.0057	U		ND	0.0057	U		ND	0.0057	U		ND	0.011	U		ND	0.0057	U	
2-4 ft	ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.011	U		ND	0.0056	U	
4-6 ft	ND	0.0061	U		ND	0.0061	U		ND	0.0061	U		ND	0.012	U		ND	0.0061	U	
CH105MFCHSOMW102ACMP																				
0-1 ft	ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.011	U		ND	0.0056	U	
0-1 DP	ND	0.0055	U		ND	0.0055	U		ND	0.0055	U		ND	0.011	U		ND	0.0055	U	
1-2 ft	ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.011	U		ND	0.0056	U	
2-4 ft	ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.011	U		ND	0.0056	U	
CH105MFCHSOMW102CMP																				
0-1 ft	ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.011	U		ND	0.0056	U	
CH105MFCHSOMW103CMP																				
0-1 ft	ND	0.0055	U		ND	0.0055	U		ND	0.0055	U		ND	0.011	U		ND	0.0055	U	
1-2 ft	ND	0.0055	U		ND	0.0055	U		ND	0.0055	U		ND	0.011	U		ND	0.0055	U	
2-4 ft	ND	0.0056	U		ND	0.0056	U		ND	0.0056	U		ND	0.011	U		ND	0.0056	U	
4-6 ft	ND	0.0067	U		ND	0.0067	U		ND	0.0067	U		ND	0.013	U		ND	0.0071	U	
6-8 ft	ND	0.0062	U		ND	0.0062	U		ND	0.0062	U		ND	0.012	U		ND	0.0062	U	
CH105MFCHSOMW104CMP																				
0-1 ft	ND	0.006	U		ND	0.006	U		ND	0.006	U		ND	0.012	U		ND	0.006	U	
1-2 ft	ND	0.0059	U		ND	0.0059	U		ND	0.0059	U		ND	0.012	U		ND	0.0059	U	
2-4 ft	ND	0.0061	U		ND	0.0061	U		ND	0.0061	U		ND	0.012	U		ND	0.0061	U	
4-6 ft	ND	0.0057	U		ND	0.0057	U		ND	0.0057	U		ND	0.011	U		ND	0.0057	U	
6-10 ft	ND	0.0055	U		ND	0.0055	U		ND	0.0055	U		ND	0.011	U		ND	0.0055	U	

Notes:
CH - Charlestown
MF - Main Forge Shop
ND - Not Detected
DP - Duplicate Sample
SO - Soil Sample
B - Soil Boring
MW - Monitoring Well Boring

Data Qualifiers
J - Estimated
U - Undetected
UJ - Undetected but Estimated
R - Rejected

mg/kg - milligrams per kilogram

Lab Qualifiers
B - Estimated
N - Spiked analyte recovery is outside stated control limits.
I - Interference
* - Relative percent difference is outside stated control limits.

Table 27
Subsurface Investigation Dioxins (USEPA Method 8290) Soil Sample Results
Former Charlestown Navy Yard, Boston, Massachusetts

Analysis	2378- TCDF				TOTAL TCDF				2378-TCDD				TOTAL TCDD				12378-PeCDF				23478-PeCDF				TOTAL PeCDF				12378-PeCDD				TOTAL PeCDD			
	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier
Units:	(ng/kg)				(ng/kg)				(ng/kg)				(ng/kg)				(ng/kg)				(ng/kg)				(ng/kg)				(ng/kg)				(ng/kg)			
CH105MFCHSOBO1CMP																																				
0-1 ft	ND	0.86	*		15.00				ND	0.3			2.8			U	1.1		J		2.6		J		16			J	ND	2.1			ND			
0-1 DP	ND	0.88			13.00				ND	0.61			3			U	0.93		J		2		J		8.6			J	ND	1			ND			
1-2 ft	2		*		20.0				ND	1.4			4.2			U	ND	1.6			2.6		J		20.0				ND	2.5			ND			
CH105MFCHSOBO7CMP																																				
0-1 ft	5.8		*		55.00				0.61		J		12.00				5.10				ND	8.1	I	UJ	85.00				ND	3.1			ND			
1-2 ft	1.5		*		11.00				ND	0.72			0.4		J	U	1.1		J		5.00				23.00				ND	0.85			ND			
CH105MFCHSOBO8CMP																																				
0-1 ft	0.26		J*		5.10				ND	0.57			ND				ND	0.68			ND	0.95			4.8			J	ND	1.3			ND			
CH105MFCHSOMW101CMP																																				
0-1 ft	24.0		*		510.0				1.5				31.0				28.0				57.0				460.0				5.8				9.3			
1-2 ft	ND	2	I*	UJ	14.0				ND	1.2			2.4				ND	1.3			2.4	J			18.0				ND	2.4			ND			
2-4 ft	ND	0.99			ND				ND	0.98			ND				ND	1.8			ND	1.7			ND				ND	2.6			ND			
4-6 ft	ND	1			ND				ND	0.85			ND				ND	1.5			ND	1.2			ND				ND	1.4			ND			
CH105MFCHSOMW102ACMP																																				
0-1 ft	4.7		*	J	36.00		J		ND	0.27			10.00				2.00		J		2.9		J	J	30.00		J		ND	1.4			8.1		J	
0-1 DP	2.2		*	J	170 J			J	0.37		J		12				1.6		J		5.4			J	180			J	ND	0.81			2.9		J	J
1-2 ft	0.67		*		31				ND	0.5			1.9			U	0.63		J		ND	1			32				ND	0.78			ND			
2-4 ft	ND	0.88			ND				ND	0.49			ND				ND	0.29			ND	0.41			ND				ND	0.96			ND			
CH105MFCHSOMW102CMP																																				
0-1 ft	2.1		8		38				ND	1.5			4.6				ND	5.6	I	UJ	6.4				38				ND	1.4			ND			
CH105MFCHSOMW103CMP																																				
0-1 ft	1.4		*		20				ND	1.3			1.4			U	1.1		J		1.5		J		11				ND	4.1			ND			
1-2 ft	2.4		*		25				ND	1.9			3.9			U	5.1				2.9		J		25				ND	7			ND			
2-4 ft	ND	2.2			1.4			U	ND	1			ND				ND	1.6			ND	1.5			ND				ND	2.5			ND			
4-6 ft	ND	0.96			5.4		JB	U	ND	0.73			ND				ND	0.75			ND	0.95			ND				ND	0.62			ND			
6-8 ft	ND	0.83			ND				ND	0.87			ND				ND	0.89			ND	0.74			ND				ND	0.78			ND			
CH105MFCHSOMW104CMP																																				
0-1 ft	0.85		J*		11				ND	0.42			2.4			U	0.45		J		0.82		J		10				ND	0.34			1.4		J	
1-2 ft	0.83		J*		14				ND	0.24			3.4			U	0.86		J		1.3		J		9.9				ND	0.54			4		J	
2-4 ft	ND	0.54			1.2			U	ND	0.63			ND				ND	0.64			0.33		J		2.3		J		ND	1.1			ND			
4-6 ft	0.3		J*		1			U	ND	0.31			ND				ND	0.51			ND	0.51			ND				ND	0.64			ND			
6-10 ft	ND	0.77			ND				ND	0.46			ND				ND	0.55			ND	0.81			ND				ND	0.81			ND			

Table 27
Subsurface Investigation Dioxins (USEPA Method 8290) Soil Sample Results
Former Charlestown Navy Yard, Boston, Massachusetts

Analysis	123478-HxCDF				123678-HxCDF				234678-HxCDF				123789-HxCDF				TOTAL HxCDF				123478-HxCDD				123678-HxCDD				123789-HxCDD				TOTAL HxCDD			
	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier
Units:	(ng/kg)				(ng/kg)				(ng/kg)				(ng/kg)				(ng/kg)				(ng/kg)				(ng/kg)				(ng/kg)				(ng/kg)			
CH105MFCHSOBO1CMP																																				
0-1 ft	ND	4.2	I	UJ	1.1		J		1.9		J		0.86		J		19				ND	1.4			ND	1			ND	0.86			5.4			
0-1 DP	ND	5	I	UJ	1.4		J		1.4		B	U	ND	4.1			12.00				ND	1.4			ND	0.98			ND	0.81			ND			
1-2 ft	ND	9.8	I	UJ	1.5		J		2.4		J		ND	3.4			17.0				ND	2			ND	1.8			ND	1.5			6.0			
CH105MFCHSOBO7CMP																																				
0-1 ft	16.00				6.50				6.30				4.9		J		90.00				ND	2.4			2.8		J		ND	2.1			9.00			
1-2 ft	ND	7.5	I	UJ	1.9		J		2.6		J		ND	4.3			19.00				ND	1.3			ND	1.1			ND	1.3			7.10			
CH105MFCHSOBO8CMP																																				
0-1 ft	ND	0.81			ND	0.68			ND	1.4			ND	2.5			ND				ND	1.1			ND	0.37			ND	1.1			ND			
CH105MFCHSOMW101CMP																																				
0-1 ft	58.0				55.0				76.0				11.0				570.0				4.9		J		7.5				6.3				53.0			
1-2 ft	ND	5.8	I	UJ	ND	2.6			2.6		J		ND	3.7			17.0				ND	1.3			ND	1.8			ND	1.6			9.1			
2-4 ft	ND	1.5			ND	1.7			ND	2.1			ND	4.5			ND				ND	1.8			ND	2			ND	1.8			ND			
4-6 ft	ND	1.7			ND	1.3			ND	2.1			ND	1.7			ND				ND	1.3			ND	1.3			ND	1.6			ND			
CH105MFCHSOMW102ACMP																																				
0-1 ft	2.60		J		1.70		J	J	2.50		J	J	0.41		J		21.00		J		0.78		J		1.1		J		ND	0.67			14.00			
0-1 DP	ND	8.5	I	UJ	3.2		J	J	4.3		J	J	ND	1.5			85			J	0.93		J		1.7		J		2		J		23			
1-2 ft	1.2		J		0.79		J		ND	0.88			ND	0.63			16				ND	0.66			ND	0.96			ND	0.82			4.6		J	
2-4 ft	ND	0.35			ND	0.34			ND	0.45			ND	0.47			ND				ND	0.72			ND	1.1			ND	0.79			1.5		J	
CH105MFCHSOMW102CMP																																				
0-1 ft	ND	5.9	I	UJ	4.1		J		4.9		J		ND	4.9			37				ND	1.5			ND	2.7			ND	2.3			12			
CH105MFCHSOMW103CMP																																				
0-1 ft	1.7		J		ND	2.1			1.4		JB	U	ND	4.6			8.4				ND	2.9			ND	5.4			ND	2.1			6.4			
1-2 ft	ND	9.3			ND	8.3			ND	12			ND	13			ND				ND	7.5			ND	6.6			ND	6			5.6			
2-4 ft	ND	1.3			ND	1.4			ND	2.1			ND	3.6			ND				ND	2.2			ND	2.1			ND	1.3			ND			
4-6 ft	ND	1			ND	0.74			ND	1.3			ND	1.6			ND				ND	1.1			ND	1.5			ND	0.83			ND			
6-8 ft	ND	1.2			ND	0.83			ND	1.2			ND	1.2			ND				ND	1.3			ND	1.4			ND	0.85			ND			
CH105MFCHSOMW104CMP																																				
0-1 ft	0.81		J		0.62		J		1.1		JB	U	ND	0.7			7.8				0.19		J		ND	0.41			0.42		J		4.3		J	
1-2 ft	0.78		J		0.62		J		1.2		JB	U	ND	0.89			9.2				ND	1			0.52		J		0.48		J		8.6			
2-4 ft	0.64		J		0.51		J		0.73		JB	U	ND	0.7			3		J	U	0.84		J		0.87		J		0.8		J		13			
4-6 ft	ND	0.26			ND	0.4			0.25		JB	U	ND	0.25			0.25		JB	U	ND	0.36			ND	0.34			ND	0.38			ND			
6-10 ft	ND	0.4			ND	0.28			0.45		JB	U	ND	1.4			0.45		JB	U	ND	0.69			ND	0.78			ND	0.65			0.47		J	

Table 27
Subsurface Investigation Dioxins (USEPA Method 8290) Soil Sample Results
Former Charlestown Navy Yard, Boston, Massachusetts

Analysis	1234678-HpCDF				1234789-HpCDF				TOTAL HpCDF				1234678-HpCDD				TOTAL HpCDD				OCDF				OCDD				Total 2378-TCDD Equivalence
	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result	Detection Limit	Lab Qualifier	DV Qualifier	Result
Units:	(ng/kg)				(ng/kg)				(ng/kg)				(ng/kg)				(ng/kg)				(ng/kg)				(ng/kg)				(ng/kg)
CH105MFCHSOBO1CMP																													
0-1 ft	4.6		J		ND	2.7			8.2			U	5				10				2.7		J		110.00				1.9
0-1 DP	5.20				ND	3.6			5.2			U	4.9		J		8.40				4.2		J		94.00				1.5
1-2 ft	9.2				4.5		J		14.0				7.8				7.8				ND	4.1			120.00				2.2
CH105MFCHSOBO7CMP																													
0-1 ft	20.00				11.00				31.00				20.00				45.00				9		J		750.00				6.4
1-2 ft	4.9		J		ND	6.5		UJ	4.9		J	U	13.00				29.00				ND	13			730.00				4.1
CH105MFCHSOBO8CMP																													
0-1 ft	ND	2.3			ND	7.4			ND				ND	2.9			ND				ND	7			96.00				0.12
CH105MFCHSOMW101CMP																													
0-1 ft	230.0				12.0				310.0				49.0				100.0				120.0				440.0				62
1-2 ft	15.0				ND	4.2			25.0				11.0				11.0				7.6		J		160.0				1.9
2-4 ft	ND	14	I	UJ	ND	9.3		UJ	ND				3.4		J		3.4		J		ND	5.5			220.0				0.25
4-6 ft	ND	2.3			ND	2.7			6.9				ND	3.2			ND				ND	2.7			45.0				0.045
CH105MFCHSOMW102ACMP																													
0-1 ft	20.00			J	11.00	2.20			36.00		J		12.00				22.00				14				230.00				3.5
0-1 DP	34			J	3.1		J		64			J	17				35				23				320				5.5
1-2 ft	6.8				ND	1.5			11			U	5.1				9.7				4.3		J		160				0.58
2-4 ft	ND	1.3			ND	0.79			0.99		JB	U	7.4				19				ND	1.3			360				0.43
CH105MFCHSOMW102CMP																													
0-1 ft	52				ND	4.2			52				22				41				26				320				5.4
CH105MFCHSOMW103CMP																													
0-1 ft	12				ND	21			12			U	5.2				13				ND	19			120				1.5
1-2 ft	4.9		J		ND	24			4.9		J	U	ND	25			7.8				ND	27			250				2.2
2-4 ft	ND	1.9			ND	3.7			ND				5.1				10				ND	4.8			770				0.82
4-6 ft	ND	1.8			ND	3.2			ND				1		JB	U	2.2		J	U	ND	2.8			37				0.047
6-8 ft	ND	1.7			ND	2			ND				1.4		JB	U	2.4		J	U	ND	2.6			36				0.050
CH105MFCHSOMW104CMP																													
0-1 ft	3.9		J		ND	1			5.4			U	3.9		J		8.2				ND	0.75			480				1.4
1-2 ft	3.4		J		ND	1.1			4.4		J	U	15				37				2.9		J		3500				4.8
2-4 ft	2.4		J		ND	1.6			2.4		J	U	20				45				1.2		J		960				1.8
4-6 ft	ND	0.54			ND	0.8			0.81		JB	U	1.4		JB	U	2.8		J	U	ND	0.88			180				0.25
6-10 ft	ND	1.1			ND	2.2			ND				4.2		J		8.4				1.4		J		490				0.58

Notes:
CH - Charlestown
MF - Main Forge Shop
ND - Not Detected
DP - Duplicate Sample
SO - Soil Sample
B - Soil Boring
MW - Monitoring Well Boring

Data Validator Qualifier:
ND - Not Detected
J - Estimated results.
UJ - Not Detected, sample quantitation limit is estimated.

ng/kg - nanograms per kilogram

Lab Qualifiers:
* Value obtained from confirmation analysis
J - Below PQL
ND - Not Detected
I - Interference

APPENDIX D

Inventory of Decontaminated Surfaces &
Confirmatory Wipe Sampling Results

Remedial Action Inventory of Non-Porous Surfaces
Former Charlestown Navy Yard - Building No. 105
Boston, Massachusetts

Navy Number	Item Number	S&W Item Designation	Grid Location	Description	Approx. Surface Area (s.f.)
230001			A6	Erie No. 10 press 113 ton	211
230002			C8	Hammer, drop forge, 1000lb	300
230003			C7	Hammer, drop forge, 1500lb	324
230004			C7	Hammer, drop forge, 1500lb	314
230008			D8	Press, mechanical 85 ton	314
230009			D8	Hammer , drop, 1500lb	314
230010			C7	Press, mechanical, 85 ton	142
230014			D6	Hammer Erie No. 14, 113 ton	253
230015			D7	Hammer, drop, 2000lb	314
230017	011704		A6	Furnace, forge	60
230018			D7	Furnace, forge oil fired	100
230020			A1	Furnace	80
230023			A7	Furnace	165
230024			D6	Furnace	138
230029			C5	Hammer, drop, 3500lb	378
230030			C5	Press, mechanical	187
230033			D5	Chain testing equipment	215
230040			D4	Cylindrical furnace electric	60
230042			D3	Cylindrical furnace electric	60
230044			D3	Crane jib 2 ton	265
230045			D3	Furnace heat treat 12' dia	408
230047			D3	Rectangular steel tank	200
230049			D2	Furnace heat treat oil fired	210
230050			D2	Furnace heat treat oil fired	88
230051			D2	5' dia. Steel pit	130
230052			D2	3' dia. Steel pit	73
230053			D4	Particle Inspector	125
230055			D2	Lindberg furnace annealing	501
230056			D1	Davit	60
230060			D1	Chain testing equipment	209
230067			B8	Furnace, forge oil fired	502
230071			A9	Small Generator	25
230072			A9	Pump and debris within fenced area	300
230073			B7	Hammer, forge 2500lb	350

Navy Number	Item Number	S&W Item Designation	Grid Location	Description	Approx. Surface Area (s.f.)
230074			B9	Small Generator	25
230076			B6	Crane Jib	293
230077			B1	Crane jib	206
230078			C7	Hammer, forge 10,000lb	550
230080			B7	Hammer, forge oil fired	306
230081			B6	Press, hydraulic, 200 ton	450
230082			C6	Hammer, forge 12,000lb	575
230083			B6	Furnace rotary forge	330
230085			B6	Press, hydraulic 200 ton	275
230087			B6	Furnace, forge oil fired	215
230089			C5	Hammer, forge 10,000lb	550
230090			B5	Furnace	245
230091			B5	Press, mechanical , 225lb	310
230092			C5	Crane jib 2 ton	325
230093			A5	Ajax forging machine	508
230098			A6	Hammer, forge 1000lb	300
230100	1011		A1	Furnace	77
230103			C3	Furnace car bottom	586
230107			B3	Crane	260
230109			C2	5' dia. Electric pit furnace	162
230110			C1	5' dia. Electric pit furnace	162
230111			C1	5' dia. Electric pit furnace	162
230112			C1	Chain testing equipment	280
230113			B1	7' dia. Electric pit furnace	105
230115			B2	Press, mechanical 85 ton	142
230116			C7	Press, mechanical 93 ton	142
230117			B2	Press, mechanical 85 ton	142
230118			B1	Press, mechanical, 85 ton	142
230119			B3	Press, mechanical, 93 ton	150
230120			A6	205 bliss 85 ton press	150
230123			B2	Hammer, forging drop, 2000lb	345
230126			B1	Hammer, forging drop, 1500lb	326
230127	4009		A3	Furnace	100
230128			A1	Furnace	80
230129	1008		B2	Furnace	120
230130	4008		A3	Furnace	100
230131			A3	Furnace, forge oil fired	256
230132			D7	Furnace	100

Navy Number	Item Number	S&W Item Designation	Grid Location	Description	Approx. Surface Area (s.f.)
230133			A1	Forging machine HD + upset	235
230134			A1	Forging machine HD + upset	235
230135			A2	Forging machine HD + upset	508
230136			A2	Forging machine HD + upset	244
230137			A3	Forging machine HD + upset	244
230138			A3	Forging machine HD + upset	244
230139			B1	Hammer, forging drop, 2000lb	345
230140			B3	Press, mechanical 85 ton	142
230147			A9	Bar shearing machine	102
230148			A9	Bar shearing machine	304
230149	4013		D4	Winch	254
230150	1010		A2	Furnace	100
230151			A7	Furnace, forge oil fired	100
230152			A7	Ajax Press 700 ton	383
230153			A2	Furnace, forge oil fired	160
230154			A6	Hammer forge, 1500lb	245
230155			B1	Press, mechanical, 85 ton	142
230158			C8	Trimmer, vertical	175
230159			A6	Furnace, forge oil fired	210
230162			A6	Furnace, forge oil fired	77
230164			A2	Furnace, forge oil fired	67
230165			A3	Furnace, forge oil fired	67
230166			A3	Furnace, forge oil fired	100
230167			A2	Furnace, forge oil fired	87
230168			A1	Furnace, forge oil fired	77
230169	1012		A1	Furnace	97
230170			A1	Pneumatic press	61
230171			A1	Pneumatic press	61
230172			A2	Pneumatic press	75
230173			A2	Pnuematic press	75
230174			A3	Pneumatic Press 11000lb	40
230175			A3	Pneumatic Press 11000lb	61
230176	1007		A7	Furnace, forge	66
230177			A3	Furnace	100
230178			A2	Furnace, forge oil fired	100
230179			A2	Furnace, forge oil fired	106
230180			A3	Furnace, forge oil fired	100
230181			A1	Furnace, forge oil fired	77

Navy Number	Item Number	S&W Item Designation	Grid Location	Description	Approx. Surface Area (s.f.)
230182			A1	Centrifuge/Pump	35
230187			A2	Furnace, forge oil fired	100
230283			B2	Press, mechanical, 115 ton	142
230285			C6	Hammer, pneumatic, 3000lb	378
230287			D5	17' dia. Furnace	700
230290			B4	Cylindrical furnace electric pit	292
230291			B2	Hammer, forging drop, 3000lb	378
230292			A4	Hammer, drop forge 2500lb	576
230293			A5	Furnace slot type	331
230294			A4	Furnace slot type	355
230295			B2	Davit	120
230296			B3	Hammer, drop 1500lb	245
230297			B3	Hammer, drop 1500lb	245
230298			D7	Hammer, drop, 2000lb	314
230299			D7	Hammer, drop, 2000lb	314
230300			C8	Press 1000 ton	600
230301			D1	Furnace electric salt bath	40
230302			A5	Forging machine HD + upset	880
230314			A3-A6	Overhead Rail	780
230323			A7	Band saw 12x12	130
230328			D6	8' dia. Cylindrical electric furnace	193
230329			A2	Furnace, rotary elec. Hearth	160
230331			D7	Furnace, forge oil fired	100
230335			B4	Crane jib 5000lb	425
230349				Furnace Basket	20
230351				Furnace Basket	20
230407			D3	Furnace	225
313086			D1	Vertical Pump	66
313117			A7	Hack saw 18x18	156
316795			D2	Crane	187
665012827			A7	Hammer	150
		CO24	B8	Column	65
		CO25	B7	Column	65
		CO26	B6	Column	65
		CO27	B5	Column	65
		CO28	B5	Column	65
		CO29	B4	Column	65
		CO30	B3	Column	65

Navy Number	Item Number	S&W Item Designation	Grid Location	Description	Approx. Surface Area (s.f.)
		CO31	B2	Column and chain rotator	90
		CO32	B1	Columns	65
		CO33	D8	Columns	65
		CO34	D7	Columns	65
		CO35	D6	Columns	65
		CO36	D5	Columns	65
		CO37	D5	Columns	65
		CO38	D4	Columns	65
		CO39	D3	Columns	65
		CO40	D2	Columns	65
		CO41	D1	Columns	65
		E01	B4	Electrical panel	191
		E02	A1	Electrical panel	121
		E03	C1	Electrical panel	138
		E04	D1	Electrical panel	150
		E05	D3	Electrical panel	213
		E06	D3	Electrical panel	145
		E07	D4	Electrical panel	149
		E08	D5	Electrical panel	303
		E09	D6	Electrical panel	156
		E10	D7	Electrical panel	35
		E11	D7	Electrical panel	35
		E12	D7	Electrical panel	45
		E13	D7	Electrical panel	39
		E14	B6	Electrical panel	24
		E15	B6	Electrical panel	38
		E16	B2	Electrical panel	25
		E17	B5	Electrical panel	65
		E18	B1-D1	Electrical panel	55
	1000		A9	Electrical panel	34
	1001		A7	Electrical panel	39
	1002		B8	20' tall steel dip-tank cylinder	264
	1004		B8	2 pumps	120
	1005		B8	Electrical panel	96
	1006		A6	Electrical panel	60
	1009		A2	Instruments cabinets	247
	1013			4' dia X 7' H cylindrical w/top (2)	201
	1018		C6	Dies	275

Navy Number	Item Number	S&W Item Designation	Grid Location	Description	Approx. Surface Area (s.f.)
	1019		D7	Monitor equipment cabinet	45
	1022		C8	Gear drive machine	110
	1023		A5	Steam Cleaner	50
			A6	Forge Hammer, Piston and Head	50
			D7	Forging Machine Pistons (2)	35
			D5	Winch	26
				Spindle shaft and pipes	250
			B5	Cylinder Tank	100
			Various	Misc and Small Equip Parts	217
				Furnace hoods (8)	280
				Furnace Baskets	40
				Steam cleaner	50
				Chain testing guard	50

Type	*Area (s.f.)*
Equipment	***31,450***
Columns	***1,195***
Electrical Panels	***2,156***
Misc. Equipment/Parts	***2,410***
Total Surface Area	***37,211***

Notes:

s.f. - square feet

S&W Item Numbers - Inventory numbers provided to miscellaneous equipment and electrical panels by Stone & Webster in the absence of a Navy Item number.

Table 4
PCB Isomers (USEPA Method 8082) Wipe Sample Data Summary
Former Charlestown Navy Yard - Building No. 105
Boston, Massachusetts

Sample ID					Arochlor 1016					Arochlor 1221					Arochlor 1232					Arochlor 1242					Arochlor 1248					Arochlor 1254					Arochlor 1260					Total PCBs	
Sample Number	Equipment Type	Location	Sample Date	QC	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier		
CH-MF-CO-EQ-ST-001-XX	Furnace	West Side of Unit	12/27/00		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-002-XX	Furnace	East Side of Unit	1/11/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-002-XD	Furnace	East Side of Unit	1/11/01	DP	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-003-XX	Press: 11000lb	South Side of Unit	1/11/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-004-XX	Furnace	East Side of Unit	1/11/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-005-XX	Press: 85 ton	East Side of Unit	1/16/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-006-XX	Hammer: 1500lb	North Side of Unit	1/16/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-007-XX	Hammer: 2000lb	South Side of Unit	1/16/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-008-XX	Press: Pneumatic	North Side of Unit	1/16/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-009-XX	Furnace	East Side of Unit	1/16/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-010-XX	Forging Machine	South Side of Unit	1/16/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-011-XX	Forging Machine	South Side of Unit (top)	1/30/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-012-XX	Forging Machine	South Side of Unit	1/30/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-013-XX	Forging Machine	South Side of Unit	1/30/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-014-XX	Forging Machine	North Side of Unit	1/30/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	1.9	1.0	µg/wipe			ND	1.0	µg/wipe		U	1.9	µg/wipe
CH-MF-CO-EQ-ST-014-XD	Forging Machine	North Side of Unit	1/30/01	DP	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-015-XX	Winch	North Side of Unit	1/30/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-016-XX	Press: 85 ton	South Side of Unit	2/8/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-017-XX	Hammer: 1500lb	East Side of Unit (10' Aboveground)	1/30/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-017-XD	Hammer: 1500lb	East Side of Unit (10' Aboveground)	1/30/01	DP	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-018-XX	Hammer: 10,000lb	West Side of Unit	2/8/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	1.0	1.0	µg/wipe			ND	1.0	µg/wipe		U	1.0	µg/wipe
CH-MF-CO-EQ-ST-019-XX	Hammer: 10,000lb	South Side of Unit	2/8/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	1.7	1.0	µg/wipe			ND	1.0	µg/wipe		U	1.7	µg/wipe
CH-MF-CO-EQ-ST-020-XX	Press: 225lb	North Side of Unit	2/8/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-021-XX	Crane Jib	East Side of Unit	2/8/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-022-XX	Furnace	West Side of Unit	2/27/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-023-XX	Furnace	North Side of Unit	2/28/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-024-XX	Instrument Cabinets	East Side of Unit	2/27/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-025-XX	Press: 93 ton	North Side of Unit	2/27/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-026-XX	Hammer: 2500lb	North Side of Unit	2/27/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-027-XX	Furnace	East Side of Unit	2/27/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-028-XX	Hammer: 12000lb	East Side of Unit	3/19/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-029-XX	Press: 200 ton	North Side of Unit	3/19/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-029-XD	Press: 200 ton	North Side of Unit	3/19/01	DP	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-030-XX	Furnace	East Side of Unit	3/19/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-031-XX	Forging Machine	North Side of Unit	3/19/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	1.2	1.0	µg/wipe			ND	1.0	µg/wipe		U	1.2	µg/wipe
CH-MF-CO-EQ-ST-032-XX	Forging Machine	South Side of Unit	3/19/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-033-XX	Hammer: 10000lb	East Side of Unit (15' Aboveground)	3/19/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-034-XX	Hammer: 1000lb	East Side of Unit	3/19/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-035-XX	Hammer: 2000lb	North Side of Unit	3/19/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	1.1	1.0	µg/wipe			ND	1.0	µg/wipe		U	1.1	µg/wipe
CH-MF-CO-EQ-ST-036-XX	Furnace	East Side of Unit	3/19/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-037-XX	Forging Machine	West Side of Unit	3/19/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	1.3	1.0	µg/wipe			ND	1.0	µg/wipe		U	1.3	µg/wipe
CH-MF-CO-EQ-ST-038-XX	Furnace	East Side of Unit	3/19/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-039-XX	Press: 115 ton	East Side of Unit	3/19/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
EB-002	Gauze Blank	-	3/19/01	EB	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-040-XX	Hammer: 3500lb	North Side of Unit - Behind Spring	3/28/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-041-XX	Press: Misc Mech	North Side of Unit	3/28/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-042-XX	Hammer: 3000lb	North Side of Unit	3/28/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-043-XX	Hammer: 3000lb	South Side of Unit - Interior West Wall	3/28/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	1.0	1.0	µg/wipe			ND	1.0	µg/wipe		U	1.0	µg/wipe
CH-MF-CO-EQ-ST-044-XX	Davit	Southeast Side of Unit	3/28/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-045-XX	Hammer: 1000lb	North Side of Unit	3/28/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-046-XX	Hammer: 1500lb	East Side of Unit	3/28/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-047-XX	Press: 85 ton	South Side of Unit	3/28/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-048-XX	Hammer: 2000lb	West Side of Unit	3/28/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-049-XX	Hammer: 1500lb	East Side fo Unit	3/28/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-050-XX	Press: 113 ton	West Side of Unit	3/28/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-051-XX	Press: 700 ton	West Side of Unit	3/28/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-052-XX	Hammer: 1500lb	North Side of Unit	3/28/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-053-XX	Electrical Panel	South Side of Unit	3/28/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe

Table 4
PCB Isomers (USEPA Method 8082) Wipe Sample Data Summary
Former Charlestown Navy Yard - Building No. 105
Boston, Massachusetts

Sample ID					Arochlor 1016					Arochlor 1221					Arochlor 1232					Arochlor 1242					Arochlor 1248					Arochlor 1254					Arochlor 1260					Total PCBs	
Sample Number	Equipment Type	Location	Sample Date	QC	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier		
CH-MF-CO-EQ-ST-054-XX	Hammer: 12000lb	West Side of Unit	3/28/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-055-XX	Hammer: 2000lb	South Side of Unit	4/5/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-056-XX	Monitoring Equip	South Side of Unit	4/5/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-057-XX	Furnace	East Side of Unit	4/5/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-058-XX	Hammer: 2500lb	North Side of Unit	4/5/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
EB-003	Gauze Blank	-	4/5/01	EB	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
EB-004	Gauze Blank	-	4/5/01	EB	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-059-XX	Furnace	East Side of Unit	4/19/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-061-XX	Furnace	East Side of Unit	4/19/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-062-XX	Furnace	North Side of Unit	4/19/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-063-XX	Furnace	South Side of Unit	4/19/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-064-XX	Band Saw	East Side of Unit	4/19/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	1.3	1.0	µg/wipe			ND	1.0	µg/wipe		U	1.3	µg/wipe
CH-MF-CO-EQ-ST-067-XX	Crane Jib	East Side of Unit	4/19/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-067-XD	Crane Jib	East Side of Unit	4/19/01	DP	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-068-XX	Press: 200 ton	Bottom Press Plate	4/19/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-068-XD	Press: 200 ton	Bottom Press Plate	4/19/01	DP	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
EB-005	Gauze Blank	-	4/19/01	EB	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
EB-006	Gauze Blank	-	4/19/01	EB	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
EB-007	Gauze Blank	-	4/19/01	EB	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
EB-008	Gauze Blank	-	4/19/01	EB	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-060-XX	Electrical Panel	North Side of Unit	4/25/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-065-XX	Trimmer	North Side of Unit	4/25/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-066-XX	Column	West Side - Interior Flange	4/25/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-069-XX	Furnace	South Side Furnace Door	4/25/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-070-XX	Furnace	East Side of Unit	4/25/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-071-XX	Column	East Side of Unit	4/25/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-072-XX	Electrical Panel	West Side of Unit	5/4/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-072-XD	Electrical Panel	West Side of Unit	5/4/01	DP	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	1.3	1.0	µg/wipe			ND	1.0	µg/wipe		U	1.3	µg/wipe
CH-MF-CO-EQ-ST-073-XX	Furnace	Top of Unit - West Side	4/25/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-073-XD	Furnace	Top of Unit - West Side	4/25/01	DP	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-074-XX	Crane Jib	East Side of Unit (7' Aboveground)	5/4/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-075-XX	Crane Jib	Northwest Side of Unit	4/25/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
EB-010	Gauze Blank	-	4/25/01	EB	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
EB-011	Gauze Blank	-	4/25/01	EB	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
EB-012	Gauze Blank	-	4/25/01	EB	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
EB-013	Gauze Blank	-	4/25/01	EB	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-076-XX	Furnace	East Side of Unit	5/4/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-077-XX	Steam Cleaner	Top of Unit	5/4/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-078-XX	Furnace	South Side of Unit - West Door	5/4/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-079-XX	Electrical Panel	Electrical Panel on Wall	5/15/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-080-XX	Furnace	Southeast Side of Unit	5/15/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-081-XX	Press: 1,000 ton	Bottom Press Plate	5/15/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-082-XX	Press: 1,000 ton	Northwest Press Post	5/15/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	2.1	1.0	µg/wipe			ND	1.0	µg/wipe		U	2.1	µg/wipe
CH-MF-CO-EQ-ST-083-XX	Gear Drive Machine	South Side of Unit	5/15/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-084-XX	Furnace	Swing Arm	5/15/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-085-XX	Furnace	Top of Unit - Northeast Corner	5/15/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-086-XX	Furnace	North Side of Unit	5/15/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-087-XX	Electrical Panel	Eastern Side of Wall	5/15/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-088-XX	Furnace	Top of Unit - East Side	5/15/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-089-XX	Crane Jib	South Side of Unit	5/15/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	1.4	1.0	µg/wipe			ND	1.0	µg/wipe		U	1.4	µg/wipe
CH-MF-CO-EQ-ST-090-XX	Steel Pit	West Side of Unit	5/15/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	27	1.0	µg/wipe			ND	1.0	µg/wipe		U	27	µg/wipe
CH-MF-CO-EQ-ST-091-XX	Column	East Side of Unit	5/15/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-091-XD	Column	East Side of Unit	5/15/01	DP	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-092-XX	Testing Equipment	West Side of Unit	5/15/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-093-XX	Particle Inspector	East Side of Unit	5/21/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	4.0	1.0	µg/wipe			ND	1.0	µg/wipe		U	4.0	µg/wipe
CH-MF-CO-EQ-ST-094-XX	Bar Shearing Machine	North Side of Unit	5/21/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-094-XD	Bar Shearing Machine	North Side of Unit	5/21/01	DP	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-095-XX	Chain Testing Machine	Arm on South Side of Unit	5/21/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	1.1	1.0	µg/wipe			ND	1.0	µg/wipe		U	1.1	µg/wipe

Table 4
PCB Isomers (USEPA Method 8082) Wipe Sample Data Summary
Former Charlestown Navy Yard - Building No. 105
Boston, Massachusetts

Sample ID					Arochlor 1016					Arochlor 1221					Arochlor 1232					Arochlor 1242					Arochlor 1248					Arochlor 1254					Arochlor 1260					Total PCBs	
Sample Number	Equipment Type	Location	Sample Date	QC	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier		
CH-MF-CO-EQ-ST-095-XD	Chain Testing Machine	North Side of Unit	5/21/01	DP	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	1.7	1.0	µg/wipe			ND	1.0	µg/wipe		U	1.7	µg/wipe
CH-MF-CO-EQ-ST-096-XX	Steel Tank	South Side of Unit	5/21/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-097-XX	Pump	East Side of Unit	5/21/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-098-XX	Steel Cylinder	Northeast Side of Unit	5/21/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-099-XX	Small Generator	East Side of Unit	5/21/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-100-XX	Dies	-	5/24/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-101-XX	Overhead Rail	On beam; 2nd support from the western end	5/24/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-102-XX	Overhead Rail	Top of rail; in front of Eq # 230292	5/24/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-103-XX	Spindle Shafts	-	5/31/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	µg/wipe
CH-MF-CO-EQ-ST-090-02	Steel Pit	Southwest Side of Unit	5/31/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	16	1.0	µg/wipe			ND	1.0	µg/wipe		U	16	µg/wipe
CH-MF-CO-EQ-ST-093-02	Particle Inspector	South Side of Unit	6/5/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	2.0	1.0	µg/wipe			ND	1.0	µg/wipe		U	2.0	µg/wipe
CH-MF-CO-EQ-ST-090-03	Steel Pit	Northewest Side of Unit	6/21/01		ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	ND	1.0	µg/wipe		U	22	1.0	µg/wipe			ND	1.0	µg/wipe		U	22	µg/wipe

Notes:
CH - Charlestown Navy Yard
MF - Main Furge Ship
CO - Confirmation Sample
EQ - Equipment Surface
ST - Non-porous Steel
µg/wipe - microgram per 100 square centimeter
QC - Sample was collected for Quality Control purposes
DP - Duplicate Sample
QA - Quality Assurance
B - Equipment Blank

Lab Qualifiers:
ND - Not Detected

Data Qualifiers:
U - Undetected

Table 5
PCB WHO Congeners (USEPA Method 1668) Wipe Sample Data Summary
Former Charlestown Navy Yard - Building No. 105
Boston, Massachusetts

Sample ID					3,4,4',5-TCB (#81)					3,3',4,4'-TCB (#77)					2',3,4,4',5-PeCB (#123)					2,3',4,4',5-PeCB (#118)					2,3,4,4',5-PeCB (#114)					2,3,3',4,4'-PeCB (#105)					3,3',4,4',5-PeCB (#126)				
Sample Number	Equipment Type	Location	Sample Date	QC	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier
CH-MF-CO-EQ-ST-001-XX	Furnace	West Side of Unit	12/27/00		ND	40	pg/wipe			64	40	pg/wipe			68	40	pg/wipe			6,000	40	pg/wipe			120	40	pg/wipe			2,800	40	pg/wipe			ND	40	pg/wipe		
CH-MF-CO-EQ-ST-012-XX	Forging Machine	South Side of Unit	1/30/01		55	40	pg/wipe	JA	J	750	40	pg/wipe			610	40	pg/wipe	JA	J	45,000	40	pg/wipe	E	J	970	40	pg/wipe			19,000	40	pg/wipe			60	40	pg/wipe	JA	J
CH-MF-CO-EQ-ST-014-XX	Forging Machine	North Side of Unit	1/30/01		55	40	pg/wipe	JA	J	790	40	pg/wipe			560	40	pg/wipe	JA	J	55,000	40	pg/wipe	E	J	1,200	40	pg/wipe	E	J	25,000	40	pg/wipe	E	J	130	40	pg/wipe	JA	J
CH-MF-CO-EQ-ST-014-XD	Forging Machine	North Side of Unit	1/30/01	DP	120	40	pg/wipe	JA	J	1,200	40	pg/wipe			950	40	pg/wipe	JA	J	79,000	40	pg/wipe	E	J	1,900	40	pg/wipe	E	J	34,000	40	pg/wipe	E	J	ND	160	pg/wipe	G	
CH-MF-CO-EQ-ST-016-XX	Press: 85 ton	South Side of Unit	2/8/01		ND	40	pg/wipe			100	40	pg/wipe			120	40	pg/wipe			10,000	40	pg/wipe			210	40	pg/wipe			4,800	40	pg/wipe			ND	40	pg/wipe		
CH-MF-CO-EQ-ST-019-XX	Hammer: 10,000lb	South Side of Unit	2/8/01		100	40	pg/wipe	JA	J	2,200	40	pg/wipe			1,600	40	pg/wipe			130,000	40	pg/wipe	E	J	2,800	40	pg/wipe	E	J	60,000	40	pg/wipe	E	J	380	40	pg/wipe		
CH-MF-CO-EQ-ST-023-XX	Furnace	North Side of Unit	2/27/01		ND	40	pg/wipe			58	40	pg/wipe			65	40	pg/wipe			4,200	40	pg/wipe			110	40	pg/wipe			1,800	40	pg/wipe			ND	40	pg/wipe		
CH-MF-CO-EQ-ST-027-XX	Furnace	East Side of Unit	2/27/01		ND	40	pg/wipe			130	40	pg/wipe			150	40	pg/wipe			12,000	40	pg/wipe			260	40	pg/wipe			4,700	40	pg/wipe			ND	40	pg/wipe		
CH-MF-CO-EQ-ST-028-XX	Hammer: 12000lb	East Side of Unit	3/19/01		600	40	pg/wipe			790	40	pg/wipe			970	40	pg/wipe			26,000	40	pg/wipe	C	J	610	40	pg/wipe	C	J	12,000	40	pg/wipe	C	J	ND	40	pg/wipe		
CH-MF-CO-EQ-ST-031-XX	Forging Machine	North Side of Unit	3/19/01		1,300	40	pg/wipe			1,900	40	pg/wipe			2,400	40	pg/wipe			85,000	40	pg/wipe	EC	J	1,900	40	pg/wipe	C	J	38,000	40	pg/wipe	C	J	180	40	pg/wipe		
CH-MF-CO-EQ-ST-034-XX	Hammer: 1000lb	East Side of Unit	3/19/01		1300	40	pg/wipe			2,100	40	pg/wipe			1400	40	pg/wipe			52,000	40	pg/wipe	C	J	1,200	40	pg/wipe	C	J	21,000	40	pg/wipe	C	J	67	40	pg/wipe		
CH-MF-CO-EQ-ST-039-XX	Press: 115 ton	East Side of Unit	3/19/01		540	40	pg/wipe			750	40	pg/wipe			710	40	pg/wipe			31,000	40	pg/wipe	C	J	620	40	pg/wipe	C	J	13,000	40	pg/wipe	C	J	95	40	pg/wipe		
EB-002	Gauze Blank	-	3/19/01	EB	ND	40	pg/wipe			ND	40	pg/wipe			ND	40	pg/wipe			300	40	pg/wipe	C	J	ND	40	pg/wipe	C	J	150	40	pg/wipe	C	J	ND	40	pg/wipe		
CH-MF-CO-EQ-ST-046-XX	Hammer: 1500lb	East Side of Unit	3/28/01		260	40	pg/wipe			500	40	pg/wipe			330	40	pg/wipe			12,000	40	pg/wipe	C	J	260	40	pg/wipe	C	J	5,000	40	pg/wipe	C	J	ND	40	pg/wipe		
CH-MF-CO-EQ-ST-063-XX	Furnace	South Side of Unit	4/19/01		76	40	pg/wipe			92	40	pg/wipe			110	40	pg/wipe			4,200	40	pg/wipe	C	J	89	40	pg/wipe	C	J	1,800	40	pg/wipe	C	J	ND	40	pg/wipe		
CH-MF-CO-EQ-ST-064-XX	Band Saw	East Side of Unit	4/19/01		860	40	pg/wipe	JA	J	1,100	40	pg/wipe			1,400	40	pg/wipe			63,000	40	pg/wipe	EC	J	1,400	40	pg/wipe	C	J	30,000	40	pg/wipe	C	J	71	40	pg/wipe		
CH-MF-CO-EQ-ST-068-XX	Press: 200 ton	Bottom Press Plate	4/19/01		100	40	pg/wipe			190	40	pg/wipe		J	160	40	pg/wipe			6,500	40	pg/wipe	C	J	140	40	pg/wipe	C	J	3,000	40	pg/wipe	C	J	ND	40	pg/wipe		
CH-MF-CO-EQ-ST-068-XD	Press: 200 ton	Bottom Press Plate	4/19/01	DP	250	40	pg/wipe	JA	J	330	40	pg/wipe		J	240	40	pg/wipe			9,900	40	pg/wipe	C	J	230	40	pg/wipe	C	J	4,400	40	pg/wipe	C	J	ND	40	pg/wipe		
EB-005	Gauze Blank	-	4/19/01	EB	ND	40	pg/wipe			ND	40	pg/wipe			ND	40	pg/wipe			64	40	pg/wipe	C	J	ND	40	pg/wipe			ND	40	pg/wipe			ND	40	pg/wipe		
CH-MF-CO-EQ-ST-060-XX	Electrical Panel	North Side of Unit	4/25/01		280	40	pg/wipe			410	40	pg/wipe			460	40	pg/wipe			18,000	40	pg/wipe	C	J	370	40	pg/wipe			7,600	40	pg/wipe	C	J	ND	40	pg/wipe		
CH-MF-CO-EQ-ST-065-XX	Trimmer	North Side of Unit	4/25/01		400	40	pg/wipe			470	40	pg/wipe	JA	J	540	40	pg/wipe			15,000	40	pg/wipe	C	J	320	40	pg/wipe	C	J	6,000	40	pg/wipe	C	J	ND	40	pg/wipe		
CH-MF-CO-EQ-ST-066-XX	Column	West Side - Interior Flange	4/25/01		160	40	pg/wipe			270	40	pg/wipe			300	40	pg/wipe			10,000	40	pg/wipe	C	J	210	40	pg/wipe	C	J	5,000	40	pg/wipe	C	J	56	40	pg/wipe	JA	J
CH-MF-CO-EQ-ST-069-XX	Furnace	South Side Furnace Door	4/25/01		52	40	pg/wipe			64	40	pg/wipe			65	40	pg/wipe			2,100	40	pg/wipe	C	J	44	40	pg/wipe	C	J	950	40	pg/wipe	C	J	ND	40	pg/wipe		
CH-MF-CO-EQ-ST-075-XX	Crane Jib	Northwest Side of Unit	4/25/01		320	40	pg/wipe			440	40	pg/wipe			500	40	pg/wipe			17,000	40	pg/wipe	C	J	370	40	pg/wipe	C	J	10,000	40	pg/wipe	C	J	73	40	pg/wipe		
EB-010	Gauze Blank	-	4/25/01	EB	ND	40	pg/wipe			ND	40	pg/wipe			ND	40	pg/wipe			91	40	pg/wipe			ND	40	pg/wipe			ND	40	pg/wipe			ND	40	pg/wipe		
CH-MF-CO-EQ-ST-094-XX	Bar Shearing Machine	North Side of Unit	5/21/01		1,000	40	pg/wipe			1,900	40	pg/wipe			1,700	40	pg/wipe			78,000	40	pg/wipe	CE	J	1,700	40	pg/wipe	C	J	36,000	40	pg/wipe	C	J	280	40	pg/wipe		
CH-MF-CO-EQ-ST-094-XD	Bar Shearing Machine	North Side of Unit	5/21/01	DP	830	40	pg/wipe			1,300	40	pg/wipe			1,200	40	pg/wipe			55,000	40	pg/wipe	CE	J	1,200	40	pg/wipe	C	J	26,000	40	pg/wipe	C	J	200	40	pg/wipe		

Notes:
CH - Charlestown Navy Yard
MF - Main Furge Ship
CO - Confirmation Sample
EQ - Equipment Surface Location
ST - Non-porous Steel
TCB - Tetrachlorobenzene
PeCB - Pentachlorobenzene
HxCB - Hexachlorobenzene
HpCB - Heptachlorobenzene
pg/wipe - picogram per 100 square centimeters
QC - Sample collected for Quality Control purposes
DP - Duplicate Sample
QA - Quality Assurance
EB - Equipment Blank

Lab Qualifiers:
ND - Not Detected
C - Co-eluting isomer
JA - The analyte was positively identified, but the quantation is an estimate.
E - Estimated result. Result concentration exceeds the calibration range.
G - Elevated reporting limit. The reporting limit is elevated due to matrix interference.
D - Result was obtained from the analysis of a dilution.

Data Qualifiers:
J - Estimated
U - Undetected
UJ - Undetected but Estimated

Table 5
PCB WHO Congeners (USEPA Method 1668) Wipe Sample Data Summary
Former Charlestown Navy Yard - Building No. 105
Boston, Massachusetts

Sample ID					2,3',4,4',5,5'-HxCB (#167)					2,3,3',4,4',5-HxCB (#156)					2,3,3',4,4',5'-HxCB (#157)					3,3',4,4',5,5'-HxCB (#169)					2,3,3',4,4',5,5'-HpCB (#189)				
Sample Number	Equipment Type	Location	Sample Date	QC	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier
CH-MF-CO-EQ-ST-001-XX	Furnace	West Side of Unit	12/27/2000		200	40	pg/wipe			750	40	pg/wipe	C	J	750	40	pg/wipe	C	J	ND	40	pg/wipe			1,300	40	pg/wipe		
CH-MF-CO-EQ-ST-012-XX	Forging Machine	South Side of Unit	1/30/2001		1,200	40	pg/wipe			4,600	40	pg/wipe	C	J	4,600	40	pg/wipe	C	J	ND	40	pg/wipe			180	40	pg/wipe		
CH-MF-CO-EQ-ST-014-XX	Forging Machine	North Side of Unit	1/30/2001		2,000	40	pg/wipe			7,300	40	pg/wipe	C	J	7,300	40	pg/wipe	C	J	ND	40	pg/wipe			270	40	pg/wipe		
CH-MF-CO-EQ-ST-014-XD	Forging Machine	North Side of Unit	1/30/2001	DP	2,500	40	pg/wipe			8,200	40	pg/wipe	C	J	8,200	40	pg/wipe	C	J	ND	40	pg/wipe			240	40	pg/wipe		
CH-MF-CO-EQ-ST-016-XX	Press: 85 ton	South Side of Unit	2/8/2001		500	40	pg/wipe			1,900	40	pg/wipe	C	J	1,900	40	pg/wipe	C	J	ND	40	pg/wipe			82	40	pg/wipe		
CH-MF-CO-EQ-ST-019-XX	Hammer: 10,000lb	South Side of Unit	2/8/2001		5,100	40	pg/wipe			19,000	40	pg/wipe	C	J	19,000	40	pg/wipe	C	J	ND	40	pg/wipe			710	40	pg/wipe		
CH-MF-CO-EQ-ST-023-XX	Furnace	North Side of Unit	2/27/2001		140	40	pg/wipe			530	40	pg/wipe	C	J	530	40	pg/wipe	C	J	ND	40	pg/wipe			ND	40	pg/wipe		
CH-MF-CO-EQ-ST-027-XX	Furnace	East Side of Unit	2/27/2001		360	40	pg/wipe			1,200	40	pg/wipe	C	J	1,200	40	pg/wipe	C	J	ND	40	pg/wipe			56	40	pg/wipe		
CH-MF-CO-EQ-ST-028-XX	Hammer: 12000lb	East Side of Unit	3/19/2001		5,200	40	pg/wipe	C	J	2,900	40	pg/wipe			680	40	pg/wipe			ND	40	pg/wipe			150	40	pg/wipe		
CH-MF-CO-EQ-ST-031-XX	Forging Machine	North Side of Unit	3/19/2001		17,000	40	pg/wipe	C	J	9,600	40	pg/wipe			2,200	40	pg/wipe			ND	40	pg/wipe			440	40	pg/wipe		
CH-MF-CO-EQ-ST-034-XX	Hammer: 1000lb	East Side of Unit	3/19/2001		8,100	40	pg/wipe	C	J	4,300	40	pg/wipe			930	40	pg/wipe			ND	40	pg/wipe			210	40	pg/wipe		
CH-MF-CO-EQ-ST-039-XX	Press: 115 ton	East Side of Unit	3/19/2001		4,400	40	pg/wipe	C	J	2,300	40	pg/wipe			500	40	pg/wipe			ND	40	pg/wipe			73	40	pg/wipe		
EB-002	Gauze Blank	-	3/19/2001	EB	60	40	pg/wipe	C	J	ND	40	pg/wipe			ND	40	pg/wipe			ND	40	pg/wipe			ND	40	pg/wipe		
CH-MF-CO-EQ-ST-046-XX	Hammer: 1500lb	East Side of Unit	3/28/2001		1,700	40	pg/wipe	C	J	860	40	pg/wipe			190	40	pg/wipe			ND	40	pg/wipe			68	40	pg/wipe		
CH-MF-CO-EQ-ST-063-XX	Furnace	South Side of Unit	4/19/2001		140	40	pg/wipe			540	40	pg/wipe			130	40	pg/wipe			ND	40	pg/wipe			ND	40	pg/wipe		
CH-MF-CO-EQ-ST-064-XX	Band Saw	East Side of Unit	4/19/2001		2,900	40	pg/wipe			11,000	40	pg/wipe			2,600	40	pg/wipe			ND	40	pg/wipe			550	40	pg/wipe		
CH-MF-CO-EQ-ST-068-XX	Press: 200 ton	Bottom Press Plate	4/19/2001		230	40	pg/wipe			840	40	pg/wipe			190	40	pg/wipe			ND	40	pg/wipe			48	40	pg/wipe		
CH-MF-CO-EQ-ST-068-XD	Press: 200 ton	Bottom Press Plate	4/19/2001	DP	340	40	pg/wipe			1,200	40	pg/wipe			280	40	pg/wipe			ND	40	pg/wipe			74	40	pg/wipe		
EB-005	Gauze Blank	-	4/19/2001	EB	ND	40	pg/wipe			ND	40	pg/wipe			ND	40	pg/wipe			ND	40	pg/wipe			ND	40	pg/wipe		
CH-MF-CO-EQ-ST-060-XX	Electrical Panel	North Side of Unit	4/25/2001		580	40	pg/wipe			1,800	40	pg/wipe			440	40	pg/wipe			ND	40	pg/wipe			86	40	pg/wipe		
CH-MF-CO-EQ-ST-065-XX	Trimmer	North Side of Unit	4/25/2001		390	40	pg/wipe			1,100	40	pg/wipe			250	40	pg/wipe			ND	40	pg/wipe			65	40	pg/wipe		
CH-MF-CO-EQ-ST-066-XX	Column	West Side - Interior Flange	4/25/2001		420	40	pg/wipe			1,200	40	pg/wipe			280	40	pg/wipe			ND	40	pg/wipe			55	40	pg/wipe		
CH-MF-CO-EQ-ST-069-XX	Furnace	South Side Furnace Door	4/25/2001		85	40	pg/wipe			280	40	pg/wipe			64	40	pg/wipe			ND	40	pg/wipe			ND	40	pg/wipe		
CH-MF-CO-EQ-ST-075-XX	Crane Jib	Northwest Side of Unit	4/25/2001		950	40	pg/wipe			3,500	40	pg/wipe			870	40	pg/wipe			ND	40	pg/wipe			160	40	pg/wipe		
EB-010	Gauze Blank	-	4/25/2001	EB	ND	40	pg/wipe			ND	40	pg/wipe			ND	40	pg/wipe			ND	40	pg/wipe			ND	40	pg/wipe		
CH-MF-CO-EQ-ST-094-XX	Bar Shearing Machine	North Side of Unit	5/21/2001		2,800	40	pg/wipe			9,400	40	pg/wipe			2,100	40	pg/wipe			ND	40	pg/wipe			510	40	pg/wipe		
CH-MF-CO-EQ-ST-094-XD	Bar Shearing Machine	North Side of Unit	5/21/2001	DP	2,000	40	pg/wipe			6,600	40	pg/wipe			1,500	40	pg/wipe			ND	40	pg/wipe			350	40	pg/wipe		

Table 6
PCB Homologues (USEPA Method 1668) Wipe Sample Data Summary
Former Charlestown Navy Yard - Building No. 105
Boston, Massachusetts

Sample ID					Monochlorobiphenyl (total)					Dichlorobiphenyl (total)					Trichlorobiphenyl (total)					Tetrachlorobiphenyl (total)					Pentachlorobiphenyl (total)					Hexachlorobiphenyl (total)					Heptachlorobiphenyl (total)				
Sample Number	Equipment Type	Location	Sample Date	QC	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier
CH-MF-CO-EQ-ST-001-XX	Furnace	West Side of Unit	12/27/00		ND	40	pg/wipe			120	40	pg/wipe			1,300	40	pg/wipe			8,500	40	pg/wipe			36,000	40	pg/wipe			20,000	40	pg/wipe			4,600	40	pg/wipe		
CH-MF-CO-EQ-ST-012-XX	Forging Machine	South Side of Unit	1/30/01		190		pg/wipe			1,200		pg/wipe			13,000		pg/wipe			130,000		pg/wipe			360,000		pg/wipe			120,000		pg/wipe			28,000		pg/wipe		
CH-MF-CO-EQ-ST-014-XX	Forging Machine	North Side of Unit	1/30/01		91		pg/wipe			680		pg/wipe			5,500		pg/wipe			67,000		pg/wipe			300,000		pg/wipe			160,000		pg/wipe			50,000		pg/wipe		
CH-MF-CO-EQ-ST-014-XD	Forging Machine	North Side of Unit	1/30/01	DP	110		pg/wipe			880		pg/wipe			8,000		pg/wipe			110,000		pg/wipe			440,000		pg/wipe			220,000		pg/wipe			62,000		pg/wipe		
CH-MF-CO-EQ-ST-016-XX	Press: 85 ton	South Side of Unit	2/8/01		ND	40	pg/wipe			160	40	pg/wipe			1,800	40	pg/wipe			16,000	40	pg/wipe			52,000	40	pg/wipe			31,000	40	pg/wipe			8,400	40	pg/wipe		
CH-MF-CO-EQ-ST-019-XX	Hammer: 10,000lb	South Side of Unit	2/8/01		61	40	pg/wipe			1,400	40	pg/wipe			20,000	40	pg/wipe			210,000	40	pg/wipe			850,000	40	pg/wipe			370,000	40	pg/wipe			93,000	40	pg/wipe		
CH-MF-CO-EQ-ST-023-XX	Furnace	North Side of Unit	2/27/01		ND	40	pg/wipe			340	40	pg/wipe			1,900	40	pg/wipe			8,000	40	pg/wipe			25,000	40	pg/wipe			15,000	40	pg/wipe			3,300	40	pg/wipe		
CH-MF-CO-EQ-ST-027-XX	Furnace	East Side of Unit	2/27/01		ND	40	pg/wipe			210	40	pg/wipe			1,700	40	pg/wipe			17,000	40	pg/wipe			76,000	40	pg/wipe			37,000	40	pg/wipe			9,800	40	pg/wipe		
CH-MF-CO-EQ-ST-028-XX	Hammer: 12000lb	East Side of Unit	3/19/01		ND	40	pg/wipe			490	40	pg/wipe			6,000	40	pg/wipe			79,000	40	pg/wipe			240,000	40	pg/wipe			100,000	40	pg/wipe			24,000	40	pg/wipe		
CH-MF-CO-EQ-ST-031-XX	Forging Machine	North Side of Unit	3/19/01		ND	40	pg/wipe			490	40	pg/wipe			5,700	40	pg/wipe			90,000	40	pg/wipe			500,000	40	pg/wipe			320,000	40	pg/wipe			84,000	40	pg/wipe		
CH-MF-CO-EQ-ST-034-XX	Hammer: 1000lb	East Side of Unit	3/19/01		ND	40	pg/wipe			440	40	pg/wipe			7,500	40	pg/wipe			120,000	40	pg/wipe			450,000	40	pg/wipe			180,000	40	pg/wipe			46,000	40	pg/wipe		
CH-MF-CO-EQ-ST-039-XX	Press: 115 ton	East Side of Unit	3/19/01		ND	40	pg/wipe			440	40	pg/wipe			4,800	40	pg/wipe			63,000	40	pg/wipe			180,000	40	pg/wipe			88,000	40	pg/wipe			12,000	40	pg/wipe		
EB-002	Gauze Blank	-	3/19/01	EB	ND	40	pg/wipe			ND	40	pg/wipe			430	40	pg/wipe			760	40	pg/wipe			1,500	40	pg/wipe			910	40	pg/wipe			370	40	pg/wipe		
CH-MF-CO-EQ-ST-046-XX	Hammer: 1500lb	East Side of Unit	3/28/01		ND	40	pg/wipe			670	40	pg/wipe			5,200	40	pg/wipe			42,000	40	pg/wipe			110,000	40	pg/wipe			37,000	40	pg/wipe			10,000	40	pg/wipe		
CH-MF-CO-EQ-ST-063-XX	Furnace	South Side of Unit	4/19/01		42	40	pg/wipe			490	40	pg/wipe		U	1,200	40	pg/wipe		U	15,000	40	pg/wipe			39,000	40	pg/wipe			16,000	40	pg/wipe			2,800	40	pg/wipe		
CH-MF-CO-EQ-ST-064-XX	Band Saw	East Side of Unit	4/19/01		690	40	pg/wipe			3,800	40	pg/wipe			9,200	40	pg/wipe			170,000	40	pg/wipe			490,000	40	pg/wipe			260,000	40	pg/wipe			47,000	40	pg/wipe		
CH-MF-CO-EQ-ST-068-XX	Press: 200 ton	Bottom Press Plate	4/19/01		ND	40	pg/wipe			350	40	pg/wipe		U	2,100	40	pg/wipe		U	20,000	40	pg/wipe			53,000	40	pg/wipe			24,000	40	pg/wipe			6,700	40	pg/wipe		J
CH-MF-CO-EQ-ST-068-XD	Press: 200 ton	Bottom Press Plate	4/19/01	DP	ND	40	pg/wipe			460	40	pg/wipe		U	330	40	pg/wipe			30,000	40	pg/wipe			81,000	40	pg/wipe			36,000	40	pg/wipe			12,000	40	pg/wipe		J
EB-005	Gauze Blank	-	4/19/01	EB	ND	40	pg/wipe			51	40	pg/wipe			240	40	pg/wipe			600	40	pg/wipe			520	40	pg/wipe			150	40	pg/wipe			ND	40	pg/wipe		
CH-MF-CO-EQ-ST-060-XX	Electrical Panel	North Side of Unit	4/25/01		ND	40	pg/wipe			260	40	pg/wipe		U	1,300	40	pg/wipe		U	24,000	40	pg/wipe			110,000	40	pg/wipe			50,000	40	pg/wipe			17,000	40	pg/wipe		
CH-MF-CO-EQ-ST-065-XX	Trimmer	North Side of Unit	4/25/01		ND	40	pg/wipe			340	40	pg/wipe		U	3,300	40	pg/wipe		U	55,000	40	pg/wipe			170,000	40	pg/wipe			460,000	40	pg/wipe			13,000	40	pg/wipe		
CH-MF-CO-EQ-ST-066-XX	Column	West Side - Interior Flange	4/25/01		ND	40	pg/wipe			180	40	pg/wipe		U	1,800	40	pg/wipe		U	17,000	40	pg/wipe			66,000	40	pg/wipe			34,000	40	pg/wipe			13,000	40	pg/wipe		
CH-MF-CO-EQ-ST-069-XX	Furnace	South Side Furnace Door	4/25/01		ND	40	pg/wipe			240	40	pg/wipe		U	560	40	pg/wipe		U	6,900	40	pg/wipe			19,000	40	pg/wipe			7,300	40	pg/wipe			2,700	40	pg/wipe		
CH-MF-CO-EQ-ST-075-XX	Crane Jib	Northwest Side of Unit	4/25/01		ND	40	pg/wipe			290	40	pg/wipe		U	1,700	40	pg/wipe		U	31,000	40	pg/wipe			120,000	40	pg/wipe			72,000	40	pg/wipe			25,000	40	pg/wipe		
EB-010	Gauze Blank	-	4/25/01	EB	ND	40	pg/wipe			170	40	pg/wipe			450	40	pg/wipe			1,500	40	pg/wipe		U	790	40	pg/wipe			190	40	pg/wipe			ND	40	pg/wipe		
CH-MF-CO-EQ-ST-094-XX	Bar Shearing Machine	North Side of Unit	5/21/01		ND	40	pg/wipe			610	40	pg/wipe			5,000	40	pg/wipe			71,000	40	pg/wipe			430,000	40	pg/wipe			230,000	40	pg/wipe			94,000	40	pg/wipe		
CH-MF-CO-EQ-ST-094-XD	Bar Shearing Machine	North Side of Unit	5/21/01	DP	ND	40	pg/wipe			460	40	pg/wipe			4,000	40	pg/wipe			5,500	40	pg/wipe			310,000	40	pg/wipe			150,000	40	pg/wipe			63,000	40	pg/wipe		

Notes:
CH - Charlestown Navy Yard
MF - Main Furge Ship
CO - Confirmation Sample
EQ - Equipment Surface Location
ST - Non-porous Steel
pg/wipe - pitogram per 100 square centimeters
QC - Sample was collected for Quality Control purposes
DP - Duplicate Sample
QA - Quality Assurance
EB - Equipment Blank

Lab Qualifiers:
ND - Non-Detect
C - Co-eluting isomer
JA - The analyte was positively identified, but the quantation is an estimate.
E - Estimated result. Result concentration exceeds the calibration range.
G - Elevated reporting limit. The reporting limit is elevated due to matrix interference.
D - Result was obtained from the analysis of a dilution.

Data Qualifiers:
J - Estimated Value
U - Undetected
UJ - Undetected but Estimated

Table 6
PCB Homologues (USEPA Method 1668) Wipe Sample Data Summary
Former Charlestown Navy Yard - Building No. 105
Boston, Massachusetts

Sample ID					Octachlorobiphenyl (total)					Nonachlorobiphenyl (total)					Decachlorobiphenyl (total)					Total Polychlorobiphenyls		
Sample Number	Equipment Type	Location	Sample Date	QC	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Cleanup Goal	Units
CH-MF-CO-EQ-ST-001-XX	Furnace	West Side of Unit	12/27/2000		870	40	pg/wipe			90	40	pg/wipe			ND	40	pg/wipe		UJ	83,532	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-012-XX	Forging Machine	South Side of Unit	1/30/2001		5,100		pg/wipe			850		pg/wipe			450		pg/wipe			658,790	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-014-XX	Forging Machine	North Side of Unit	1/30/2001		11,000		pg/wipe			1,900		pg/wipe			2,000		pg/wipe			598,171	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-014-XD	Forging Machine	North Side of Unit	1/30/2001	DP	14,000		pg/wipe			2,400		pg/wipe			3,200		pg/wipe			860,590	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-016-XX	Press: 85 ton	South Side of Unit	2/8/2001		2,000	40	pg/wipe			500	40	pg/wipe			240	40	pg/wipe		U	122,100	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-019-XX	Hammer: 10,000lb	South Side of Unit	2/8/2001		19,000	40	pg/wipe			4,000	40	pg/wipe			4,300	40	pg/wipe			1,571,761	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-023-XX	Furnace	North Side of Unit	2/27/2001		570	40	pg/wipe			ND	75	pg/wipe			ND	90	pg/wipe		UJ	54,110	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-027-XX	Furnace	East Side of Unit	2/27/2001		2,200	40	pg/wipe			480	40	pg/wipe		J	ND	130	pg/wipe		UJ	144,390	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-028-XX	Hammer: 12000lb	East Side of Unit	3/19/2001		4,300	40	pg/wipe			1,200	40	pg/wipe			450	40	pg/wipe			455,440	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-031-XX	Forging Machine	North Side of Unit	3/19/2001		15,000	40	pg/wipe			4,000	40	pg/wipe			3,000	40	pg/wipe			1,022,190	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-034-XX	Hammer: 1000lb	East Side of Unit	3/19/2001		7,500	40	pg/wipe			1,800	40	pg/wipe			440	200	pg/wipe	D		813,680	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-039-XX	Press: 115 ton	East Side of Unit	3/19/2001		2,100	40	pg/wipe			590	40	pg/wipe			240	40	pg/wipe			351,170	2,270,000	pg/wipe
EB-002	Gauze Blank	-	3/19/2001	EB	ND	40	pg/wipe			ND	40	pg/wipe			ND	40	pg/wipe			3,970	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-046-XX	Hammer: 1500lb	East Side of Unit	3/28/2001		3,400	40	pg/wipe			2,300	40	pg/wipe			290	40	pg/wipe	JA	J	210,860	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-063-XX	Furnace	South Side of Unit	4/19/2001		240	40	pg/wipe			55	40	pg/wipe			ND	40	pg/wipe			74,827	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-064-XX	Band Saw	East Side of Unit	4/19/2001		4,200	40	pg/wipe			600	40	pg/wipe			48	40	pg/wipe			985,538	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-068-XX	Press: 200 ton	Bottom Press Plate	4/19/2001		1,900	40	pg/wipe			580	40	pg/wipe			120	40	pg/wipe			108,750	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-068-XD	Press: 200 ton	Bottom Press Plate	4/19/2001	DP	2,800	40	pg/wipe			870	40	pg/wipe			180	40	pg/wipe			163,640	2,270,000	pg/wipe
EB-005	Gauze Blank	-	4/19/2001	EB	ND	40	pg/wipe			ND	40	pg/wipe			ND	40	pg/wipe			1,561	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-060-XX	Electrical Panel	North Side of Unit	4/25/2001		4,400	40	pg/wipe			1,400	40	pg/wipe			960	40	pg/wipe			209,320	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-065-XX	Trimmer	North Side of Unit	4/25/2001		2,100	40	pg/wipe			780	40	pg/wipe			1,100	40	pg/wipe			705,620	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-066-XX	Column	West Side - Interior Flange	4/25/2001		1,800	40	pg/wipe			540	40	pg/wipe			280	40	pg/wipe			134,600	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-069-XX	Furnace	South Side Furnace Door	4/25/2001		650	40	pg/wipe			310	40	pg/wipe			89	40	pg/wipe			37,749	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-075-XX	Crane Jib	Northwest Side of Unit	4/25/2001		2,700	40	pg/wipe			950	40	pg/wipe			450	40	pg/wipe			254,090	2,270,000	pg/wipe
EB-010	Gauze Blank	-	4/25/2001	EB	ND	40	pg/wipe			ND	40	pg/wipe			ND	40	pg/wipe			3,100	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-094-XX	Bar Shearing Machine	North Side of Unit	5/21/2001		18,000	40	pg/wipe			2,900	40	pg/wipe			1,900	40	pg/wipe			853,410	2,270,000	pg/wipe
CH-MF-CO-EQ-ST-094-XD	Bar Shearing Machine	North Side of Unit	5/21/2001	DP	11,000	40	pg/wipe			2,200	40	pg/wipe			1,600	40	pg/wipe			547,760	2,270,000	pg/wipe

Table 7
PAH (USEPA Method 8270C) Wipe Sample Data Summary
Former Charlestown Navy Yard - Building No. 105
Boston, Massachusetts

Sample ID					Acenaphthene					Acenaphthylene					Anthracene					Benzo(a)anthracene						Benzo(b)fluoranthene					Benzo(k)fluoranthene				
Sample Number	Equipment Type	Location	Sample Date	QC	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Cleanup Goal	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier
CH-MF-CO-EQ-ST-001-XX	Furnace	West Side of Unit	########		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-012-XX	Forging Machine	South Side of Unit	1/30/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	0.21	10	6.23	µg/wipe	J	J	0.22	10	µg/wipe	J	J	0.24	10	µg/wipe	J	J
CH-MF-CO-EQ-ST-014-XX	Forging Machine	North Side of Unit	1/30/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-014-XD	Forging Machine	North Side of Unit	1/30/2001	DP	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-016-XX	Press: 85 ton	South Side of Unit	2/8/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-019-XX	Hammer: 10,000lb	South Side of Unit	2/8/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-023-XX	Furnace	North Side of Unit	2/28/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-027-XX	Furnace	East Side of Unit	2/27/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-028-XX	Hammer: 12000lb	East Side of Unit	3/19/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-031-XX	Forging Machine	North Side of Unit	3/19/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-034-XX	Hammer: 1000lb	East Side of Unit	3/19/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-039-XX	Press: 115 ton	East Side of Unit	3/19/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
EB-002	Gauze Blank	-	3/19/2001	EB	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-046-XX	Hammer: 1500lb	East Side of Unit	3/28/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-063-XX	Furnace	South Side of Unit	4/19/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-064-XX	Band Saw	East Side of Unit	4/19/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-068-XX	Press: 200 ton	Bottom Press Plate	4/19/01		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-068-XD	Press: 200 ton	Bottom Press Plate	4/19/01	DP	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
EB-005	Gauze Blank	-	4/19/01	EB	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-060-XX	Electrical Panel	North Side of Unit	4/25/01		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-065-XX	Trimmer	North Side of Unit	4/25/01		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-066-XX	Column	West Side - Interior Flange	4/25/01		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-069-XX	Furnace	South Side Furnace Door	4/25/01		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-075-XX	Crane Jib	Northwest Side of Unit	4/25/01		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
EB-010	Gauze Blank	-	4/25/01	EB	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-094-XX	Bar Shearing Machine	North Side of Unit	5/21/01		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-094-XD	Bar Shearing Machine	North Side of Unit	5/21/01	DP	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6.23	µg/wipe		U	ND	10	µg/wipe		U	ND	10	µg/wipe		U

Notes:
CH - Charlestown Navy Yard
MF - Main Furge Ship
CO - Confirmation Sample
EQ - Equipment Surface Location
ST - Non-porous Steel
µg/wipe - microgram per 100 square centimeter
QC - Sample was collected for Quality Control purposes
DP - Duplicate Sample
QA - Quality Assurance
EB - Equipment Blank

Lab Qualifiers:
ND - Not Detected
J - Concentration detected is below the calibration range

Data Qualifiers:
J - Estimated Result
U - Undetected

Table 7
PAH (USEPA Method 8270C) Wipe Sample Data Summary
Former Charlestown Navy Yard - Building No. 105
Boston, Massachusetts

Sample ID					Benzo(ghi)perylene					Benzo(a)pyrene					Chrysene						Dibenzo(a,h)anthracene					Fluoranthene						Fluorene				
Sample Number	Equipment Type	Location	Sample Date	QC	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Cleanup Goal	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Cleanup Goal	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier
CH-MF-CO-EQ-ST-001-XX	Furnace	West Side of Unit	########		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-012-XX	Forging Machine	South Side of Unit	1/30/2001		0.66	10	µg/wipe	J	J	0.20	10	µg/wipe	J	J	0.35	10	623	µg/wipe	J	J	ND	10	µg/wipe		U	0.81	10	6,560	µg/wipe	J	J	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-014-XX	Forging Machine	North Side of Unit	1/30/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	0.27	10	6,560	µg/wipe	J	J	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-014-XD	Forging Machine	North Side of Unit	1/30/2001	DP	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	0.48	10	6,560	µg/wipe	J	J	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-016-XX	Press: 85 ton	South Side of Unit	2/8/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-019-XX	Hammer: 10,000lb	South Side of Unit	2/8/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-023-XX	Furnace	North Side of Unit	2/28/2001		1.1	10	µg/wipe	J	J	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-027-XX	Furnace	East Side of Unit	2/27/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-028-XX	Hammer: 12000lb	East Side of Unit	3/19/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-031-XX	Forging Machine	North Side of Unit	3/19/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	0.65	10	6,560	µg/wipe	J	J	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-034-XX	Hammer: 1000lb	East Side of Unit	3/19/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-039-XX	Press: 115 ton	East Side of Unit	3/19/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
EB-002	Gauze Blank	-	3/19/2001	EB	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-046-XX	Hammer: 1500lb	East Side of Unit	3/28/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-063-XX	Furnace	South Side of Unit	4/19/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-064-XX	Band Saw	East Side of Unit	4/19/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-068-XX	Press: 200 ton	Bottom Press Plate	4/19/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-068-XD	Press: 200 ton	Bottom Press Plate	4/19/2001	DP	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
EB-005	Gauze Blank	-	4/19/2001	EB	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-060-XX	Electrical Panel	North Side of Unit	4/25/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-065-XX	Trimmer	North Side of Unit	4/25/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-066-XX	Column	West Side - Interior Flange	4/25/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-069-XX	Furnace	South Side Furnace Door	4/25/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-075-XX	Crane Jib	Northwest Side of Unit	4/25/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
EB-010	Gauze Blank	-	4/25/2001	EB	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-094-XX	Bar Shearing Machine	North Side of Unit	5/21/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-094-XD	Bar Shearing Machine	North Side of Unit	5/21/2001	DP	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	623	µg/wipe		U	ND	10	µg/wipe		U	ND	10	6,560	µg/wipe		U	ND	10	µg/wipe		U

Table 7
PAH (USEPA Method 8270C) Wipe Sample Data Summary
Former Charlestown Navy Yard - Building No. 105
Boston, Massachusetts

Sample ID					Indeno(1,2,3-cd)pyrene					Naphthalene					Phenanthrene						Pyrene				
Sample Number	Equipment Type	Location	Sample Date	QC	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Cleanup Goal	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier
CH-MF-CO-EQ-ST-001-XX	Furnace	West Side of Unit	########		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-012-XX	Forging Machine	South Side of Unit	1/30/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	1.1	10	4,920	µg/wipe	J	J	0.41	10	µg/wipe	J	J
CH-MF-CO-EQ-ST-014-XX	Forging Machine	North Side of Unit	1/30/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	0.72	10	4,920	µg/wipe	J	J	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-014-XD	Forging Machine	North Side of Unit	1/30/2001	DP	ND	10	µg/wipe		U	ND	10	µg/wipe		U	0.95	10	4,920	µg/wipe	J	J	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-016-XX	Press: 85 ton	South Side of Unit	2/8/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-019-XX	Hammer: 10,000lb	South Side of Unit	2/8/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-023-XX	Furnace	North Side of Unit	2/28/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-027-XX	Furnace	East Side of Unit	2/27/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-028-XX	Hammer: 12000lb	East Side of Unit	3/19/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-031-XX	Forging Machine	North Side of Unit	3/19/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	1.5	10	4,920	µg/wipe	J	J	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-034-XX	Hammer: 1000lb	East Side of Unit	3/19/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-039-XX	Press: 115 ton	East Side of Unit	3/19/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
EB-002	Gauze Blank	-	3/19/2001	EB	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-046-XX	Hammer: 1500lb	East Side of Unit	3/28/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	1.5	10	4,920	µg/wipe	J	J	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-063-XX	Furnace	South Side of Unit	4/19/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-064-XX	Band Saw	East Side of Unit	4/19/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-068-XX	Press: 200 ton	Bottom Press Plate	4/19/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-068-XD	Press: 200 ton	Bottom Press Plate	4/19/2001	DP	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
EB-005	Gauze Blank	-	4/19/2001	EB	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-060-XX	Electrical Panel	North Side of Unit	4/25/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-065-XX	Trimmer	North Side of Unit	4/25/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-066-XX	Column	West Side - Interior Flange	4/25/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-069-XX	Furnace	South Side Furnace Door	4/25/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-075-XX	Crane Jib	Northwest Side of Unit	4/25/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
EB-010	Gauze Blank	-	4/25/2001	EB	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-094-XX	Bar Shearing Machine	North Side of Unit	5/21/2001		ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U
CH-MF-CO-EQ-ST-094-XD	Bar Shearing Machine	North Side of Unit	5/21/2001	DP	ND	10	µg/wipe		U	ND	10	µg/wipe		U	ND	10	4,920	µg/wipe		U	ND	10	µg/wipe		U

Table 8
Select Total Metals (USEPA Method 6010B) Wipe Sample Data Summary
Former Charlestown Navy Yard - Building No. 105
Boston, Massachusetts

Sample ID					Antimony					Arsenic					Barium					Beryllium				
Sample Number	Equipment Type	Location	Sample Date	QC	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier
CH-MF-CO-EQ-ST-001-XX	Furnace	West Side of Unit	12/27/00		0.55	3.0	µg/wipe	B	U	0.27	0.50	µg/wipe	B	J	4.2	10.0	µg/wipe	B	J	0.086	0.25	µg/wipe	B	U
CH-MF-CO-EQ-ST-012-XX	Forging Machine	South Side of Unit	1/30/01		1.3	3.0	µg/wipe	B	J	0.60	0.50	µg/wipe		U	28.8	10.0	µg/wipe			0.031	0.25	µg/wipe	B	J
CH-MF-CO-EQ-ST-014-XX	Forging Machine	North Side of Unit	1/30/01		5.0	3.0	µg/wipe			1.1	0.50	µg/wipe		U	7.1	10.0	µg/wipe	B	J	0.028	0.25	µg/wipe	B	J
CH-MF-CO-EQ-ST-014-XD	Forging Machine	North Side of Unit	1/30/01	DP	0.29	3.0	µg/wipe	B	J	0.63	0.50	µg/wipe		U	1.9	10.0	µg/wipe	B	U	ND	0.25	µg/wipe		
EB-001	Gauze Blank	-	1/30/01	EB	ND	3.0	µg/wipe			0.23	0.50	µg/wipe	B	J	0.78	10.0	µg/wipe	B	J	ND	0.25	µg/wipe		
CH-MF-CO-EQ-ST-016-XX	Press: 85 ton	South Side of Unit	2/8/01		1.2	3.0	µg/wipe	B	J	0.95	0.50	µg/wipe			22.0	10.0	µg/wipe			ND	0.25	µg/wipe		
CH-MF-CO-EQ-ST-019-XX	Hammer: 10,000lb	South Side of Unit	2/8/01		22.5	3.0	µg/wipe			1.9	0.50	µg/wipe			1,630	50.0	µg/wipe			ND	0.25	µg/wipe		
CH-MF-CO-EQ-ST-023-XX	Furnace	North Side of Unit	2/28/01		0.81	3.0	µg/wipe	B	J	1.1	0.50	µg/wipe			3.3	10.0	µg/wipe	B	J	ND	0.25	µg/wipe		
CH-MF-CO-EQ-ST-027-XX	Furnace	East Side of Unit	2/27/01		0.39	3.0	µg/wipe	B	U	0.28	0.50	µg/wipe	B	J	2.4	10.0	µg/wipe	B	J	ND	0.25	µg/wipe		
CH-MF-CO-EQ-ST-028-XX	Hammer: 12000lb	East Side of Unit	3/19/01		2.5	3.0	µg/wipe	B	J	0.81	0.50	µg/wipe			1,020	50.0	µg/wipe			0.070	0.25	µg/wipe	B	U
CH-MF-CO-EQ-ST-031-XX	Forging Machine	North Side of Unit	3/19/01		1.3	3.0	µg/wipe	B	J	2.6	0.50	µg/wipe			16.6	10.0	µg/wipe			0.11	0.25	µg/wipe	B	U
CH-MF-CO-EQ-ST-034-XX	Hammer: 1000lb	East Side of Unit	3/19/01		0.34	3.0	µg/wipe	B	U	0.32	0.50	µg/wipe	B	U	471	10.0	µg/wipe			0.078	0.25	µg/wipe	B	U
CH-MF-CO-EQ-ST-039-XX	Press: 115 ton	East Side of Unit	3/19/01		0.12	3.0	µg/wipe	B	U	0.34	0.50	µg/wipe	B	U	2,430	50.0	µg/wipe			0.072	0.25	µg/wipe	B	U
EB-002	Gauze Blank	-	3/19/01	EB	0.17	3.0	µg/wipe	B	U	0.15	0.50	µg/wipe	B	J	0.86	10.0	µg/wipe	B	J	0.068	0.25	µg/wipe	B	U
CH-MF-CO-EQ-ST-046-XX	Hammer: 1500lb	East Side of Unit	3/28/01		2.6	3.0	µg/wipe	B	J	2.1	0.50	µg/wipe			447	10.0	µg/wipe			0.18	0.25	µg/wipe	B	U
CH-MF-CO-EQ-ST-063-XX	Furnace	South Side of Unit	4/19/01		0.49	3.0	µg/wipe	B	J	0.26	0.50	µg/wipe	B	U	1.6	10.0	µg/wipe	B	U	ND	0.25	µg/wipe		
CH-MF-CO-EQ-ST-064-XX	Band Saw	East Side of Unit	4/19/01		ND	3.0	µg/wipe			0.12	0.50	µg/wipe	B	U	0.95	10.0	µg/wipe	B	U	ND	0.25	µg/wipe		
CH-MF-CO-EQ-ST-068-XX	Press: 200 ton	Bottom Press Plate	4/19/01		4.3	3.0	µg/wipe			0.95	0.50	µg/wipe			108	10.0	µg/wipe		J	ND	0.25	µg/wipe		
CH-MF-CO-EQ-ST-068-XD	Press: 200 ton	Bottom Press Plate	4/19/01	DP	2.8	3.0	µg/wipe	B	J	0.66	0.50	µg/wipe			63.9	10.0	µg/wipe		J	ND	0.25	µg/wipe		
EB-005	Gauze Blank	-	4/19/01	EB	ND	3.0	µg/wipe			0.13	0.50	µg/wipe	B	J	0.55	10.0	µg/wipe	B	J	ND	0.25	µg/wipe		
CH-MF-CO-EQ-ST-060-XX	Electrical Panel	North Side of Unit	4/25/01		0.51	3.0	µg/wipe	B	J	0.35	0.50	µg/wipe	B	U	3.2	10.0	µg/wipe	B	U	0.042	0.25	µg/wipe	B	U
CH-MF-CO-EQ-ST-065-XX	Trimmer	North Side of Unit	4/25/01		0.30	3.0	µg/wipe	B	J	0.24	0.50	µg/wipe	B	U	599	20.0	µg/wipe			0.044	0.25	µg/wipe	B	U
CH-MF-CO-EQ-ST-066-XX	Column	West Side - Interior Flange	4/25/01		0.26	3.0	µg/wipe	B	J	0.49	0.50	µg/wipe	B	U	1.5	10.0	µg/wipe	B	U	0.050	0.25	µg/wipe	B	U
CH-MF-CO-EQ-ST-069-XX	Furnace	South Side Furnace Door	4/25/01		0.31	3.0	µg/wipe	B	J	0.45	0.50	µg/wipe	B	U	1.3	10.0	µg/wipe	B	U	0.054	0.25	µg/wipe	B	U
CH-MF-CO-EQ-ST-075-XX	Crane Jib	Northwest Side of Unit	4/25/01		0.25	3.0	µg/wipe	B	J	0.22	0.50	µg/wipe	B	U	1.1	10.0	µg/wipe	B	U	0.044	0.25	µg/wipe	B	U
EB-010	Gauze Blank	-	4/25/01	EB	ND	3.0	µg/wipe			0.15	0.50	µg/wipe	B	U	1.3	10.0	µg/wipe	B	J	0.043	0.25	µg/wipe	B	U
CH-MF-CO-EQ-ST-094-XX	Bar Shearing Machine	North Side of Unit	5/21/01		1.6	3.0	µg/wipe	B	J	0.83	0.50	µg/wipe			30.8	10.0	µg/wipe			0.031	0.25	µg/wipe	B	J
CH-MF-CO-EQ-ST-094-XD	Bar Shearing Machine	North Side of Unit	5/21/01	DP	1.9	3.0	µg/wipe	B	J	0.61	0.50	µg/wipe			20.6	10.0	µg/wipe			0.042	0.25	µg/wipe	B	J

Notes:
CH - Charlestown Navy Yard
MF - Main Furge Ship
CO - Confirmation Sample
EQ - Equipment Surface Location
ST - Non-porous Steel
µg/wipe - microgram per 100 square centimeter
QC - Sample was collected for Quality Control purposes
DP - Duplicate Sample
QA - Quality Assurance
EB - Equipment Blank

Lab Qualifiers:
ND - Not Detected
B - Estimated Result

Data Qualifiers:
J - Estimated
U - Undetected

Table 8
Select Total Metals (USEPA Method 6010B) Wipe Sample Data Summary
Former Charlestown Navy Yard - Building No. 105
Boston, Massachusetts

Sample ID					Cadmium					Lead					Nickel					Silver				
Sample Number	Equipment Type	Location	Sample Date	QC	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier	Result	Reporting Limit	Units	Lab Qualifier	DV Qualifier
CH-MF-CO-EQ-ST-001-XX	Furnace	West Side of Unit	12/27/2000		0.058	0.25	µg/wipe	B	U	21.7	0.15	µg/wipe			1.3	2.0	µg/wipe	B	J	ND	0.50	µg/wipe		
CH-MF-CO-EQ-ST-012-XX	Forging Machine	South Side of Unit	1/30/2001		0.29	0.25	µg/wipe			13.1	0.15	µg/wipe			9.4	2.0	µg/wipe			ND	0.50	µg/wipe		
CH-MF-CO-EQ-ST-014-XX	Forging Machine	North Side of Unit	1/30/2001		5.3	0.25	µg/wipe			31.5	0.15	µg/wipe			23.0	2.0	µg/wipe			0.10	0.50	µg/wipe	B	U
CH-MF-CO-EQ-ST-014-XD	Forging Machine	North Side of Unit	1/30/2001	DP	0.57	0.25	µg/wipe			3.7	0.15	µg/wipe			3.0	2.0	µg/wipe			0.060	0.50	µg/wipe	B	U
EB-001	Gauze Blank	-	1/30/2001	EB	ND	0.25	µg/wipe			0.24	0.15	µg/wipe		U	ND	2.0	µg/wipe			ND	0.50	µg/wipe		
CH-MF-CO-EQ-ST-016-XX	Press: 85 ton	South Side of Unit	2/8/2001		0.40	0.25	µg/wipe			56.4	0.15	µg/wipe			11.4	2.0	µg/wipe			0.054	0.50	µg/wipe	B	J
CH-MF-CO-EQ-ST-019-XX	Hammer: 10,000lb	South Side of Unit	2/8/2001		5.0	0.25	µg/wipe			792	0.75	µg/wipe			60.1	2.0	µg/wipe			0.088	0.50	µg/wipe	B	J
CH-MF-CO-EQ-ST-023-XX	Furnace	North Side of Unit	2/28/2001		0.35	0.25	µg/wipe			21.0	0.15	µg/wipe			7.8	2.0	µg/wipe			ND	0.50	µg/wipe		
CH-MF-CO-EQ-ST-027-XX	Furnace	East Side of Unit	2/27/2001		0.040	0.25	µg/wipe	B	J	34.7	0.15	µg/wipe			1.2	2.0	µg/wipe	B	J	ND	0.50	µg/wipe		
CH-MF-CO-EQ-ST-028-XX	Hammer: 12000lb	East Side of Unit	3/19/2001		1.0	0.25	µg/wipe			164	0.15	µg/wipe			16.8	2.0	µg/wipe			ND	0.50	µg/wipe		
CH-MF-CO-EQ-ST-031-XX	Forging Machine	North Side of Unit	3/19/2001		0.18	0.25	µg/wipe	B	J	402	0.30	µg/wipe			31.3	2.0	µg/wipe			0.076	0.50	µg/wipe	B	J
CH-MF-CO-EQ-ST-034-XX	Hammer: 1000lb	East Side of Unit	3/19/2001		0.18	0.25	µg/wipe	B	J	64.4	0.15	µg/wipe			5.1	2.0	µg/wipe			ND	0.50	µg/wipe		
CH-MF-CO-EQ-ST-039-XX	Press: 115 ton	East Side of Unit	3/19/2001		0.099	0.25	µg/wipe	B	J	44.0	0.15	µg/wipe			1.0	2.0	µg/wipe	B	J	0.048	0.50	µg/wipe	B	J
EB-002	Gauze Blank	-	3/19/2001	EB	ND	0.25	µg/wipe			0.22	0.15	µg/wipe			ND	2.0	µg/wipe			ND	0.50	µg/wipe		
CH-MF-CO-EQ-ST-046-XX	Hammer: 1500lb	East Side of Unit	3/28/2001		2.6	0.25	µg/wipe			762	0.75	µg/wipe			26.2	2.0	µg/wipe			ND	0.50	µg/wipe		
CH-MF-CO-EQ-ST-063-XX	Furnace	South Side of Unit	4/19/2001		0.041	0.25	µg/wipe	B	J	7.3	0.15	µg/wipe			1.1	2.0	µg/wipe	B	J	ND	0.50	µg/wipe		
CH-MF-CO-EQ-ST-064-XX	Band Saw	East Side of Unit	4/19/2001		0.061	0.25	µg/wipe	B	J	2.5	0.15	µg/wipe			0.31	2.0	µg/wipe	B	J	ND	0.50	µg/wipe		
CH-MF-CO-EQ-ST-068-XX	Press: 200 ton	Bottom Press Plate	4/19/2001		4.4	0.25	µg/wipe			73.4	0.15	µg/wipe			27.6	2.0	µg/wipe			0.098	0.50	µg/wipe	B	J
CH-MF-CO-EQ-ST-068-XD	Press: 200 ton	Bottom Press Plate	4/19/2001	DP	3.5	0.25	µg/wipe			53.6	0.15	µg/wipe			17.0	2.0	µg/wipe			0.074	0.50	µg/wipe	B	J
EB-005	Gauze Blank	-	4/19/2001	EB	ND	0.25	µg/wipe			ND	0.15	µg/wipe			ND	2.0	µg/wipe			ND	0.50	µg/wipe		
CH-MF-CO-EQ-ST-060-XX	Electrical Panel	North Side of Unit	4/25/2001		0.30	0.25	µg/wipe			41.5	0.15	µg/wipe			1.9	2.0	µg/wipe	B	J	0.045	0.50	µg/wipe	B	J
CH-MF-CO-EQ-ST-065-XX	Trimmer	North Side of Unit	4/25/2001		0.52	0.25	µg/wipe			105	0.15	µg/wipe			1.8	2.0	µg/wipe	B	J	0.040	0.50	µg/wipe	B	J
CH-MF-CO-EQ-ST-066-XX	Column	West Side - Interior Flange	4/25/2001		0.22	0.25	µg/wipe	B	J	1.6	0.15	µg/wipe			7.5	2.0	µg/wipe			ND	0.50	µg/wipe		
CH-MF-CO-EQ-ST-069-XX	Furnace	South Side Furnace Door	4/25/2001		12.6	0.25	µg/wipe			4.8	0.15	µg/wipe			96.9	2.0	µg/wipe			0.71	0.50	µg/wipe		
CH-MF-CO-EQ-ST-075-XX	Crane Jib	Northwest Side of Unit	4/25/2001		0.51	0.25	µg/wipe			3.5	0.15	µg/wipe			2.4	2.0	µg/wipe			0.078	0.50	µg/wipe	B	J
EB-010	Gauze Blank	-	4/25/2001	EB	ND	0.25	µg/wipe			0.19	0.15	µg/wipe		U	ND	2.0	µg/wipe			ND	0.50	µg/wipe		
CH-MF-CO-EQ-ST-094-XX	Bar Shearing Machine	North Side of Unit	5/21/2001		1.0	0.25	µg/wipe			35.0	0.15	µg/wipe			10	2.0	µg/wipe			0.054	0.50	µg/wipe	B	J
CH-MF-CO-EQ-ST-094-XD	Bar Shearing Machine	North Side of Unit	5/21/2001	DP	1.2	0.25	µg/wipe			26.8	0.15	µg/wipe			16.7	2.0	µg/wipe			0.066	0.50	µg/wipe	B	J

Table 9
PCDD and PCDF Isomers (USEPA Method 8290) Wipe Sample Data Summary
Former Charlestown Navy Yard - Building No. 105
Boston, Massachusetts

Sample ID					2378-TCDF					TOTAL TCDF					2378-TCDD					TOTAL TCDD					12378-PeCDF					23478-PeCDF				
Sample Number	Equipment Type	Location	Sample Date	QC	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier
CH-MF-CO-EQ-ST-001-XX	Furnace	West Side of Unit	12/27/00		ND	0.0046	ng/wipe			ND	0.0046	ng/wipe			ND	0.0094	ng/wipe			ND	0.0094	ng/wipe			ND	0.0060	ng/wipe			ND	0.0046	ng/wipe		
CH-MF-CO-EQ-ST-012-XX	Forging Machine	South Side of Unit	1/30/01		0.0460	0.00120	ng/wipe			0.5000	0.00120	ng/wipe			ND	0.00093	ng/wipe			0.0057	0.00093	ng/wipe	J		0.0110	0.00095	ng/wipe	J		0.0098	0.00097	ng/wipe	J	
CH-MF-CO-EQ-ST-014-XX	Forging Machine	North Side of Unit	1/30/01		0.0480	0.00210	ng/wipe			0.5500	0.00210	ng/wipe			ND	0.00085	ng/wipe			0.0150	0.00085	ng/wipe		J	0.0140	0.00082	ng/wipe	J		0.0160	0.00240	ng/wipe	J	
CH-MF-CO-EQ-ST-014-XD	Forging Machine	North Side of Unit	1/30/01	DP	0.0570	0.00140	ng/wipe			0.6900	0.00140	ng/wipe			ND	0.00094	ng/wipe			0.0270	0.00094	ng/wipe		J	0.0160	0.00110	ng/wipe	J		0.0180	0.00091	ng/wipe	J	
CH-MF-CO-EQ-ST-016-XX	Press: 85 ton	South Side of Unit	2/8/01		0.0028	0.00078	ng/wipe	J		0.0043	0.00078	ng/wipe	J		ND	0.00160	ng/wipe			ND	0.00160	ng/wipe			0.0021	0.00110	ng/wipe	J		0.0019*	0.00110	ng/wipe	I	J
CH-MF-CO-EQ-ST-019-XX	Hammer: 10,000lb	South Side of Unit	2/8/01		0.0480	0.00160	ng/wipe			0.4500	0.00160	ng/wipe			ND	0.00150	ng/wipe			0.0058	0.00150	ng/wipe	J		0.0150	0.00042	ng/wipe	J		0.0200	0.00044	ng/wipe	J	
CH-MF-CO-EQ-ST-023-XX	Furnace	North Side of Unit	2/28/01		ND	0.0065	ng/wipe			ND	0.0065	ng/wipe			ND	0.0120	ng/wipe			ND	0.0120	ng/wipe			ND	0.0041	ng/wipe			ND	0.0053	ng/wipe		
CH-MF-CO-EQ-ST-027-XX	Furnace	East Side of Unit	2/27/01		ND	0.0067	ng/wipe			ND	0.0067	ng/wipe			ND	0.0061	ng/wipe			ND	0.0061	ng/wipe			ND	0.0089	ng/wipe			ND	0.0032	ng/wipe		
CH-MF-CO-EQ-ST-028-XX	Hammer: 12000lb	East Side of Unit	3/19/01		0.039*	0.00110	ng/wipe	E	J	0.3300	0.00110	ng/wipe			ND	0.00099	ng/wipe			0.0062	0.00099	ng/wipe	J		0.0087	0.00300	ng/wipe	J		0.0084	0.00082	ng/wipe	J	J
CH-MF-CO-EQ-ST-031-XX	Forging Machine	North Side of Unit	3/19/01		0.0360*	0.00060	ng/wipe	E	J	0.3200	0.00060	ng/wipe			ND	0.00180	ng/wipe			0.0150	0.00180	ng/wipe			0.0099	0.00240	ng/wipe	J		0.0110	0.00140	ng/wipe	J	
CH-MF-CO-EQ-ST-034-XX	Hammer: 1000lb	East Side of Unit	3/19/01		0.0510	0.00280	ng/wipe			0.5300	0.00280	ng/wipe			ND	0.00140	ng/wipe			0.0100	0.00140	ng/wipe			0.0150	0.00180	ng/wipe	J		0.0160	0.00094	ng/wipe	J	
CH-MF-CO-EQ-ST-039-XX	Press: 115 ton	East Side of Unit	3/19/01		ND	0.00110	ng/wipe			0.0067	0.00110	ng/wipe	J		ND	0.00150	ng/wipe			ND	0.00150	ng/wipe			ND	0.00094	ng/wipe			ND	0.00059	ng/wipe		
EB-002	Gauze Blank	-	3/19/01	EB	0.150	0.0031	ng/wipe			1.600	0.0031	ng/wipe			ND	0.0058	ng/wipe			0.047	0.0058	ng/wipe			0.0730*	0.0076	ng/wipe	I		0.750	0.0033	ng/wipe		
CH-MF-CO-EQ-ST-046-XX	Hammer: 1500lb	East Side of Unit	3/28/01		0.0062	0.0014	ng/wipe	J		0.0310	0.0014	ng/wipe			ND	0.0031	ng/wipe			ND	0.0031	ng/wipe			ND	0.0020	ng/wipe			0.0024	0.0024	ng/wipe	J	
CH-MF-CO-EQ-ST-063-XX	Furnace	South Side of Unit	4/19/01		ND	0.0077	ng/wipe			ND	0.0077	ng/wipe			ND	0.0079	ng/wipe			ND	0.0079	ng/wipe			ND	0.0047	ng/wipe			ND	0.0054	ng/wipe		
CH-MF-CO-EQ-ST-064-XX	Band Saw	East Side of Unit	4/19/01		ND	0.0084	ng/wipe			ND	0.0084	ng/wipe			ND	0.0095	ng/wipe			ND	0.0095	ng/wipe			ND	0.0054	ng/wipe			ND	0.0048	ng/wipe		
CH-MF-CO-EQ-ST-068-XX	Press: 200 ton	Bottom Press Plate	4/19/01		ND	0.0024	ng/wipe			ND	0.0024	ng/wipe			ND	0.0046	ng/wipe			ND	0.0046	ng/wipe			ND	0.0025	ng/wipe			ND	0.0029	ng/wipe		
CH-MF-CO-EQ-ST-068-XD	Press: 200 ton	Bottom Press Plate	4/19/01	DP	0.0057	0.0024	ng/wipe	J		0.0110	0.0024	ng/wipe	J		ND	0.0033	ng/wipe			ND	0.0033	ng/wipe			ND	0.0034	ng/wipe			ND	0.0032	ng/wipe		
EB-005	Gauze Blank	-	4/19/01	EB	ND	0.0043	ng/wipe			ND	0.0043	ng/wipe			ND	0.0071	ng/wipe			ND	0.0071	ng/wipe			ND	0.0028	ng/wipe			ND	0.0027	ng/wipe		
EB-009[a]	Gauze Blank	-	4/19/01	EB	ND	0.0031	ng/wipe			ND	0.0031	ng/wipe			ND	0.0022	ng/wipe			ND	0.0022	ng/wipe			ND	0.0020	ng/wipe			ND	0.0018	ng/wipe		
CH-MF-CO-EQ-ST-060-XX	Electrical Panel	North Side of Unit	4/25/01		0.0200	0.00110	ng/wipe			0.1800	0.00110	ng/wipe			ND	0.00092	ng/wipe			0.0038	0.00092	ng/wipe	J		0.0093	0.00080	ng/wipe	J		0.0074	0.00042	ng/wipe	BJ	J
CH-MF-CO-EQ-ST-065-XX	Trimmer	North Side of Unit	4/25/01		0.0190	0.00110	ng/wipe			0.1900	0.00110	ng/wipe			0.0017	0.00150	ng/wipe	J		0.0061	0.00150	ng/wipe	J		0.0057	0.00056	ng/wipe	J		0.0077	0.00200	ng/wipe	BJ	J
CH-MF-CO-EQ-ST-066-XX	Column	West Side - Interior Flange	4/25/01		0.0150	0.00054	ng/wipe			0.0900	0.00054	ng/wipe			ND	0.00092	ng/wipe			ND	0.00092	ng/wipe			0.0054	0.00074	ng/wipe	J		0.0064	0.00048	ng/wipe		
CH-MF-CO-EQ-ST-069-XX	Furnace	South Side Furnace Door	4/25/01		0.0028	0.00069	ng/wipe	BJ	U	0.0140	0.00069	ng/wipe	B	U	ND	0.00081	ng/wipe			ND	0.00081	ng/wipe			0.0014	0.00051	ng/wipe	J	U	0.0018	0.00066	ng/wipe	BJ	U
CH-MF-CO-EQ-ST-075-XX	Crane Jib	Northwest Side of Unit	4/25/01		0.0290	0.00110	ng/wipe			0.2100	0.00110	ng/wipe			ND	0.00093	ng/wipe			0.0024	0.00093	ng/wipe	J		0.0120	0.00045	ng/wipe	J		0.0140	0.00030	ng/wipe	J	
EB-010	Gauze Blank	-	4/25/01	EB	ND	0.00092	ng/wipe			ND	0.00092	ng/wipe			ND	0.00120	ng/wipe			ND	0.00120	ng/wipe			ND	0.00045	ng/wipe			0.00089	0.00049	ng/wipe	BJ	U
CH-MF-CO-EQ-ST-094-XX	Bar Shearing Machine	North Side of Unit	5/21/01		0.0260	0.00420	ng/wipe			0.1400	0.00420	ng/wipe			ND	0.00710	ng/wipe			ND	0.00710	ng/wipe			0.0070	0.00070	ng/wipe	J		0.0230	0.00150	ng/wipe	J	
CH-MF-CO-EQ-ST-094-XD	Bar Shearing Machine	North Side of Unit	5/21/01	DP	0.0280	0.00300	ng/wipe			0.1600	0.00300	ng/wipe			ND	0.00520	ng/wipe			0.0083	0.00520	ng/wipe	J		0.0063	0.00190	ng/wipe	J		0.0027	0.00130	ng/wipe	J	

Notes:
CH - Charlestown Navy Yard
MF - Main Furge Ship
CQ - Confirmation Sample
EQ - Equipment Surface Location
ST - Non-Porous Steel
TCDF - Tetrachlorodibenzofurans
TCDD - Tetrachlorodibenzo-p-dioxins
PeCDF - Pentachlorodibenzofurans
PeCDD - Pentachlorodibenzo-p-dioxins
HxCDF - Hexachlorodibenzofurans
HxCDD - Hexachlorodibenzo-p-dioxins
HpCDF - Heptachlorodibenzofurans
HpCDD - Heptachlorodibenzo-p-dioxins
OCDF - Octachlorodibenzofurans
OCDD - Octachlorodibenzo-p-dioxins
LOD - Limit of Detection
LRL - Lower Reporting Limit
ng/wipe - nanograms per 100 square centimeters
QC - Sample was collected for Quality Control purposes
DP - Duplicate Sample
QA - Quality Assurance
EB - Equipment Blank
* - Estimated Maximum Possible Concentration
[a] Sample ID EB-009 represents the retest of Sample ID EB-002 for PCDD/PCDF analysis.

Lab Qualifiers:
ND - Not Detected
I - Interference
J - Concentration detected is below the calibration range
B - Less than 10 times higher than method blank level
E - PCDE Interference

Data Qualifiers:
J - Estimated
U - Undetected
UJ - Undetected but Estimated

Table 9
PCDD and PCDF Isomers (USEPA Method 8290) Wipe Sample Data Summary
Former Charlestown Navy Yard - Building No. 105
Boston, Massachusetts

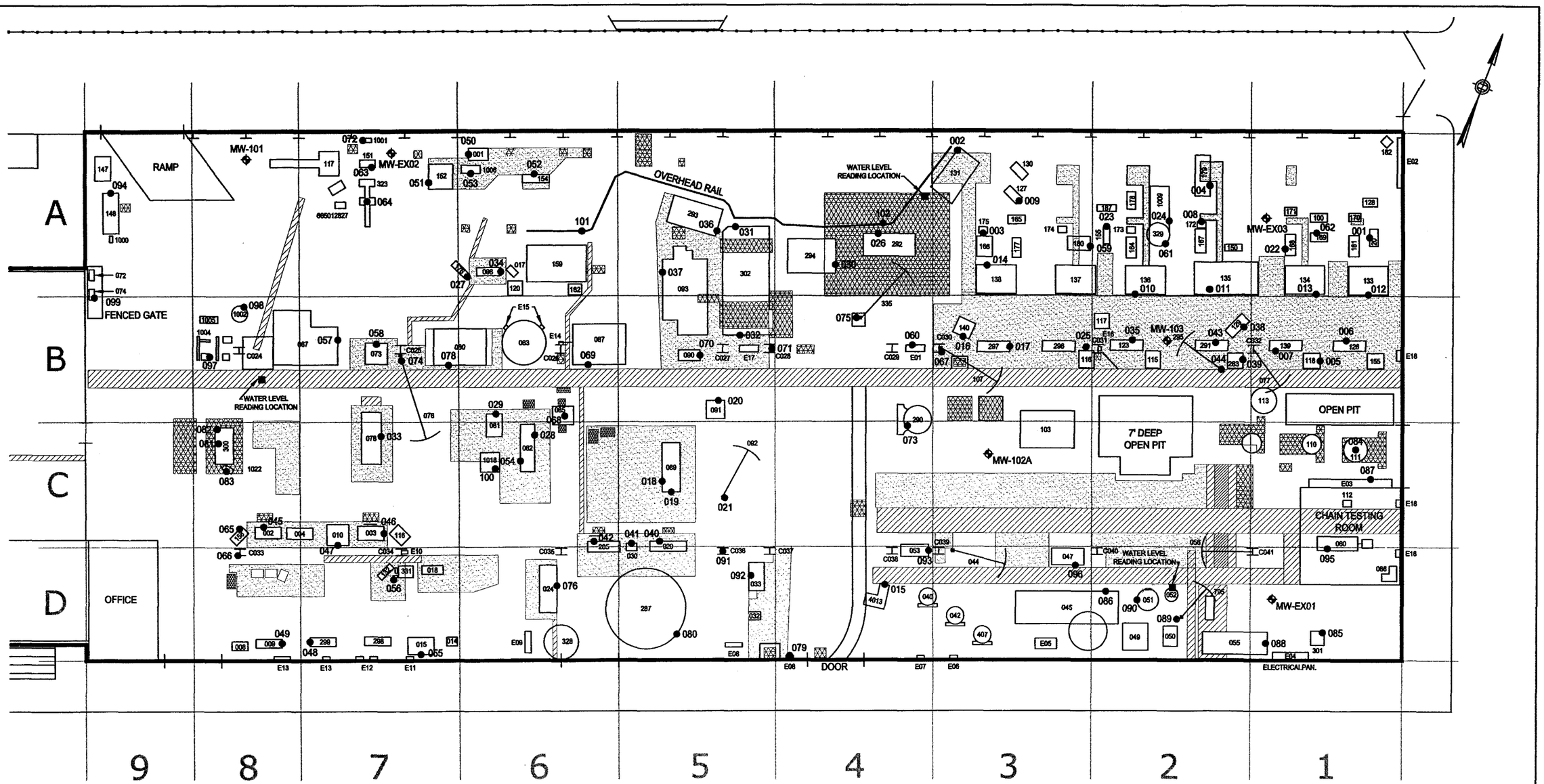
Sample ID					TOTAL PeCDF					12378-PeCDD					TOTAL PeCDD					123478-HxCDF					123678-HxCDF					234678-HxCDF					123789-HxCDF				
Sample Number	Equipment Type	Location	Sample Date	QC	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier
CH-MF-CO-EQ-ST-001-XX	Furnace	West Side of Unit	12/27/2000		ND	0.0053	ng/wipe			ND	0.0071	ng/wipe			ND	0.0071	ng/wipe			0.0090	0.0031	ng/wipe	BJ	U	0.0083	0.0031	ng/wipe	BJ	U	ND	0.0041	ng/wipe			ND	0.0042	ng/wipe		
CH-MF-CO-EQ-ST-012-XX	Forging Machine	South Side of Unit	1/30/2001		0.1400	0.00096	ng/wipe			ND	0.00120	ng/wipe			ND	0.00120	ng/wipe			0.0052	0.00038	ng/wipe	J		0.0039	0.00051	ng/wipe	J		0.0030	0.00050	ng/wipe	J		ND	0.00089	ng/wipe		
CH-MF-CO-EQ-ST-014-XX	Forging Machine	North Side of Unit	1/30/2001		0.2000	0.00160	ng/wipe			ND	0.00080	ng/wipe			ND	0.00080	ng/wipe			0.0076	0.00100	ng/wipe	J		0.0050	0.00097	ng/wipe	J		0.0045	0.00130	ng/wipe	J		0.0024	0.00110	ng/wipe	J	
CH-MF-CO-EQ-ST-014-XD	Forging Machine	North Side of Unit	1/30/2001	DP	0.2500	0.00100	ng/wipe			ND	0.00120	ng/wipe			0.0100	0.00120	ng/wipe	J		0.0088	0.00082	ng/wipe	J		0.0075	0.00085	ng/wipe	J		0.0071	0.00093	ng/wipe	J		0.0027	0.00027	ng/wipe	J	
CH-MF-CO-EQ-ST-016-XX	Press: 85 ton	South Side of Unit	2/8/2001		0.0032	0.00110	ng/wipe	J		0.0012*		ng/wipe	I	J	ND	0.00100	ng/wipe			0.0024	0.00082	ng/wipe	J		0.0033	0.00100	ng/wipe	J		0.0017	0.00100	ng/wipe	J		0.0012*	0.00091	ng/wipe	I	J
CH-MF-CO-EQ-ST-019-XX	Hammer: 10,000lb	South Side of Unit	2/8/2001		0.1800	0.00043	ng/wipe			ND	0.00160	ng/wipe			ND	0.00160	ng/wipe			0.0076	0.00100	ng/wipe	J		0.0047	0.00150	ng/wipe	J		0.0068	0.00120	ng/wipe	J		ND	0.00110	ng/wipe		
CH-MF-CO-EQ-ST-023-XX	Furnace	North Side of Unit	2/28/2001		ND	0.0047	ng/wipe			ND	0.0110	ng/wipe			ND	0.0110	ng/wipe			ND	0.0089	ng/wipe			ND	0.0130	ng/wipe			ND	0.0082	ng/wipe			ND	0.0076	ng/wipe		
CH-MF-CO-EQ-ST-027-XX	Furnace	East Side of Unit	2/27/2001		0.0075	0.0061	ng/wipe	J		ND	0.0039	ng/wipe			ND	0.0039	ng/wipe			ND	0.0033	ng/wipe			ND	0.0040	ng/wipe			ND	0.0044	ng/wipe			ND	0.0041	ng/wipe		
CH-MF-CO-EQ-ST-028-XX	Hammer: 12000lb	East Side of Unit	3/19/2001		0.1100	0.00190	ng/wipe			ND	0.00190	ng/wipe		UJ	ND	0.00190	ng/wipe			0.015*	0.00068	ng/wipe	E	J	0.0033	0.00039	ng/wipe	J		0.0021	0.00080	ng/wipe	J		ND	0.00061	ng/wipe		
CH-MF-CO-EQ-ST-031-XX	Forging Machine	North Side of Unit	3/19/2001		0.1400	0.00190	ng/wipe			ND	0.00340	ng/wipe			ND	0.00340	ng/wipe			0.0150*	0.00200	ng/wipe	E	J	0.0061	0.00059	ng/wipe	J		0.0035	0.00086	ng/wipe	J		0.0020	0.00042	ng/wipe	J	
CH-MF-CO-EQ-ST-034-XX	Hammer: 1000lb	East Side of Unit	3/19/2001		0.1800	0.00140	ng/wipe			ND	0.00260	ng/wipe			ND	0.00260	ng/wipe			0.012*	0.00074	ng/wipe	E	J	0.0054	0.00053	ng/wipe	J		0.0035	0.00084	ng/wipe	J		0.0016	0.00081	ng/wipe	J	
CH-MF-CO-EQ-ST-039-XX	Press: 115 ton	East Side of Unit	3/19/2001		ND	0.00076	ng/wipe			ND	0.00240	ng/wipe			ND	0.00240	ng/wipe			0.0013*	0.00073	ng/wipe	E	J	ND	0.00100	ng/wipe			0.0011*	0.00093	ng/wipe	I	J	0.0013	0.00079	ng/wipe	J	
EB-002	Gauze Blank	-	3/19/2001	EB	2.900	0.0055	ng/wipe			ND	0.0078	ng/wipe			ND	0.0078	ng/wipe			1.2000*	0.0024	ng/wipe	E		0.540	0.0031	ng/wipe			0.390	0.0020	ng/wipe			0.340	0.0099	ng/wipe		
CH-MF-CO-EQ-ST-046-XX	Hammer: 1500lb	East Side of Unit	3/28/2001		0.0170	0.0022	ng/wipe	J		ND	0.0032	ng/wipe			ND	0.0032	ng/wipe			0.0039*	0.0023	ng/wipe	E	J	0.0028	0.0021	ng/wipe	E	J	ND	0.0049	ng/wipe			ND	0.0014	ng/wipe		
CH-MF-CO-EQ-ST-063-XX	Furnace	South Side of Unit	4/19/2001		ND	0.0051	ng/wipe			ND	0.0067	ng/wipe			ND	0.0067	ng/wipe			ND	0.0050	ng/wipe			ND	0.0027	ng/wipe			ND	0.0042	ng/wipe			ND	0.0035	ng/wipe		
CH-MF-CO-EQ-ST-064-XX	Band Saw	East Side of Unit	4/19/2001		ND	0.0051	ng/wipe			ND	0.0053	ng/wipe			ND	0.0053	ng/wipe			ND	0.0033	ng/wipe			ND	0.0028	ng/wipe			ND	0.0045	ng/wipe			ND	0.0044	ng/wipe		
CH-MF-CO-EQ-ST-068-XX	Press: 200 ton	Bottom Press Plate	4/19/2001		ND	0.0027	ng/wipe			ND	0.0026	ng/wipe			ND	0.0026	ng/wipe			0.0036	0.0022	ng/wipe	J		0.0023	0.0013	ng/wipe	J		ND	0.0017	ng/wipe			ND	0.0028	ng/wipe		
CH-MF-CO-EQ-ST-068-XD	Press: 200 ton	Bottom Press Plate	4/19/2001	DP	ND	0.0033	ng/wipe			ND	0.0043	ng/wipe			ND	0.0043	ng/wipe			0.0030	0.0025	ng/wipe	J		ND	0.0018	ng/wipe			ND	0.0023	ng/wipe			ND	0.0014	ng/wipe		
EB-005	Gauze Blank	-	4/19/2001	EB	ND	0.0028	ng/wipe			ND	0.0037	ng/wipe			ND	0.0037	ng/wipe			ND	0.0017	ng/wipe			ND	0.0014	ng/wipe			ND	0.0020	ng/wipe			ND	0.0017	ng/wipe		
EB-009[a]	Gauze Blank	-	4/19/2001	EB	ND	0.0019	ng/wipe			ND	0.0034	ng/wipe			ND	0.0034	ng/wipe			ND	0.0024	ng/wipe			ND	0.0022	ng/wipe			ND	0.0020	ng/wipe			ND	0.0019	ng/wipe		
CH-MF-CO-EQ-ST-060-XX	Electrical Panel	North Side of Unit	4/25/2001		0.0820	0.00061	ng/wipe			ND	0.00130	ng/wipe		UJ	ND	0.00130	ng/wipe			0.0053	0.00083	ng/wipe	J		0.0015	0.00057	ng/wipe	BJ	U	0.0018	0.00100	ng/wipe	BJ	U	0.0018	0.00090	ng/wipe	J	
CH-MF-CO-EQ-ST-065-XX	Trimmer	North Side of Unit	4/25/2001		0.0840	0.00130	ng/wipe			ND	0.00110	ng/wipe		UJ	ND	0.00110	ng/wipe			0.0023	0.00100	ng/wipe	J		0.0066*	0.00100	ng/wipe	E	J	0.0013*	0.00120	ng/wipe	I	UJ	ND	0.00150	ng/wipe		
CH-MF-CO-EQ-ST-066-XX	Column	West Side - Interior Flange	4/25/2001		0.0500	0.00061	ng/wipe	J		ND	0.00099	ng/wipe		UJ	ND	0.00099	ng/wipe			0.00270*	0.00048	ng/wipe	I	J	0.00330*	0.00039	ng/wipe	E	UJ	0.00100*	0.00044	ng/wipe	I	UJ	ND	0.00072	ng/wipe		
CH-MF-CO-EQ-ST-069-XX	Furnace	South Side Furnace Door	4/25/2001		0.0057	0.00059	ng/wipe	BJ	U	ND	0.00096	ng/wipe		UJ	ND	0.00096	ng/wipe			0.0012*	0.00055	ng/wipe	E	J	0.0020*	0.00053	ng/wipe	E	UJ	ND	0.00050	ng/wipe			ND	0.00067	ng/wipe		
CH-MF-CO-EQ-ST-075-XX	Crane Jib	Northwest Side of Unit	4/25/2001		0.1400	0.00037	ng/wipe			0.00140*	0.00051	ng/wipe	I	J	0.0059	0.00051	ng/wipe	J		0.0079	0.00034	ng/wipe	J		0.00220*	0.00046	ng/wipe	I	UJ	0.0027	0.00074	ng/wipe	BJ	UJ	0.0018	0.00063	ng/wipe	J	
EB-010	Gauze Blank	-	4/25/2001	EB	0.00089	0.00047	ng/wipe	BJ	U	ND	0.00084	ng/wipe		UJ	ND	0.00084	ng/wipe			ND	0.00049	ng/wipe			ND	0.00056	ng/wipe			ND	0.00062	ng/wipe			ND	0.00063	ng/wipe		
CH-MF-CO-EQ-ST-094-XX	Bar Shearing Machine	North Side of Unit	5/21/2001		0.1600	0.00110	ng/wipe			ND	0.00110	ng/wipe			ND	0.00110	ng/wipe			0.0058	0.00130	ng/wipe	J		0.0079*	0.00320	ng/wipe	I	J	0.0071*	0.00240	ng/wipe	I	J	ND	0.00110	ng/wipe		
CH-MF-CO-EQ-ST-094-XD	Bar Shearing Machine	North Side of Unit	5/21/2001	DP	0.1600	0.00180	ng/wipe			ND	0.00150	ng/wipe			ND	0.00150	ng/wipe			0.0068	0.00110	ng/wipe	J		0.0093*	0.00150	ng/wipe	E	J	0.0093	0.00091	ng/wipe	J		0.0023*	0.00042	ng/wipe	I	J

Table 9
PCDD and PCDF Isomers (USEPA Method 8290) Wipe Sample Data Summary
Former Charlestown Navy Yard - Building No. 105
Boston, Massachusetts

Sample ID					TOTAL HxCDF					123478-HxCDD					123678-HxCDD					123789-HxCDD					TOTAL HxCDD					1234678-HpCDF				
Sample Number	Equipment Type	Location	Sample Date	QC	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier
CH-MF-CO-EQ-ST-001-XX	Furnace	West Side of Unit	12/27/2000		0.0500	0.0036	ng/wipe	BJ	U	ND	0.0062	ng/wipe			ND	0.0042	ng/wipe			ND	0.0058	ng/wipe			ND	0.0054	ng/wipe			0.0610	0.0039	ng/wipe	B	U
CH-MF-CO-EQ-ST-012-XX	Forging Machine	South Side of Unit	1/30/2001		0.0400	0.00057	ng/wipe	J		ND	0.00064	ng/wipe			ND	0.00041	ng/wipe			ND	0.00085	ng/wipe			0.0100	0.00064	ng/wipe			0.0083	0.00050	ng/wipe	BJ	U
CH-MF-CO-EQ-ST-014-XX	Forging Machine	North Side of Unit	1/30/2001		0.0720	0.00110	ng/wipe			ND	0.00097	ng/wipe			0.0025	0.00085	ng/wipe	J		0.0013*	0.00110	ng/wipe	I	J	0.0058	0.00097	ng/wipe	J	J	0.0200	0.00099	ng/wipe	BJ	U
CH-MF-CO-EQ-ST-014-XD	Forging Machine	North Side of Unit	1/30/2001	DP	0.0810	0.00072	ng/wipe			ND	0.00068	ng/wipe			0.0031	0.00071	ng/wipe	J		ND	0.00042	ng/wipe			0.0120	0.00060	ng/wipe	J	J	0.0350	0.00150	ng/wipe	BJ	U
CH-MF-CO-EQ-ST-016-XX	Press: 85 ton	South Side of Unit	2/8/2001		0.0260	0.00094	ng/wipe	J		0.0014*	0.00096	ng/wipe	I	J	0.0023	0.00091	ng/wipe	I	J	0.0021	0.00079	ng/wipe	I	J	ND	0.00089	ng/wipe			0.0360	0.00083	ng/wipe	J	
CH-MF-CO-EQ-ST-019-XX	Hammer: 10,000lb	South Side of Unit	2/8/2001		0.0840	0.00120	ng/wipe			ND	0.00160	ng/wipe			0.0032	0.00150	ng/wipe	J		0.0019	0.00160	ng/wipe	J		0.0150	0.00150	ng/wipe	J		0.0220	0.00130	ng/wipe	J	
CH-MF-CO-EQ-ST-023-XX	Furnace	North Side of Unit	2/28/2001		ND	0.0096	ng/wipe			ND	0.0130	ng/wipe			ND	0.0150	ng/wipe			ND	0.0160	ng/wipe			ND	0.0150	ng/wipe			ND	0.0130	ng/wipe		
CH-MF-CO-EQ-ST-027-XX	Furnace	East Side of Unit	2/27/2001		ND	0.0039	ng/wipe			ND	0.0087	ng/wipe			ND	0.0090	ng/wipe			ND	0.0053	ng/wipe			ND	0.0077	ng/wipe			0.011^	0.0035	ng/wipe	I	J
CH-MF-CO-EQ-ST-028-XX	Hammer: 12000lb	East Side of Unit	3/19/2001		0.0300	0.00057	ng/wipe	BJ	U	ND	0.00078	ng/wipe			0.0021	0.00086	ng/wipe	BJ	U	ND	0.00070	ng/wipe			0.0021	0.00078	ng/wipe	BJ	U	0.0060	0.00250	ng/wipe	BJ	U
CH-MF-CO-EQ-ST-031-XX	Forging Machine	North Side of Unit	3/19/2001		0.0430	0.00096	ng/wipe	J		ND	0.00130	ng/wipe			ND	0.00140	ng/wipe			0.0015*	0.00095	ng/wipe	I	J	0.0110	0.00120	ng/wipe	J	U	0.0120	0.00210	ng/wipe	BJ	U
CH-MF-CO-EQ-ST-034-XX	Hammer: 1000lb	East Side of Unit	3/19/2001		0.0730	0.00073	ng/wipe			ND	0.00190	ng/wipe			ND	0.00240	ng/wipe			ND	0.00093	ng/wipe			0.0093	0.00170	ng/wipe	J	U	0.0180	0.00410	ng/wipe	BJ	U
CH-MF-CO-EQ-ST-039-XX	Press: 115 ton	East Side of Unit	3/19/2001		0.0026	0.00087	ng/wipe	BJ	U	ND	0.00095	ng/wipe			ND	0.00087	ng/wipe			ND	0.00065	ng/wipe			ND	0.00079	ng/wipe			0.0034	0.00170	ng/wipe	BJ	U
EB-002	Gauze Blank	-	3/19/2001	EB	1.600	0.0043	ng/wipe			0.029	0.0037	ng/wipe	J		0.021	0.0048	ng/wipe	J		0.0082*	0.0031	ng/wipe	I		0.400	0.0039	ng/wipe			0.730	0.0110	ng/wipe		
CH-MF-CO-EQ-ST-046-XX	Hammer: 1500lb	East Side of Unit	3/28/2001		ND	0.0026	ng/wipe			ND	0.0022	ng/wipe			ND	0.0032	ng/wipe			ND	0.0023	ng/wipe			ND	0.0026	ng/wipe			0.0320	0.0092	ng/wipe	J	
CH-MF-CO-EQ-ST-063-XX	Furnace	South Side of Unit	4/19/2001		ND	0.0039	ng/wipe			ND	0.0030	ng/wipe			ND	0.0049	ng/wipe			ND	0.0050	ng/wipe			ND	0.0043	ng/wipe			ND	0.0035	ng/wipe		
CH-MF-CO-EQ-ST-064-XX	Band Saw	East Side of Unit	4/19/2001		ND	0.0037	ng/wipe			ND	0.0094	ng/wipe			ND	0.0060	ng/wipe			ND	0.0060	ng/wipe			ND	0.0072	ng/wipe			ND	0.0050	ng/wipe		
CH-MF-CO-EQ-ST-068-XX	Press: 200 ton	Bottom Press Plate	4/19/2001		0.0160	0.0020	ng/wipe	J		ND	0.0029	ng/wipe			ND	0.0027	ng/wipe			ND	0.0017	ng/wipe			ND	0.0025	ng/wipe			0.0036*	0.0027	ng/wipe	I	
CH-MF-CO-EQ-ST-068-XD	Press: 200 ton	Bottom Press Plate	4/19/2001	DP	0.0068	0.0020	ng/wipe	J		ND	0.0031	ng/wipe			ND	0.0022	ng/wipe			ND	0.0021	ng/wipe			ND	0.0025	ng/wipe			0.0043	0.0015	ng/wipe	J	
EB-005	Gauze Blank	-	4/19/2001	EB	0.0032	0.0017	ng/wipe	J		ND	0.0037	ng/wipe			ND	0.0028	ng/wipe			ND	0.0020	ng/wipe			ND	0.0028	ng/wipe			ND	0.0019	ng/wipe		
EB-009*	Gauze Blank	-	4/19/2001	EB	ND	0.0021	ng/wipe			ND	0.0029	ng/wipe			ND	0.0033	ng/wipe			ND	0.0024	ng/wipe			0.0081	0.0029	ng/wipe	J		ND	0.0027	ng/wipe		
CH-MF-CO-EQ-ST-060-XX	Electrical Panel	North Side of Unit	4/25/2001		0.0340	0.00083	ng/wipe	J		0.00080*	0.00038	ng/wipe	I	J	0.0019	0.00058	ng/wipe	J		ND	0.00047	ng/wipe			0.0019	0.00048	ng/wipe	J		0.01900*	0.00110	ng/wipe	E	J
CH-MF-CO-EQ-ST-065-XX	Trimmer	North Side of Unit	4/25/2001		0.0290	0.00120	ng/wipe	J		ND	0.00100	ng/wipe			0.0012*	0.00100	ng/wipe	I	J	ND	0.00083	ng/wipe			0.0025	0.00097	ng/wipe	J		0.0210*	0.00110	ng/wipe	E	J
CH-MF-CO-EQ-ST-066-XX	Column	West Side - Interior Flange	4/25/2001		0.0057	0.00050	ng/wipe	J	U	ND	0.00058	ng/wipe			ND	0.00096	ng/wipe			ND	0.00100	ng/wipe			0.0018	0.00085	ng/wipe	J		0.00810*	0.00084	ng/wipe	E	UJ
CH-MF-CO-EQ-ST-069-XX	Furnace	South Side Furnace Door	4/25/2001		0.0045	0.00066	ng/wipe	J	U	ND	0.00060	ng/wipe			ND	0.00072	ng/wipe			ND	0.00075	ng/wipe			ND	0.00069	ng/wipe			0.0047*	0.00045	ng/wipe	E	UJ
CH-MF-CO-EQ-ST-075-XX	Crane Jib	Northwest Side of Unit	4/25/2001		0.0460	0.00054	ng/wipe	J		0.00076*	0.00036	ng/wipe	I	J	0.00120*	0.00038	ng/wipe	I	J	ND	0.00056	ng/wipe			0.0075	0.00043	ng/wipe	J		0.01500*	0.00042	ng/wipe	E	UJ
EB-010	Gauze Blank	-	4/25/2001	EB	ND	0.00057	ng/wipe			ND	0.00066	ng/wipe			ND	0.00049	ng/wipe			ND	0.00077	ng/wipe			ND	0.00064	ng/wipe			0.0030*	0.00046	ng/wipe	E	UJ
CH-MF-CO-EQ-ST-094-XX	Bar Shearing Machine	North Side of Unit	5/21/2001		0.0920	0.00200	ng/wipe			ND	0.00220	ng/wipe			0.0029	0.00200	ng/wipe	J		ND	0.00470	ng/wipe			0.0029	0.00300	ng/wipe	J	J	0.0470*	0.00100	ng/wipe	E	J
CH-MF-CO-EQ-ST-094-XD	Bar Shearing Machine	North Side of Unit	5/21/2001	DP	0.1100	0.00099	ng/wipe			0.0026	0.00067	ng/wipe	J		0.0035*	0.00070	ng/wipe	I	J	0.0020*	0.00100	ng/wipe	I	J	0.0068	0.00080	ng/wipe	J	J	0.0470*	0.00110	ng/wipe	E	J

Table 9
PCDD and PCDF Isomers (USEPA Method 8290) Wipe Sample Data Summary
Former Charlestown Navy Yard - Building No. 105
Boston, Massachusetts

Sample ID					1234789-HpCDF					TOTAL HpCDF					1234678-HpCDD					TOTAL HpCDD					OCDF					OCDD					TOTAL 2378-TCDD EQUIVALENCE	
Sample Number	Equipment Type	Location	Sample Date	QC	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	LOD / LRL	Units	Lab Qualifier	DV Qualifier	Result	Units
CH-MF-CO-EQ-ST-001-XX	Furnace	West Side of Unit	12/27/2000		ND	0.0040	ng/wipe			0.0610	0.0039	ng/wipe	B	U	0.0096	0.0059	ng/wipe	BJ	U	0.0098	0.0059	ng/wipe	BJ	U	0.0880	0.0053	ng/wipe	BJ	U	0.0640	0.0180	ng/wipe	BJ	U	0.0026	ng/wipe
CH-MF-CO-EQ-ST-012-XX	Forging Machine	South Side of Unit	1/30/2001		ND	0.00093	ng/wipe			0.0180	0.00072	ng/wipe	BJ	U	0.0075	0.00150	ng/wipe	J		0.0130	0.00150	ng/wipe	J		ND	0.00370	ng/wipe			0.0340	0.00470	ng/wipe	J	J	0.011	ng/wipe
CH-MF-CO-EQ-ST-014-XX	Forging Machine	North Side of Unit	1/30/2001		ND	0.00220	ng/wipe			0.0410	0.00160	ng/wipe	BJ	U	0.0160	0.00130	ng/wipe	J		0.0300	0.00130	ng/wipe	J		0.0280	0.00440	ng/wipe	J		0.0920	0.00440	ng/wipe	J	J	0.016	ng/wipe
CH-MF-CO-EQ-ST-014-XD	Forging Machine	North Side of Unit	1/30/2001	DP	ND	0.00170	ng/wipe			0.0740	0.00160	ng/wipe	BJ	U	0.0230	0.00140	ng/wipe	J		0.0440	0.00140	ng/wipe	J		0.0460	0.00470	ng/wipe	J		0.1100	0.00770	ng/wipe		J	0.019	ng/wipe
CH-MF-CO-EQ-ST-016-XX	Press: 65 ton	South Side of Unit	2/6/2001		0.0023	0.00091	ng/wipe	J		0.0720	0.00087	ng/wipe	BJ	U	0.0180	0.00120	ng/wipe	BJ	U	0.0250	0.00120	ng/wipe	BJ	U	0.0420	0.00150	ng/wipe	BJ	U	0.1200	0.00160	ng/wipe	B	U	0.0019	ng/wipe
CH-MF-CO-EQ-ST-019-XX	Hammer: 10,000lb	South Side of Unit	2/8/2001		0.0028	0.00180	ng/wipe	J		0.0460	0.00160	ng/wipe	BJ	U	0.0280	0.00180	ng/wipe	BJ	U	0.0430	0.00180	ng/wipe	BJ	U	0.0350	0.00280	ng/wipe	BJ	U	0.1800	0.00320	ng/wipe	B	U	0.019	ng/wipe
CH-MF-CO-EQ-ST-023-XX	Furnace	North Side of Unit	2/28/2001		ND	0.0250	ng/wipe			ND	0.0190	ng/wipe			ND	0.0290	ng/wipe			ND	0.0290	ng/wipe			ND	0.0420	ng/wipe			0.11	0.0450	ng/wipe	B	UJ	0.00011	ng/wipe
CH-MF-CO-EQ-ST-027-XX	Furnace	East Side of Unit	2/27/2001		ND	0.0083	ng/wipe			ND	0.0059	ng/wipe			0.013*	0.0050	ng/wipe	I	J	ND	0.0050	ng/wipe			0.0360	0.0063	ng/wipe	J		0.1200	0.0140	ng/wipe	B	U	0.00016	ng/wipe
CH-MF-CO-EQ-ST-028-XX	Hammer: 12000lb	East Side of Unit	3/19/2001		ND	0.00280	ng/wipe			0.0060	0.00270	ng/wipe	BJ	U	0.0140	0.00110	ng/wipe	BJ	U	0.0250	0.00110	ng/wipe	BJ	U	ND	0.00660	ng/wipe			0.0870	0.00340	ng/wipe	BJ	UJ	0.0057	ng/wipe
CH-MF-CO-EQ-ST-031-XX	Forging Machine	North Side of Unit	3/19/2001		ND	0.00330	ng/wipe			0.0120	0.00270	ng/wipe	BJ	U	0.0120	0.00200	ng/wipe	BJ	U	0.0230	0.00200	ng/wipe	BJ	U	0.0100*	0.00400	ng/wipe	I	J	0.0510	0.00240	ng/wipe	BJ	U	0.0075	ng/wipe
CH-MF-CO-EQ-ST-034-XX	Hammer: 1000lb	East Side of Unit	3/19/2001		ND	0.00620	ng/wipe			0.0550	0.00520	ng/wipe	BJ	U	0.0130	0.00270	ng/wipe	BJ	U	0.0260	0.00270	ng/wipe	BJ	U	0.0350	0.00700	ng/wipe	J		0.1300	0.00620	ng/wipe	B	U	0.015	ng/wipe
CH-MF-CO-EQ-ST-039-XX	Press: 115 ton	East Side of Unit	3/19/2001		ND	0.00220	ng/wipe			0.0100	0.00190	ng/wipe	BJ	U	0.0130	0.00110	ng/wipe	BJ	U	0.0230	0.00110	ng/wipe	BJ	U	0.0150	0.00740	ng/wipe	J		0.1200	0.00340	ng/wipe	B	U	0.00043	ng/wipe
EB-002	Gauze Blank	-	3/19/2001	EB	0.410	0.0097	ng/wipe			1.900	0.0100	ng/wipe			0.280	0.0084	ng/wipe	B		0.890	0.0084	ng/wipe			0.930	0.0120	ng/wipe			1.500	0.0130	ng/wipe	B		0.54	ng/wipe
CH-MF-CO-EQ-ST-046-XX	Hammer: 1500lb	East Side of Unit	3/28/2001		ND	0.0071	ng/wipe			0.0320	0.0062	ng/wipe	J	U	0.0190	0.0035	ng/wipe	J		0.0300	0.0035	ng/wipe			0.2200	0.0110	ng/wipe			0.1700	0.0079	ng/wipe	B	U	0.0027	ng/wipe
CH-MF-CO-EQ-ST-063-XX	Furnace	South Side of Unit	4/19/2001		ND	0.0055	ng/wipe			ND	0.0046	ng/wipe			0.0057	0.0029	ng/wipe	J		0.0057	0.0029	ng/wipe	J		ND	0.0130	ng/wipe			0.0350	0.0087	ng/wipe	BJ		0.000091	ng/wipe
CH-MF-CO-EQ-ST-064-XX	Band Saw	East Side of Unit	4/19/2001		ND	0.0035	ng/wipe			ND	0.0042	ng/wipe			ND	0.0057	ng/wipe			ND	0.0057	ng/wipe			ND	0.0120	ng/wipe			0.019	0.0069	ng/wipe	BJ		0.000019	ng/wipe
CH-MF-CO-EQ-ST-065-XX	Press: 200 ton	Bottom Press Plate	4/19/2001		ND	0.0033	ng/wipe			ND	0.0030	ng/wipe			0.0087	0.0030	ng/wipe	J		0.0087	0.0030	ng/wipe	J		0.0084	0.0079	ng/wipe	J		0.0450	0.0130	ng/wipe	BJ		0.00074	ng/wipe
CH-MF-CO-EQ-ST-065-XD	Press: 200 ton	Bottom Press Plate	4/19/2001	DP	ND	0.0025	ng/wipe			0.0043	0.0020	ng/wipe	J		0.0099	0.0027	ng/wipe	J		0.0160	0.0027	ng/wipe	J		0.0100	0.0060	ng/wipe	J		0.0540	0.0086	ng/wipe	BJ		0.0011	ng/wipe
EB-005	Gauze Blank	-	4/19/2001	EB	ND	0.0026	ng/wipe			ND	0.0023	ng/wipe			0.0047	0.0032	ng/wipe	J		0.0047	0.0032	ng/wipe	J		0.0160	0.0038	ng/wipe	J		0.0350	0.0044	ng/wipe	BJ		0.000098	ng/wipe
EB-009[a]	Gauze Blank	-	4/19/2001	EB	ND	0.0031	ng/wipe			ND	0.0029	ng/wipe			ND	0.0030	ng/wipe			ND	0.0030	ng/wipe			ND	0.0038	ng/wipe			0.0095	0.0058	ng/wipe	BJ		0.0000095	ng/wipe
CH-MF-CO-EQ-ST-060-XX	Electrical Panel	North Side of Unit	4/25/2001		ND	0.00120	ng/wipe			0.0087	0.00110	ng/wipe	J	U	0.0093	0.00079	ng/wipe	BJ	U	0.0170	0.00079	ng/wipe	BJ	U	0.0120	0.00190	ng/wipe	BJ	U	0.0450	0.00190	ng/wipe	BJ	U	0.0076	ng/wipe
CH-MF-CO-EQ-ST-065-XX	Trimmer	North Side of Unit	4/25/2001		ND	0.00150	ng/wipe			0.0170	0.00130	ng/wipe	J	U	0.0120	0.00150	ng/wipe	BJ	U	0.0220	0.00150	ng/wipe	BJ	U	0.0660	0.00380	ng/wipe	BJ	U	0.0750	0.00780	ng/wipe	BJ	UJ	0.0082	ng/wipe
CH-MF-CO-EQ-ST-066-XX	Column	West Side - Interior Flange	4/25/2001		ND	0.00120	ng/wipe			0.0025	0.00100	ng/wipe	J	U	0.0061	0.00073	ng/wipe	BJ	U	0.0140	0.00073	ng/wipe	BJ	U	0.0041	0.00140	ng/wipe	BJ	U	0.0380	0.00340	ng/wipe	BJ	U	0.0051	ng/wipe
CH-MF-CO-EQ-ST-069-XX	Furnace	South Side Furnace Door	4/25/2001		ND	0.00065	ng/wipe			ND	0.00056	ng/wipe			0.0038	0.00071	ng/wipe	BJ	U	0.0068	0.00071	ng/wipe	BJ	U	0.0045	0.00100	ng/wipe	BJ	U	0.0190	0.00190	ng/wipe	BJ	U	0.0013	ng/wipe
CH-MF-CO-EQ-ST-075-XX	Crane Jib	Northwest Side of Unit	4/25/2001		ND	0.00083	ng/wipe			0.0044	0.00063	ng/wipe	J	U	0.0066	0.00056	ng/wipe	BJ	U	0.0150	0.00056	ng/wipe	BJ	U	0.0064	0.00130	ng/wipe	BJ	U	0.0320	0.00260	ng/wipe	BJ	U	0.012	ng/wipe
EB-010	Gauze Blank	-	4/25/2001	EB	ND	0.00054	ng/wipe			ND	0.00050	ng/wipe			0.00210	0.00057	ng/wipe	BJ	U	0.00450	0.00057	ng/wipe	BJ	U	0.00280	0.00120	ng/wipe	BJ	U	0.01300	0.00190	ng/wipe	BJ	U	0.00048	ng/wipe
CH-MF-CO-EQ-ST-094-XX	Bar Shearing Machine	North Side of Unit	5/21/2001		0.0028	0.00093	ng/wipe	J	J	0.0260	0.00097	ng/wipe	J		0.0210	0.00180	ng/wipe	J		0.0380	0.00160	ng/wipe	J		0.0200	0.00180	ng/wipe	J		0.0080	0.00250	ng/wipe	J		0.016	ng/wipe
CH-MF-CO-EQ-ST-094-XD	Bar Shearing Machine	North Side of Unit	5/21/2001	DP	0.0032	0.00130	ng/wipe	J	J	0.0270	0.00120	ng/wipe	J		0.0200	0.00280	ng/wipe	J		0.0384	0.00200	ng/wipe	J		0.0270	0.00330	ng/wipe	J		0.1200	0.00330	ng/wipe			0.019	ng/wipe



LEGEND:

- TRENCH
- STEEL PLATE COVERED TRENCH
- SOIL FLOOR
- CONCRETE FLOOR
- 049 CONFIRMATION WIPE SAMPLE LOCATION
- MW-102A MONITORING WELL LOCATION
- CRANE / DAVIT
- C028 COLUMN
- E06 ELECTRICAL PANEL

NOTES:

3-DIGIT EQUIPMENT NUMBERS ARE FROM LAST 3 DIGITS OF MACHINE'S NAVY IDENTIFICATION NUMBER.

3-DIGIT SAMPLE NUMBERS ARE FROM LAST 3 DIGITS OF THE STONE & WEBSTER DESIGNATED CONFIRMATION WIPE SAMPLE LOCATIONS.

0 25 50 FEET

1" = 25'-0"

CHARLESTOWN BUILDING #105

FIGURE 3

CONFIRMATION WIPE SAMPLE LOCATIONS NON-POROUS SURFACES REMEDIAL ACTION

BUILDING 105 SITE REMEDIATION-CHARLESTOWN NAVY YARD

STONE & WEBSTER INC.
STOUGHTON, MASSACHUSETTS

U.S ARMY CORPS OF ENGINEERS

D:_charlestown_esk_b_01_wipe--samp.dwg

APPENDIX E

Supplemental Site Investigation Laboratory Data Reports

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

September 3, 2014

Joe Spencer
Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960

Project Location: Charlestown, MA
Client Job Number:
Project Number: BLDG 105
Laboratory Work Order Number: 14H1122

Enclosed are results of analyses for samples received by the laboratory on August 25, 2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960
ATTN: Joe Spencer

REPORT DATE: 9/3/2014

PURCHASE ORDER NUMBER:

PROJECT NUMBER: BLDG 105

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 14H1122

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Charlestown, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
SB-14 (0-0.5)	14H1122-01	Soil		SM 2540G	
				SW-846 8082A	
SB-14 (0.5-2)	14H1122-02	Soil		SM 2540G	
				SW-846 8082A	
SB-16 (0-0.5)	14H1122-05	Soil		SM 2540G	
				SW-846 8082A	
SB-16 (0.5-2)	14H1122-06	Soil		SM 2540G	
				SW-846 8082A	
SB-17 (0-0.5)	14H1122-09	Soil		SM 2540G	
				SW-846 8082A	
SB-17 (0.5-2)	14H1122-10	Soil		SM 2540G	
				SW-846 8082A	
SB-18 (0-0.5)	14H1122-13	Soil		SM 2540G	
				SW-846 8082A	
SB-18 (4-6)	14H1122-15	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
				SW-846 6010C	
				SW-846 7471B	
				SW-846 8260C	
SB-18 (0.5-2)	14H1122-16	Soil		SM 2540G	
				SW-846 8082A	
SB-20 (0-0.5)	14H1122-17	Soil		SM 2540G	
				SW-846 8082A	
SB-20 (0.5-2)	14H1122-18	Soil		SM 2540G	
				SW-846 8082A	
SB-20 (4-6)	14H1122-20	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
				SW-846 6010C	
				SW-846 7471B	
				SW-846 8260C	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

For method MA VPH, only hydrocarbon ranges were requested and reported

For method 6010, only RCRA 8 metals were requested and reported.

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MADEP-VPH-04-1.1

Qualifications:

O-01

Soil/methanol ratio does not meet method specifications. Excess amount of soil. Sample was completely covered with methanol, but with less than the method-specified amount.

Analyte & Samples(s) Qualified:

14H1122-15[SB-18 (4-6)], 14H1122-20[SB-20 (4-6)]

RL-05

Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.

Analyte & Samples(s) Qualified:

C5-C8 Aliphatics
14H1122-20[SB-20 (4-6)]

Unadjusted C5-C8 Aliphatics
14H1122-20[SB-20 (4-6)]

S-15

Surrogate recovery outside of control limits due to suspected sample matrix interference. Chromatogram(s) is attached.

Analyte & Samples(s) Qualified:

2,5-Dibromotoluene (FID)
14H1122-20[SB-20 (4-6)]

SW-846 8082A

Qualifications:

O-03

Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.

Analyte & Samples(s) Qualified:

Aroclor-1254
14H1122-18[SB-20 (0.5-2)]

Aroclor-1254 [2C]
14H1122-18[SB-20 (0.5-2)]

O-04

Sample fingerprint does not match standard exactly. Sample was quantitated against the closest matching standard.

Analyte & Samples(s) Qualified:

Aroclor-1248
14H1122-18[SB-20 (0.5-2)]

Aroclor-1248 [2C]
14H1122-18[SB-20 (0.5-2)]

O-32

A five times dilution was performed as part of the standard analytical procedure.

Analyte & Samples(s) Qualified:

14H1122-02[SB-14 (0.5-2)], 14H1122-06[SB-16 (0.5-2)], 14H1122-16[SB-18 (0.5-2)]

P-01

Result was confirmed using a dissimilar column. Relative percent difference between the two results was >40%. In accordance with the method, the higher result was reported.

Analyte & Samples(s) Qualified:

Aroclor-1248 [2C]
14H1122-18[SB-20 (0.5-2)]

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S-01

The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

Analyte & Samples(s) Qualified:

Decachlorobiphenyl
14H1122-01[SB-14 (0-0.5)], 14H1122-05[SB-16 (0-0.5)], 14H1122-13[SB-18 (0-0.5)], 14H1122-17[SB-20 (0-0.5)]

Decachlorobiphenyl [2C]
14H1122-01[SB-14 (0-0.5)], 14H1122-05[SB-16 (0-0.5)], 14H1122-13[SB-18 (0-0.5)], 14H1122-17[SB-20 (0-0.5)]

Tetrachloro-m-xylene
14H1122-01[SB-14 (0-0.5)], 14H1122-05[SB-16 (0-0.5)], 14H1122-13[SB-18 (0-0.5)], 14H1122-17[SB-20 (0-0.5)]

Tetrachloro-m-xylene [2C]
14H1122-01[SB-14 (0-0.5)], 14H1122-05[SB-16 (0-0.5)], 14H1122-13[SB-18 (0-0.5)], 14H1122-17[SB-20 (0-0.5)]

V-06

Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.

Analyte & Samples(s) Qualified:

Aroclor-1016
B103590-BS1, B103590-BSD1

SW-846 8260C

Qualifications:

L-02

Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.

Analyte & Samples(s) Qualified:

Acetone
B103519-BS1, B103519-BSD1

Bromoform
B103519-BS1, B103519-BSD1

L-14

Compound classified by MA CAM as difficult with acceptable recoveries of 40-160%. Recovery does not meet 70-130% criteria but does meet difficult compound criteria.

Analyte & Samples(s) Qualified:

1,4-Dioxane
B103519-BS1, B103519-BSD1

2-Butanone (MEK)
B103519-BS1, B103519-BSD1

2-Hexanone (MBK)
B103519-BS1, B103519-BSD1

Bromomethane
B103519-BS1, B103679-BS1

RL-06

Elevated reporting limit due to high concentration of non-target compounds. MA CAM reporting limit not met.

Analyte & Samples(s) Qualified:

14H1122-20[SB-20 (4-6)]

V-06

Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.

Analyte & Samples(s) Qualified:

n-Butylbenzene
14H1122-20[SB-20 (4-6)], B103519-BS1, B103519-BSD1

V-16

Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.

Analyte & Samples(s) Qualified:

1,4-Dioxane
14H1122-15[SB-18 (4-6)], 14H1122-20[SB-20 (4-6)], B103519-BLK1, B103519-BS1, B103519-BSD1, B103679-BLK1, B103679-BS1, B103679-BSD1

Tetrahydrofuran
14H1122-20[SB-20 (4-6)], B103519-BLK1, B103519-BS1, B103519-BSD1

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V-20

Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

1,1,2,2-Tetrachloroethane
B103519-BS1, B103519-BSD1

1,2,3-Trichlorobenzene
B103519-BS1, B103519-BSD1

1,2,3-Trichloropropane
B103519-BS1, B103519-BSD1

1,2,4-Trimethylbenzene
B103519-BS1, B103519-BSD1

Benzene
B103519-BS1, B103519-BSD1

Bromochloromethane
B103519-BS1, B103519-BSD1

Bromoform
B103519-BS1, B103519-BSD1

Dichlorodifluoromethane (Freon 12
B103519-BS1, B103519-BSD1

Naphthalene
B103519-BS1, B103519-BSD1

MADEP-EPH-04-1.1

SPE cartridge contamination with non-petroleum compounds, if present, is verified by GC/MS in each method blank per extraction batch and excluded from C 11-C22 aromatic range fraction in all samples in the batch. No significant modifications were made to the method.

MADEP-VPH-04-1.1

No significant modifications were made to the method. All VPH samples were received preserved properly in methanol with a soil/methanol ratio of 1:1 +/- 25% completely covered by methanol in the proper containers specified on the chain-of-custody form unless specified in this narrative.

SW-846 8260C

Laboratory control sample recoveries for required MCP Data Enhancement 8260 compounds were all within limits specified by the method except for “difficult analytes” where recovery control limits of 40-160% are used and/or unless otherwise listed in this narrative. Difficult analytes: MIBK, MEK, acetone, 1,4-dioxane, chloromethane, dichlorodifluoromethane, 2-hexanone, and bromomethane.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Tod E. Kopyscinski
Laboratory Director

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-14 (0-0.5) | Sampled: 8/21/2014 09:45

Sample ID: 14H1122-01

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.61	mg/Kg dry	25		SW-846 8082A	8/26/14	8/29/14 15:38	JMB
Aroclor-1221 [1]	ND	0.61	mg/Kg dry	25		SW-846 8082A	8/26/14	8/29/14 15:38	JMB
Aroclor-1232 [1]	ND	0.61	mg/Kg dry	25		SW-846 8082A	8/26/14	8/29/14 15:38	JMB
Aroclor-1242 [1]	ND	0.61	mg/Kg dry	25		SW-846 8082A	8/26/14	8/29/14 15:38	JMB
Aroclor-1248 [1]	ND	0.61	mg/Kg dry	25		SW-846 8082A	8/26/14	8/29/14 15:38	JMB
Aroclor-1254 [1]	4.4	0.61	mg/Kg dry	25		SW-846 8082A	8/26/14	8/29/14 15:38	JMB
Aroclor-1260 [1]	ND	0.61	mg/Kg dry	25		SW-846 8082A	8/26/14	8/29/14 15:38	JMB
Aroclor-1262 [1]	ND	0.61	mg/Kg dry	25		SW-846 8082A	8/26/14	8/29/14 15:38	JMB
Aroclor-1268 [1]	ND	0.61	mg/Kg dry	25		SW-846 8082A	8/26/14	8/29/14 15:38	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	*	30-150	S-01	8/29/14 15:38
Decachlorobiphenyl [2]	*	30-150	S-01	8/29/14 15:38
Tetrachloro-m-xylene [1]	*	30-150	S-01	8/29/14 15:38
Tetrachloro-m-xylene [2]	*	30-150	S-01	8/29/14 15:38

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-14 (0-0.5) | Sampled: 8/21/2014 09:45

Sample ID: 14H1122-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	81.6		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-14 (0.5-2) | Sampled: 8/21/2014 09:55

Sample ID: 14H1122-02

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 11:44	JMB
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 11:44	JMB
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 11:44	JMB
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 11:44	JMB
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 11:44	JMB
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 11:44	JMB
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 11:44	JMB
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 11:44	JMB
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 11:44	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	88.0	30-150		8/29/14 11:44
Decachlorobiphenyl [2]	77.9	30-150		8/29/14 11:44
Tetrachloro-m-xylene [1]	88.9	30-150		8/29/14 11:44
Tetrachloro-m-xylene [2]	87.9	30-150		8/29/14 11:44

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-14 (0.5-2) | Sampled: 8/21/2014 09:55

Sample ID: 14H1122-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	88.9		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-16 (0-0.5) | Sampled: 8/21/2014 10:20

Sample ID: 14H1122-05

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.59	mg/Kg dry	25		SW-846 8082A	8/26/14	8/29/14 15:50	JMB
Aroclor-1221 [1]	ND	0.59	mg/Kg dry	25		SW-846 8082A	8/26/14	8/29/14 15:50	JMB
Aroclor-1232 [1]	ND	0.59	mg/Kg dry	25		SW-846 8082A	8/26/14	8/29/14 15:50	JMB
Aroclor-1242 [1]	ND	0.59	mg/Kg dry	25		SW-846 8082A	8/26/14	8/29/14 15:50	JMB
Aroclor-1248 [1]	ND	0.59	mg/Kg dry	25		SW-846 8082A	8/26/14	8/29/14 15:50	JMB
Aroclor-1254 [1]	3.8	0.59	mg/Kg dry	25		SW-846 8082A	8/26/14	8/29/14 15:50	JMB
Aroclor-1260 [1]	ND	0.59	mg/Kg dry	25		SW-846 8082A	8/26/14	8/29/14 15:50	JMB
Aroclor-1262 [1]	ND	0.59	mg/Kg dry	25		SW-846 8082A	8/26/14	8/29/14 15:50	JMB
Aroclor-1268 [1]	ND	0.59	mg/Kg dry	25		SW-846 8082A	8/26/14	8/29/14 15:50	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	*	30-150	S-01	8/29/14 15:50
Decachlorobiphenyl [2]	*	30-150	S-01	8/29/14 15:50
Tetrachloro-m-xylene [1]	*	30-150	S-01	8/29/14 15:50
Tetrachloro-m-xylene [2]	*	30-150	S-01	8/29/14 15:50

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-16 (0-0.5) | Sampled: 8/21/2014 10:20

Sample ID: 14H1122-05

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	82.8		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-16 (0.5-2) | Sampled: 8/21/2014 10:25

Sample ID: 14H1122-06

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:08	JMB
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:08	JMB
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:08	JMB
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:08	JMB
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:08	JMB
Aroclor-1254 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:08	JMB
Aroclor-1260 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:08	JMB
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:08	JMB
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:08	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	94.7	30-150		8/29/14 12:08
Decachlorobiphenyl [2]	84.5	30-150		8/29/14 12:08
Tetrachloro-m-xylene [1]	89.2	30-150		8/29/14 12:08
Tetrachloro-m-xylene [2]	85.1	30-150		8/29/14 12:08

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-16 (0.5-2) | Sampled: 8/21/2014 10:25

Sample ID: 14H1122-06

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	85.5		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-17 (0-0.5) | Sampled: 8/21/2014 11:00

Sample ID: 14H1122-09

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.10	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:21	JMB
Aroclor-1221 [1]	ND	0.10	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:21	JMB
Aroclor-1232 [1]	ND	0.10	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:21	JMB
Aroclor-1242 [1]	ND	0.10	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:21	JMB
Aroclor-1248 [1]	ND	0.10	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:21	JMB
Aroclor-1254 [1]	0.82	0.10	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:21	JMB
Aroclor-1260 [1]	ND	0.10	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:21	JMB
Aroclor-1262 [1]	ND	0.10	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:21	JMB
Aroclor-1268 [1]	ND	0.10	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:21	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	104	30-150		8/29/14 12:21
Decachlorobiphenyl [2]	93.1	30-150		8/29/14 12:21
Tetrachloro-m-xylene [1]	96.1	30-150		8/29/14 12:21
Tetrachloro-m-xylene [2]	97.0	30-150		8/29/14 12:21

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-17 (0-0.5) | Sampled: 8/21/2014 11:00

Sample ID: 14H1122-09

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	93.5		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-17 (0.5-2) | Sampled: 8/21/2014 11:05

Sample ID: 14H1122-10

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:33	JMB
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:33	JMB
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:33	JMB
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:33	JMB
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:33	JMB
Aroclor-1254 [1]	0.23	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:33	JMB
Aroclor-1260 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:33	JMB
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:33	JMB
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:33	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	77.3	30-150		8/29/14 12:33
Decachlorobiphenyl [2]	72.6	30-150		8/29/14 12:33
Tetrachloro-m-xylene [1]	70.3	30-150		8/29/14 12:33
Tetrachloro-m-xylene [2]	77.8	30-150		8/29/14 12:33

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-17 (0.5-2) | Sampled: 8/21/2014 11:05

Sample ID: 14H1122-10

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	83.0		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-18 (0-0.5) | Sampled: 8/21/2014 11:40

Sample ID: 14H1122-13

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	2.1	mg/Kg dry	100		SW-846 8082A	8/26/14	8/29/14 16:02	JMB
Aroclor-1221 [1]	ND	2.1	mg/Kg dry	100		SW-846 8082A	8/26/14	8/29/14 16:02	JMB
Aroclor-1232 [1]	ND	2.1	mg/Kg dry	100		SW-846 8082A	8/26/14	8/29/14 16:02	JMB
Aroclor-1242 [1]	ND	2.1	mg/Kg dry	100		SW-846 8082A	8/26/14	8/29/14 16:02	JMB
Aroclor-1248 [1]	ND	2.1	mg/Kg dry	100		SW-846 8082A	8/26/14	8/29/14 16:02	JMB
Aroclor-1254 [1]	13	2.1	mg/Kg dry	100		SW-846 8082A	8/26/14	8/29/14 16:02	JMB
Aroclor-1260 [1]	ND	2.1	mg/Kg dry	100		SW-846 8082A	8/26/14	8/29/14 16:02	JMB
Aroclor-1262 [1]	ND	2.1	mg/Kg dry	100		SW-846 8082A	8/26/14	8/29/14 16:02	JMB
Aroclor-1268 [1]	ND	2.1	mg/Kg dry	100		SW-846 8082A	8/26/14	8/29/14 16:02	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	*	30-150	S-01	8/29/14 16:02
Decachlorobiphenyl [2]	*	30-150	S-01	8/29/14 16:02
Tetrachloro-m-xylene [1]	*	30-150	S-01	8/29/14 16:02
Tetrachloro-m-xylene [2]	*	30-150	S-01	8/29/14 16:02

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-18 (0-0.5) | Sampled: 8/21/2014 11:40

Sample ID: 14H1122-13

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	91.9		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-18 (4-6) | Sampled: 8/21/2014 11:55

Sample ID: 14H1122-15

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Benzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Bromobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Bromochloromethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Bromodichloromethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Bromoform	ND	0.0087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Bromomethane	ND	0.0087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
2-Butanone (MEK)	ND	0.035	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
n-Butylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
sec-Butylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
tert-Butylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Carbon Disulfide	ND	0.017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Carbon Tetrachloride	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Chlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Chlorodibromomethane	ND	0.00087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Chloroethane	ND	0.0087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Chloroform	ND	0.0035	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Chloromethane	ND	0.0087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
2-Chlorotoluene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
4-Chlorotoluene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,2-Dibromoethane (EDB)	ND	0.00087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Dibromomethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,2-Dichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,3-Dichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,4-Dichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.0087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,1-Dichloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,2-Dichloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,1-Dichloroethylene	ND	0.0035	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
cis-1,2-Dichloroethylene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
trans-1,2-Dichloroethylene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,2-Dichloropropane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,3-Dichloropropane	ND	0.00087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
2,2-Dichloropropane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,1-Dichloropropene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
cis-1,3-Dichloropropene	ND	0.00087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
trans-1,3-Dichloropropene	ND	0.00087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Diethyl Ether	ND	0.0087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Diisopropyl Ether (DIPE)	ND	0.00087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,4-Dioxane	ND	0.087	mg/Kg dry	1	V-16	SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Ethylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-18 (4-6) | Sampled: 8/21/2014 11:55

Sample ID: 14H1122-15

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
2-Hexanone (MBK)	ND	0.017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Isopropylbenzene (Cumene)	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0035	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Methylene Chloride	ND	0.0087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Naphthalene	ND	0.0087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
n-Propylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Styrene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,1,1,2-Tetrachloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,1,2,2-Tetrachloroethane	ND	0.00087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Tetrachloroethylene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Tetrahydrofuran	ND	0.0087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Toluene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,2,3-Trichlorobenzene	ND	0.0087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,2,4-Trichlorobenzene	ND	0.0035	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,1,1-Trichloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,1,2-Trichloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Trichloroethylene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,2,3-Trichloropropane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,2,4-Trimethylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
1,3,5-Trimethylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
Vinyl Chloride	ND	0.0087	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
m+p Xylene	ND	0.0035	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF
o-Xylene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 14:54	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	125	70-130		8/27/14 14:54
Toluene-d8	97.2	70-130		8/27/14 14:54
4-Bromofluorobenzene	97.1	70-130		8/27/14 14:54

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-18 (4-6) | Sampled: 8/21/2014 11:55

Sample ID: 14H1122-15

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	ND	14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS
C19-C36 Aliphatics	ND	14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS
Unadjusted C11-C22 Aromatics	ND	14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS
C11-C22 Aromatics	ND	14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS
Acenaphthene	ND	0.14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS
Acenaphthylene	ND	0.14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS
Anthracene	ND	0.14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS
Benzo(a)anthracene	ND	0.14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS
Benzo(a)pyrene	ND	0.14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS
Benzo(b)fluoranthene	ND	0.14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS
Benzo(g,h,i)perylene	ND	0.14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS
Benzo(k)fluoranthene	ND	0.14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS
Chrysene	ND	0.14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS
Dibenz(a,h)anthracene	ND	0.14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS
Fluoranthene	ND	0.14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS
Fluorene	ND	0.14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS
Indeno(1,2,3-cd)pyrene	ND	0.14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS
2-Methylnaphthalene	ND	0.14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS
Naphthalene	ND	0.14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS
Phenanthrene	ND	0.14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS
Pyrene	ND	0.14	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:38	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	65.7	40-140		9/2/14 16:38
o-Terphenyl (OTP)	88.5	40-140		9/2/14 16:38
2-Bromonaphthalene	107	40-140		9/2/14 16:38
2-Fluorobiphenyl	120	40-140		9/2/14 16:38

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-18 (4-6) | Sampled: 8/21/2014 11:55

Sample ID: 14H1122-15

Sample Matrix: Soil

Sample Flags: O-01

Soil/Methanol Preservation Ratio: 1.66

Petroleum Hydrocarbons Analyses - VPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	14	mg/Kg dry	1		MADEP-VPH-04-1.1	8/27/14	8/28/14 7:01	EEH
C5-C8 Aliphatics	ND	14	mg/Kg dry	1		MADEP-VPH-04-1.1	8/27/14	8/28/14 7:01	EEH
Unadjusted C9-C12 Aliphatics	57	14	mg/Kg dry	1		MADEP-VPH-04-1.1	8/27/14	8/28/14 7:01	EEH
C9-C12 Aliphatics	ND	14	mg/Kg dry	1		MADEP-VPH-04-1.1	8/27/14	8/28/14 7:01	EEH
C9-C10 Aromatics	46	14	mg/Kg dry	1		MADEP-VPH-04-1.1	8/27/14	8/28/14 7:01	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
2,5-Dibromotoluene (FID)	105	70-130		8/28/14 7:01	
2,5-Dibromotoluene (PID)	104	70-130		8/28/14 7:01	

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-18 (4-6) | Sampled: 8/21/2014 11:55

Sample ID: 14H1122-15

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	3.5	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:30	OP
Barium	51	3.5	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:30	OP
Cadmium	ND	0.35	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:30	OP
Chromium	26	0.71	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:30	OP
Lead	89	1.1	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:30	OP
Mercury	ND	0.036	mg/Kg dry	1		SW-846 7471B	8/28/14	8/29/14 12:22	JMP
Selenium	ND	7.1	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:30	OP
Silver	ND	0.71	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:30	OP

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-18 (4-6) | Sampled: 8/21/2014 11:55

Sample ID: 14H1122-15

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	68.0		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-18 (0.5-2) | Sampled: 8/21/2014 11:45

Sample ID: 14H1122-16

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:58	JMB
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:58	JMB
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:58	JMB
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:58	JMB
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:58	JMB
Aroclor-1254 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:58	JMB
Aroclor-1260 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:58	JMB
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:58	JMB
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 12:58	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	68.5	30-150		8/29/14 12:58
Decachlorobiphenyl [2]	64.1	30-150		8/29/14 12:58
Tetrachloro-m-xylene [1]	72.9	30-150		8/29/14 12:58
Tetrachloro-m-xylene [2]	74.1	30-150		8/29/14 12:58

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-18 (0.5-2) | Sampled: 8/21/2014 11:45

Sample ID: 14H1122-16

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	84.9		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-20 (0-0.5) | Sampled: 8/21/2014 14:00

Sample ID: 14H1122-17

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	8/26/14	8/29/14 16:15	JMB
Aroclor-1221 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	8/26/14	8/29/14 16:15	JMB
Aroclor-1232 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	8/26/14	8/29/14 16:15	JMB
Aroclor-1242 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	8/26/14	8/29/14 16:15	JMB
Aroclor-1248 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	8/26/14	8/29/14 16:15	JMB
Aroclor-1254 [1]	7.9	1.1	mg/Kg dry	50		SW-846 8082A	8/26/14	8/29/14 16:15	JMB
Aroclor-1260 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	8/26/14	8/29/14 16:15	JMB
Aroclor-1262 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	8/26/14	8/29/14 16:15	JMB
Aroclor-1268 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	8/26/14	8/29/14 16:15	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	*	30-150	S-01	8/29/14 16:15
Decachlorobiphenyl [2]	*	30-150	S-01	8/29/14 16:15
Tetrachloro-m-xylene [1]	*	30-150	S-01	8/29/14 16:15
Tetrachloro-m-xylene [2]	*	30-150	S-01	8/29/14 16:15

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-20 (0-0.5) | Sampled: 8/21/2014 14:00

Sample ID: 14H1122-17

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	91.0		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-20 (0.5-2) | Sampled: 8/21/2014 14:05

Sample ID: 14H1122-18

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 13:47	JMB
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 13:47	JMB
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 13:47	JMB
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 13:47	JMB
Aroclor-1248 [2]	0.17	0.11	mg/Kg dry	5	O-04, P-01	SW-846 8082A	8/26/14	8/29/14 13:47	JMB
Aroclor-1254 [2]	0.60	0.11	mg/Kg dry	5	O-03	SW-846 8082A	8/26/14	8/29/14 13:47	JMB
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 13:47	JMB
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 13:47	JMB
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 13:47	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	90.8	30-150		8/29/14 13:47
Decachlorobiphenyl [2]	84.2	30-150		8/29/14 13:47
Tetrachloro-m-xylene [1]	65.9	30-150		8/29/14 13:47
Tetrachloro-m-xylene [2]	77.7	30-150		8/29/14 13:47

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-20 (0.5-2) | Sampled: 8/21/2014 14:05

Sample ID: 14H1122-18

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	90.9		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-20 (4-6) | Sampled: 8/21/2014 14:15

Sample ID: 14H1122-20

Sample Matrix: Soil

Sample Flags: RL-06

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.10	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Benzene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Bromobenzene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Bromochloromethane	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Bromodichloromethane	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Bromoform	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Bromomethane	ND	1.0	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
2-Butanone (MEK)	ND	10	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
n-Butylbenzene	1.1	0.20	mg/Kg dry	4	V-06	SW-846 8260C	8/26/14	8/29/14 1:05	EEH
sec-Butylbenzene	0.80	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
tert-Butylbenzene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.10	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Carbon Disulfide	ND	2.0	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Carbon Tetrachloride	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Chlorobenzene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Chlorodibromomethane	ND	0.10	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Chloroethane	ND	0.40	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Chloroform	ND	0.40	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Chloromethane	ND	1.0	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
2-Chlorotoluene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
4-Chlorotoluene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	1.0	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,2-Dibromoethane (EDB)	ND	0.10	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Dibromomethane	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,2-Dichlorobenzene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,3-Dichlorobenzene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,4-Dichlorobenzene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.40	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,1-Dichloroethane	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,2-Dichloroethane	ND	1.0	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,1-Dichloroethylene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
cis-1,2-Dichloroethylene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
trans-1,2-Dichloroethylene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,2-Dichloropropane	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,3-Dichloropropane	ND	0.10	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
2,2-Dichloropropane	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,1-Dichloropropene	ND	0.40	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
cis-1,3-Dichloropropene	ND	0.10	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
trans-1,3-Dichloropropene	ND	0.10	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Diethyl Ether	ND	0.40	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Diisopropyl Ether (DIPE)	ND	0.10	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,4-Dioxane	ND	10	mg/Kg dry	4	V-16	SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Ethylbenzene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-20 (4-6) | Sampled: 8/21/2014 14:15

Sample ID: 14H1122-20

Sample Matrix: Soil

Sample Flags: RL-06

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
2-Hexanone (MBK)	ND	2.0	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Isopropylbenzene (Cumene)	0.37	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Methylene Chloride	ND	1.0	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
4-Methyl-2-pentanone (MIBK)	ND	2.0	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Naphthalene	ND	0.40	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
n-Propylbenzene	0.66	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Styrene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,1,1,2-Tetrachloroethane	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,1,2,2-Tetrachloroethane	ND	0.10	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Tetrachloroethylene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Tetrahydrofuran	ND	0.80	mg/Kg dry	4	V-16	SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Toluene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,2,3-Trichlorobenzene	ND	0.80	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,2,4-Trichlorobenzene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,1,1-Trichloroethane	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,1,2-Trichloroethane	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Trichloroethylene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Trichlorofluoromethane (Freon 11)	ND	0.40	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,2,3-Trichloropropane	ND	0.40	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,2,4-Trimethylbenzene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
1,3,5-Trimethylbenzene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
Vinyl Chloride	ND	0.40	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
m+p Xylene	ND	0.40	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH
o-Xylene	ND	0.20	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:05	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
1,2-Dichloroethane-d4	95.8	70-130		8/29/14	1:05
Toluene-d8	93.6	70-130		8/29/14	1:05
4-Bromofluorobenzene	100	70-130		8/29/14	1:05

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-20 (4-6) | Sampled: 8/21/2014 14:15

Sample ID: 14H1122-20

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	3700	480	mg/Kg dry	40		MADEP-EPH-04-1.1	8/26/14	9/3/14 9:32	SCS
C19-C36 Aliphatics	1200	480	mg/Kg dry	40		MADEP-EPH-04-1.1	8/26/14	9/3/14 9:32	SCS
Unadjusted C11-C22 Aromatics	1500	120	mg/Kg dry	10		MADEP-EPH-04-1.1	8/26/14	9/3/14 9:32	SCS
C11-C22 Aromatics	1500	120	mg/Kg dry	10		MADEP-EPH-04-1.1	8/26/14	9/3/14 9:32	SCS
Acenaphthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:57	SCS
Acenaphthylene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:57	SCS
Anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:57	SCS
Benzo(a)anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:57	SCS
Benzo(a)pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:57	SCS
Benzo(b)fluoranthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:57	SCS
Benzo(g,h,i)perylene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:57	SCS
Benzo(k)fluoranthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:57	SCS
Chrysene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:57	SCS
Dibenz(a,h)anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:57	SCS
Fluoranthene	0.61	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:57	SCS
Fluorene	7.0	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:57	SCS
Indeno(1,2,3-cd)pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:57	SCS
2-Methylnaphthalene	10	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:57	SCS
Naphthalene	2.9	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:57	SCS
Phenanthrene	3.3	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:57	SCS
Pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/26/14	9/2/14 16:57	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	70.3	40-140		9/2/14 16:57
o-Terphenyl (OTP)	93.3	40-140		9/2/14 16:57
2-Bromonaphthalene	95.3	40-140		9/2/14 16:57
2-Fluorobiphenyl	99.2	40-140		9/2/14 16:57

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-20 (4-6) | Sampled: 8/21/2014 14:15

Sample ID: 14H1122-20

Sample Matrix: Soil

Sample Flags: O-01

Soil/Methanol Preservation Ratio: 1.78

Petroleum Hydrocarbons Analyses - VPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	91	mg/Kg dry	10	RL-05	MADEP-VPH-04-1.1	8/27/14	8/28/14 5:01	EEH
C5-C8 Aliphatics	ND	91	mg/Kg dry	10	RL-05	MADEP-VPH-04-1.1	8/27/14	8/28/14 5:01	EEH
Unadjusted C9-C12 Aliphatics	300	91	mg/Kg dry	10		MADEP-VPH-04-1.1	8/27/14	8/28/14 5:01	EEH
C9-C12 Aliphatics	ND	91	mg/Kg dry	10		MADEP-VPH-04-1.1	8/27/14	8/28/14 5:01	EEH
C9-C10 Aromatics	230	91	mg/Kg dry	10		MADEP-VPH-04-1.1	8/27/14	8/28/14 5:01	EEH

Surrogates	% Recovery		Recovery Limits	Flag/Qual		
2,5-Dibromotoluene (FID)	**237**	*	70-130	S-15	8/28/14 5:01	
2,5-Dibromotoluene (PID)	**135**	*	70-130		8/28/14 5:01	

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-20 (4-6) | Sampled: 8/21/2014 14:15

Sample ID: 14H1122-20

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	2.9	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:35	OP
Barium	54	2.9	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:35	OP
Cadmium	ND	0.29	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:35	OP
Chromium	31	0.59	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:35	OP
Lead	160	0.88	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:35	OP
Mercury	0.088	0.030	mg/Kg dry	1		SW-846 7471B	8/28/14	8/29/14 12:23	JMP
Selenium	ND	5.9	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:35	OP
Silver	ND	0.59	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:35	OP

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1122

Date Received: 8/25/2014

Field Sample #: SB-20 (4-6) | Sampled: 8/21/2014 14:15

Sample ID: 14H1122-20

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	81.9		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Sample Extraction Data

Prep Method: SW-846 3546-MADEP-EPH-04-1.1

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1122-15 [SB-18 (4-6)]	B103583	20.4	2.00	08/26/14
14H1122-20 [SB-20 (4-6)]	B103583	20.4	2.00	08/26/14

Prep Method: MA VPH-MADEP-VPH-04-1.1

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1122-15 [SB-18 (4-6)]	B103663	24.8	23.0	08/27/14
14H1122-20 [SB-20 (4-6)]	B103663	26.6	19.9	08/27/14

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
14H1122-01 [SB-14 (0-0.5)]	B103865	08/29/14
14H1122-02 [SB-14 (0.5-2)]	B103865	08/29/14
14H1122-05 [SB-16 (0-0.5)]	B103865	08/29/14
14H1122-06 [SB-16 (0.5-2)]	B103865	08/29/14
14H1122-09 [SB-17 (0-0.5)]	B103865	08/29/14
14H1122-10 [SB-17 (0.5-2)]	B103865	08/29/14
14H1122-13 [SB-18 (0-0.5)]	B103865	08/29/14
14H1122-15 [SB-18 (4-6)]	B103865	08/29/14
14H1122-16 [SB-18 (0.5-2)]	B103865	08/29/14
14H1122-17 [SB-20 (0-0.5)]	B103865	08/29/14
14H1122-18 [SB-20 (0.5-2)]	B103865	08/29/14
14H1122-20 [SB-20 (4-6)]	B103865	08/29/14

Prep Method: SW-846 3050B-SW-846 6010C

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1122-15 [SB-18 (4-6)]	B103724	1.04	50.0	08/27/14
14H1122-20 [SB-20 (4-6)]	B103724	1.04	50.0	08/27/14

Prep Method: SW-846 7471-SW-846 7471B

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1122-15 [SB-18 (4-6)]	B103812	0.609	50.0	08/28/14
14H1122-20 [SB-20 (4-6)]	B103812	0.600	50.0	08/28/14

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1122-01 [SB-14 (0-0.5)]	B103590	10.1	10.0	08/26/14
14H1122-02 [SB-14 (0.5-2)]	B103590	10.4	10.0	08/26/14
14H1122-05 [SB-16 (0-0.5)]	B103590	10.3	10.0	08/26/14
14H1122-06 [SB-16 (0.5-2)]	B103590	10.1	10.0	08/26/14
14H1122-09 [SB-17 (0-0.5)]	B103590	10.3	10.0	08/26/14
14H1122-10 [SB-17 (0.5-2)]	B103590	10.4	10.0	08/26/14
14H1122-13 [SB-18 (0-0.5)]	B103590	10.3	10.0	08/26/14
14H1122-16 [SB-18 (0.5-2)]	B103590	10.2	10.0	08/26/14
14H1122-17 [SB-20 (0-0.5)]	B103590	10.2	10.0	08/26/14

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Sample Extraction Data

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1122-18 [SB-20 (0.5-2)]	B103590	10.3	10.0	08/26/14

Prep Method: SW-846 5035-SW-846 8260C

Lab Number [Field ID]	Batch	Sample Amount(g)	Methanol Volume(mL)	Methanol Aliquot(mL)	Final Volume(mL)	Date
14H1122-20 [SB-20 (4-6)]	B103519	23.4	19.2	0.25	50	08/26/14

Prep Method: SW-846 5035-SW-846 8260C

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1122-15 [SB-18 (4-6)]	B103679	8.43	10.0	08/27/14

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103519 - SW-846 5035										
Blank (B103519-BLK1)				Prepared: 08/26/14 Analyzed: 08/28/14						
Acetone	ND	2.5	mg/Kg wet							
tert-Amyl Methyl Ether (TAME)	ND	0.025	mg/Kg wet							
Benzene	ND	0.050	mg/Kg wet							
Bromobenzene	ND	0.050	mg/Kg wet							
Bromochloromethane	ND	0.050	mg/Kg wet							
Bromodichloromethane	ND	0.050	mg/Kg wet							
Bromoform	ND	0.050	mg/Kg wet							
Bromomethane	ND	0.25	mg/Kg wet							
2-Butanone (MEK)	ND	2.5	mg/Kg wet							
n-Butylbenzene	ND	0.050	mg/Kg wet							
sec-Butylbenzene	ND	0.050	mg/Kg wet							
tert-Butylbenzene	ND	0.050	mg/Kg wet							
tert-Butyl Ethyl Ether (TBEE)	ND	0.025	mg/Kg wet							
Carbon Disulfide	ND	0.50	mg/Kg wet							
Carbon Tetrachloride	ND	0.050	mg/Kg wet							
Chlorobenzene	ND	0.050	mg/Kg wet							
Chlorodibromomethane	ND	0.025	mg/Kg wet							
Chloroethane	ND	0.10	mg/Kg wet							
Chloroform	ND	0.10	mg/Kg wet							
Chloromethane	ND	0.25	mg/Kg wet							
2-Chlorotoluene	ND	0.050	mg/Kg wet							
4-Chlorotoluene	ND	0.050	mg/Kg wet							
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.25	mg/Kg wet							
1,2-Dibromoethane (EDB)	ND	0.025	mg/Kg wet							
Dibromomethane	ND	0.050	mg/Kg wet							
1,2-Dichlorobenzene	ND	0.050	mg/Kg wet							
1,3-Dichlorobenzene	ND	0.050	mg/Kg wet							
1,4-Dichlorobenzene	ND	0.050	mg/Kg wet							
Dichlorodifluoromethane (Freon 12)	ND	0.10	mg/Kg wet							
1,1-Dichloroethane	ND	0.050	mg/Kg wet							
1,2-Dichloroethane	ND	0.25	mg/Kg wet							
1,1-Dichloroethylene	ND	0.050	mg/Kg wet							
cis-1,2-Dichloroethylene	ND	0.050	mg/Kg wet							
trans-1,2-Dichloroethylene	ND	0.050	mg/Kg wet							
1,2-Dichloropropane	ND	0.050	mg/Kg wet							
1,3-Dichloropropane	ND	0.025	mg/Kg wet							
2,2-Dichloropropane	ND	0.050	mg/Kg wet							
1,1-Dichloropropene	ND	0.10	mg/Kg wet							
cis-1,3-Dichloropropene	ND	0.025	mg/Kg wet							
trans-1,3-Dichloropropene	ND	0.025	mg/Kg wet							
Diethyl Ether	ND	0.10	mg/Kg wet							
Diisopropyl Ether (DIPE)	ND	0.025	mg/Kg wet							
1,4-Dioxane	ND	2.5	mg/Kg wet							V-16
Ethylbenzene	ND	0.050	mg/Kg wet							
Hexachlorobutadiene	ND	0.050	mg/Kg wet							
2-Hexanone (MBK)	ND	0.50	mg/Kg wet							
Isopropylbenzene (Cumene)	ND	0.050	mg/Kg wet							
p-Isopropyltoluene (p-Cymene)	ND	0.050	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.050	mg/Kg wet							
Methylene Chloride	ND	0.25	mg/Kg wet							
4-Methyl-2-pentanone (MIBK)	ND	0.50	mg/Kg wet							
Naphthalene	ND	0.10	mg/Kg wet							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B103519 - SW-846 5035											
Blank (B103519-BLK1)				Prepared: 08/26/14 Analyzed: 08/28/14							
n-Propylbenzene	ND	0.050	mg/Kg wet								
Styrene	ND	0.050	mg/Kg wet								
1,1,1,2-Tetrachloroethane	ND	0.050	mg/Kg wet								
1,1,2,2-Tetrachloroethane	ND	0.025	mg/Kg wet								
Tetrachloroethylene	ND	0.050	mg/Kg wet								
Tetrahydrofuran	ND	0.20	mg/Kg wet							V-16	
Toluene	ND	0.050	mg/Kg wet								
1,2,3-Trichlorobenzene	ND	0.20	mg/Kg wet								
1,2,4-Trichlorobenzene	ND	0.050	mg/Kg wet								
1,1,1-Trichloroethane	ND	0.050	mg/Kg wet								
1,1,2-Trichloroethane	ND	0.050	mg/Kg wet								
Trichloroethylene	ND	0.050	mg/Kg wet								
Trichlorofluoromethane (Freon 11)	ND	0.10	mg/Kg wet								
1,2,3-Trichloropropane	ND	0.10	mg/Kg wet								
1,2,4-Trimethylbenzene	ND	0.050	mg/Kg wet								
1,3,5-Trimethylbenzene	ND	0.050	mg/Kg wet								
Vinyl Chloride	ND	0.10	mg/Kg wet								
m+p Xylene	ND	0.10	mg/Kg wet								
o-Xylene	ND	0.050	mg/Kg wet								
Surrogate: 1,2-Dichloroethane-d4	*0.0226*		mg/Kg wet	0.0250		90.2	70-130				
Surrogate: Toluene-d8	*0.0239*		mg/Kg wet	0.0250		95.6	70-130				
Surrogate: 4-Bromofluorobenzene	*0.0233*		mg/Kg wet	0.0250		93.2	70-130				
LCS (B103519-BS1)				Prepared: 08/26/14 Analyzed: 08/28/14							
Acetone	0.222	0.057	mg/Kg wet	0.113		**196** *	40-160			L-02	†
tert-Amyl Methyl Ether (TAME)	0.0109	0.00057	mg/Kg wet	0.0113		96.6	70-130				
Benzene	0.0127	0.0011	mg/Kg wet	0.0113		112	70-130			V-20	
Bromobenzene	0.0124	0.0011	mg/Kg wet	0.0113		110	70-130				
Bromochloromethane	0.0137	0.0011	mg/Kg wet	0.0113		121	70-130			V-20	
Bromodichloromethane	0.0128	0.0011	mg/Kg wet	0.0113		113	70-130				
Bromoform	0.0166	0.0011	mg/Kg wet	0.0113		**147** *	70-130			L-02, V-20	
Bromomethane	0.00726	0.0057	mg/Kg wet	0.0113		64.1	40-160			L-14	†
2-Butanone (MEK)	0.154	0.057	mg/Kg wet	0.113		136	40-160			L-14	†
n-Butylbenzene	0.0143	0.0011	mg/Kg wet	0.0113		126	70-130			V-06	
sec-Butylbenzene	0.0133	0.0011	mg/Kg wet	0.0113		117	70-130				
tert-Butylbenzene	0.0133	0.0011	mg/Kg wet	0.0113		118	70-130				
tert-Butyl Ethyl Ether (TBEE)	0.0121	0.00057	mg/Kg wet	0.0113		106	70-130				
Carbon Disulfide	0.0132	0.011	mg/Kg wet	0.0113		117	70-130				
Carbon Tetrachloride	0.0138	0.0011	mg/Kg wet	0.0113		121	70-130				
Chlorobenzene	0.0124	0.0011	mg/Kg wet	0.0113		109	70-130				
Chlorodibromomethane	0.0128	0.00057	mg/Kg wet	0.0113		113	70-130				
Chloroethane	0.0114	0.0023	mg/Kg wet	0.0113		100	70-130				
Chloroform	0.0123	0.0023	mg/Kg wet	0.0113		109	70-130				
Chloromethane	0.0104	0.0057	mg/Kg wet	0.0113		91.9	40-160				†
2-Chlorotoluene	0.0109	0.0011	mg/Kg wet	0.0113		96.0	70-130				
4-Chlorotoluene	0.0119	0.0011	mg/Kg wet	0.0113		105	70-130				
1,2-Dibromo-3-chloropropane (DBCP)	0.0125	0.0057	mg/Kg wet	0.0113		110	70-130				
1,2-Dibromoethane (EDB)	0.0130	0.00057	mg/Kg wet	0.0113		115	70-130				
Dibromomethane	0.0135	0.0011	mg/Kg wet	0.0113		119	70-130				
1,2-Dichlorobenzene	0.0128	0.0011	mg/Kg wet	0.0113		113	70-130				
1,3-Dichlorobenzene	0.0127	0.0011	mg/Kg wet	0.0113		112	70-130				
1,4-Dichlorobenzene	0.0130	0.0011	mg/Kg wet	0.0113		115	70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B103519 - SW-846 5035											
LCS (B103519-BS1)				Prepared: 08/26/14 Analyzed: 08/28/14							
Dichlorodifluoromethane (Freon 12)	0.0103	0.0023	mg/Kg wet	0.0113		90.5	40-160			V-20	†
1,1-Dichloroethane	0.0130	0.0011	mg/Kg wet	0.0113		115	70-130				
1,2-Dichloroethane	0.0125	0.0057	mg/Kg wet	0.0113		110	70-130				
1,1-Dichloroethylene	0.0108	0.0011	mg/Kg wet	0.0113		95.2	70-130				
cis-1,2-Dichloroethylene	0.0122	0.0011	mg/Kg wet	0.0113		108	70-130				
trans-1,2-Dichloroethylene	0.0126	0.0011	mg/Kg wet	0.0113		111	70-130				
1,2-Dichloropropane	0.0132	0.0011	mg/Kg wet	0.0113		116	70-130				
1,3-Dichloropropane	0.0130	0.00057	mg/Kg wet	0.0113		115	70-130				
2,2-Dichloropropane	0.0121	0.0011	mg/Kg wet	0.0113		107	70-130				
1,1-Dichloropropene	0.0130	0.0023	mg/Kg wet	0.0113		115	70-130				
cis-1,3-Dichloropropene	0.0119	0.00057	mg/Kg wet	0.0113		105	70-130				
trans-1,3-Dichloropropene	0.0131	0.00057	mg/Kg wet	0.0113		116	70-130				
Diethyl Ether	0.0121	0.0023	mg/Kg wet	0.0113		107	70-130				
Diisopropyl Ether (DIPE)	0.0113	0.00057	mg/Kg wet	0.0113		99.7	70-130				
1,4-Dioxane	0.0757	0.057	mg/Kg wet	0.113		66.8	40-160			L-14, V-16	†
Ethylbenzene	0.0127	0.0011	mg/Kg wet	0.0113		112	70-130				
Hexachlorobutadiene	0.0137	0.0011	mg/Kg wet	0.0113		121	70-130				
2-Hexanone (MBK)	0.160	0.011	mg/Kg wet	0.113		141	40-160			L-14	†
Isopropylbenzene (Cumene)	0.0122	0.0011	mg/Kg wet	0.0113		107	70-130				
p-Isopropyltoluene (p-Cymene)	0.0141	0.0011	mg/Kg wet	0.0113		124	70-130				
Methyl tert-Butyl Ether (MTBE)	0.0125	0.0011	mg/Kg wet	0.0113		110	70-130				
Methylene Chloride	0.0112	0.0057	mg/Kg wet	0.0113		98.4	70-130				
4-Methyl-2-pentanone (MIBK)	0.113	0.011	mg/Kg wet	0.113		99.3	40-160				†
Naphthalene	0.0136	0.0023	mg/Kg wet	0.0113		120	70-130			V-20	
n-Propylbenzene	0.0125	0.0011	mg/Kg wet	0.0113		110	70-130				
Styrene	0.0126	0.0011	mg/Kg wet	0.0113		111	70-130				
1,1,1,2-Tetrachloroethane	0.0133	0.0011	mg/Kg wet	0.0113		118	70-130				
1,1,2,2-Tetrachloroethane	0.0131	0.00057	mg/Kg wet	0.0113		116	70-130			V-20	
Tetrachloroethylene	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130				
Tetrahydrofuran	0.0124	0.0045	mg/Kg wet	0.0113		110	70-130			V-16	
Toluene	0.0124	0.0011	mg/Kg wet	0.0113		109	70-130				
1,2,3-Trichlorobenzene	0.0136	0.0045	mg/Kg wet	0.0113		120	70-130			V-20	
1,2,4-Trichlorobenzene	0.0141	0.0011	mg/Kg wet	0.0113		124	70-130				
1,1,1-Trichloroethane	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130				
1,1,2-Trichloroethane	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130				
Trichloroethylene	0.0132	0.0011	mg/Kg wet	0.0113		117	70-130				
Trichlorofluoromethane (Freon 11)	0.0115	0.0023	mg/Kg wet	0.0113		101	70-130				
1,2,3-Trichloropropane	0.0128	0.0023	mg/Kg wet	0.0113		113	70-130			V-20	
1,2,4-Trimethylbenzene	0.0137	0.0011	mg/Kg wet	0.0113		121	70-130			V-20	
1,3,5-Trimethylbenzene	0.0124	0.0011	mg/Kg wet	0.0113		109	70-130				
Vinyl Chloride	0.00798	0.0023	mg/Kg wet	0.0113		70.4	70-130				
m+p Xylene	0.0242	0.0023	mg/Kg wet	0.0227		107	70-130				
o-Xylene	0.0121	0.0011	mg/Kg wet	0.0113		107	70-130				
Surrogate: 1,2-Dichloroethane-d4	*0.0267*		mg/Kg wet	0.0283		94.2	70-130				
Surrogate: Toluene-d8	*0.0273*		mg/Kg wet	0.0283		96.4	70-130				
Surrogate: 4-Bromofluorobenzene	*0.0267*		mg/Kg wet	0.0283		94.2	70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B103519 - SW-846 5035												
LCS Dup (B103519-BSD1)				Prepared: 08/26/14 Analyzed: 08/28/14								
Acetone	0.232	0.057	mg/Kg wet	0.113		**204**	*	40-160	4.01	20	L-02	†
tert-Amyl Methyl Ether (TAME)	0.0110	0.00057	mg/Kg wet	0.0113		97.3		70-130	0.722	20		
Benzene	0.0132	0.0011	mg/Kg wet	0.0113		116		70-130	3.68	20	V-20	
Bromobenzene	0.0124	0.0011	mg/Kg wet	0.0113		110		70-130	0.182	20		
Bromochloromethane	0.0143	0.0011	mg/Kg wet	0.0113		127		70-130	4.28	20	V-20	
Bromodichloromethane	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130	0.354	20		
Bromoform	0.0164	0.0011	mg/Kg wet	0.0113		**145**	*	70-130	1.51	20	L-02, V-20	
Bromomethane	0.00823	0.0057	mg/Kg wet	0.0113		72.6		40-160	12.4	20		†
2-Butanone (MEK)	0.157	0.057	mg/Kg wet	0.113		139		40-160	2.26	20	L-14	†
n-Butylbenzene	0.0139	0.0011	mg/Kg wet	0.0113		123		70-130	2.81	20	V-06	
sec-Butylbenzene	0.0131	0.0011	mg/Kg wet	0.0113		116		70-130	1.37	20		
tert-Butylbenzene	0.0133	0.0011	mg/Kg wet	0.0113		117		70-130	0.512	20		
tert-Butyl Ethyl Ether (TBEE)	0.0121	0.00057	mg/Kg wet	0.0113		107		70-130	0.469	20		
Carbon Disulfide	0.0133	0.011	mg/Kg wet	0.0113		117		70-130	0.256	20		
Carbon Tetrachloride	0.0140	0.0011	mg/Kg wet	0.0113		124		70-130	1.71	20		
Chlorobenzene	0.0124	0.0011	mg/Kg wet	0.0113		110		70-130	0.549	20		
Chlorodibromomethane	0.0125	0.00057	mg/Kg wet	0.0113		110		70-130	2.60	20		
Chloroethane	0.0121	0.0023	mg/Kg wet	0.0113		107		70-130	6.08	20		
Chloroform	0.0124	0.0023	mg/Kg wet	0.0113		110		70-130	1.10	20		
Chloromethane	0.0110	0.0057	mg/Kg wet	0.0113		97.4		40-160	5.81	20		†
2-Chlorotoluene	0.0113	0.0011	mg/Kg wet	0.0113		99.7		70-130	3.78	20		
4-Chlorotoluene	0.0123	0.0011	mg/Kg wet	0.0113		109		70-130	3.37	20		
1,2-Dibromo-3-chloropropane (DBCP)	0.0125	0.0057	mg/Kg wet	0.0113		110		70-130	0.272	20		
1,2-Dibromoethane (EDB)	0.0131	0.00057	mg/Kg wet	0.0113		115		70-130	0.522	20		
Dibromomethane	0.0133	0.0011	mg/Kg wet	0.0113		118		70-130	1.02	20		
1,2-Dichlorobenzene	0.0124	0.0011	mg/Kg wet	0.0113		109		70-130	3.33	20		
1,3-Dichlorobenzene	0.0125	0.0011	mg/Kg wet	0.0113		110		70-130	1.35	20		
1,4-Dichlorobenzene	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130	1.75	20		
Dichlorodifluoromethane (Freon 12)	0.0107	0.0023	mg/Kg wet	0.0113		94.4		40-160	4.22	20	V-20	†
1,1-Dichloroethane	0.0135	0.0011	mg/Kg wet	0.0113		119		70-130	3.59	20		
1,2-Dichloroethane	0.0124	0.0057	mg/Kg wet	0.0113		109		70-130	1.18	20		
1,1-Dichloroethylene	0.0110	0.0011	mg/Kg wet	0.0113		97.0		70-130	1.87	20		
cis-1,2-Dichloroethylene	0.0123	0.0011	mg/Kg wet	0.0113		109		70-130	0.740	20		
trans-1,2-Dichloroethylene	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130	1.97	20		
1,2-Dichloropropane	0.0129	0.0011	mg/Kg wet	0.0113		114		70-130	1.91	20		
1,3-Dichloropropane	0.0125	0.00057	mg/Kg wet	0.0113		110		70-130	4.01	20		
2,2-Dichloropropane	0.0124	0.0011	mg/Kg wet	0.0113		110		70-130	2.68	20		
1,1-Dichloropropene	0.0132	0.0023	mg/Kg wet	0.0113		116		70-130	1.30	20		
cis-1,3-Dichloropropene	0.0123	0.00057	mg/Kg wet	0.0113		109		70-130	3.47	20		
trans-1,3-Dichloropropene	0.0134	0.00057	mg/Kg wet	0.0113		118		70-130	1.79	20		
Diethyl Ether	0.0119	0.0023	mg/Kg wet	0.0113		105		70-130	1.60	20		
Diisopropyl Ether (DIPE)	0.0121	0.00057	mg/Kg wet	0.0113		107		70-130	6.88	20		
1,4-Dioxane	0.0759	0.057	mg/Kg wet	0.113		67.0		40-160	0.269	20	L-14, V-16	†
Ethylbenzene	0.0131	0.0011	mg/Kg wet	0.0113		116		70-130	3.33	20		
Hexachlorobutadiene	0.0139	0.0011	mg/Kg wet	0.0113		123		70-130	1.56	20		
2-Hexanone (MBK)	0.158	0.011	mg/Kg wet	0.113		139		40-160	1.36	20	L-14	†
Isopropylbenzene (Cumene)	0.0122	0.0011	mg/Kg wet	0.0113		108		70-130	0.0930	20		
p-Isopropyltoluene (p-Cymene)	0.0136	0.0011	mg/Kg wet	0.0113		120		70-130	3.60	20		
Methyl tert-Butyl Ether (MTBE)	0.0125	0.0011	mg/Kg wet	0.0113		110		70-130	0.272	20		
Methylene Chloride	0.0114	0.0057	mg/Kg wet	0.0113		100		70-130	1.91	20		
4-Methyl-2-pentanone (MIBK)	0.111	0.011	mg/Kg wet	0.113		98.3		40-160	1.04	20		†
Naphthalene	0.0135	0.0023	mg/Kg wet	0.0113		119		70-130	1.17	20	V-20	

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103519 - SW-846 5035										
LCS Dup (B103519-BSD1)				Prepared: 08/26/14 Analyzed: 08/28/14						
n-Propylbenzene	0.0128	0.0011	mg/Kg wet	0.0113		113	70-130	2.60	20	
Styrene	0.0125	0.0011	mg/Kg wet	0.0113		110	70-130	0.451	20	
1,1,1,2-Tetrachloroethane	0.0136	0.0011	mg/Kg wet	0.0113		120	70-130	2.02	20	
1,1,2,2-Tetrachloroethane	0.0133	0.00057	mg/Kg wet	0.0113		118	70-130	1.72	20	V-20
Tetrachloroethylene	0.0133	0.0011	mg/Kg wet	0.0113		118	70-130	3.46	20	
Tetrahydrofuran	0.0121	0.0045	mg/Kg wet	0.0113		107	70-130	2.59	20	V-16
Toluene	0.0123	0.0011	mg/Kg wet	0.0113		109	70-130	0.184	20	
1,2,3-Trichlorobenzene	0.0132	0.0045	mg/Kg wet	0.0113		116	70-130	3.47	20	V-20
1,2,4-Trichlorobenzene	0.0139	0.0011	mg/Kg wet	0.0113		123	70-130	1.30	20	
1,1,1-Trichloroethane	0.0133	0.0011	mg/Kg wet	0.0113		118	70-130	3.11	20	
1,1,2-Trichloroethane	0.0126	0.0011	mg/Kg wet	0.0113		111	70-130	2.32	20	
Trichloroethylene	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130	2.52	20	
Trichlorofluoromethane (Freon 11)	0.0121	0.0023	mg/Kg wet	0.0113		106	70-130	5.00	20	
1,2,3-Trichloropropane	0.0129	0.0023	mg/Kg wet	0.0113		114	70-130	0.352	20	V-20
1,2,4-Trimethylbenzene	0.0132	0.0011	mg/Kg wet	0.0113		117	70-130	3.20	20	V-20
1,3,5-Trimethylbenzene	0.0125	0.0011	mg/Kg wet	0.0113		110	70-130	1.27	20	
Vinyl Chloride	0.00822	0.0023	mg/Kg wet	0.0113		72.5	70-130	2.94	20	
m+p Xylene	0.0250	0.0023	mg/Kg wet	0.0227		110	70-130	3.37	20	
o-Xylene	0.0124	0.0011	mg/Kg wet	0.0113		109	70-130	2.13	20	
Surrogate: 1,2-Dichloroethane-d4	*0.0275*		mg/Kg wet	0.0283		97.0	70-130			
Surrogate: Toluene-d8	*0.0266*		mg/Kg wet	0.0283		93.9	70-130			
Surrogate: 4-Bromofluorobenzene	*0.0264*		mg/Kg wet	0.0283		93.2	70-130			
Batch B103679 - SW-846 5035										
Blank (B103679-BLK1)				Prepared & Analyzed: 08/27/14						
Acetone	ND	0.10	mg/Kg wet							
tert-Amyl Methyl Ether (TAME)	ND	0.0010	mg/Kg wet							
Benzene	ND	0.0020	mg/Kg wet							
Bromobenzene	ND	0.0020	mg/Kg wet							
Bromochloromethane	ND	0.0020	mg/Kg wet							
Bromodichloromethane	ND	0.0020	mg/Kg wet							
Bromoform	ND	0.010	mg/Kg wet							
Bromomethane	ND	0.010	mg/Kg wet							
2-Butanone (MEK)	ND	0.040	mg/Kg wet							
n-Butylbenzene	ND	0.0020	mg/Kg wet							
sec-Butylbenzene	ND	0.0020	mg/Kg wet							
tert-Butylbenzene	ND	0.0020	mg/Kg wet							
tert-Butyl Ethyl Ether (TBEE)	ND	0.0010	mg/Kg wet							
Carbon Disulfide	ND	0.020	mg/Kg wet							
Carbon Tetrachloride	ND	0.0020	mg/Kg wet							
Chlorobenzene	ND	0.0020	mg/Kg wet							
Chlorodibromomethane	ND	0.0010	mg/Kg wet							
Chloroethane	ND	0.010	mg/Kg wet							
Chloroform	ND	0.0040	mg/Kg wet							
Chloromethane	ND	0.010	mg/Kg wet							
2-Chlorotoluene	ND	0.0020	mg/Kg wet							
4-Chlorotoluene	ND	0.0020	mg/Kg wet							
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0020	mg/Kg wet							
1,2-Dibromoethane (EDB)	ND	0.0010	mg/Kg wet							
Dibromomethane	ND	0.0020	mg/Kg wet							
1,2-Dichlorobenzene	ND	0.0020	mg/Kg wet							
1,3-Dichlorobenzene	ND	0.0020	mg/Kg wet							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103679 - SW-846 5035										
Blank (B103679-BLK1)				Prepared & Analyzed: 08/27/14						
1,4-Dichlorobenzene	ND	0.0020	mg/Kg wet							
Dichlorodifluoromethane (Freon 12)	ND	0.010	mg/Kg wet							
1,1-Dichloroethane	ND	0.0020	mg/Kg wet							
1,2-Dichloroethane	ND	0.0020	mg/Kg wet							
1,1-Dichloroethylene	ND	0.0040	mg/Kg wet							
cis-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
trans-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
1,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,3-Dichloropropane	ND	0.0010	mg/Kg wet							
2,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,1-Dichloropropene	ND	0.0020	mg/Kg wet							
cis-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
trans-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
Diethyl Ether	ND	0.010	mg/Kg wet							
Diisopropyl Ether (DIPE)	ND	0.0010	mg/Kg wet							
1,4-Dioxane	ND	0.10	mg/Kg wet							V-16
Ethylbenzene	ND	0.0020	mg/Kg wet							
Hexachlorobutadiene	ND	0.0020	mg/Kg wet							
2-Hexanone (MBK)	ND	0.020	mg/Kg wet							
Isopropylbenzene (Cumene)	ND	0.0020	mg/Kg wet							
p-Isopropyltoluene (p-Cymene)	ND	0.0020	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.0040	mg/Kg wet							
Methylene Chloride	ND	0.010	mg/Kg wet							
4-Methyl-2-pentanone (MIBK)	ND	0.020	mg/Kg wet							
Naphthalene	ND	0.010	mg/Kg wet							
n-Propylbenzene	ND	0.0020	mg/Kg wet							
Styrene	ND	0.0020	mg/Kg wet							
1,1,1,2-Tetrachloroethane	ND	0.0020	mg/Kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0010	mg/Kg wet							
Tetrachloroethylene	ND	0.0020	mg/Kg wet							
Tetrahydrofuran	ND	0.010	mg/Kg wet							
Toluene	ND	0.0020	mg/Kg wet							
1,2,3-Trichlorobenzene	ND	0.010	mg/Kg wet							
1,2,4-Trichlorobenzene	ND	0.0040	mg/Kg wet							
1,1,1-Trichloroethane	ND	0.0020	mg/Kg wet							
1,1,2-Trichloroethane	ND	0.0020	mg/Kg wet							
Trichloroethylene	ND	0.0020	mg/Kg wet							
Trichlorofluoromethane (Freon 11)	ND	0.010	mg/Kg wet							
1,2,3-Trichloropropane	ND	0.0020	mg/Kg wet							
1,2,4-Trimethylbenzene	ND	0.0020	mg/Kg wet							
1,3,5-Trimethylbenzene	ND	0.0020	mg/Kg wet							
Vinyl Chloride	ND	0.010	mg/Kg wet							
m+p Xylene	ND	0.0040	mg/Kg wet							
o-Xylene	ND	0.0020	mg/Kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0545*		mg/Kg wet	0.0500		109	70-130			
Surrogate: Toluene-d8	*0.0482*		mg/Kg wet	0.0500		96.4	70-130			
Surrogate: 4-Bromofluorobenzene	*0.0480*		mg/Kg wet	0.0500		96.0	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B103679 - SW-846 5035											
LCS (B103679-BS1)				Prepared & Analyzed: 08/27/14							
Acetone	0.224	0.10	mg/Kg wet	0.200		112	40-160				†
tert-Amyl Methyl Ether (TAME)	0.0188	0.0010	mg/Kg wet	0.0200		94.0	70-130				
Benzene	0.0195	0.0020	mg/Kg wet	0.0200		97.5	70-130				
Bromobenzene	0.0207	0.0020	mg/Kg wet	0.0200		103	70-130				
Bromochloromethane	0.0211	0.0020	mg/Kg wet	0.0200		106	70-130				
Bromodichloromethane	0.0233	0.0020	mg/Kg wet	0.0200		116	70-130				
Bromoform	0.0222	0.010	mg/Kg wet	0.0200		111	70-130				
Bromomethane	0.0135	0.010	mg/Kg wet	0.0200		67.6	40-160			L-14	†
2-Butanone (MEK)	0.217	0.040	mg/Kg wet	0.200		109	40-160				†
n-Butylbenzene	0.0216	0.0020	mg/Kg wet	0.0200		108	70-130				
sec-Butylbenzene	0.0220	0.0020	mg/Kg wet	0.0200		110	70-130				
tert-Butylbenzene	0.0215	0.0020	mg/Kg wet	0.0200		108	70-130				
tert-Butyl Ethyl Ether (TBEE)	0.0197	0.0010	mg/Kg wet	0.0200		98.6	70-130				
Carbon Disulfide	0.0191	0.020	mg/Kg wet	0.0200		95.5	70-130				
Carbon Tetrachloride	0.0223	0.0020	mg/Kg wet	0.0200		111	70-130				
Chlorobenzene	0.0213	0.0020	mg/Kg wet	0.0200		106	70-130				
Chlorodibromomethane	0.0233	0.0010	mg/Kg wet	0.0200		116	70-130				
Chloroethane	0.0190	0.010	mg/Kg wet	0.0200		94.8	70-130				
Chloroform	0.0215	0.0040	mg/Kg wet	0.0200		108	70-130				
Chloromethane	0.0150	0.010	mg/Kg wet	0.0200		75.2	40-160				†
2-Chlorotoluene	0.0221	0.0020	mg/Kg wet	0.0200		110	70-130				
4-Chlorotoluene	0.0224	0.0020	mg/Kg wet	0.0200		112	70-130				
1,2-Dibromo-3-chloropropane (DBCP)	0.0231	0.0020	mg/Kg wet	0.0200		115	70-130				
1,2-Dibromoethane (EDB)	0.0220	0.0010	mg/Kg wet	0.0200		110	70-130				
Dibromomethane	0.0224	0.0020	mg/Kg wet	0.0200		112	70-130				
1,2-Dichlorobenzene	0.0212	0.0020	mg/Kg wet	0.0200		106	70-130				
1,3-Dichlorobenzene	0.0203	0.0020	mg/Kg wet	0.0200		102	70-130				
1,4-Dichlorobenzene	0.0206	0.0020	mg/Kg wet	0.0200		103	70-130				
Dichlorodifluoromethane (Freon 12)	0.0156	0.010	mg/Kg wet	0.0200		78.0	40-160				†
1,1-Dichloroethane	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130				
1,2-Dichloroethane	0.0246	0.0020	mg/Kg wet	0.0200		123	70-130				
1,1-Dichloroethylene	0.0210	0.0040	mg/Kg wet	0.0200		105	70-130				
cis-1,2-Dichloroethylene	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130				
trans-1,2-Dichloroethylene	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130				
1,2-Dichloropropane	0.0209	0.0020	mg/Kg wet	0.0200		104	70-130				
1,3-Dichloropropane	0.0211	0.0010	mg/Kg wet	0.0200		106	70-130				
2,2-Dichloropropane	0.0197	0.0020	mg/Kg wet	0.0200		98.7	70-130				
1,1-Dichloropropene	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130				
cis-1,3-Dichloropropene	0.0212	0.0010	mg/Kg wet	0.0200		106	70-130				
trans-1,3-Dichloropropene	0.0236	0.0010	mg/Kg wet	0.0200		118	70-130				
Diethyl Ether	0.0211	0.010	mg/Kg wet	0.0200		106	70-130				
Diisopropyl Ether (DIPE)	0.0192	0.0010	mg/Kg wet	0.0200		96.0	70-130				
1,4-Dioxane	0.224	0.10	mg/Kg wet	0.200		112	40-160			V-16	†
Ethylbenzene	0.0213	0.0020	mg/Kg wet	0.0200		107	70-130				
Hexachlorobutadiene	0.0226	0.0020	mg/Kg wet	0.0200		113	70-130				
2-Hexanone (MBK)	0.214	0.020	mg/Kg wet	0.200		107	40-160				†
Isopropylbenzene (Cumene)	0.0224	0.0020	mg/Kg wet	0.0200		112	70-130				
p-Isopropyltoluene (p-Cymene)	0.0209	0.0020	mg/Kg wet	0.0200		105	70-130				
Methyl tert-Butyl Ether (MTBE)	0.0204	0.0040	mg/Kg wet	0.0200		102	70-130				
Methylene Chloride	0.0183	0.010	mg/Kg wet	0.0200		91.5	70-130				
4-Methyl-2-pentanone (MIBK)	0.193	0.020	mg/Kg wet	0.200		96.7	40-160				†
Naphthalene	0.0208	0.010	mg/Kg wet	0.0200		104	70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103679 - SW-846 5035										
LCS (B103679-BS1)				Prepared & Analyzed: 08/27/14						
n-Propylbenzene	0.0228	0.0020	mg/Kg wet	0.0200		114	70-130			
Styrene	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130			
1,1,1,2-Tetrachloroethane	0.0234	0.0020	mg/Kg wet	0.0200		117	70-130			
1,1,2,2-Tetrachloroethane	0.0212	0.0010	mg/Kg wet	0.0200		106	70-130			
Tetrachloroethylene	0.0217	0.0020	mg/Kg wet	0.0200		108	70-130			
Tetrahydrofuran	0.0196	0.010	mg/Kg wet	0.0200		97.9	70-130			
Toluene	0.0211	0.0020	mg/Kg wet	0.0200		105	70-130			
1,2,3-Trichlorobenzene	0.0201	0.010	mg/Kg wet	0.0200		100	70-130			
1,2,4-Trichlorobenzene	0.0196	0.0040	mg/Kg wet	0.0200		98.0	70-130			
1,1,1-Trichloroethane	0.0216	0.0020	mg/Kg wet	0.0200		108	70-130			
1,1,2-Trichloroethane	0.0220	0.0020	mg/Kg wet	0.0200		110	70-130			
Trichloroethylene	0.0230	0.0020	mg/Kg wet	0.0200		115	70-130			
Trichlorofluoromethane (Freon 11)	0.0219	0.010	mg/Kg wet	0.0200		110	70-130			
1,2,3-Trichloropropane	0.0217	0.0020	mg/Kg wet	0.0200		108	70-130			
1,2,4-Trimethylbenzene	0.0207	0.0020	mg/Kg wet	0.0200		104	70-130			
1,3,5-Trimethylbenzene	0.0216	0.0020	mg/Kg wet	0.0200		108	70-130			
Vinyl Chloride	0.0142	0.010	mg/Kg wet	0.0200		70.9	70-130			
m+p Xylene	0.0442	0.0040	mg/Kg wet	0.0400		111	70-130			
o-Xylene	0.0220	0.0020	mg/Kg wet	0.0200		110	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0531*		mg/Kg wet	0.0500		106	70-130			
Surrogate: Toluene-d8	*0.0491*		mg/Kg wet	0.0500		98.2	70-130			
Surrogate: 4-Bromofluorobenzene	*0.0499*		mg/Kg wet	0.0500		99.9	70-130			
LCS Dup (B103679-BSD1)				Prepared & Analyzed: 08/27/14						
Acetone	0.250	0.10	mg/Kg wet	0.200		125	40-160	11.1	20	†
tert-Amyl Methyl Ether (TAME)	0.0185	0.0010	mg/Kg wet	0.0200		92.6	70-130	1.50	20	
Benzene	0.0194	0.0020	mg/Kg wet	0.0200		97.0	70-130	0.514	20	
Bromobenzene	0.0203	0.0020	mg/Kg wet	0.0200		101	70-130	1.96	20	
Bromochloromethane	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130	3.27	20	
Bromodichloromethane	0.0228	0.0020	mg/Kg wet	0.0200		114	70-130	2.26	20	
Bromoform	0.0215	0.010	mg/Kg wet	0.0200		107	70-130	3.30	20	
Bromomethane	0.0164	0.010	mg/Kg wet	0.0200		82.0	40-160	19.3	20	†
2-Butanone (MEK)	0.234	0.040	mg/Kg wet	0.200		117	40-160	7.26	20	†
n-Butylbenzene	0.0212	0.0020	mg/Kg wet	0.0200		106	70-130	1.68	20	
sec-Butylbenzene	0.0218	0.0020	mg/Kg wet	0.0200		109	70-130	0.912	20	
tert-Butylbenzene	0.0213	0.0020	mg/Kg wet	0.0200		106	70-130	1.12	20	
tert-Butyl Ethyl Ether (TBEE)	0.0192	0.0010	mg/Kg wet	0.0200		96.1	70-130	2.57	20	
Carbon Disulfide	0.0201	0.020	mg/Kg wet	0.0200		101	70-130	5.20	20	
Carbon Tetrachloride	0.0215	0.0020	mg/Kg wet	0.0200		108	70-130	3.29	20	
Chlorobenzene	0.0208	0.0020	mg/Kg wet	0.0200		104	70-130	2.00	20	
Chlorodibromomethane	0.0231	0.0010	mg/Kg wet	0.0200		116	70-130	0.862	20	
Chloroethane	0.0207	0.010	mg/Kg wet	0.0200		103	70-130	8.58	20	
Chloroform	0.0210	0.0040	mg/Kg wet	0.0200		105	70-130	2.63	20	
Chloromethane	0.0160	0.010	mg/Kg wet	0.0200		80.0	40-160	6.19	20	†
2-Chlorotoluene	0.0217	0.0020	mg/Kg wet	0.0200		109	70-130	1.73	20	
4-Chlorotoluene	0.0216	0.0020	mg/Kg wet	0.0200		108	70-130	3.55	20	
1,2-Dibromo-3-chloropropane (DBCP)	0.0226	0.0020	mg/Kg wet	0.0200		113	70-130	2.19	20	
1,2-Dibromoethane (EDB)	0.0216	0.0010	mg/Kg wet	0.0200		108	70-130	2.20	20	
Dibromomethane	0.0220	0.0020	mg/Kg wet	0.0200		110	70-130	1.89	20	
1,2-Dichlorobenzene	0.0208	0.0020	mg/Kg wet	0.0200		104	70-130	2.10	20	
1,3-Dichlorobenzene	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130	0.691	20	
1,4-Dichlorobenzene	0.0200	0.0020	mg/Kg wet	0.0200		100	70-130	2.66	20	

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B103679 - SW-846 5035											
LCS Dup (B103679-BSD1)				Prepared & Analyzed: 08/27/14							
Dichlorodifluoromethane (Freon 12)	0.0168	0.010	mg/Kg wet	0.0200		83.8	40-160	7.17	20		†
1,1-Dichloroethane	0.0201	0.0020	mg/Kg wet	0.0200		101	70-130	0.199	20		
1,2-Dichloroethane	0.0237	0.0020	mg/Kg wet	0.0200		119	70-130	3.40	20		
1,1-Dichloroethylene	0.0216	0.0040	mg/Kg wet	0.0200		108	70-130	2.82	20		
cis-1,2-Dichloroethylene	0.0201	0.0020	mg/Kg wet	0.0200		100	70-130	1.68	20		
trans-1,2-Dichloroethylene	0.0205	0.0020	mg/Kg wet	0.0200		103	70-130	0.391	20		
1,2-Dichloropropane	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130	2.03	20		
1,3-Dichloropropane	0.0204	0.0010	mg/Kg wet	0.0200		102	70-130	3.66	20		
2,2-Dichloropropane	0.0193	0.0020	mg/Kg wet	0.0200		96.7	70-130	2.05	20		
1,1-Dichloropropene	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130	0.689	20		
cis-1,3-Dichloropropene	0.0204	0.0010	mg/Kg wet	0.0200		102	70-130	3.75	20		
trans-1,3-Dichloropropene	0.0226	0.0010	mg/Kg wet	0.0200		113	70-130	4.15	20		
Diethyl Ether	0.0212	0.010	mg/Kg wet	0.0200		106	70-130	0.378	20		
Diisopropyl Ether (DIPE)	0.0189	0.0010	mg/Kg wet	0.0200		94.4	70-130	1.68	20		
1,4-Dioxane	0.196	0.10	mg/Kg wet	0.200		98.1	40-160	13.4	20	V-16	†
Ethylbenzene	0.0209	0.0020	mg/Kg wet	0.0200		104	70-130	2.09	20		
Hexachlorobutadiene	0.0226	0.0020	mg/Kg wet	0.0200		113	70-130	0.0885	20		
2-Hexanone (MBK)	0.232	0.020	mg/Kg wet	0.200		116	40-160	8.06	20		†
Isopropylbenzene (Cumene)	0.0220	0.0020	mg/Kg wet	0.0200		110	70-130	1.80	20		
p-Isopropyltoluene (p-Cymene)	0.0207	0.0020	mg/Kg wet	0.0200		103	70-130	1.15	20		
Methyl tert-Butyl Ether (MTBE)	0.0199	0.0040	mg/Kg wet	0.0200		99.4	70-130	2.78	20		
Methylene Chloride	0.0182	0.010	mg/Kg wet	0.0200		90.9	70-130	0.658	20		
4-Methyl-2-pentanone (MIBK)	0.189	0.020	mg/Kg wet	0.200		94.5	40-160	2.36	20		†
Naphthalene	0.0206	0.010	mg/Kg wet	0.0200		103	70-130	1.16	20		
n-Propylbenzene	0.0224	0.0020	mg/Kg wet	0.0200		112	70-130	1.86	20		
Styrene	0.0196	0.0020	mg/Kg wet	0.0200		98.2	70-130	3.60	20		
1,1,1,2-Tetrachloroethane	0.0230	0.0020	mg/Kg wet	0.0200		115	70-130	1.73	20		
1,1,2,2-Tetrachloroethane	0.0204	0.0010	mg/Kg wet	0.0200		102	70-130	4.04	20		
Tetrachloroethylene	0.0214	0.0020	mg/Kg wet	0.0200		107	70-130	1.11	20		
Tetrahydrofuran	0.0185	0.010	mg/Kg wet	0.0200		92.5	70-130	5.67	20		
Toluene	0.0207	0.0020	mg/Kg wet	0.0200		104	70-130	1.72	20		
1,2,3-Trichlorobenzene	0.0198	0.010	mg/Kg wet	0.0200		99.2	70-130	1.20	20		
1,2,4-Trichlorobenzene	0.0194	0.0040	mg/Kg wet	0.0200		97.0	70-130	1.03	20		
1,1,1-Trichloroethane	0.0215	0.0020	mg/Kg wet	0.0200		108	70-130	0.464	20		
1,1,2-Trichloroethane	0.0210	0.0020	mg/Kg wet	0.0200		105	70-130	4.74	20		
Trichloroethylene	0.0223	0.0020	mg/Kg wet	0.0200		112	70-130	2.91	20		
Trichlorofluoromethane (Freon 11)	0.0230	0.010	mg/Kg wet	0.0200		115	70-130	4.99	20		
1,2,3-Trichloropropane	0.0212	0.0020	mg/Kg wet	0.0200		106	70-130	2.14	20		
1,2,4-Trimethylbenzene	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130	2.44	20		
1,3,5-Trimethylbenzene	0.0211	0.0020	mg/Kg wet	0.0200		106	70-130	2.25	20		
Vinyl Chloride	0.0145	0.010	mg/Kg wet	0.0200		72.7	70-130	2.51	20		
m+p Xylene	0.0432	0.0040	mg/Kg wet	0.0400		108	70-130	2.24	20		
o-Xylene	0.0216	0.0020	mg/Kg wet	0.0200		108	70-130	2.11	20		
Surrogate: 1,2-Dichloroethane-d4	*0.0522*		mg/Kg wet	0.0500		104	70-130				
Surrogate: Toluene-d8	*0.0490*		mg/Kg wet	0.0500		98.0	70-130				
Surrogate: 4-Bromofluorobenzene	*0.0497*		mg/Kg wet	0.0500		99.4	70-130				

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103590 - SW-846 3540C										
Blank (B103590-BLK1)				Prepared: 08/26/14 Analyzed: 08/27/14						
Aroclor-1016	ND	0.020	mg/Kg wet							
Aroclor-1016 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1221	ND	0.020	mg/Kg wet							
Aroclor-1221 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1232	ND	0.020	mg/Kg wet							
Aroclor-1232 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1242	ND	0.020	mg/Kg wet							
Aroclor-1242 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1248	ND	0.020	mg/Kg wet							
Aroclor-1248 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1254	ND	0.020	mg/Kg wet							
Aroclor-1254 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1260	ND	0.020	mg/Kg wet							
Aroclor-1260 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1262	ND	0.020	mg/Kg wet							
Aroclor-1262 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1268	ND	0.020	mg/Kg wet							
Aroclor-1268 [2C]	ND	0.020	mg/Kg wet							
Surrogate: Decachlorobiphenyl	*0.166*		mg/Kg wet	0.200		82.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.185*		mg/Kg wet	0.200		92.5	30-150			
Surrogate: Tetrachloro-m-xylene	*0.164*		mg/Kg wet	0.200		82.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.176*		mg/Kg wet	0.200		88.2	30-150			
LCS (B103590-BS1)				Prepared: 08/26/14 Analyzed: 08/27/14						
Aroclor-1016	0.23	0.10	mg/Kg wet	0.200		116	40-140			V-06
Aroclor-1016 [2C]	0.19	0.10	mg/Kg wet	0.200		93.8	40-140			
Aroclor-1260	0.22	0.10	mg/Kg wet	0.200		109	40-140			
Aroclor-1260 [2C]	0.20	0.10	mg/Kg wet	0.200		98.6	40-140			
Surrogate: Decachlorobiphenyl	*0.209*		mg/Kg wet	0.200		104	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.219*		mg/Kg wet	0.200		109	30-150			
Surrogate: Tetrachloro-m-xylene	*0.191*		mg/Kg wet	0.200		95.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.194*		mg/Kg wet	0.200		97.1	30-150			
LCS Dup (B103590-BSD1)				Prepared: 08/26/14 Analyzed: 08/27/14						
Aroclor-1016	0.23	0.10	mg/Kg wet	0.200		114	40-140	2.36	30	V-06
Aroclor-1016 [2C]	0.18	0.10	mg/Kg wet	0.200		90.1	40-140	4.03	30	
Aroclor-1260	0.21	0.10	mg/Kg wet	0.200		104	40-140	4.21	30	
Aroclor-1260 [2C]	0.19	0.10	mg/Kg wet	0.200		94.7	40-140	4.08	30	
Surrogate: Decachlorobiphenyl	*0.193*		mg/Kg wet	0.200		96.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.198*		mg/Kg wet	0.200		98.8	30-150			
Surrogate: Tetrachloro-m-xylene	*0.191*		mg/Kg wet	0.200		95.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.188*		mg/Kg wet	0.200		93.8	30-150			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103583 - SW-846 3546										
Blank (B103583-BLK1)				Prepared: 08/26/14 Analyzed: 08/27/14						
C9-C18 Aliphatics	ND	10	mg/Kg wet							
C19-C36 Aliphatics	ND	10	mg/Kg wet							
Unadjusted C11-C22 Aromatics	ND	10	mg/Kg wet							
C11-C22 Aromatics	ND	10	mg/Kg wet							
Acenaphthene	ND	0.10	mg/Kg wet							
Acenaphthylene	ND	0.10	mg/Kg wet							
Anthracene	ND	0.10	mg/Kg wet							
Benzo(a)anthracene	ND	0.10	mg/Kg wet							
Benzo(a)pyrene	ND	0.10	mg/Kg wet							
Benzo(b)fluoranthene	ND	0.10	mg/Kg wet							
Benzo(g,h,i)perylene	ND	0.10	mg/Kg wet							
Benzo(k)fluoranthene	ND	0.10	mg/Kg wet							
Chrysene	ND	0.10	mg/Kg wet							
Dibenz(a,h)anthracene	ND	0.10	mg/Kg wet							
Fluoranthene	ND	0.10	mg/Kg wet							
Fluorene	ND	0.10	mg/Kg wet							
Indeno(1,2,3-cd)pyrene	ND	0.10	mg/Kg wet							
2-Methylnaphthalene	ND	0.10	mg/Kg wet							
Naphthalene	ND	0.10	mg/Kg wet							
Phenanthrene	ND	0.10	mg/Kg wet							
Pyrene	ND	0.10	mg/Kg wet							
n-Decane	ND	0.10	mg/Kg wet							
n-Docosane	ND	0.10	mg/Kg wet							
n-Dodecane	ND	0.10	mg/Kg wet							
n-Eicosane	ND	0.10	mg/Kg wet							
n-Hexacosane	ND	0.10	mg/Kg wet							
n-Hexadecane	ND	0.10	mg/Kg wet							
n-Hexatriacontane	ND	0.10	mg/Kg wet							
n-Nonadecane	ND	0.10	mg/Kg wet							
n-Nonane	ND	0.10	mg/Kg wet							
n-Octacosane	ND	0.10	mg/Kg wet							
n-Octadecane	ND	0.10	mg/Kg wet							
n-Tetracosane	ND	0.10	mg/Kg wet							
n-Tetradecane	ND	0.10	mg/Kg wet							
n-Triacontane	ND	0.10	mg/Kg wet							
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet							
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet							
Surrogate: Chlorooctadecane (COD)	*3.10*		mg/Kg wet	5.00		62.1	40-140			
Surrogate: o-Terphenyl (OTP)	*4.08*		mg/Kg wet	5.05		80.7	40-140			
Surrogate: 2-Bromonaphthalene	*5.11*		mg/Kg wet	5.00		102	40-140			
Surrogate: 2-Fluorobiphenyl	*5.57*		mg/Kg wet	5.00		111	40-140			
LCS (B103583-BS1)				Prepared: 08/26/14 Analyzed: 08/27/14						
Acenaphthene	4.30	0.10	mg/Kg wet	5.00		85.9	40-140			
Acenaphthylene	4.12	0.10	mg/Kg wet	5.00		82.4	40-140			
Anthracene	5.31	0.10	mg/Kg wet	5.00		106	40-140			
Benzo(a)anthracene	4.84	0.10	mg/Kg wet	5.00		96.7	40-140			
Benzo(a)pyrene	4.75	0.10	mg/Kg wet	5.00		95.0	40-140			
Benzo(b)fluoranthene	4.72	0.10	mg/Kg wet	5.00		94.3	40-140			
Benzo(g,h,i)perylene	4.81	0.10	mg/Kg wet	5.00		96.1	40-140			
Benzo(k)fluoranthene	4.64	0.10	mg/Kg wet	5.00		92.8	40-140			
Chrysene	4.86	0.10	mg/Kg wet	5.00		97.2	40-140			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103583 - SW-846 3546										
LCS (B103583-BS1)				Prepared: 08/26/14 Analyzed: 08/27/14						
Dibenz(a,h)anthracene	4.67	0.10	mg/Kg wet	5.00		93.4	40-140			
Fluoranthene	4.93	0.10	mg/Kg wet	5.00		98.6	40-140			
Fluorene	4.64	0.10	mg/Kg wet	5.00		92.8	40-140			
Indeno(1,2,3-cd)pyrene	3.90	0.10	mg/Kg wet	5.00		78.0	40-140			
2-Methylnaphthalene	4.07	0.10	mg/Kg wet	5.00		81.3	40-140			
Naphthalene	3.74	0.10	mg/Kg wet	5.00		74.7	40-140			
Phenanthrene	4.89	0.10	mg/Kg wet	5.00		97.9	40-140			
Pyrene	4.92	0.10	mg/Kg wet	5.00		98.5	40-140			
n-Decane	2.41	0.10	mg/Kg wet	5.00		48.3	40-140			
n-Docosane	4.20	0.10	mg/Kg wet	5.00		83.9	40-140			
n-Dodecane	3.22	0.10	mg/Kg wet	5.00		64.3	40-140			
n-Eicosane	4.13	0.10	mg/Kg wet	5.00		82.6	40-140			
n-Hexacosane	4.04	0.10	mg/Kg wet	5.00		80.8	40-140			
n-Hexadecane	4.15	0.10	mg/Kg wet	5.00		82.9	40-140			
n-Hexatriacontane	4.22	0.10	mg/Kg wet	5.00		84.3	40-140			
n-Nonadecane	4.20	0.10	mg/Kg wet	5.00		84.1	40-140			
n-Nonane	1.70	0.10	mg/Kg wet	5.00		34.0	30-140			
n-Octacosane	4.00	0.10	mg/Kg wet	5.00		80.1	40-140			
n-Octadecane	4.24	0.10	mg/Kg wet	5.00		84.8	40-140			
n-Tetracosane	4.08	0.10	mg/Kg wet	5.00		81.6	40-140			
n-Tetradecane	3.67	0.10	mg/Kg wet	5.00		73.3	40-140			
n-Triacontane	4.08	0.10	mg/Kg wet	5.00		81.5	40-140			
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
Surrogate: Chlorooctadecane (COD)	*3.52*		mg/Kg wet	5.00		70.4	40-140			
Surrogate: o-Terphenyl (OTP)	*4.68*		mg/Kg wet	5.05		92.8	40-140			
Surrogate: 2-Bromonaphthalene	*4.87*		mg/Kg wet	5.00		97.4	40-140			
Surrogate: 2-Fluorobiphenyl	*5.42*		mg/Kg wet	5.00		108	40-140			
LCS Dup (B103583-BSD1)				Prepared: 08/26/14 Analyzed: 08/27/14						
Acenaphthene	4.09	0.10	mg/Kg wet	5.00		81.8	40-140	4.94	25	
Acenaphthylene	3.92	0.10	mg/Kg wet	5.00		78.5	40-140	4.84	25	
Anthracene	4.94	0.10	mg/Kg wet	5.00		98.8	40-140	7.21	25	
Benzo(a)anthracene	4.47	0.10	mg/Kg wet	5.00		89.3	40-140	7.95	25	
Benzo(a)pyrene	4.39	0.10	mg/Kg wet	5.00		87.7	40-140	7.95	25	
Benzo(b)fluoranthene	4.40	0.10	mg/Kg wet	5.00		88.0	40-140	6.90	25	
Benzo(g,h,i)perylene	4.36	0.10	mg/Kg wet	5.00		87.2	40-140	9.75	25	
Benzo(k)fluoranthene	4.25	0.10	mg/Kg wet	5.00		84.9	40-140	8.85	25	
Chrysene	4.42	0.10	mg/Kg wet	5.00		88.4	40-140	9.56	25	
Dibenz(a,h)anthracene	4.24	0.10	mg/Kg wet	5.00		84.9	40-140	9.53	25	
Fluoranthene	4.59	0.10	mg/Kg wet	5.00		91.9	40-140	7.03	25	
Fluorene	4.34	0.10	mg/Kg wet	5.00		86.9	40-140	6.58	25	
Indeno(1,2,3-cd)pyrene	3.62	0.10	mg/Kg wet	5.00		72.4	40-140	7.49	25	
2-Methylnaphthalene	3.90	0.10	mg/Kg wet	5.00		78.0	40-140	4.18	25	
Naphthalene	3.62	0.10	mg/Kg wet	5.00		72.3	40-140	3.30	25	
Phenanthrene	4.54	0.10	mg/Kg wet	5.00		90.7	40-140	7.58	25	
Pyrene	4.59	0.10	mg/Kg wet	5.00		91.7	40-140	7.06	25	
n-Decane	2.46	0.10	mg/Kg wet	5.00		49.3	40-140	2.02	25	
n-Docosane	4.08	0.10	mg/Kg wet	5.00		81.7	40-140	2.73	25	
n-Dodecane	3.16	0.10	mg/Kg wet	5.00		63.1	40-140	1.87	25	
n-Eicosane	4.01	0.10	mg/Kg wet	5.00		80.1	40-140	3.02	25	
n-Hexacosane	3.91	0.10	mg/Kg wet	5.00		78.2	40-140	3.32	25	

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103583 - SW-846 3546										
LCS Dup (B103583-BSD1)				Prepared: 08/26/14 Analyzed: 08/27/14						
n-Hexadecane	4.05	0.10	mg/Kg wet	5.00		80.9	40-140	2.40	25	
n-Hexatriacontane	4.18	0.10	mg/Kg wet	5.00		83.6	40-140	0.917	25	
n-Nonadecane	4.09	0.10	mg/Kg wet	5.00		81.9	40-140	2.65	25	
n-Nonane	1.77	0.10	mg/Kg wet	5.00		35.4	30-140	3.91	25	
n-Octacosane	3.86	0.10	mg/Kg wet	5.00		77.1	40-140	3.77	25	
n-Octadecane	4.13	0.10	mg/Kg wet	5.00		82.7	40-140	2.54	25	
n-Tetracosane	3.94	0.10	mg/Kg wet	5.00		78.7	40-140	3.55	25	
n-Tetradecane	3.58	0.10	mg/Kg wet	5.00		71.6	40-140	2.35	25	
n-Triacontane	3.93	0.10	mg/Kg wet	5.00		78.5	40-140	3.72	25	
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
Surrogate: Chlorooctadecane (COD)	*3.47*		mg/Kg wet	5.00		69.4	40-140			
Surrogate: o-Terphenyl (OTP)	*4.24*		mg/Kg wet	5.05		84.0	40-140			
Surrogate: 2-Bromonaphthalene	*4.80*		mg/Kg wet	5.00		96.1	40-140			
Surrogate: 2-Fluorobiphenyl	*5.33*		mg/Kg wet	5.00		107	40-140			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - VPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103663 - MA VPH										
Blank (B103663-BLK1)				Prepared & Analyzed: 08/27/14						
Unadjusted C5-C8 Aliphatics	ND	10	mg/Kg wet							
C5-C8 Aliphatics	ND	10	mg/Kg wet							
Unadjusted C9-C12 Aliphatics	ND	10	mg/Kg wet							
C9-C12 Aliphatics	ND	10	mg/Kg wet							
C9-C10 Aromatics	ND	10	mg/Kg wet							
Benzene	ND	0.050	mg/Kg wet							
Butylcyclohexane	ND	0.050	mg/Kg wet							
Decane	ND	0.050	mg/Kg wet							
Ethylbenzene	ND	0.050	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.050	mg/Kg wet							
2-Methylpentane	ND	0.050	mg/Kg wet							
Naphthalene	ND	0.50	mg/Kg wet							
Nonane	ND	0.050	mg/Kg wet							
Pentane	ND	0.050	mg/Kg wet							
Toluene	ND	0.050	mg/Kg wet							
1,2,4-Trimethylbenzene	ND	0.050	mg/Kg wet							
2,2,4-Trimethylpentane	ND	0.050	mg/Kg wet							
m+p Xylene	ND	0.10	mg/Kg wet							
o-Xylene	ND	0.050	mg/Kg wet							
Surrogate: 2,5-Dibromotoluene (FID)	*2.58*		mg/Kg wet	3.33		77.3	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*2.53*		mg/Kg wet	3.33		75.8	70-130			
LCS (B103663-BS1)				Prepared & Analyzed: 08/27/14						
Benzene	0.0958	0.0010	mg/Kg wet	0.100		95.8	70-130			
Butylcyclohexane	0.0855	0.0010	mg/Kg wet	0.100		85.5	70-130			
Decane	0.0977	0.0010	mg/Kg wet	0.100		97.7	70-130			
Ethylbenzene	0.0849	0.0010	mg/Kg wet	0.100		84.9	70-130			
Methyl tert-Butyl Ether (MTBE)	0.0998	0.0010	mg/Kg wet	0.100		99.8	70-130			
2-Methylpentane	0.0965	0.0010	mg/Kg wet	0.100		96.5	70-130			
Naphthalene	0.0877	0.010	mg/Kg wet	0.100		87.7	70-130			
Nonane	0.0948	0.0010	mg/Kg wet	0.100		94.8	30-130			
Pentane	0.103	0.0010	mg/Kg wet	0.100		103	70-130			
Toluene	0.0917	0.0010	mg/Kg wet	0.100		91.7	70-130			
1,2,4-Trimethylbenzene	0.0774	0.0010	mg/Kg wet	0.100		77.4	70-130			
2,2,4-Trimethylpentane	0.108	0.0010	mg/Kg wet	0.100		108	70-130			
m+p Xylene	0.173	0.0020	mg/Kg wet	0.200		86.5	70-130			
o-Xylene	0.0846	0.0010	mg/Kg wet	0.100		84.6	70-130			
Surrogate: 2,5-Dibromotoluene (FID)	*0.0403*		mg/Kg wet	0.0400		101	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*0.0343*		mg/Kg wet	0.0400		85.7	70-130			
LCS Dup (B103663-BSD1)				Prepared & Analyzed: 08/27/14						
Benzene	0.0958	0.0010	mg/Kg wet	0.100		95.8	70-130	0.0344	25	
Butylcyclohexane	0.0902	0.0010	mg/Kg wet	0.100		90.2	70-130	5.42	25	
Decane	0.103	0.0010	mg/Kg wet	0.100		103	70-130	5.16	25	
Ethylbenzene	0.0858	0.0010	mg/Kg wet	0.100		85.8	70-130	1.05	25	
Methyl tert-Butyl Ether (MTBE)	0.0953	0.0010	mg/Kg wet	0.100		95.3	70-130	4.61	25	
2-Methylpentane	0.0965	0.0010	mg/Kg wet	0.100		96.5	70-130	0.0135	25	
Naphthalene	0.0899	0.010	mg/Kg wet	0.100		89.9	70-130	2.42	25	
Nonane	0.100	0.0010	mg/Kg wet	0.100		100	30-130	5.44	25	
Pentane	0.103	0.0010	mg/Kg wet	0.100		103	70-130	0.428	25	
Toluene	0.0923	0.0010	mg/Kg wet	0.100		92.3	70-130	0.689	25	
1,2,4-Trimethylbenzene	0.0781	0.0010	mg/Kg wet	0.100		78.1	70-130	0.922	25	

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - VPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103663 - MA VPH										
LCS Dup (B103663-BSD1)				Prepared & Analyzed: 08/27/14						
2,2,4-Trimethylpentane	0.106	0.0010	mg/Kg wet	0.100		106	70-130	1.95	25	
m+p Xylene	0.175	0.0020	mg/Kg wet	0.200		87.7	70-130	1.39	25	
o-Xylene	0.0857	0.0010	mg/Kg wet	0.100		85.7	70-130	1.26	25	
Surrogate: 2,5-Dibromotoluene (FID)	*0.0414*		mg/Kg wet	0.0400		104	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*0.0374*		mg/Kg wet	0.0400		93.5	70-130			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103724 - SW-846 3050B										
Blank (B103724-BLK1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Arsenic	ND	2.5	mg/Kg wet							
Barium	ND	2.5	mg/Kg wet							
Cadmium	ND	0.25	mg/Kg wet							
Chromium	ND	0.50	mg/Kg wet							
Lead	ND	0.75	mg/Kg wet							
Selenium	ND	5.0	mg/Kg wet							
Silver	ND	0.50	mg/Kg wet							
LCS (B103724-BS1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Arsenic	123	5.0	mg/Kg wet	122		101	77.8-122.1			
Barium	166	5.0	mg/Kg wet	167		99.3	82-117.4			
Cadmium	88.0	0.50	mg/Kg wet	88.0		100	81.9-118.2			
Chromium	105	1.0	mg/Kg wet	102		103	78.7-120.6			
Lead	90.3	1.5	mg/Kg wet	94.5		95.6	82.4-117.8			
Selenium	161	10	mg/Kg wet	157		102	77.1-122.3			
Silver	32.4	1.0	mg/Kg wet	34.2		94.7	74.3-125.4			
LCS Dup (B103724-BSD1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Arsenic	121	5.0	mg/Kg wet	122		98.9	77.8-122.1	1.70	30	
Barium	168	5.0	mg/Kg wet	167		101	82-117.4	1.28	30	
Cadmium	89.0	0.50	mg/Kg wet	88.0		101	81.9-118.2	1.14	30	
Chromium	104	1.0	mg/Kg wet	102		102	78.7-120.6	0.942	30	
Lead	90.1	1.5	mg/Kg wet	94.5		95.3	82.4-117.8	0.264	30	
Selenium	162	10	mg/Kg wet	157		103	77.1-122.3	0.647	30	
Silver	32.0	1.0	mg/Kg wet	34.2		93.6	74.3-125.4	1.20	30	
MRL Check (B103724-MRL1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Lead	0.710	0.72	mg/Kg wet	0.720		98.6	80-120			
Batch B103812 - SW-846 7471										
Blank (B103812-BLK1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Mercury	ND	0.025	mg/Kg wet							
LCS (B103812-BS1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Mercury	5.83	0.36	mg/Kg wet	5.76		101	71.2-128.6			
LCS Dup (B103812-BSD1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Mercury	5.71	0.37	mg/Kg wet	5.76		99.1	71.2-128.6	2.10	30	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103865 - % Solids										
Duplicate (B103865-DUP4)	**Source: 14H1122-13**		Prepared: 08/29/14 Analyzed: 09/02/14							
% Solids	93.4		% Wt		91.9			1.62	20	

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-14 (0-0.5)

Lab Sample ID: 14H1122-01 Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	4.4	
	2	0.00	0.00	0.00	3.9	11.1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-16 (0-0.5)

Lab Sample ID: 14H1122-05 Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	3.8	
	2	0.00	0.00	0.00	3.3	14.3

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-17 (0-0.5)

Lab Sample ID: 14H1122-09 Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.82	
	2	0.00	0.00	0.00	0.74	9.9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-17 (0.5-2)

Lab Sample ID: 14H1122-10 Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.23	
	2	0.00	0.00	0.00	0.23	1.3

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-18 (0-0.5)

Lab Sample ID: 14H1122-13 Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	13	
	2	0.00	0.00	0.00	11	19.7

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-20 (0-0.5)

Lab Sample ID: 14H1122-17 Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	7.9	
	2	0.00	0.00	0.00	7.5	5.2

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-20 (0.5-2)

Lab Sample ID: 14H1122-18 Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1248	1	0.00	0.00	0.00	0.12	
	2	0.00	0.00	0.00	0.17	38.6
Aroclor-1254	1	0.00	0.00	0.00	0.59	
	2	0.00	0.00	0.00	0.60	1.0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B103590-BS1 Date(s) Analyzed: 08/27/2014 08/27/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.23	
	2	0.00	0.00	0.00	0.19	20
Aroclor-1260	1	0.00	0.00	0.00	0.22	
	2	0.00	0.00	0.00	0.20	9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B103590-BSD1 Date(s) Analyzed: 08/27/2014 08/27/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.23	
	2	0.00	0.00	0.00	0.18	23
Aroclor-1260	1	0.00	0.00	0.00	0.21	
	2	0.00	0.00	0.00	0.19	10

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
L-02	Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.
L-14	Compound classified by MA CAM as difficult with acceptable recoveries of 40-160%. Recovery does not meet 70-130% criteria but does meet difficult compound criteria.
O-01	Soil/methanol ratio does not meet method specifications. Excess amount of soil. Sample was completely covered with methanol, but with less than the method-specified amount.
O-03	Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
O-04	Sample fingerprint does not match standard exactly. Sample was quantitated against the closest matching standard.
O-32	A five times dilution was performed as part of the standard analytical procedure.
P-01	Result was confirmed using a dissimilar column. Relative percent difference between the two results was >40%. In accordance with the method, the higher result was reported.
RL-05	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
RL-06	Elevated reporting limit due to high concentration of non-target compounds. MA CAM reporting limit not met.
S-01	The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
S-15	Surrogate recovery outside of control limits due to suspected sample matrix interference. Chromatogram(s) is attached.
V-06	Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.
V-16	Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
V-20	Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
MADEP-EPH-04-1.1 in Soil	
C9-C18 Aliphatics	CT,NC,WA,ME,ME,NH-P
C19-C36 Aliphatics	CT,NC,WA,ME,ME,NH-P
Unadjusted C11-C22 Aromatics	CT,NC,WA,ME,ME,NH-P
C11-C22 Aromatics	CT,NC,WA,ME,ME,NH-P
Acenaphthene	CT,NC,WA,ME,ME,NH-P
Acenaphthylene	CT,NC,WA,ME,ME,NH-P
Anthracene	CT,NC,WA,ME,ME,NH-P
Benzo(a)anthracene	CT,NC,WA,ME,ME,NH-P
Benzo(a)pyrene	CT,NC,WA,ME,ME,NH-P
Benzo(b)fluoranthene	CT,NC,WA,ME,ME,NH-P
Benzo(g,h,i)perylene	CT,NC,WA,ME,ME,NH-P
Benzo(k)fluoranthene	CT,NC,WA,ME,ME,NH-P
Chrysene	CT,NC,WA,ME,ME,NH-P
Dibenz(a,h)anthracene	CT,NC,WA,ME,ME,NH-P
Fluoranthene	CT,NC,WA,ME,ME,NH-P
Fluorene	CT,NC,WA,ME,ME
Indeno(1,2,3-cd)pyrene	CT,NC,WA,ME,ME,NH-P
2-Methylnaphthalene	CT,NC,WA,ME,ME
Naphthalene	CT,NC,WA,ME,ME,NH-P
Phenanthrene	CT,NC,WA,ME,ME,NH-P
Pyrene	CT,NC,WA,ME,ME,NH-P
MADEP-VPH-04-1.1 in Soil	
Unadjusted C5-C8 Aliphatics	CT,NC,WA,ME,NH-P
C5-C8 Aliphatics	CT,NC,WA,ME,NH-P
Unadjusted C9-C12 Aliphatics	CT,NC,WA,ME,NH-P
C9-C12 Aliphatics	CT,NC,WA,ME,NH-P
C9-C10 Aromatics	CT,NC,WA,ME,NH-P
Benzene	CT,NC,WA,ME,NH-P
Ethylbenzene	CT,NC,WA,ME,NH-P
Methyl tert-Butyl Ether (MTBE)	CT,NC,WA,ME,NH-P
Naphthalene	CT,NC,WA,ME,NH-P
Toluene	CT,NC,WA,ME,NH-P
m+p Xylene	CT,NC,WA,ME,NH-P
o-Xylene	CT,NC,WA,ME,NH-P
SW-846 6010C in Soil	
Arsenic	CT,NH,NY,ME,NC,VA,NJ
Barium	CT,NH,NY,ME,NC,VA,NJ
Cadmium	CT,NH,NY,ME,NC,VA,NJ
Chromium	CT,NH,NY,ME,NC,VA,NJ
Lead	CT,NH,NY,AIHA,ME,NC,VA,NJ
Selenium	CT,NH,NY,ME,NC,VA,NJ
Silver	CT,NH,NY,ME,NC,VA,NJ
SW-846 7471B in Soil	
Mercury	CT,NH,NY,NC,ME,VA,NJ
SW-846 8082A in Soil	

con-test® ANALYTICAL LABORATORY
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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Soil	
Aroclor-1016	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA,NJ
SW-846 8260C in Soil	
Acetone	CT,NH,NY,ME
Acetone	CT,NH,NY,ME
Benzene	CT,NH,NY,ME
Benzene	CT,NH,NY,ME
Bromobenzene	NH,NY,ME
Bromobenzene	NH,NY,ME
Bromochloromethane	NH,NY,ME
Bromochloromethane	NH,NY,ME
Bromodichloromethane	CT,NH,NY,ME
Bromodichloromethane	CT,NH,NY,ME
Bromoform	CT,NH,NY,ME
Bromoform	CT,NH,NY,ME
Bromomethane	CT,NH,NY,ME
Bromomethane	CT,NH,NY,ME
2-Butanone (MEK)	CT,NH,NY,ME
2-Butanone (MEK)	CT,NH,NY,ME
n-Butylbenzene	CT,NH,NY,ME
n-Butylbenzene	CT,NH,NY,ME
sec-Butylbenzene	CT,NH,NY,ME
sec-Butylbenzene	CT,NH,NY,ME
tert-Butylbenzene	CT,NH,NY,ME
tert-Butylbenzene	CT,NH,NY,ME
Carbon Disulfide	CT,NH,NY,ME
Carbon Disulfide	CT,NH,NY,ME
Carbon Tetrachloride	CT,NH,NY,ME
Carbon Tetrachloride	CT,NH,NY,ME
Chlorobenzene	CT,NH,NY,ME
Chlorobenzene	CT,NH,NY,ME
Chlorodibromomethane	CT,NH,NY,ME
Chlorodibromomethane	CT,NH,NY,ME
Chloroethane	CT,NH,NY,ME

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260C in Soil	
Chloroethane	CT,NH,NY,ME
Chloroform	CT,NH,NY,ME
Chloroform	CT,NH,NY,ME
Chloromethane	CT,NH,NY,ME
Chloromethane	CT,NH,NY,ME
2-Chlorotoluene	CT,NH,NY,ME
2-Chlorotoluene	CT,NH,NY,ME
4-Chlorotoluene	CT,NH,NY,ME
4-Chlorotoluene	CT,NH,NY,ME
Dibromomethane	NH,NY,ME
Dibromomethane	NH,NY,ME
1,2-Dichlorobenzene	CT,NH,NY,ME
1,2-Dichlorobenzene	CT,NH,NY,ME
1,3-Dichlorobenzene	CT,NH,NY,ME
1,3-Dichlorobenzene	CT,NH,NY,ME
1,4-Dichlorobenzene	CT,NH,NY,ME
1,4-Dichlorobenzene	CT,NH,NY,ME
Dichlorodifluoromethane (Freon 12)	NY,ME
Dichlorodifluoromethane (Freon 12)	NY,ME
1,1-Dichloroethane	CT,NH,NY,ME
1,1-Dichloroethane	CT,NH,NY,ME
1,2-Dichloroethane	CT,NH,NY,ME
1,2-Dichloroethane	CT,NH,NY,ME
1,1-Dichloroethylene	CT,NH,NY,ME
1,1-Dichloroethylene	CT,NH,NY,ME
cis-1,2-Dichloroethylene	CT,NH,NY,ME
cis-1,2-Dichloroethylene	CT,NH,NY,ME
trans-1,2-Dichloroethylene	CT,NH,NY,ME
trans-1,2-Dichloroethylene	CT,NH,NY,ME
1,2-Dichloropropane	CT,NH,NY,ME
1,2-Dichloropropane	CT,NH,NY,ME
1,3-Dichloropropane	NH,NY,ME
1,3-Dichloropropane	NH,NY,ME
2,2-Dichloropropane	NH,NY,ME
2,2-Dichloropropane	NH,NY,ME
1,1-Dichloropropene	NH,NY,ME
1,1-Dichloropropene	NH,NY,ME
cis-1,3-Dichloropropene	CT,NH,NY,ME
cis-1,3-Dichloropropene	CT,NH,NY,ME
trans-1,3-Dichloropropene	CT,NH,NY,ME
trans-1,3-Dichloropropene	CT,NH,NY,ME
Ethylbenzene	CT,NH,NY,ME
Ethylbenzene	CT,NH,NY,ME
Hexachlorobutadiene	NH,NY,ME
Hexachlorobutadiene	NH,NY,ME
2-Hexanone (MBK)	CT,NH,NY,ME
2-Hexanone (MBK)	CT,NH,NY,ME

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260C in Soil	
Isopropylbenzene (Cumene)	CT,NH,NY,ME
Isopropylbenzene (Cumene)	CT,NH,NY,ME
p-Isopropyltoluene (p-Cymene)	NH,NY
p-Isopropyltoluene (p-Cymene)	NH,NY
Methyl tert-Butyl Ether (MTBE)	NY
Methyl tert-Butyl Ether (MTBE)	NY
Methylene Chloride	CT,NH,NY,ME
Methylene Chloride	CT,NH,NY,ME
4-Methyl-2-pentanone (MIBK)	CT,NH,NY
4-Methyl-2-pentanone (MIBK)	CT,NH,NY
Naphthalene	NH,NY,ME
Naphthalene	NH,NY,ME
n-Propylbenzene	NH,NY
n-Propylbenzene	NH,NY
Styrene	CT,NH,NY,ME
Styrene	CT,NH,NY,ME
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME
Tetrachloroethylene	CT,NH,NY,ME
Tetrachloroethylene	CT,NH,NY,ME
Toluene	CT,NH,NY,ME
Toluene	CT,NH,NY,ME
1,2,3-Trichlorobenzene	ME
1,2,4-Trichlorobenzene	NH,NY,ME
1,2,4-Trichlorobenzene	NH,NY,ME
1,1,1-Trichloroethane	CT,NH,NY,ME
1,1,1-Trichloroethane	CT,NH,NY,ME
1,1,2-Trichloroethane	CT,NH,NY,ME
1,1,2-Trichloroethane	CT,NH,NY,ME
Trichloroethylene	CT,NH,NY,ME
Trichloroethylene	CT,NH,NY,ME
Trichlorofluoromethane (Freon 11)	CT,NH,NY,ME
Trichlorofluoromethane (Freon 11)	CT,NH,NY,ME
1,2,3-Trichloropropane	NH,NY,ME
1,2,3-Trichloropropane	NH,NY,ME
1,2,4-Trimethylbenzene	CT,NH,NY,ME
1,2,4-Trimethylbenzene	CT,NH,NY,ME
1,3,5-Trimethylbenzene	CT,NH,NY,ME
1,3,5-Trimethylbenzene	CT,NH,NY,ME
Vinyl Chloride	CT,NH,NY,ME
Vinyl Chloride	CT,NH,NY,ME
m+p Xylene	CT,NH,NY,ME
m+p Xylene	CT,NH,NY,ME
o-Xylene	CT,NH,NY,ME
o-Xylene	CT,NH,NY,ME

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The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2015
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2015
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2015
RI	Rhode Island Department of Health	LAO00112	12/30/2014
NC	North Carolina Div. of Water Quality	652	12/31/2014
NJ	New Jersey DEP	MA007 NELAP	06/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2015
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2015
WA	State of Washington Department of Ecology	C2065	02/23/2015
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2014
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2014

con-test® ANALYTICAL LABORATORY
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Email: info@contestlabs.com
www.contestlabs.com

CHAIN OF CUSTODY RECORD

14H1122

Rev 04.05.12

39 Spruce Street
East longmeadow, MA 01028

Company Name: WESTON & SAMPSON
Address: 5 Centennial Drive
PEABODY, MA 01960
Attention: JOE SPENCER
Project Location: CHARLESTOWN, MA
Sampled By: JRS / PK

Telephone: 800 SAMPSON
Project #: BLDG 105
Client PO#:

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ☒ WEBSITE
Fax #: spencerj@wseinc.com
Email: bridgeot@wseinc.com
Format: ☒ PDF ☒ EXCEL ○ GIS ○ OTHER ○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	PCB w/ SOXHLET	EPH w/ PAHs, RCRA 8	VPH NO TARGETS, 8260
01	SB-14 (0-0.5)	8/21	0945		Y	S	U	X		
02	SB-14 (0.5-2)	↓	0955		↓	↓	↓	X		
03	SB-14 (2-4)	↓	1000		↓	↓	↓			
04	SB-14 (4-6)	↓	1010		↓	↓	↓			
05	SB-16 (0-0.5)	↓	1020		↓	↓	↓	X		
06	SB-16 (0.5-2)	↓	1025		↓	↓	↓	X		
07	SB-16 (2-4)	↓	1030		↓	↓	↓			
08	SB-16 (4-6)	↓	1035		↓	↓	↓			
09	SB-17 (0-0.5)	↓	1100		↓	↓	↓	X		
10	SB-17 (0.5-2)	↓	1105		↓	↓	↓	X		

ANALYSIS REQUESTED

# of Containers	1	1	2/2
** Preservation	—	—	N/B
***Container Code	A	A	V

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V=vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other

Comments:
PLEASE HOLD SAMPLES THAT ARE NOT MARKED FOR ANALYSIS [I.E, SB-14 (4-6)]

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time:
[signature]	8/21 1700
Received by: (signature) [signature] 8/25/14	Date/Time: 12:30 pm
Relinquished by: (signature) [signature] 8/25/14	Date/Time: 8:00 pm
Received by: (signature) [signature] 4.4° 8.25.14	Date/Time: 2000

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5 day
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts: S-1
Connecticut:
Other:

Is your project MCP or RCP?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID #

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

†† TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

con-test ANALYTICAL LABORATORY
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Email: info@contestlabs.com
www.contestlabs.com

CHAIN OF CUSTODY RECORD

14H1122

Rev 04.05.12

39 Spruce Street
East longmeadow, MA 01028

Company Name: WESTON & SAMPSON
Telephone: 1800 SAMPSON
Address: 5 Centennial Dr
PEABODY, MA
Project #: BUDG 105
Client PO#:
Attention: JOE SPENCER
Project Location: CHARLESTOWN, MA
Sampled By: JRC / PK

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ☒ WEBSITE
Fax #:
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

ANALYSIS REQUESTED

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection: Beginning Date/Time	Collection: Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	PCBs w SOCHLET	EPH w PAHs, RCRA8	VPH NO TARGETS, 8260
11	SB-17 (2-4)	1110	8/21		X	S	U			
12	SB-17 (4-6)	1115								
13	SB-18 (0-0.5)	1140						X		
14	SB-18 (2-4)	1150						X		
15	SB-18 (4-6)	1155						X	X	X
16	SB-18 (0.5-2)	1145						X		
17	SB-20 (0-0.5)	1400						X		
18	SB-20 (0.5-2)	1405						X		
19	SB-20 (2-4)	1410								
20	SB-20 (4-6)	1415						X	X	X

# of Containers	1	1	2/2
** Preservation	—	—	M/B
***Container Co	A	A	V

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL= sludge
O = other

Comments:
PLEASE HOLD SAMPLES THAT ARE NOT MARKED FOR ANALYSIS [I.E., SB-18 (2-4)]

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time:
[signature]	8/22 1700
Received by: (signature) [signature] 8/25/14	Date/Time: 12:30 pm
Relinquished by: (signature) [signature] 8/25/14	Date/Time: 8:00 pm
Received by: (signature) Cassie Cats 4.4° 8.25.14	Date/Time: 2000

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5-day

RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts: S-1
Connecticut:
Other:

Is your project MCP or RCP?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID #

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

†† TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

39 Spruce St.
East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
www.contestlabs.com

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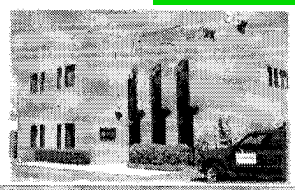


Sample Receipt Checklist

CLIENT NAME: Weston & Sampson RECEIVED BY: CC DATE: 8.25.14

1) **Was the chain(s) of custody relinquished and signed?** (Yes) No No CoC Included

2) **Does the chain agree with the samples?** (Yes) No
If not, explain:

3) **Are all the samples in good condition?** (Yes) No
If not, explain:

4) **How were the samples received:**
On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒

Were the samples received in Temperature Compliance of (2-6°C)? (Yes) No N/A

Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.4°

5) **Are there Dissolved samples for the lab to filter?** Yes (No)
Who was notified _____ Date _____ Time _____

6) **Are there any RUSH or SHORT HOLDING TIME samples?** Yes (No)
Who was notified _____ Date _____ Time _____

7) **Location where samples are stored:** 19

Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature: _____

8) **Do all samples have the proper Acid pH:** Yes No (N/A) _____

9) **Do all samples have the proper Base pH:** Yes No (N/A) _____

10) **Was the PC notified of any discrepancies with the CoC vs the samples:** Yes No (N/A)

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	22A
500 mL Amber		4 oz amber/clear jar	
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below	8	Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol 4
Bisulfate 4 # DI Water _____
Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)

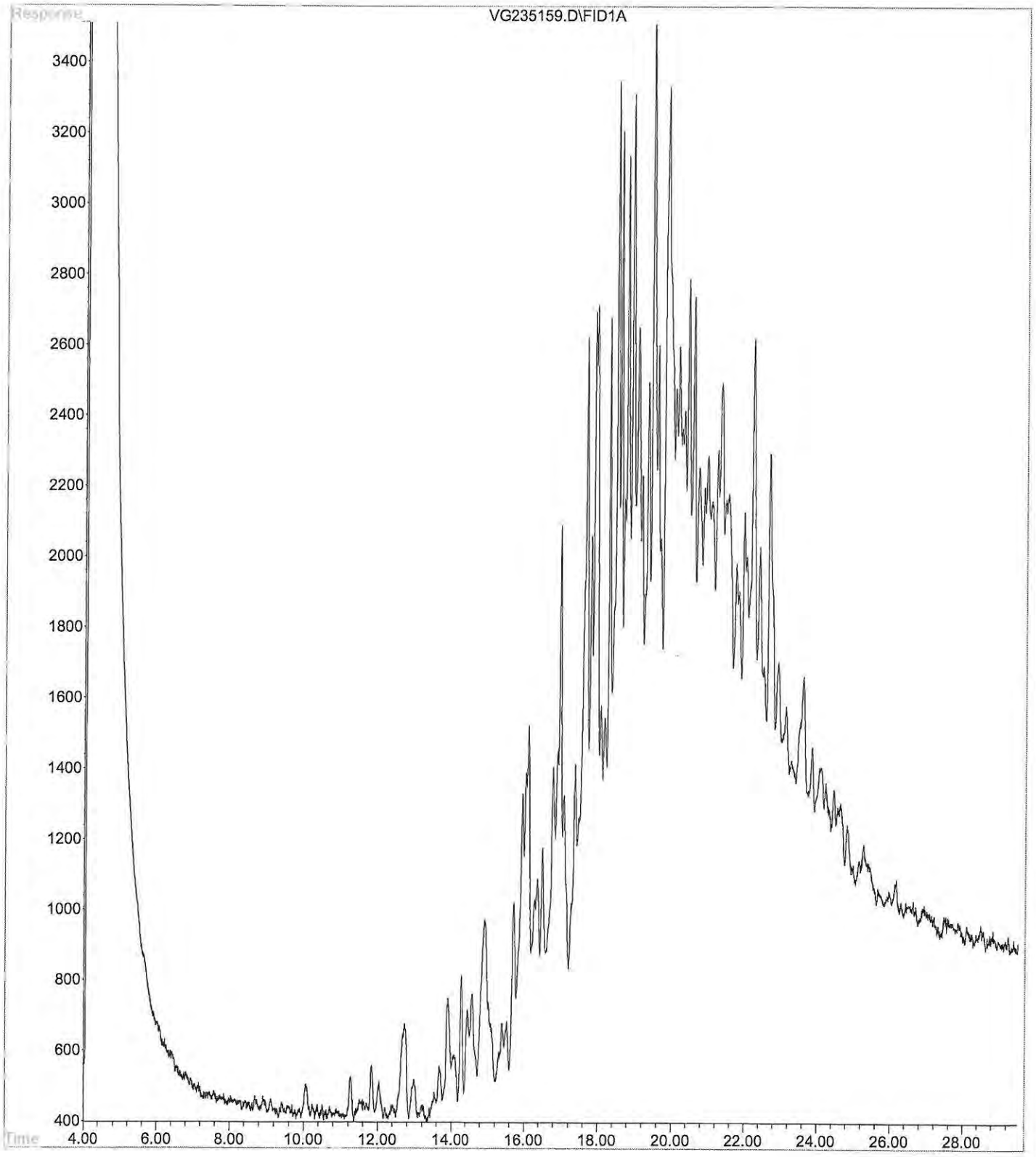
Any False statement will be brought to the attention of Client

Question	Answer (True/False) T/F/NA	Comment
1) The cooler's custody seal, if present, is intact.	NA	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	T	
18) There is sufficient volume for all requsted analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	T	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	NA	
21) Samples do not require splitting or compositing.	T	

Who notified of False statements? **Date/Time:**

Log-In Technician Initials: CC **Date/Time:** 8.25.14 2000

```
File        : D:\HPCHEM\2\DATA\082314\VG235159.D
Operator    : ORGANICS
Acquired    : 28 Aug 2014    5:01 am using AcqMethod VS210814.M
Instrument :    VPH GC 2
Sample Name: 14H1122-20 @ 500X
Misc Info   : 500
Vial Number: 30
```



MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 14H1122
Project Location: Charlestown, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

14H1122-01 thru 14H1122-20

Matrices: Soil

CAM Protocol (check all that below)

8260 VOC CAM II A (X)	7470/7471 Hg CAM IIIB (X)	MassDEP VPH CAM IV A (X)	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A (X)	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )
6010 Metals CAM III A (X)	6020 Metals CAM III D ( )	8082 PCB CAM V A (X)	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☑ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]

A response to questions G, H and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☐ Yes	☑ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Tod Kopyscinski Position: Laboratory Director

Printed Name: Tod E. Kopyscinski Date: 09/03/14

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September 3, 2014

Joe Spencer
Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960

Project Location: Charlestown, MA
Client Job Number:
Project Number: BLDG 105
Laboratory Work Order Number: 14H1123

Enclosed are results of analyses for samples received by the laboratory on August 25, 2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960
ATTN: Joe Spencer

REPORT DATE: 9/3/2014

PURCHASE ORDER NUMBER:

PROJECT NUMBER: BLDG 105

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 14H1123

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Charlestown, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
SB-21 (0-0.5)	14H1123-01	Soil		SM 2540G	
				SW-846 8082A	
SB-21 (0.5-2)	14H1123-02	Soil		SM 2540G	
				SW-846 8082A	
SB-21 (4-6)	14H1123-04	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
				SW-846 6010C	
				SW-846 7471B	
				SW-846 8260C	
SB-22 (0-0.5)	14H1123-05	Soil		SM 2540G	
				SW-846 8082A	
SB-22 (0.5-2)	14H1123-06	Soil		SM 2540G	
				SW-846 8082A	
SB-22 (4-6)	14H1123-08	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
				SW-846 6010C	
				SW-846 7471B	
				SW-846 8260C	
SB-7 (0-0.5)	14H1123-09	Soil		SM 2540G	
				SW-846 8082A	
SB-7 (0.5-2)	14H1123-10	Soil		SM 2540G	
				SW-846 8082A	
SB-4 (0-0.5)	14H1123-13	Soil		SM 2540G	
				SW-846 8082A	
SB-4 (0.5-2)	14H1123-14	Soil		SM 2540G	
				SW-846 8082A	
SB-4 (2-4)	14H1123-15	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
				SW-846 6010C	
				SW-846 7471B	
				SW-846 8260C	
SB-9 (0-0.5)	14H1123-17	Soil		SM 2540G	
				SW-846 8082A	
SB-9 (0.5-2)	14H1123-18	Soil		SM 2540G	
				SW-846 8082A	

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Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960
ATTN: Joe Spencer

REPORT DATE: 9/3/2014

PURCHASE ORDER NUMBER:

PROJECT NUMBER: BLDG 105

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 14H1123

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Charlestown, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
SB-9 (4-6)	14H1123-20	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
				SW-846 6010C	
				SW-846 7471B	
				SW-846 8260C	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

For method MA VPH, only hydrocarbon ranges were requested and reported

For method 6010, only RCRA 8 metals were requested and reported.

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MADEP-VPH-04-1.1

Qualifications:

O-01

Soil/methanol ratio does not meet method specifications. Excess amount of soil. Sample was completely covered with methanol, but with less than the method-specified amount.

Analyte & Samples(s) Qualified:

14H1123-04[SB-21 (4-6)], 14H1123-20[SB-9 (4-6)]

RL-05

Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.

Analyte & Samples(s) Qualified:

C5-C8 Aliphatics
14H1123-15[SB-4 (2-4)], 14H1123-20[SB-9 (4-6)]

Unadjusted C5-C8 Aliphatics
14H1123-15[SB-4 (2-4)], 14H1123-20[SB-9 (4-6)]

SW-846 8082A

Qualifications:

O-04

Sample fingerprint does not match standard exactly. Sample was quantitated against the closest matching standard.

Analyte & Samples(s) Qualified:

Aroclor-1268
14H1123-05[SB-22 (0-0.5)]

Aroclor-1268 [2C]
14H1123-05[SB-22 (0-0.5)]

O-32

A five times dilution was performed as part of the standard analytical procedure.

Analyte & Samples(s) Qualified:

14H1123-02[SB-21 (0.5-2)], 14H1123-09[SB-7 (0-0.5)], 14H1123-17[SB-9 (0-0.5)], 14H1123-18[SB-9 (0.5-2)]

S-19

Surrogate recovery is outside of control limits, matrix interference suspected. Reanalysis yielded similar surrogate non-conformance.

Analyte & Samples(s) Qualified:

Decachlorobiphenyl
14H1123-05[SB-22 (0-0.5)], 14H1123-05RE1[SB-22 (0-0.5)]

Decachlorobiphenyl [2C]
14H1123-05[SB-22 (0-0.5)], 14H1123-05RE1[SB-22 (0-0.5)]

S-24

Surrogate recovery is biased high due to the presence of Aroclor 1268 in the sample. Aroclor 1268 contains decachlorobiphenyl.

Analyte & Samples(s) Qualified:

Decachlorobiphenyl
14H1123-06[SB-22 (0.5-2)]

Decachlorobiphenyl [2C]
14H1123-06[SB-22 (0.5-2)]

SW-846 8260C

Qualifications:

L-02

Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.

Analyte & Samples(s) Qualified:

Acetone
B103519-BS1, B103519-BSD1, B103625-BS1, B103625-BSD1

Bromoform
B103519-BS1, B103519-BSD1

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L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

2-Butanone (MEK)
B103625-BS1

Naphthalene
B103625-BS1

L-14

Compound classified by MA CAM as difficult with acceptable recoveries of 40-160%. Recovery does not meet 70-130% criteria but does meet difficult compound criteria.

Analyte & Samples(s) Qualified:

1,4-Dioxane
B103519-BS1, B103519-BSD1

2-Butanone (MEK)
B103519-BS1, B103519-BSD1, B103625-BSD1

2-Hexanone (MBK)
B103519-BS1, B103519-BSD1, B103625-BS1, B103625-BSD1

Bromomethane
B103519-BS1

R-05

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:

1,4-Dioxane
14H1123-04[SB-21 (4-6)], 14H1123-08[SB-22 (4-6)], B103625-BLK1, B103625-BS1, B103625-BSD1

RL-06

Elevated reporting limit due to high concentration of non-target compounds. MA CAM reporting limit not met.

Analyte & Samples(s) Qualified:

14H1123-15[SB-4 (2-4)]

RL-07

Elevated reporting limit based on lowest point in calibration.
MA CAM reporting limit not met.

Analyte & Samples(s) Qualified:

1,2-Dibromo-3-chloropropane (DB
14H1123-20[SB-9 (4-6)]

1,2-Dichloroethane
14H1123-20[SB-9 (4-6)]

Bromomethane
14H1123-20[SB-9 (4-6)]

Carbon Disulfide
14H1123-20[SB-9 (4-6)]

Chloromethane
14H1123-20[SB-9 (4-6)]

Methylene Chloride
14H1123-20[SB-9 (4-6)]

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V-05

Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

1,2,3-Trichlorobenzene
14H1123-04[SB-21 (4-6)], 14H1123-08[SB-22 (4-6)], B103625-BLK1, B103625-BS1, B103625-BSD1

1,4-Dioxane
14H1123-04[SB-21 (4-6)], 14H1123-08[SB-22 (4-6)], B103625-BLK1, B103625-BS1, B103625-BSD1

Chloromethane
14H1123-04[SB-21 (4-6)], 14H1123-08[SB-22 (4-6)], B103625-BLK1, B103625-BS1, B103625-BSD1

Methylene Chloride
14H1123-04[SB-21 (4-6)], 14H1123-08[SB-22 (4-6)], B103625-BLK1, B103625-BS1, B103625-BSD1

Naphthalene
14H1123-04[SB-21 (4-6)], 14H1123-08[SB-22 (4-6)], B103625-BLK1, B103625-BS1, B103625-BSD1

Trichlorofluoromethane (Freon 11)
14H1123-04[SB-21 (4-6)], 14H1123-08[SB-22 (4-6)], B103625-BLK1, B103625-BS1, B103625-BSD1

V-06

Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.

Analyte & Samples(s) Qualified:

n-Butylbenzene
14H1123-15[SB-4 (2-4)], B103519-BS1, B103519-BSD1

V-16

Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.

Analyte & Samples(s) Qualified:

1,4-Dioxane
14H1123-04[SB-21 (4-6)], 14H1123-08[SB-22 (4-6)], 14H1123-15[SB-4 (2-4)], 14H1123-20[SB-9 (4-6)], B103519-BLK1, B103519-BS1, B103519-BSD1, B103625-BLK1, B103625-BS1, B103625-BSD1

Tetrahydrofuran
14H1123-04[SB-21 (4-6)], 14H1123-08[SB-22 (4-6)], 14H1123-15[SB-4 (2-4)], 14H1123-20[SB-9 (4-6)], B103519-BLK1, B103519-BS1, B103519-BSD1, B103625-BLK1, B103625-BS1, B103625-BSD1

V-20

Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

1,1,2,2-Tetrachloroethane
B103519-BS1, B103519-BSD1

1,2,3-Trichlorobenzene
B103519-BS1, B103519-BSD1

1,2,3-Trichloropropane
B103519-BS1, B103519-BSD1

1,2,4-Trimethylbenzene
B103519-BS1, B103519-BSD1

Benzene
B103519-BS1, B103519-BSD1

Bromochloromethane
B103519-BS1, B103519-BSD1

Bromoform
B103519-BS1, B103519-BSD1

Dichlorodifluoromethane (Freon 12
B103519-BS1, B103519-BSD1

Naphthalene
B103519-BS1, B103519-BSD1

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MADEP-EPH-04-1.1

SPE cartridge contamination with non-petroleum compounds, if present, is verified by GC/MS in each method blank per extraction batch and excluded from C 11-C22 aromatic range fraction in all samples in the batch. No significant modifications were made to the method.

MADEP-VPH-04-1.1

No significant modifications were made to the method. All VPH samples were received preserved properly in methanol with a soil/methanol ratio of 1:1 +/- 25% completely covered by methanol in the proper containers specified on the chain-of-custody form unless specified in this narrative.

SW-846 8260C

Laboratory control sample recoveries for required MCP Data Enhancement 8260 compounds were all within limits specified by the method except for “difficult analytes” where recovery control limits of 40-160% are used and/or unless otherwise listed in this narrative. Difficult analytes: MIBK, MEK, acetone, 1,4-dioxane, chloromethane, dichlorodifluoromethane, 2-hexanone, and bromomethane.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Daren J. Damboragian
Laboratory Manager

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-21 (0-0.5) | Sampled: 8/21/2014 12:55

Sample ID: 14H1123-01

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 15:55	JMB
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 15:55	JMB
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 15:55	JMB
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 15:55	JMB
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 15:55	JMB
Aroclor-1254 [2]	1.0	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 15:55	JMB
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 15:55	JMB
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 15:55	JMB
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 15:55	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	71.5	30-150		8/28/14 15:55
Decachlorobiphenyl [2]	78.5	30-150		8/28/14 15:55
Tetrachloro-m-xylene [1]	80.1	30-150		8/28/14 15:55
Tetrachloro-m-xylene [2]	93.3	30-150		8/28/14 15:55

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-21 (0-0.5) | Sampled: 8/21/2014 12:55

Sample ID: 14H1123-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	86.7		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-21 (0.5-2) | Sampled: 8/21/2014 13:00

Sample ID: 14H1123-02

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:08	JMB
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:08	JMB
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:08	JMB
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:08	JMB
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:08	JMB
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:08	JMB
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:08	JMB
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:08	JMB
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:08	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	90.1	30-150		8/28/14 16:08
Decachlorobiphenyl [2]	99.8	30-150		8/28/14 16:08
Tetrachloro-m-xylene [1]	90.8	30-150		8/28/14 16:08
Tetrachloro-m-xylene [2]	102	30-150		8/28/14 16:08

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-21 (0.5-2) | Sampled: 8/21/2014 13:00

Sample ID: 14H1123-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	87.9		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-21 (4-6) | Sampled: 8/21/2014 13:15

Sample ID: 14H1123-04

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.055	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00055	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Benzene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Bromobenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Bromochloromethane	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Bromodichloromethane	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Bromoform	ND	0.0022	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Bromomethane	ND	0.0055	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
2-Butanone (MEK)	ND	0.022	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
n-Butylbenzene	0.0030	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
sec-Butylbenzene	0.0017	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
tert-Butylbenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00055	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Carbon Disulfide	ND	0.0033	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Carbon Tetrachloride	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Chlorobenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Chlorodibromomethane	ND	0.00055	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Chloroethane	ND	0.0055	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Chloroform	ND	0.0022	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Chloromethane	ND	0.0055	mg/Kg dry	1	V-05	SW-846 8260C	8/27/14	8/27/14 11:49	MFF
2-Chlorotoluene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
4-Chlorotoluene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,2-Dibromoethane (EDB)	ND	0.00055	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Dibromomethane	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,2-Dichlorobenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,3-Dichlorobenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,4-Dichlorobenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.0055	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,1-Dichloroethane	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,2-Dichloroethane	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,1-Dichloroethylene	ND	0.0022	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
cis-1,2-Dichloroethylene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
trans-1,2-Dichloroethylene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,2-Dichloropropane	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,3-Dichloropropane	ND	0.00055	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
2,2-Dichloropropane	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,1-Dichloropropene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
cis-1,3-Dichloropropene	ND	0.00055	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
trans-1,3-Dichloropropene	ND	0.0022	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Diethyl Ether	ND	0.0055	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Diisopropyl Ether (DIPE)	ND	0.00055	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,4-Dioxane	ND	0.055	mg/Kg dry	1	R-05, V-05, V-16	SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Ethylbenzene	0.0028	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-21 (4-6) | Sampled: 8/21/2014 13:15

Sample ID: 14H1123-04

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
2-Hexanone (MBK)	ND	0.011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Isopropylbenzene (Cumene)	0.0019	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
p-Isopropyltoluene (p-Cymene)	0.0024	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0022	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Methylene Chloride	ND	0.0055	mg/Kg dry	1	V-05	SW-846 8260C	8/27/14	8/27/14 11:49	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Naphthalene	0.013	0.0022	mg/Kg dry	1	V-05	SW-846 8260C	8/27/14	8/27/14 11:49	MFF
n-Propylbenzene	0.0025	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Styrene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,1,1,2-Tetrachloroethane	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,1,2,2-Tetrachloroethane	ND	0.00055	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Tetrachloroethylene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Tetrahydrofuran	ND	0.0055	mg/Kg dry	1	V-16	SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Toluene	0.0014	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,2,3-Trichlorobenzene	ND	0.0011	mg/Kg dry	1	V-05	SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,2,4-Trichlorobenzene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,1,1-Trichloroethane	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,1,2-Trichloroethane	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Trichloroethylene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0055	mg/Kg dry	1	V-05	SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,2,3-Trichloropropane	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,2,4-Trimethylbenzene	0.024	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
1,3,5-Trimethylbenzene	0.0060	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
Vinyl Chloride	ND	0.0055	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
m+p Xylene	0.016	0.0022	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF
o-Xylene	0.0093	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 11:49	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	100	70-130		8/27/14 11:49
Toluene-d8	95.1	70-130		8/27/14 11:49
4-Bromofluorobenzene	91.2	70-130		8/27/14 11:49

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-21 (4-6) | Sampled: 8/21/2014 13:15

Sample ID: 14H1123-04

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	230	56	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 12:41	SCS
C19-C36 Aliphatics	160	11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:40	SCS
Unadjusted C11-C22 Aromatics	170	11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:40	SCS
C11-C22 Aromatics	170	11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:40	SCS
Acenaphthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:40	SCS
Acenaphthylene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:40	SCS
Anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:40	SCS
Benzo(a)anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:40	SCS
Benzo(a)pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:40	SCS
Benzo(b)fluoranthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:40	SCS
Benzo(g,h,i)perylene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:40	SCS
Benzo(k)fluoranthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:40	SCS
Chrysene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:40	SCS
Dibenz(a,h)anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:40	SCS
Fluoranthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:40	SCS
Fluorene	0.29	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:40	SCS
Indeno(1,2,3-cd)pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:40	SCS
2-Methylnaphthalene	0.12	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:40	SCS
Naphthalene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:40	SCS
Phenanthrene	0.30	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:40	SCS
Pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:40	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	67.7	40-140		9/3/14 7:40
o-Terphenyl (OTP)	79.7	40-140		9/3/14 7:40
2-Bromonaphthalene	79.0	40-140		9/3/14 7:40
2-Fluorobiphenyl	90.7	40-140		9/3/14 7:40

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-21 (4-6) | Sampled: 8/21/2014 13:15

Sample ID: 14H1123-04

Sample Matrix: Soil

Sample Flags: O-01

Soil/Methanol Preservation Ratio: 1.71

Petroleum Hydrocarbons Analyses - VPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	8.0	mg/Kg dry	1		MADEP-VPH-04-1.1	8/26/14	8/26/14 20:42	EEH
C5-C8 Aliphatics	ND	8.0	mg/Kg dry	1		MADEP-VPH-04-1.1	8/26/14	8/26/14 20:42	EEH
Unadjusted C9-C12 Aliphatics	38	8.0	mg/Kg dry	1		MADEP-VPH-04-1.1	8/26/14	8/26/14 20:42	EEH
C9-C12 Aliphatics	10	8.0	mg/Kg dry	1		MADEP-VPH-04-1.1	8/26/14	8/26/14 20:42	EEH
C9-C10 Aromatics	28	8.0	mg/Kg dry	1		MADEP-VPH-04-1.1	8/26/14	8/26/14 20:42	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,5-Dibromotoluene (FID)	103	70-130		8/26/14 20:42
2,5-Dibromotoluene (PID)	98.2	70-130		8/26/14 20:42

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-21 (4-6) | Sampled: 8/21/2014 13:15

Sample ID: 14H1123-04

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	2.7	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:40	OP
Barium	42	2.7	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:40	OP
Cadmium	ND	0.27	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:40	OP
Chromium	28	0.54	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:40	OP
Lead	7.6	0.80	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:40	OP
Mercury	ND	0.028	mg/Kg dry	1		SW-846 7471B	8/28/14	8/29/14 12:24	JMP
Selenium	ND	5.4	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:40	OP
Silver	ND	0.54	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:40	OP

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-21 (4-6) | Sampled: 8/21/2014 13:15

Sample ID: 14H1123-04

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	88.1		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-22 (0-0.5) | Sampled: 8/21/2014 14:30

Sample ID: 14H1123-05

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:21	KAL
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/29/14	9/2/14 12:00	KAL
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:21	KAL
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/29/14	9/2/14 12:00	KAL
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:21	KAL
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/29/14	9/2/14 12:00	KAL
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:21	KAL
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/29/14	9/2/14 12:00	KAL
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:21	KAL
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/29/14	9/2/14 12:00	KAL
Aroclor-1254 [2]	0.73	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:21	KAL
Aroclor-1254 [2]	0.57	0.11	mg/Kg dry	5		SW-846 8082A	8/29/14	9/2/14 12:00	KAL
Aroclor-1260 [1]	0.45	0.11	mg/Kg dry	5		SW-846 8082A	8/29/14	9/2/14 12:00	KAL
Aroclor-1260 [2]	0.64	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:21	KAL
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:21	KAL
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/29/14	9/2/14 12:00	KAL
Aroclor-1268 [1]	0.12	0.12	mg/Kg dry	5	O-04	SW-846 8082A	8/26/14	8/28/14 16:21	KAL
Aroclor-1268 [2]	0.17	0.11	mg/Kg dry	5		SW-846 8082A	8/29/14	9/2/14 12:00	KAL

Surrogates	% Recovery		Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	**208**	*	30-150	S-19	8/28/14 16:21
Decachlorobiphenyl [1]	**752**	*	30-150	S-19	9/2/14 12:00
Decachlorobiphenyl [2]	**715**	*	30-150	S-19	9/2/14 12:00
Decachlorobiphenyl [2]	**223**	*	30-150	S-19	8/28/14 16:21
Tetrachloro-m-xylene [1]	86.1		30-150		8/28/14 16:21
Tetrachloro-m-xylene [1]	82.9		30-150		9/2/14 12:00
Tetrachloro-m-xylene [2]	92.5		30-150		8/28/14 16:21
Tetrachloro-m-xylene [2]	80.2		30-150		9/2/14 12:00

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-22 (0-0.5) | Sampled: 8/21/2014 14:30

Sample ID: 14H1123-05

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	83.8		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-22 (0.5-2) | Sampled: 8/21/2014 14:35

Sample ID: 14H1123-06

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:33	JMB
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:33	JMB
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:33	JMB
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:33	JMB
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:33	JMB
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:33	JMB
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:33	JMB
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:33	JMB
Aroclor-1268 [2]	0.11	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:33	JMB

Surrogates	% Recovery		Recovery Limits	Flag/Qual		
Decachlorobiphenyl [1]	**933**	*	30-150	S-24		8/28/14 16:33
Decachlorobiphenyl [2]	**964**	*	30-150	S-24		8/28/14 16:33
Tetrachloro-m-xylene [1]	78.3		30-150			8/28/14 16:33
Tetrachloro-m-xylene [2]	85.5		30-150			8/28/14 16:33

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-22 (0.5-2) | Sampled: 8/21/2014 14:35

Sample ID: 14H1123-06

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	91.1		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-22 (4-6) | Sampled: 8/21/2014 14:45

Sample ID: 14H1123-08

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.097	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00097	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Benzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Bromobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Bromochloromethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Bromodichloromethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Bromoform	ND	0.0039	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Bromomethane	ND	0.0097	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
2-Butanone (MEK)	ND	0.039	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
n-Butylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
sec-Butylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
tert-Butylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00097	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Carbon Disulfide	ND	0.0058	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Carbon Tetrachloride	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Chlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Chlorodibromomethane	ND	0.00097	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Chloroethane	ND	0.0097	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Chloroform	ND	0.0039	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Chloromethane	ND	0.0097	mg/Kg dry	1	V-05	SW-846 8260C	8/27/14	8/27/14 12:17	MFF
2-Chlorotoluene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
4-Chlorotoluene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,2-Dibromoethane (EDB)	ND	0.00097	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Dibromomethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,2-Dichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,3-Dichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,4-Dichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.0097	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,1-Dichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,2-Dichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,1-Dichloroethylene	ND	0.0039	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
cis-1,2-Dichloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
trans-1,2-Dichloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,2-Dichloropropane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,3-Dichloropropane	ND	0.00097	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
2,2-Dichloropropane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,1-Dichloropropene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
cis-1,3-Dichloropropene	ND	0.00097	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
trans-1,3-Dichloropropene	ND	0.0039	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Diethyl Ether	ND	0.0097	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Diisopropyl Ether (DIPE)	ND	0.00097	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,4-Dioxane	ND	0.097	mg/Kg dry	1	R-05, V-05, V-16	SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Ethylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-22 (4-6) | Sampled: 8/21/2014 14:45

Sample ID: 14H1123-08

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
2-Hexanone (MBK)	ND	0.019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Isopropylbenzene (Cumene)	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0039	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Methylene Chloride	ND	0.0097	mg/Kg dry	1	V-05	SW-846 8260C	8/27/14	8/27/14 12:17	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Naphthalene	ND	0.0039	mg/Kg dry	1	V-05	SW-846 8260C	8/27/14	8/27/14 12:17	MFF
n-Propylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Styrene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,1,1,2-Tetrachloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,1,2,2-Tetrachloroethane	ND	0.00097	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Tetrachloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Tetrahydrofuran	ND	0.0097	mg/Kg dry	1	V-16	SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Toluene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,2,3-Trichlorobenzene	ND	0.0019	mg/Kg dry	1	V-05	SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,2,4-Trichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,1,1-Trichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,1,2-Trichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Trichloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0097	mg/Kg dry	1	V-05	SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,2,3-Trichloropropane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,2,4-Trimethylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
1,3,5-Trimethylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
Vinyl Chloride	ND	0.0097	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
m+p Xylene	ND	0.0039	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF
o-Xylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 12:17	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	95.0	70-130		8/27/14 12:17
Toluene-d8	99.6	70-130		8/27/14 12:17
4-Bromofluorobenzene	94.5	70-130		8/27/14 12:17

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-22 (4-6) | Sampled: 8/21/2014 14:45

Sample ID: 14H1123-08

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	280	54	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 13:01	SCS
C19-C36 Aliphatics	220	54	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 13:01	SCS
Unadjusted C11-C22 Aromatics	210	11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:21	SCS
C11-C22 Aromatics	190	11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:21	SCS
Acenaphthene	0.36	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:21	SCS
Acenaphthylene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:21	SCS
Anthracene	0.69	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:21	SCS
Benzo(a)anthracene	1.4	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:21	SCS
Benzo(a)pyrene	1.4	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:21	SCS
Benzo(b)fluoranthene	1.8	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:21	SCS
Benzo(g,h,i)perylene	0.82	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:21	SCS
Benzo(k)fluoranthene	0.72	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:21	SCS
Chrysene	1.5	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:21	SCS
Dibenz(a,h)anthracene	0.19	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:21	SCS
Fluoranthene	3.2	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:21	SCS
Fluorene	0.37	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:21	SCS
Indeno(1,2,3-cd)pyrene	0.91	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:21	SCS
2-Methylnaphthalene	0.35	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:21	SCS
Naphthalene	0.24	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:21	SCS
Phenanthrene	2.7	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:21	SCS
Pyrene	3.1	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:21	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
Chlorooctadecane (COD)	78.6	40-140		9/3/14	8:21
o-Terphenyl (OTP)	74.3	40-140		9/3/14	8:21
2-Bromonaphthalene	78.2	40-140		9/3/14	8:21
2-Fluorobiphenyl	89.9	40-140		9/3/14	8:21

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-22 (4-6) | Sampled: 8/21/2014 14:45

Sample ID: 14H1123-08

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - VPH

Soil/Methanol Preservation Ratio: 0.84

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	14	mg/Kg dry	1		MADEP-VPH-04-1.1	8/26/14	8/26/14 21:18	EEH
C5-C8 Aliphatics	ND	14	mg/Kg dry	1		MADEP-VPH-04-1.1	8/26/14	8/26/14 21:18	EEH
Unadjusted C9-C12 Aliphatics	ND	14	mg/Kg dry	1		MADEP-VPH-04-1.1	8/26/14	8/26/14 21:18	EEH
C9-C12 Aliphatics	ND	14	mg/Kg dry	1		MADEP-VPH-04-1.1	8/26/14	8/26/14 21:18	EEH
C9-C10 Aromatics	ND	14	mg/Kg dry	1		MADEP-VPH-04-1.1	8/26/14	8/26/14 21:18	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,5-Dibromotoluene (FID)	94.5	70-130		8/26/14 21:18
2,5-Dibromotoluene (PID)	82.0	70-130		8/26/14 21:18

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-22 (4-6) | Sampled: 8/21/2014 14:45

Sample ID: 14H1123-08

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	9.3	2.6	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:45	OP
Barium	56	2.6	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:45	OP
Cadmium	1.6	0.26	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:45	OP
Chromium	170	0.52	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:45	OP
Lead	180	0.78	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:45	OP
Mercury	0.20	0.026	mg/Kg dry	1		SW-846 7471B	8/28/14	8/29/14 12:26	JMP
Selenium	ND	5.2	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:45	OP
Silver	ND	0.52	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:45	OP

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-22 (4-6) | Sampled: 8/21/2014 14:45

Sample ID: 14H1123-08

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	92.5		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-7 (0-0.5) | Sampled: 8/22/2014 11:00

Sample ID: 14H1123-09

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:46	JMB
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:46	JMB
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:46	JMB
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:46	JMB
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:46	JMB
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:46	JMB
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:46	JMB
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:46	JMB
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:46	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	89.3	30-150		8/28/14 16:46
Decachlorobiphenyl [2]	103	30-150		8/28/14 16:46
Tetrachloro-m-xylene [1]	86.9	30-150		8/28/14 16:46
Tetrachloro-m-xylene [2]	96.1	30-150		8/28/14 16:46

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-7 (0-0.5) | Sampled: 8/22/2014 11:00

Sample ID: 14H1123-09

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	86.6		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-7 (0.5-2) | Sampled: 8/22/2014 11:05

Sample ID: 14H1123-10

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:59	JMB
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:59	JMB
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:59	JMB
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:59	JMB
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:59	JMB
Aroclor-1254 [2]	0.13	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:59	JMB
Aroclor-1260 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:59	JMB
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:59	JMB
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 16:59	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	94.9	30-150		8/28/14 16:59
Decachlorobiphenyl [2]	101	30-150		8/28/14 16:59
Tetrachloro-m-xylene [1]	79.2	30-150		8/28/14 16:59
Tetrachloro-m-xylene [2]	88.8	30-150		8/28/14 16:59

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-7 (0.5-2) | Sampled: 8/22/2014 11:05

Sample ID: 14H1123-10

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	84.7		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-4 (0-0.5) | Sampled: 8/22/2014 11:20

Sample ID: 14H1123-13

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 17:38	JMB
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 17:38	JMB
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 17:38	JMB
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 17:38	JMB
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 17:38	JMB
Aroclor-1254 [2]	0.43	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 17:38	JMB
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 17:38	JMB
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 17:38	JMB
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 17:38	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	80.1	30-150		8/28/14 17:38
Decachlorobiphenyl [2]	85.8	30-150		8/28/14 17:38
Tetrachloro-m-xylene [1]	71.0	30-150		8/28/14 17:38
Tetrachloro-m-xylene [2]	81.4	30-150		8/28/14 17:38

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-4 (0-0.5) | Sampled: 8/22/2014 11:20

Sample ID: 14H1123-13

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	87.6		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-4 (0.5-2) | Sampled: 8/22/2014 11:25

Sample ID: 14H1123-14

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 2:11	JMB
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 2:11	JMB
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 2:11	JMB
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 2:11	JMB
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 2:11	JMB
Aroclor-1254 [1]	0.29	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 2:11	JMB
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 2:11	JMB
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 2:11	JMB
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 2:11	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	77.9	30-150		8/29/14 2:11
Decachlorobiphenyl [2]	82.8	30-150		8/29/14 2:11
Tetrachloro-m-xylene [1]	69.8	30-150		8/29/14 2:11
Tetrachloro-m-xylene [2]	75.8	30-150		8/29/14 2:11

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-4 (0.5-2) | Sampled: 8/22/2014 11:25

Sample ID: 14H1123-14

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	86.0		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-4 (2-4) | Sampled: 8/22/2014 11:30

Sample ID: 14H1123-15

Sample Matrix: Soil

Sample Flags: RL-06

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	12	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.12	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Benzene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Bromobenzene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Bromochloromethane	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Bromodichloromethane	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Bromoform	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Bromomethane	ND	1.2	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
2-Butanone (MEK)	ND	12	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
n-Butylbenzene	1.4	0.25	mg/Kg dry	4	V-06	SW-846 8260C	8/26/14	8/29/14 2:25	EEH
sec-Butylbenzene	0.61	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
tert-Butylbenzene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.12	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Carbon Disulfide	ND	2.5	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Carbon Tetrachloride	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Chlorobenzene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Chlorodibromomethane	ND	0.12	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Chloroethane	ND	0.50	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Chloroform	ND	0.50	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Chloromethane	ND	1.2	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
2-Chlorotoluene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
4-Chlorotoluene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	1.2	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,2-Dibromoethane (EDB)	ND	0.12	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Dibromomethane	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,2-Dichlorobenzene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,3-Dichlorobenzene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,4-Dichlorobenzene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.50	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,1-Dichloroethane	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,2-Dichloroethane	ND	1.2	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,1-Dichloroethylene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
cis-1,2-Dichloroethylene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
trans-1,2-Dichloroethylene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,2-Dichloropropane	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,3-Dichloropropane	ND	0.12	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
2,2-Dichloropropane	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,1-Dichloropropene	ND	0.50	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
cis-1,3-Dichloropropene	ND	0.12	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
trans-1,3-Dichloropropene	ND	0.12	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Diethyl Ether	ND	0.50	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Diisopropyl Ether (DIPE)	ND	0.12	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,4-Dioxane	ND	12	mg/Kg dry	4	V-16	SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Ethylbenzene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-4 (2-4) | Sampled: 8/22/2014 11:30

Sample ID: 14H1123-15

Sample Matrix: Soil

Sample Flags: RL-06

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
2-Hexanone (MBK)	ND	2.5	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Isopropylbenzene (Cumene)	0.30	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Methylene Chloride	ND	1.2	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
4-Methyl-2-pentanone (MIBK)	ND	2.5	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Naphthalene	ND	0.50	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
n-Propylbenzene	0.71	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Styrene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,1,1,2-Tetrachloroethane	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,1,2,2-Tetrachloroethane	ND	0.12	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Tetrachloroethylene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Tetrahydrofuran	ND	1.0	mg/Kg dry	4	V-16	SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Toluene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,2,3-Trichlorobenzene	ND	1.0	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,2,4-Trichlorobenzene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,1,1-Trichloroethane	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,1,2-Trichloroethane	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Trichloroethylene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Trichlorofluoromethane (Freon 11)	ND	0.50	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,2,3-Trichloropropane	ND	0.50	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,2,4-Trimethylbenzene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
1,3,5-Trimethylbenzene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
Vinyl Chloride	ND	0.50	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
m+p Xylene	ND	0.50	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH
o-Xylene	ND	0.25	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:25	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	91.2	70-130		8/29/14 2:25
Toluene-d8	94.7	70-130		8/29/14 2:25
4-Bromofluorobenzene	96.2	70-130		8/29/14 2:25

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-4 (2-4) | Sampled: 8/22/2014 11:30

Sample ID: 14H1123-15

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	5900	590	mg/Kg dry	50		MADEP-EPH-04-1.1	8/28/14	9/3/14 14:03	SCS
C19-C36 Aliphatics	960	590	mg/Kg dry	50		MADEP-EPH-04-1.1	8/28/14	9/3/14 14:03	SCS
Unadjusted C11-C22 Aromatics	2000	120	mg/Kg dry	10		MADEP-EPH-04-1.1	8/28/14	9/3/14 14:03	SCS
C11-C22 Aromatics	1900	120	mg/Kg dry	10		MADEP-EPH-04-1.1	8/28/14	9/3/14 14:03	SCS
Acenaphthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:00	SCS
Acenaphthylene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:00	SCS
Anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:00	SCS
Benzo(a)anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:00	SCS
Benzo(a)pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:00	SCS
Benzo(b)fluoranthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:00	SCS
Benzo(g,h,i)perylene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:00	SCS
Benzo(k)fluoranthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:00	SCS
Chrysene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:00	SCS
Dibenz(a,h)anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:00	SCS
Fluoranthene	0.93	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:00	SCS
Fluorene	10	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:00	SCS
Indeno(1,2,3-cd)pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:00	SCS
2-Methylnaphthalene	23	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:00	SCS
Naphthalene	2.7	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:00	SCS
Phenanthrene	3.6	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:00	SCS
Pyrene	0.23	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:00	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	90.0	40-140		9/3/14 8:00
o-Terphenyl (OTP)	114	40-140		9/3/14 8:00
2-Bromonaphthalene	88.8	40-140		9/3/14 8:00
2-Fluorobiphenyl	90.6	40-140		9/3/14 8:00

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-4 (2-4) | Sampled: 8/22/2014 11:30

Sample ID: 14H1123-15

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - VPH

Soil/Methanol Preservation Ratio: 1.15

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	120	mg/Kg dry	10	RL-05	MADEP-VPH-04-1.1	8/26/14	8/27/14 3:16	EEH
C5-C8 Aliphatics	ND	120	mg/Kg dry	10	RL-05	MADEP-VPH-04-1.1	8/26/14	8/27/14 3:16	EEH
Unadjusted C9-C12 Aliphatics	570	120	mg/Kg dry	10		MADEP-VPH-04-1.1	8/26/14	8/27/14 3:16	EEH
C9-C12 Aliphatics	140	120	mg/Kg dry	10		MADEP-VPH-04-1.1	8/26/14	8/27/14 3:16	EEH
C9-C10 Aromatics	430	120	mg/Kg dry	10		MADEP-VPH-04-1.1	8/26/14	8/27/14 3:16	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,5-Dibromotoluene (FID)	102	70-130		8/27/14 3:16
2,5-Dibromotoluene (PID)	103	70-130		8/27/14 3:16

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-4 (2-4) | Sampled: 8/22/2014 11:30

Sample ID: 14H1123-15

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	2.8	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:50	OP
Barium	40	2.8	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:50	OP
Cadmium	ND	0.28	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:50	OP
Chromium	21	0.56	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:50	OP
Lead	42	0.84	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:50	OP
Mercury	0.049	0.027	mg/Kg dry	1		SW-846 7471B	8/27/14	8/28/14 12:47	JMP
Selenium	ND	5.6	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:50	OP
Silver	ND	0.56	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 19:50	OP

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-4 (2-4) | Sampled: 8/22/2014 11:30

Sample ID: 14H1123-15

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	85.3		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-9 (0-0.5) | Sampled: 8/22/2014 11:40

Sample ID: 14H1123-17

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 18:03	JMB
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 18:03	JMB
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 18:03	JMB
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 18:03	JMB
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 18:03	JMB
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 18:03	JMB
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 18:03	JMB
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 18:03	JMB
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 18:03	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	86.0	30-150		8/28/14 18:03
Decachlorobiphenyl [2]	88.9	30-150		8/28/14 18:03
Tetrachloro-m-xylene [1]	82.3	30-150		8/28/14 18:03
Tetrachloro-m-xylene [2]	86.1	30-150		8/28/14 18:03

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-9 (0-0.5) | Sampled: 8/22/2014 11:40

Sample ID: 14H1123-17

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	87.6		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-9 (0.5-2) | Sampled: 8/22/2014 11:45

Sample ID: 14H1123-18

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	1.2	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 18:16	JMB
Aroclor-1221 [1]	ND	1.2	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 18:16	JMB
Aroclor-1232 [1]	ND	1.2	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 18:16	JMB
Aroclor-1242 [1]	ND	1.2	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 18:16	JMB
Aroclor-1248 [1]	ND	1.2	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 18:16	JMB
Aroclor-1254 [1]	ND	1.2	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 18:16	JMB
Aroclor-1260 [1]	ND	1.2	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 18:16	JMB
Aroclor-1262 [1]	ND	1.2	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 18:16	JMB
Aroclor-1268 [1]	ND	1.2	mg/Kg dry	5		SW-846 8082A	8/26/14	8/28/14 18:16	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	92.6	30-150		8/28/14 18:16
Decachlorobiphenyl [2]	97.3	30-150		8/28/14 18:16
Tetrachloro-m-xylene [1]	91.9	30-150		8/28/14 18:16
Tetrachloro-m-xylene [2]	98.1	30-150		8/28/14 18:16

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-9 (0.5-2) | Sampled: 8/22/2014 11:45

Sample ID: 14H1123-18

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	8.00		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-9 (4-6) | Sampled: 8/22/2014 11:55

Sample ID: 14H1123-20

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	3.2	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.032	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Benzene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Bromobenzene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Bromochloromethane	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Bromodichloromethane	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Bromoform	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Bromomethane	ND	0.32	mg/Kg dry	1	RL-07	SW-846 8260C	8/26/14	8/29/14 1:32	EEH
2-Butanone (MEK)	ND	3.2	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
n-Butylbenzene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
sec-Butylbenzene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
tert-Butylbenzene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.032	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Carbon Disulfide	ND	0.63	mg/Kg dry	1	RL-07	SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Carbon Tetrachloride	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Chlorobenzene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Chlorodibromomethane	ND	0.032	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Chloroethane	ND	0.13	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Chloroform	ND	0.13	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Chloromethane	ND	0.32	mg/Kg dry	1	RL-07	SW-846 8260C	8/26/14	8/29/14 1:32	EEH
2-Chlorotoluene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
4-Chlorotoluene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.32	mg/Kg dry	1	RL-07	SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,2-Dibromoethane (EDB)	ND	0.032	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Dibromomethane	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,2-Dichlorobenzene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,3-Dichlorobenzene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,4-Dichlorobenzene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.13	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,1-Dichloroethane	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,2-Dichloroethane	ND	0.32	mg/Kg dry	1	RL-07	SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,1-Dichloroethylene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
cis-1,2-Dichloroethylene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
trans-1,2-Dichloroethylene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,2-Dichloropropane	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,3-Dichloropropane	ND	0.032	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
2,2-Dichloropropane	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,1-Dichloropropene	ND	0.13	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
cis-1,3-Dichloropropene	ND	0.032	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
trans-1,3-Dichloropropene	ND	0.032	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Diethyl Ether	ND	0.13	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Diisopropyl Ether (DIPE)	ND	0.032	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,4-Dioxane	ND	3.2	mg/Kg dry	1	V-16	SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Ethylbenzene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-9 (4-6) | Sampled: 8/22/2014 11:55

Sample ID: 14H1123-20

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
2-Hexanone (MBK)	ND	0.63	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Isopropylbenzene (Cumene)	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Methylene Chloride	ND	0.32	mg/Kg dry	1	RL-07	SW-846 8260C	8/26/14	8/29/14 1:32	EEH
4-Methyl-2-pentanone (MIBK)	ND	0.63	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Naphthalene	ND	0.13	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
n-Propylbenzene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Styrene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,1,1,2-Tetrachloroethane	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,1,2,2-Tetrachloroethane	ND	0.032	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Tetrachloroethylene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Tetrahydrofuran	ND	0.25	mg/Kg dry	1	V-16	SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Toluene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,2,3-Trichlorobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,2,4-Trichlorobenzene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,1,1-Trichloroethane	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,1,2-Trichloroethane	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Trichloroethylene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Trichlorofluoromethane (Freon 11)	ND	0.13	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,2,3-Trichloropropane	ND	0.13	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,2,4-Trimethylbenzene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
1,3,5-Trimethylbenzene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
Vinyl Chloride	ND	0.13	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
m+p Xylene	ND	0.13	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH
o-Xylene	ND	0.063	mg/Kg dry	1		SW-846 8260C	8/26/14	8/29/14 1:32	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	90.1	70-130		8/29/14 1:32
Toluene-d8	97.6	70-130		8/29/14 1:32
4-Bromofluorobenzene	94.0	70-130		8/29/14 1:32

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-9 (4-6) | Sampled: 8/22/2014 11:55

Sample ID: 14H1123-20

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	1500	230	mg/Kg dry	20		MADEP-EPH-04-1.1	8/28/14	9/3/14 11:59	SCS
C19-C36 Aliphatics	410	230	mg/Kg dry	20		MADEP-EPH-04-1.1	8/28/14	9/3/14 11:59	SCS
Unadjusted C11-C22 Aromatics	670	59	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 11:59	SCS
C11-C22 Aromatics	670	59	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 11:59	SCS
Acenaphthene	0.51	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:02	SCS
Acenaphthylene	0.73	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:02	SCS
Anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:02	SCS
Benzo(a)anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:02	SCS
Benzo(a)pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:02	SCS
Benzo(b)fluoranthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:02	SCS
Benzo(g,h,i)perylene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:02	SCS
Benzo(k)fluoranthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:02	SCS
Chrysene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:02	SCS
Dibenz(a,h)anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:02	SCS
Fluoranthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:02	SCS
Fluorene	0.57	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:02	SCS
Indeno(1,2,3-cd)pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:02	SCS
2-Methylnaphthalene	0.91	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:02	SCS
Naphthalene	0.41	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:02	SCS
Phenanthrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:02	SCS
Pyrene	0.13	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:02	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	61.8	40-140		9/3/14 6:02
o-Terphenyl (OTP)	84.7	40-140		9/3/14 6:02
2-Bromonaphthalene	76.5	40-140		9/3/14 6:02
2-Fluorobiphenyl	81.7	40-140		9/3/14 6:02

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-9 (4-6) | Sampled: 8/22/2014 11:55

Sample ID: 14H1123-20

Sample Matrix: Soil

Sample Flags: O-01

Soil/Methanol Preservation Ratio: 1.78

Petroleum Hydrocarbons Analyses - VPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	78	mg/Kg dry	10	RL-05	MADEP-VPH-04-1.1	8/26/14	8/27/14 3:52	EEH
C5-C8 Aliphatics	ND	78	mg/Kg dry	10	RL-05	MADEP-VPH-04-1.1	8/26/14	8/27/14 3:52	EEH
Unadjusted C9-C12 Aliphatics	260	78	mg/Kg dry	10		MADEP-VPH-04-1.1	8/26/14	8/27/14 3:52	EEH
C9-C12 Aliphatics	ND	78	mg/Kg dry	10		MADEP-VPH-04-1.1	8/26/14	8/27/14 3:52	EEH
C9-C10 Aromatics	190	78	mg/Kg dry	10		MADEP-VPH-04-1.1	8/26/14	8/27/14 3:52	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
2,5-Dibromotoluene (FID)	107	70-130		8/27/14	3:52
2,5-Dibromotoluene (PID)	94.7	70-130		8/27/14	3:52

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-9 (4-6) | Sampled: 8/22/2014 11:55

Sample ID: 14H1123-20

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	2.8	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:11	OP
Barium	40	2.8	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:11	OP
Cadmium	ND	0.28	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:11	OP
Chromium	19	0.57	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:11	OP
Lead	43	0.85	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:11	OP
Mercury	0.041	0.027	mg/Kg dry	1		SW-846 7471B	8/27/14	8/28/14 12:49	JMP
Selenium	ND	5.7	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:11	OP
Silver	ND	0.57	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:11	OP

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1123

Date Received: 8/25/2014

Field Sample #: SB-9 (4-6) | Sampled: 8/22/2014 11:55

Sample ID: 14H1123-20

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	84.5		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

con-test® ANALYTICAL LABORATORY
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Sample Extraction Data

Prep Method: SW-846 3546-MADEP-EPH-04-1.1

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1123-04RE1 [SB-21 (4-6)]	B103793	20.1	2.00	08/28/14
14H1123-08RE1 [SB-22 (4-6)]	B103793	20.1	2.00	08/28/14
14H1123-15RE1 [SB-4 (2-4)]	B103793	20.0	2.00	08/28/14
14H1123-20RE1 [SB-9 (4-6)]	B103793	20.2	2.00	08/28/14

Prep Method: MA VPH-MADEP-VPH-04-1.1

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1123-04 [SB-21 (4-6)]	B103547	25.7	18.2	08/26/14
14H1123-08 [SB-22 (4-6)]	B103547	12.6	16.0	08/26/14
14H1123-15 [SB-4 (2-4)]	B103547	17.2	17.6	08/26/14
14H1123-20 [SB-9 (4-6)]	B103547	26.6	17.5	08/26/14

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
14H1123-01 [SB-21 (0-0.5)]	B103865	08/29/14
14H1123-02 [SB-21 (0.5-2)]	B103865	08/29/14
14H1123-04 [SB-21 (4-6)]	B103865	08/29/14
14H1123-05 [SB-22 (0-0.5)]	B103865	08/29/14
14H1123-06 [SB-22 (0.5-2)]	B103865	08/29/14
14H1123-08 [SB-22 (4-6)]	B103865	08/29/14
14H1123-09 [SB-7 (0-0.5)]	B103865	08/29/14
14H1123-10 [SB-7 (0.5-2)]	B103865	08/29/14
14H1123-13 [SB-4 (0-0.5)]	B103865	08/29/14
14H1123-14 [SB-4 (0.5-2)]	B103865	08/29/14
14H1123-15 [SB-4 (2-4)]	B103865	08/29/14
14H1123-17 [SB-9 (0-0.5)]	B103865	08/29/14
14H1123-18 [SB-9 (0.5-2)]	B103865	08/29/14
14H1123-20 [SB-9 (4-6)]	B103865	08/29/14

Prep Method: SW-846 3050B-SW-846 6010C

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1123-04 [SB-21 (4-6)]	B103724	1.06	50.0	08/27/14
14H1123-08 [SB-22 (4-6)]	B103724	1.03	50.0	08/27/14
14H1123-15 [SB-4 (2-4)]	B103724	1.04	50.0	08/27/14
14H1123-20 [SB-9 (4-6)]	B103724	1.04	50.0	08/27/14

Prep Method: SW-846 7471-SW-846 7471B

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1123-15 [SB-4 (2-4)]	B103696	0.642	50.0	08/27/14
14H1123-20 [SB-9 (4-6)]	B103696	0.646	50.0	08/27/14

Prep Method: SW-846 7471-SW-846 7471B

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1123-04 [SB-21 (4-6)]	B103812	0.604	50.0	08/28/14

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Sample Extraction Data

Prep Method: SW-846 7471-SW-846 7471B

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1123-08 [SB-22 (4-6)]	B103812	0.619	50.0	08/28/14

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1123-01 [SB-21 (0-0.5)]	B103593	10.3	10.0	08/26/14
14H1123-02 [SB-21 (0.5-2)]	B103593	10.1	10.0	08/26/14
14H1123-05 [SB-22 (0-0.5)]	B103593	10.1	10.0	08/26/14
14H1123-06 [SB-22 (0.5-2)]	B103593	10.3	10.0	08/26/14
14H1123-09 [SB-7 (0-0.5)]	B103593	10.1	10.0	08/26/14
14H1123-10 [SB-7 (0.5-2)]	B103593	10.1	10.0	08/26/14
14H1123-13 [SB-4 (0-0.5)]	B103593	10.0	10.0	08/26/14
14H1123-14 [SB-4 (0.5-2)]	B103593	10.2	10.0	08/26/14
14H1123-17 [SB-9 (0-0.5)]	B103593	10.1	10.0	08/26/14
14H1123-18 [SB-9 (0.5-2)]	B103593	10.3	10.0	08/26/14

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1123-05RE1 [SB-22 (0-0.5)]	B103891	10.5	10.0	08/29/14

Prep Method: SW-846 5035-SW-846 8260C

Lab Number [Field ID]	Batch	Sample Amount(g)	Methanol Volume(mL)	Methanol Aliquot(mL)	Final Volume(mL)	Date
14H1123-15 [SB-4 (2-4)]	B103519	16.3	17.4	0.25	50	08/26/14
14H1123-20 [SB-9 (4-6)]	B103519	16.3	17.5	1	50	08/26/14

Prep Method: SW-846 5035-SW-846 8260C

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1123-04 [SB-21 (4-6)]	B103625	10.3	10.0	08/27/14
14H1123-08 [SB-22 (4-6)]	B103625	5.58	10.0	08/27/14

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103519 - SW-846 5035										
Blank (B103519-BLK1)				Prepared: 08/26/14 Analyzed: 08/28/14						
Acetone	ND	2.5	mg/Kg wet							
tert-Amyl Methyl Ether (TAME)	ND	0.025	mg/Kg wet							
Benzene	ND	0.050	mg/Kg wet							
Bromobenzene	ND	0.050	mg/Kg wet							
Bromochloromethane	ND	0.050	mg/Kg wet							
Bromodichloromethane	ND	0.050	mg/Kg wet							
Bromoform	ND	0.050	mg/Kg wet							
Bromomethane	ND	0.25	mg/Kg wet							
2-Butanone (MEK)	ND	2.5	mg/Kg wet							
n-Butylbenzene	ND	0.050	mg/Kg wet							
sec-Butylbenzene	ND	0.050	mg/Kg wet							
tert-Butylbenzene	ND	0.050	mg/Kg wet							
tert-Butyl Ethyl Ether (TBEE)	ND	0.025	mg/Kg wet							
Carbon Disulfide	ND	0.50	mg/Kg wet							
Carbon Tetrachloride	ND	0.050	mg/Kg wet							
Chlorobenzene	ND	0.050	mg/Kg wet							
Chlorodibromomethane	ND	0.025	mg/Kg wet							
Chloroethane	ND	0.10	mg/Kg wet							
Chloroform	ND	0.10	mg/Kg wet							
Chloromethane	ND	0.25	mg/Kg wet							
2-Chlorotoluene	ND	0.050	mg/Kg wet							
4-Chlorotoluene	ND	0.050	mg/Kg wet							
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.25	mg/Kg wet							
1,2-Dibromoethane (EDB)	ND	0.025	mg/Kg wet							
Dibromomethane	ND	0.050	mg/Kg wet							
1,2-Dichlorobenzene	ND	0.050	mg/Kg wet							
1,3-Dichlorobenzene	ND	0.050	mg/Kg wet							
1,4-Dichlorobenzene	ND	0.050	mg/Kg wet							
Dichlorodifluoromethane (Freon 12)	ND	0.10	mg/Kg wet							
1,1-Dichloroethane	ND	0.050	mg/Kg wet							
1,2-Dichloroethane	ND	0.25	mg/Kg wet							
1,1-Dichloroethylene	ND	0.050	mg/Kg wet							
cis-1,2-Dichloroethylene	ND	0.050	mg/Kg wet							
trans-1,2-Dichloroethylene	ND	0.050	mg/Kg wet							
1,2-Dichloropropane	ND	0.050	mg/Kg wet							
1,3-Dichloropropane	ND	0.025	mg/Kg wet							
2,2-Dichloropropane	ND	0.050	mg/Kg wet							
1,1-Dichloropropene	ND	0.10	mg/Kg wet							
cis-1,3-Dichloropropene	ND	0.025	mg/Kg wet							
trans-1,3-Dichloropropene	ND	0.025	mg/Kg wet							
Diethyl Ether	ND	0.10	mg/Kg wet							
Diisopropyl Ether (DIPE)	ND	0.025	mg/Kg wet							
1,4-Dioxane	ND	2.5	mg/Kg wet							V-16
Ethylbenzene	ND	0.050	mg/Kg wet							
Hexachlorobutadiene	ND	0.050	mg/Kg wet							
2-Hexanone (MBK)	ND	0.50	mg/Kg wet							
Isopropylbenzene (Cumene)	ND	0.050	mg/Kg wet							
p-Isopropyltoluene (p-Cymene)	ND	0.050	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.050	mg/Kg wet							
Methylene Chloride	ND	0.25	mg/Kg wet							
4-Methyl-2-pentanone (MIBK)	ND	0.50	mg/Kg wet							
Naphthalene	ND	0.10	mg/Kg wet							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B103519 - SW-846 5035											
Blank (B103519-BLK1)				Prepared: 08/26/14 Analyzed: 08/28/14							
n-Propylbenzene	ND	0.050	mg/Kg wet								
Styrene	ND	0.050	mg/Kg wet								
1,1,1,2-Tetrachloroethane	ND	0.050	mg/Kg wet								
1,1,2,2-Tetrachloroethane	ND	0.025	mg/Kg wet								
Tetrachloroethylene	ND	0.050	mg/Kg wet								
Tetrahydrofuran	ND	0.20	mg/Kg wet							V-16	
Toluene	ND	0.050	mg/Kg wet								
1,2,3-Trichlorobenzene	ND	0.20	mg/Kg wet								
1,2,4-Trichlorobenzene	ND	0.050	mg/Kg wet								
1,1,1-Trichloroethane	ND	0.050	mg/Kg wet								
1,1,2-Trichloroethane	ND	0.050	mg/Kg wet								
Trichloroethylene	ND	0.050	mg/Kg wet								
Trichlorofluoromethane (Freon 11)	ND	0.10	mg/Kg wet								
1,2,3-Trichloropropane	ND	0.10	mg/Kg wet								
1,2,4-Trimethylbenzene	ND	0.050	mg/Kg wet								
1,3,5-Trimethylbenzene	ND	0.050	mg/Kg wet								
Vinyl Chloride	ND	0.10	mg/Kg wet								
m+p Xylene	ND	0.10	mg/Kg wet								
o-Xylene	ND	0.050	mg/Kg wet								
Surrogate: 1,2-Dichloroethane-d4	*0.0226*		mg/Kg wet	0.0250		90.2	70-130				
Surrogate: Toluene-d8	*0.0239*		mg/Kg wet	0.0250		95.6	70-130				
Surrogate: 4-Bromofluorobenzene	*0.0233*		mg/Kg wet	0.0250		93.2	70-130				
LCS (B103519-BS1)				Prepared: 08/26/14 Analyzed: 08/28/14							
Acetone	0.222	0.057	mg/Kg wet	0.113		**196** *	40-160			L-02	†
tert-Amyl Methyl Ether (TAME)	0.0109	0.00057	mg/Kg wet	0.0113		96.6	70-130				
Benzene	0.0127	0.0011	mg/Kg wet	0.0113		112	70-130			V-20	
Bromobenzene	0.0124	0.0011	mg/Kg wet	0.0113		110	70-130				
Bromochloromethane	0.0137	0.0011	mg/Kg wet	0.0113		121	70-130			V-20	
Bromodichloromethane	0.0128	0.0011	mg/Kg wet	0.0113		113	70-130				
Bromoform	0.0166	0.0011	mg/Kg wet	0.0113		**147** *	70-130			L-02, V-20	
Bromomethane	0.00726	0.0057	mg/Kg wet	0.0113		64.1	40-160			L-14	†
2-Butanone (MEK)	0.154	0.057	mg/Kg wet	0.113		136	40-160			L-14	†
n-Butylbenzene	0.0143	0.0011	mg/Kg wet	0.0113		126	70-130			V-06	
sec-Butylbenzene	0.0133	0.0011	mg/Kg wet	0.0113		117	70-130				
tert-Butylbenzene	0.0133	0.0011	mg/Kg wet	0.0113		118	70-130				
tert-Butyl Ethyl Ether (TBEE)	0.0121	0.00057	mg/Kg wet	0.0113		106	70-130				
Carbon Disulfide	0.0132	0.011	mg/Kg wet	0.0113		117	70-130				
Carbon Tetrachloride	0.0138	0.0011	mg/Kg wet	0.0113		121	70-130				
Chlorobenzene	0.0124	0.0011	mg/Kg wet	0.0113		109	70-130				
Chlorodibromomethane	0.0128	0.00057	mg/Kg wet	0.0113		113	70-130				
Chloroethane	0.0114	0.0023	mg/Kg wet	0.0113		100	70-130				
Chloroform	0.0123	0.0023	mg/Kg wet	0.0113		109	70-130				
Chloromethane	0.0104	0.0057	mg/Kg wet	0.0113		91.9	40-160				†
2-Chlorotoluene	0.0109	0.0011	mg/Kg wet	0.0113		96.0	70-130				
4-Chlorotoluene	0.0119	0.0011	mg/Kg wet	0.0113		105	70-130				
1,2-Dibromo-3-chloropropane (DBCP)	0.0125	0.0057	mg/Kg wet	0.0113		110	70-130				
1,2-Dibromoethane (EDB)	0.0130	0.00057	mg/Kg wet	0.0113		115	70-130				
Dibromomethane	0.0135	0.0011	mg/Kg wet	0.0113		119	70-130				
1,2-Dichlorobenzene	0.0128	0.0011	mg/Kg wet	0.0113		113	70-130				
1,3-Dichlorobenzene	0.0127	0.0011	mg/Kg wet	0.0113		112	70-130				
1,4-Dichlorobenzene	0.0130	0.0011	mg/Kg wet	0.0113		115	70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B103519 - SW-846 5035											
LCS (B103519-BS1)				Prepared: 08/26/14 Analyzed: 08/28/14							
Dichlorodifluoromethane (Freon 12)	0.0103	0.0023	mg/Kg wet	0.0113		90.5	40-160			V-20	†
1,1-Dichloroethane	0.0130	0.0011	mg/Kg wet	0.0113		115	70-130				
1,2-Dichloroethane	0.0125	0.0057	mg/Kg wet	0.0113		110	70-130				
1,1-Dichloroethylene	0.0108	0.0011	mg/Kg wet	0.0113		95.2	70-130				
cis-1,2-Dichloroethylene	0.0122	0.0011	mg/Kg wet	0.0113		108	70-130				
trans-1,2-Dichloroethylene	0.0126	0.0011	mg/Kg wet	0.0113		111	70-130				
1,2-Dichloropropane	0.0132	0.0011	mg/Kg wet	0.0113		116	70-130				
1,3-Dichloropropane	0.0130	0.00057	mg/Kg wet	0.0113		115	70-130				
2,2-Dichloropropane	0.0121	0.0011	mg/Kg wet	0.0113		107	70-130				
1,1-Dichloropropene	0.0130	0.0023	mg/Kg wet	0.0113		115	70-130				
cis-1,3-Dichloropropene	0.0119	0.00057	mg/Kg wet	0.0113		105	70-130				
trans-1,3-Dichloropropene	0.0131	0.00057	mg/Kg wet	0.0113		116	70-130				
Diethyl Ether	0.0121	0.0023	mg/Kg wet	0.0113		107	70-130				
Diisopropyl Ether (DIPE)	0.0113	0.00057	mg/Kg wet	0.0113		99.7	70-130				
1,4-Dioxane	0.0757	0.057	mg/Kg wet	0.113		66.8	40-160			L-14, V-16	†
Ethylbenzene	0.0127	0.0011	mg/Kg wet	0.0113		112	70-130				
Hexachlorobutadiene	0.0137	0.0011	mg/Kg wet	0.0113		121	70-130				
2-Hexanone (MBK)	0.160	0.011	mg/Kg wet	0.113		141	40-160			L-14	†
Isopropylbenzene (Cumene)	0.0122	0.0011	mg/Kg wet	0.0113		107	70-130				
p-Isopropyltoluene (p-Cymene)	0.0141	0.0011	mg/Kg wet	0.0113		124	70-130				
Methyl tert-Butyl Ether (MTBE)	0.0125	0.0011	mg/Kg wet	0.0113		110	70-130				
Methylene Chloride	0.0112	0.0057	mg/Kg wet	0.0113		98.4	70-130				
4-Methyl-2-pentanone (MIBK)	0.113	0.011	mg/Kg wet	0.113		99.3	40-160				†
Naphthalene	0.0136	0.0023	mg/Kg wet	0.0113		120	70-130			V-20	
n-Propylbenzene	0.0125	0.0011	mg/Kg wet	0.0113		110	70-130				
Styrene	0.0126	0.0011	mg/Kg wet	0.0113		111	70-130				
1,1,1,2-Tetrachloroethane	0.0133	0.0011	mg/Kg wet	0.0113		118	70-130				
1,1,2,2-Tetrachloroethane	0.0131	0.00057	mg/Kg wet	0.0113		116	70-130			V-20	
Tetrachloroethylene	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130				
Tetrahydrofuran	0.0124	0.0045	mg/Kg wet	0.0113		110	70-130			V-16	
Toluene	0.0124	0.0011	mg/Kg wet	0.0113		109	70-130				
1,2,3-Trichlorobenzene	0.0136	0.0045	mg/Kg wet	0.0113		120	70-130			V-20	
1,2,4-Trichlorobenzene	0.0141	0.0011	mg/Kg wet	0.0113		124	70-130				
1,1,1-Trichloroethane	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130				
1,1,2-Trichloroethane	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130				
Trichloroethylene	0.0132	0.0011	mg/Kg wet	0.0113		117	70-130				
Trichlorofluoromethane (Freon 11)	0.0115	0.0023	mg/Kg wet	0.0113		101	70-130				
1,2,3-Trichloropropane	0.0128	0.0023	mg/Kg wet	0.0113		113	70-130			V-20	
1,2,4-Trimethylbenzene	0.0137	0.0011	mg/Kg wet	0.0113		121	70-130			V-20	
1,3,5-Trimethylbenzene	0.0124	0.0011	mg/Kg wet	0.0113		109	70-130				
Vinyl Chloride	0.00798	0.0023	mg/Kg wet	0.0113		70.4	70-130				
m+p Xylene	0.0242	0.0023	mg/Kg wet	0.0227		107	70-130				
o-Xylene	0.0121	0.0011	mg/Kg wet	0.0113		107	70-130				
Surrogate: 1,2-Dichloroethane-d4	*0.0267*		mg/Kg wet	0.0283		94.2	70-130				
Surrogate: Toluene-d8	*0.0273*		mg/Kg wet	0.0283		96.4	70-130				
Surrogate: 4-Bromofluorobenzene	*0.0267*		mg/Kg wet	0.0283		94.2	70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B103519 - SW-846 5035												
LCS Dup (B103519-BSD1)				Prepared: 08/26/14 Analyzed: 08/28/14								
Acetone	0.232	0.057	mg/Kg wet	0.113		**204**	*	40-160	4.01	20	L-02	†
tert-Amyl Methyl Ether (TAME)	0.0110	0.00057	mg/Kg wet	0.0113		97.3		70-130	0.722	20		
Benzene	0.0132	0.0011	mg/Kg wet	0.0113		116		70-130	3.68	20	V-20	
Bromobenzene	0.0124	0.0011	mg/Kg wet	0.0113		110		70-130	0.182	20		
Bromochloromethane	0.0143	0.0011	mg/Kg wet	0.0113		127		70-130	4.28	20	V-20	
Bromodichloromethane	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130	0.354	20		
Bromoform	0.0164	0.0011	mg/Kg wet	0.0113		**145**	*	70-130	1.51	20	V-20, L-02	
Bromomethane	0.00823	0.0057	mg/Kg wet	0.0113		72.6		40-160	12.4	20		†
2-Butanone (MEK)	0.157	0.057	mg/Kg wet	0.113		139		40-160	2.26	20	L-14	†
n-Butylbenzene	0.0139	0.0011	mg/Kg wet	0.0113		123		70-130	2.81	20	V-06	
sec-Butylbenzene	0.0131	0.0011	mg/Kg wet	0.0113		116		70-130	1.37	20		
tert-Butylbenzene	0.0133	0.0011	mg/Kg wet	0.0113		117		70-130	0.512	20		
tert-Butyl Ethyl Ether (TBEE)	0.0121	0.00057	mg/Kg wet	0.0113		107		70-130	0.469	20		
Carbon Disulfide	0.0133	0.011	mg/Kg wet	0.0113		117		70-130	0.256	20		
Carbon Tetrachloride	0.0140	0.0011	mg/Kg wet	0.0113		124		70-130	1.71	20		
Chlorobenzene	0.0124	0.0011	mg/Kg wet	0.0113		110		70-130	0.549	20		
Chlorodibromomethane	0.0125	0.00057	mg/Kg wet	0.0113		110		70-130	2.60	20		
Chloroethane	0.0121	0.0023	mg/Kg wet	0.0113		107		70-130	6.08	20		
Chloroform	0.0124	0.0023	mg/Kg wet	0.0113		110		70-130	1.10	20		
Chloromethane	0.0110	0.0057	mg/Kg wet	0.0113		97.4		40-160	5.81	20		†
2-Chlorotoluene	0.0113	0.0011	mg/Kg wet	0.0113		99.7		70-130	3.78	20		
4-Chlorotoluene	0.0123	0.0011	mg/Kg wet	0.0113		109		70-130	3.37	20		
1,2-Dibromo-3-chloropropane (DBCP)	0.0125	0.0057	mg/Kg wet	0.0113		110		70-130	0.272	20		
1,2-Dibromoethane (EDB)	0.0131	0.00057	mg/Kg wet	0.0113		115		70-130	0.522	20		
Dibromomethane	0.0133	0.0011	mg/Kg wet	0.0113		118		70-130	1.02	20		
1,2-Dichlorobenzene	0.0124	0.0011	mg/Kg wet	0.0113		109		70-130	3.33	20		
1,3-Dichlorobenzene	0.0125	0.0011	mg/Kg wet	0.0113		110		70-130	1.35	20		
1,4-Dichlorobenzene	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130	1.75	20		
Dichlorodifluoromethane (Freon 12)	0.0107	0.0023	mg/Kg wet	0.0113		94.4		40-160	4.22	20	V-20	†
1,1-Dichloroethane	0.0135	0.0011	mg/Kg wet	0.0113		119		70-130	3.59	20		
1,2-Dichloroethane	0.0124	0.0057	mg/Kg wet	0.0113		109		70-130	1.18	20		
1,1-Dichloroethylene	0.0110	0.0011	mg/Kg wet	0.0113		97.0		70-130	1.87	20		
cis-1,2-Dichloroethylene	0.0123	0.0011	mg/Kg wet	0.0113		109		70-130	0.740	20		
trans-1,2-Dichloroethylene	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130	1.97	20		
1,2-Dichloropropane	0.0129	0.0011	mg/Kg wet	0.0113		114		70-130	1.91	20		
1,3-Dichloropropane	0.0125	0.00057	mg/Kg wet	0.0113		110		70-130	4.01	20		
2,2-Dichloropropane	0.0124	0.0011	mg/Kg wet	0.0113		110		70-130	2.68	20		
1,1-Dichloropropene	0.0132	0.0023	mg/Kg wet	0.0113		116		70-130	1.30	20		
cis-1,3-Dichloropropene	0.0123	0.00057	mg/Kg wet	0.0113		109		70-130	3.47	20		
trans-1,3-Dichloropropene	0.0134	0.00057	mg/Kg wet	0.0113		118		70-130	1.79	20		
Diethyl Ether	0.0119	0.0023	mg/Kg wet	0.0113		105		70-130	1.60	20		
Diisopropyl Ether (DIPE)	0.0121	0.00057	mg/Kg wet	0.0113		107		70-130	6.88	20		
1,4-Dioxane	0.0759	0.057	mg/Kg wet	0.113		67.0		40-160	0.269	20	L-14, V-16	†
Ethylbenzene	0.0131	0.0011	mg/Kg wet	0.0113		116		70-130	3.33	20		
Hexachlorobutadiene	0.0139	0.0011	mg/Kg wet	0.0113		123		70-130	1.56	20		
2-Hexanone (MBK)	0.158	0.011	mg/Kg wet	0.113		139		40-160	1.36	20	L-14	†
Isopropylbenzene (Cumene)	0.0122	0.0011	mg/Kg wet	0.0113		108		70-130	0.0930	20		
p-Isopropyltoluene (p-Cymene)	0.0136	0.0011	mg/Kg wet	0.0113		120		70-130	3.60	20		
Methyl tert-Butyl Ether (MTBE)	0.0125	0.0011	mg/Kg wet	0.0113		110		70-130	0.272	20		
Methylene Chloride	0.0114	0.0057	mg/Kg wet	0.0113		100		70-130	1.91	20		
4-Methyl-2-pentanone (MIBK)	0.111	0.011	mg/Kg wet	0.113		98.3		40-160	1.04	20		†
Naphthalene	0.0135	0.0023	mg/Kg wet	0.0113		119		70-130	1.17	20	V-20	

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103519 - SW-846 5035										
LCS Dup (B103519-BSD1)				Prepared: 08/26/14 Analyzed: 08/28/14						
n-Propylbenzene	0.0128	0.0011	mg/Kg wet	0.0113		113	70-130	2.60	20	
Styrene	0.0125	0.0011	mg/Kg wet	0.0113		110	70-130	0.451	20	
1,1,1,2-Tetrachloroethane	0.0136	0.0011	mg/Kg wet	0.0113		120	70-130	2.02	20	
1,1,2,2-Tetrachloroethane	0.0133	0.00057	mg/Kg wet	0.0113		118	70-130	1.72	20	V-20
Tetrachloroethylene	0.0133	0.0011	mg/Kg wet	0.0113		118	70-130	3.46	20	
Tetrahydrofuran	0.0121	0.0045	mg/Kg wet	0.0113		107	70-130	2.59	20	V-16
Toluene	0.0123	0.0011	mg/Kg wet	0.0113		109	70-130	0.184	20	
1,2,3-Trichlorobenzene	0.0132	0.0045	mg/Kg wet	0.0113		116	70-130	3.47	20	V-20
1,2,4-Trichlorobenzene	0.0139	0.0011	mg/Kg wet	0.0113		123	70-130	1.30	20	
1,1,1-Trichloroethane	0.0133	0.0011	mg/Kg wet	0.0113		118	70-130	3.11	20	
1,1,2-Trichloroethane	0.0126	0.0011	mg/Kg wet	0.0113		111	70-130	2.32	20	
Trichloroethylene	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130	2.52	20	
Trichlorofluoromethane (Freon 11)	0.0121	0.0023	mg/Kg wet	0.0113		106	70-130	5.00	20	
1,2,3-Trichloropropane	0.0129	0.0023	mg/Kg wet	0.0113		114	70-130	0.352	20	V-20
1,2,4-Trimethylbenzene	0.0132	0.0011	mg/Kg wet	0.0113		117	70-130	3.20	20	V-20
1,3,5-Trimethylbenzene	0.0125	0.0011	mg/Kg wet	0.0113		110	70-130	1.27	20	
Vinyl Chloride	0.00822	0.0023	mg/Kg wet	0.0113		72.5	70-130	2.94	20	
m+p Xylene	0.0250	0.0023	mg/Kg wet	0.0227		110	70-130	3.37	20	
o-Xylene	0.0124	0.0011	mg/Kg wet	0.0113		109	70-130	2.13	20	
Surrogate: 1,2-Dichloroethane-d4	*0.0275*		mg/Kg wet	0.0283		97.0	70-130			
Surrogate: Toluene-d8	*0.0266*		mg/Kg wet	0.0283		93.9	70-130			
Surrogate: 4-Bromofluorobenzene	*0.0264*		mg/Kg wet	0.0283		93.2	70-130			
Batch B103625 - SW-846 5035										
Blank (B103625-BLK1)				Prepared & Analyzed: 08/27/14						
Acetone	ND	0.10	mg/Kg wet							
tert-Amyl Methyl Ether (TAME)	ND	0.0010	mg/Kg wet							
Benzene	ND	0.0020	mg/Kg wet							
Bromobenzene	ND	0.0020	mg/Kg wet							
Bromochloromethane	ND	0.0020	mg/Kg wet							
Bromodichloromethane	ND	0.0020	mg/Kg wet							
Bromoform	ND	0.0040	mg/Kg wet							
Bromomethane	ND	0.010	mg/Kg wet							
2-Butanone (MEK)	ND	0.040	mg/Kg wet							
n-Butylbenzene	ND	0.0020	mg/Kg wet							
sec-Butylbenzene	ND	0.0020	mg/Kg wet							
tert-Butylbenzene	ND	0.0020	mg/Kg wet							
tert-Butyl Ethyl Ether (TBEE)	ND	0.0010	mg/Kg wet							
Carbon Disulfide	ND	0.0060	mg/Kg wet							
Carbon Tetrachloride	ND	0.0020	mg/Kg wet							
Chlorobenzene	ND	0.0020	mg/Kg wet							
Chlorodibromomethane	ND	0.0010	mg/Kg wet							
Chloroethane	ND	0.010	mg/Kg wet							
Chloroform	ND	0.0040	mg/Kg wet							
Chloromethane	ND	0.010	mg/Kg wet							V-05
2-Chlorotoluene	ND	0.0020	mg/Kg wet							
4-Chlorotoluene	ND	0.0020	mg/Kg wet							
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0020	mg/Kg wet							
1,2-Dibromoethane (EDB)	ND	0.0010	mg/Kg wet							
Dibromomethane	ND	0.0020	mg/Kg wet							
1,2-Dichlorobenzene	ND	0.0020	mg/Kg wet							
1,3-Dichlorobenzene	ND	0.0020	mg/Kg wet							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103625 - SW-846 5035										
Blank (B103625-BLK1)				Prepared & Analyzed: 08/27/14						
1,4-Dichlorobenzene	ND	0.0020	mg/Kg wet							
Dichlorodifluoromethane (Freon 12)	ND	0.010	mg/Kg wet							
1,1-Dichloroethane	ND	0.0020	mg/Kg wet							
1,2-Dichloroethane	ND	0.0020	mg/Kg wet							
1,1-Dichloroethylene	ND	0.0040	mg/Kg wet							
cis-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
trans-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
1,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,3-Dichloropropane	ND	0.0010	mg/Kg wet							
2,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,1-Dichloropropene	ND	0.0020	mg/Kg wet							
cis-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
trans-1,3-Dichloropropene	ND	0.0040	mg/Kg wet							
Diethyl Ether	ND	0.010	mg/Kg wet							
Diisopropyl Ether (DIPE)	ND	0.0010	mg/Kg wet							
1,4-Dioxane	ND	0.10	mg/Kg wet							R-05, V-05, V-16
Ethylbenzene	ND	0.0020	mg/Kg wet							
Hexachlorobutadiene	ND	0.0020	mg/Kg wet							
2-Hexanone (MBK)	ND	0.020	mg/Kg wet							
Isopropylbenzene (Cumene)	ND	0.0020	mg/Kg wet							
p-Isopropyltoluene (p-Cymene)	ND	0.0020	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.0040	mg/Kg wet							
Methylene Chloride	ND	0.010	mg/Kg wet							V-05
4-Methyl-2-pentanone (MIBK)	ND	0.020	mg/Kg wet							
Naphthalene	ND	0.0040	mg/Kg wet							V-05
n-Propylbenzene	ND	0.0020	mg/Kg wet							
Styrene	ND	0.0020	mg/Kg wet							
1,1,1,2-Tetrachloroethane	ND	0.0020	mg/Kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0010	mg/Kg wet							
Tetrachloroethylene	ND	0.0020	mg/Kg wet							
Tetrahydrofuran	ND	0.010	mg/Kg wet							V-16
Toluene	ND	0.0020	mg/Kg wet							
1,2,3-Trichlorobenzene	ND	0.0020	mg/Kg wet							V-05
1,2,4-Trichlorobenzene	ND	0.0020	mg/Kg wet							
1,1,1-Trichloroethane	ND	0.0020	mg/Kg wet							
1,1,2-Trichloroethane	ND	0.0020	mg/Kg wet							
Trichloroethylene	ND	0.0020	mg/Kg wet							
Trichlorofluoromethane (Freon 11)	ND	0.010	mg/Kg wet							V-05
1,2,3-Trichloropropane	ND	0.0020	mg/Kg wet							
1,2,4-Trimethylbenzene	ND	0.0020	mg/Kg wet							
1,3,5-Trimethylbenzene	ND	0.0020	mg/Kg wet							
Vinyl Chloride	ND	0.010	mg/Kg wet							
m+p Xylene	ND	0.0040	mg/Kg wet							
o-Xylene	ND	0.0020	mg/Kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0487*		mg/Kg wet	0.0500		97.5	70-130			
Surrogate: Toluene-d8	*0.0495*		mg/Kg wet	0.0500		98.9	70-130			
Surrogate: 4-Bromofluorobenzene	*0.0496*		mg/Kg wet	0.0500		99.2	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B103625 - SW-846 5035												
LCS (B103625-BS1)				Prepared & Analyzed: 08/27/14								
Acetone	0.358	0.10	mg/Kg wet	0.200		**179**	*	40-160			L-02	†
tert-Amyl Methyl Ether (TAME)	0.0220	0.0010	mg/Kg wet	0.0200		110		70-130				
Benzene	0.0214	0.0020	mg/Kg wet	0.0200		107		70-130				
Bromobenzene	0.0219	0.0020	mg/Kg wet	0.0200		110		70-130				
Bromochloromethane	0.0236	0.0020	mg/Kg wet	0.0200		118		70-130				
Bromodichloromethane	0.0241	0.0020	mg/Kg wet	0.0200		120		70-130				
Bromoform	0.0211	0.0040	mg/Kg wet	0.0200		105		70-130				
Bromomethane	0.0149	0.010	mg/Kg wet	0.0200		74.4		40-160				†
2-Butanone (MEK)	0.345	0.040	mg/Kg wet	0.200		**172**	*	40-160			L-07	†
n-Butylbenzene	0.0223	0.0020	mg/Kg wet	0.0200		111		70-130				
sec-Butylbenzene	0.0231	0.0020	mg/Kg wet	0.0200		115		70-130				
tert-Butylbenzene	0.0228	0.0020	mg/Kg wet	0.0200		114		70-130				
tert-Butyl Ethyl Ether (TBEE)	0.0236	0.0010	mg/Kg wet	0.0200		118		70-130				
Carbon Disulfide	0.0196	0.0060	mg/Kg wet	0.0200		98.0		70-130				
Carbon Tetrachloride	0.0235	0.0020	mg/Kg wet	0.0200		117		70-130				
Chlorobenzene	0.0215	0.0020	mg/Kg wet	0.0200		107		70-130				
Chlorodibromomethane	0.0235	0.0010	mg/Kg wet	0.0200		117		70-130				
Chloroethane	0.0203	0.010	mg/Kg wet	0.0200		102		70-130				
Chloroform	0.0225	0.0040	mg/Kg wet	0.0200		112		70-130				
Chloromethane	0.0169	0.010	mg/Kg wet	0.0200		84.7		40-160			V-05	†
2-Chlorotoluene	0.0222	0.0020	mg/Kg wet	0.0200		111		70-130				
4-Chlorotoluene	0.0232	0.0020	mg/Kg wet	0.0200		116		70-130				
1,2-Dibromo-3-chloropropane (DBCP)	0.0196	0.0020	mg/Kg wet	0.0200		98.2		70-130				
1,2-Dibromoethane (EDB)	0.0238	0.0010	mg/Kg wet	0.0200		119		70-130				
Dibromomethane	0.0232	0.0020	mg/Kg wet	0.0200		116		70-130				
1,2-Dichlorobenzene	0.0212	0.0020	mg/Kg wet	0.0200		106		70-130				
1,3-Dichlorobenzene	0.0211	0.0020	mg/Kg wet	0.0200		105		70-130				
1,4-Dichlorobenzene	0.0210	0.0020	mg/Kg wet	0.0200		105		70-130				
Dichlorodifluoromethane (Freon 12)	0.0228	0.010	mg/Kg wet	0.0200		114		40-160				†
1,1-Dichloroethane	0.0219	0.0020	mg/Kg wet	0.0200		109		70-130				
1,2-Dichloroethane	0.0232	0.0020	mg/Kg wet	0.0200		116		70-130				
1,1-Dichloroethylene	0.0201	0.0040	mg/Kg wet	0.0200		100		70-130				
cis-1,2-Dichloroethylene	0.0215	0.0020	mg/Kg wet	0.0200		108		70-130				
trans-1,2-Dichloroethylene	0.0216	0.0020	mg/Kg wet	0.0200		108		70-130				
1,2-Dichloropropane	0.0224	0.0020	mg/Kg wet	0.0200		112		70-130				
1,3-Dichloropropane	0.0233	0.0010	mg/Kg wet	0.0200		117		70-130				
2,2-Dichloropropane	0.0241	0.0020	mg/Kg wet	0.0200		121		70-130				
1,1-Dichloropropene	0.0235	0.0020	mg/Kg wet	0.0200		118		70-130				
cis-1,3-Dichloropropene	0.0222	0.0010	mg/Kg wet	0.0200		111		70-130				
trans-1,3-Dichloropropene	0.0227	0.0040	mg/Kg wet	0.0200		113		70-130				
Diethyl Ether	0.0198	0.010	mg/Kg wet	0.0200		98.8		70-130				
Diisopropyl Ether (DIPE)	0.0214	0.0010	mg/Kg wet	0.0200		107		70-130				
1,4-Dioxane	0.169	0.10	mg/Kg wet	0.200		84.3		40-160			R-05, V-05, V-16	†
Ethylbenzene	0.0241	0.0020	mg/Kg wet	0.0200		120		70-130				
Hexachlorobutadiene	0.0232	0.0020	mg/Kg wet	0.0200		116		70-130				
2-Hexanone (MBK)	0.307	0.020	mg/Kg wet	0.200		154		40-160			L-14	†
Isopropylbenzene (Cumene)	0.0226	0.0020	mg/Kg wet	0.0200		113		70-130				
p-Isopropyltoluene (p-Cymene)	0.0232	0.0020	mg/Kg wet	0.0200		116		70-130				
Methyl tert-Butyl Ether (MTBE)	0.0225	0.0040	mg/Kg wet	0.0200		112		70-130				
Methylene Chloride	0.0174	0.010	mg/Kg wet	0.0200		87.2		70-130			V-05	
4-Methyl-2-pentanone (MIBK)	0.211	0.020	mg/Kg wet	0.200		106		40-160				†
Naphthalene	0.0139	0.0040	mg/Kg wet	0.0200		**69.6**	*	70-130			L-07, V-05	

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QUALITY CONTROL

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B103625 - SW-846 5035												
LCS (B103625-BS1)				Prepared & Analyzed: 08/27/14								
n-Propylbenzene	0.0238	0.0020	mg/Kg wet	0.0200		119		70-130				
Styrene	0.0228	0.0020	mg/Kg wet	0.0200		114		70-130				
1,1,1,2-Tetrachloroethane	0.0243	0.0020	mg/Kg wet	0.0200		121		70-130				
1,1,2,2-Tetrachloroethane	0.0209	0.0010	mg/Kg wet	0.0200		105		70-130				
Tetrachloroethylene	0.0254	0.0020	mg/Kg wet	0.0200		127		70-130				
Tetrahydrofuran	0.0211	0.010	mg/Kg wet	0.0200		105		70-130			V-16	
Toluene	0.0212	0.0020	mg/Kg wet	0.0200		106		70-130				
1,2,3-Trichlorobenzene	0.0182	0.0020	mg/Kg wet	0.0200		90.8		70-130			V-05	
1,2,4-Trichlorobenzene	0.0184	0.0020	mg/Kg wet	0.0200		92.2		70-130				
1,1,1-Trichloroethane	0.0241	0.0020	mg/Kg wet	0.0200		120		70-130				
1,1,2-Trichloroethane	0.0225	0.0020	mg/Kg wet	0.0200		113		70-130				
Trichloroethylene	0.0236	0.0020	mg/Kg wet	0.0200		118		70-130				
Trichlorofluoromethane (Freon 11)	0.0195	0.010	mg/Kg wet	0.0200		97.5		70-130			V-05	
1,2,3-Trichloropropane	0.0225	0.0020	mg/Kg wet	0.0200		112		70-130				
1,2,4-Trimethylbenzene	0.0229	0.0020	mg/Kg wet	0.0200		115		70-130				
1,3,5-Trimethylbenzene	0.0236	0.0020	mg/Kg wet	0.0200		118		70-130				
Vinyl Chloride	0.0188	0.010	mg/Kg wet	0.0200		93.9		70-130				
m+p Xylene	0.0468	0.0040	mg/Kg wet	0.0400		117		70-130				
o-Xylene	0.0232	0.0020	mg/Kg wet	0.0200		116		70-130				
Surrogate: 1,2-Dichloroethane-d4	*0.0485*		mg/Kg wet	0.0500		97.0		70-130				
Surrogate: Toluene-d8	*0.0512*		mg/Kg wet	0.0500		102		70-130				
Surrogate: 4-Bromofluorobenzene	*0.0492*		mg/Kg wet	0.0500		98.4		70-130				
LCS Dup (B103625-BSD1)				Prepared & Analyzed: 08/27/14								
Acetone	0.328	0.10	mg/Kg wet	0.200		**164**	*	40-160	8.52	20	L-02	†
tert-Amyl Methyl Ether (TAME)	0.0217	0.0010	mg/Kg wet	0.0200		109		70-130	1.37	20		
Benzene	0.0203	0.0020	mg/Kg wet	0.0200		102		70-130	5.17	20		
Bromobenzene	0.0222	0.0020	mg/Kg wet	0.0200		111		70-130	1.36	20		
Bromochloromethane	0.0229	0.0020	mg/Kg wet	0.0200		114		70-130	3.18	20		
Bromodichloromethane	0.0234	0.0020	mg/Kg wet	0.0200		117		70-130	3.12	20		
Bromoform	0.0212	0.0040	mg/Kg wet	0.0200		106		70-130	0.568	20		
Bromomethane	0.0150	0.010	mg/Kg wet	0.0200		75.1		40-160	0.936	20		†
2-Butanone (MEK)	0.318	0.040	mg/Kg wet	0.200		159		40-160	8.13	20	L-14	†
n-Butylbenzene	0.0223	0.0020	mg/Kg wet	0.0200		112		70-130	0.180	20		
sec-Butylbenzene	0.0222	0.0020	mg/Kg wet	0.0200		111		70-130	3.71	20		
tert-Butylbenzene	0.0224	0.0020	mg/Kg wet	0.0200		112		70-130	1.77	20		
tert-Butyl Ethyl Ether (TBEE)	0.0231	0.0010	mg/Kg wet	0.0200		116		70-130	1.80	20		
Carbon Disulfide	0.0192	0.0060	mg/Kg wet	0.0200		96.1		70-130	1.96	20		
Carbon Tetrachloride	0.0225	0.0020	mg/Kg wet	0.0200		113		70-130	4.09	20		
Chlorobenzene	0.0214	0.0020	mg/Kg wet	0.0200		107		70-130	0.373	20		
Chlorodibromomethane	0.0236	0.0010	mg/Kg wet	0.0200		118		70-130	0.764	20		
Chloroethane	0.0202	0.010	mg/Kg wet	0.0200		101		70-130	0.691	20		
Chloroform	0.0221	0.0040	mg/Kg wet	0.0200		111		70-130	1.53	20		
Chloromethane	0.0169	0.010	mg/Kg wet	0.0200		84.4		40-160	0.355	20	V-05	†
2-Chlorotoluene	0.0223	0.0020	mg/Kg wet	0.0200		111		70-130	0.270	20		
4-Chlorotoluene	0.0231	0.0020	mg/Kg wet	0.0200		116		70-130	0.173	20		
1,2-Dibromo-3-chloropropane (DBCP)	0.0187	0.0020	mg/Kg wet	0.0200		93.7		70-130	4.69	20		
1,2-Dibromoethane (EDB)	0.0247	0.0010	mg/Kg wet	0.0200		124		70-130	3.87	20		
Dibromomethane	0.0237	0.0020	mg/Kg wet	0.0200		118		70-130	2.05	20		
1,2-Dichlorobenzene	0.0211	0.0020	mg/Kg wet	0.0200		106		70-130	0.473	20		
1,3-Dichlorobenzene	0.0214	0.0020	mg/Kg wet	0.0200		107		70-130	1.60	20		
1,4-Dichlorobenzene	0.0211	0.0020	mg/Kg wet	0.0200		106		70-130	0.475	20		

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QUALITY CONTROL

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD		RPD Limit	Notes	
Batch B103625 - SW-846 5035												
LCS Dup (B103625-BSD1)				Prepared & Analyzed: 08/27/14								
Dichlorodifluoromethane (Freon 12)	0.0227	0.010	mg/Kg wet	0.0200		113	40-160	0.528		20		†
1,1-Dichloroethane	0.0210	0.0020	mg/Kg wet	0.0200		105	70-130	4.01		20		
1,2-Dichloroethane	0.0234	0.0020	mg/Kg wet	0.0200		117	70-130	1.03		20		
1,1-Dichloroethylene	0.0193	0.0040	mg/Kg wet	0.0200		96.6	70-130	3.96		20		
cis-1,2-Dichloroethylene	0.0210	0.0020	mg/Kg wet	0.0200		105	70-130	2.63		20		
trans-1,2-Dichloroethylene	0.0209	0.0020	mg/Kg wet	0.0200		105	70-130	2.92		20		
1,2-Dichloropropane	0.0225	0.0020	mg/Kg wet	0.0200		112	70-130	0.178		20		
1,3-Dichloropropane	0.0235	0.0010	mg/Kg wet	0.0200		118	70-130	0.769		20		
2,2-Dichloropropane	0.0233	0.0020	mg/Kg wet	0.0200		116	70-130	3.54		20		
1,1-Dichloropropene	0.0213	0.0020	mg/Kg wet	0.0200		106	70-130	10.0		20		
cis-1,3-Dichloropropene	0.0224	0.0010	mg/Kg wet	0.0200		112	70-130	0.896		20		
trans-1,3-Dichloropropene	0.0231	0.0040	mg/Kg wet	0.0200		115	70-130	1.66		20		
Diethyl Ether	0.0189	0.010	mg/Kg wet	0.0200		94.7	70-130	4.24		20		
Diisopropyl Ether (DIPE)	0.0210	0.0010	mg/Kg wet	0.0200		105	70-130	1.70		20		
1,4-Dioxane	0.213	0.10	mg/Kg wet	0.200		107	40-160	**23.3**	*	20	V-16, R-05, V-05	†
Ethylbenzene	0.0238	0.0020	mg/Kg wet	0.0200		119	70-130	1.25		20		
Hexachlorobutadiene	0.0227	0.0020	mg/Kg wet	0.0200		114	70-130	2.00		20		
2-Hexanone (MBK)	0.289	0.020	mg/Kg wet	0.200		145	40-160	6.15		20	L-14	†
Isopropylbenzene (Cumene)	0.0225	0.0020	mg/Kg wet	0.0200		112	70-130	0.443		20		
p-Isopropyltoluene (p-Cymene)	0.0224	0.0020	mg/Kg wet	0.0200		112	70-130	3.51		20		
Methyl tert-Butyl Ether (MTBE)	0.0223	0.0040	mg/Kg wet	0.0200		112	70-130	0.715		20		
Methylene Chloride	0.0168	0.010	mg/Kg wet	0.0200		84.0	70-130	3.74		20	V-05	
4-Methyl-2-pentanone (MIBK)	0.208	0.020	mg/Kg wet	0.200		104	40-160	1.58		20		†
Naphthalene	0.0144	0.0040	mg/Kg wet	0.0200		72.0	70-130	3.39		20	V-05	
n-Propylbenzene	0.0233	0.0020	mg/Kg wet	0.0200		116	70-130	2.13		20		
Styrene	0.0233	0.0020	mg/Kg wet	0.0200		117	70-130	2.25		20		
1,1,1,2-Tetrachloroethane	0.0245	0.0020	mg/Kg wet	0.0200		123	70-130	0.984		20		
1,1,2,2-Tetrachloroethane	0.0212	0.0010	mg/Kg wet	0.0200		106	70-130	1.33		20		
Tetrachloroethylene	0.0245	0.0020	mg/Kg wet	0.0200		123	70-130	3.37		20		
Tetrahydrofuran	0.0207	0.010	mg/Kg wet	0.0200		104	70-130	1.72		20	V-16	
Toluene	0.0214	0.0020	mg/Kg wet	0.0200		107	70-130	1.03		20		
1,2,3-Trichlorobenzene	0.0182	0.0020	mg/Kg wet	0.0200		90.8	70-130	0.00		20	V-05	
1,2,4-Trichlorobenzene	0.0182	0.0020	mg/Kg wet	0.0200		90.9	70-130	1.42		20		
1,1,1-Trichloroethane	0.0233	0.0020	mg/Kg wet	0.0200		116	70-130	3.38		20		
1,1,2-Trichloroethane	0.0238	0.0020	mg/Kg wet	0.0200		119	70-130	5.27		20		
Trichloroethylene	0.0237	0.0020	mg/Kg wet	0.0200		119	70-130	0.507		20		
Trichlorofluoromethane (Freon 11)	0.0185	0.010	mg/Kg wet	0.0200		92.3	70-130	5.48		20	V-05	
1,2,3-Trichloropropane	0.0229	0.0020	mg/Kg wet	0.0200		114	70-130	1.85		20		
1,2,4-Trimethylbenzene	0.0232	0.0020	mg/Kg wet	0.0200		116	70-130	1.13		20		
1,3,5-Trimethylbenzene	0.0236	0.0020	mg/Kg wet	0.0200		118	70-130	0.254		20		
Vinyl Chloride	0.0182	0.010	mg/Kg wet	0.0200		91.2	70-130	2.92		20		
m+p Xylene	0.0473	0.0040	mg/Kg wet	0.0400		118	70-130	1.15		20		
o-Xylene	0.0232	0.0020	mg/Kg wet	0.0200		116	70-130	0.345		20		
Surrogate: 1,2-Dichloroethane-d4	*0.0479*		mg/Kg wet	0.0500		95.9	70-130					
Surrogate: Toluene-d8	*0.0494*		mg/Kg wet	0.0500		98.7	70-130					
Surrogate: 4-Bromofluorobenzene	*0.0509*		mg/Kg wet	0.0500		102	70-130					

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103593 - SW-846 3540C										
Blank (B103593-BLK1)				Prepared: 08/26/14 Analyzed: 08/28/14						
Aroclor-1016	ND	0.020	mg/Kg wet							
Aroclor-1016 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1221	ND	0.020	mg/Kg wet							
Aroclor-1221 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1232	ND	0.020	mg/Kg wet							
Aroclor-1232 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1242	ND	0.020	mg/Kg wet							
Aroclor-1242 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1248	ND	0.020	mg/Kg wet							
Aroclor-1248 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1254	ND	0.020	mg/Kg wet							
Aroclor-1254 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1260	ND	0.020	mg/Kg wet							
Aroclor-1260 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1262	ND	0.020	mg/Kg wet							
Aroclor-1262 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1268	ND	0.020	mg/Kg wet							
Aroclor-1268 [2C]	ND	0.020	mg/Kg wet							
Surrogate: Decachlorobiphenyl	*0.191*		mg/Kg wet	0.200		95.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.186*		mg/Kg wet	0.200		93.0	30-150			
Surrogate: Tetrachloro-m-xylene	*0.188*		mg/Kg wet	0.200		93.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.147*		mg/Kg wet	0.200		73.4	30-150			
LCS (B103593-BS1)				Prepared: 08/26/14 Analyzed: 08/28/14						
Aroclor-1016	0.17	0.10	mg/Kg wet	0.200		85.3	40-140			
Aroclor-1016 [2C]	0.17	0.10	mg/Kg wet	0.200		86.4	40-140			
Aroclor-1260	0.18	0.10	mg/Kg wet	0.200		87.6	40-140			
Aroclor-1260 [2C]	0.19	0.10	mg/Kg wet	0.200		94.6	40-140			
Surrogate: Decachlorobiphenyl	*0.175*		mg/Kg wet	0.200		87.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.174*		mg/Kg wet	0.200		87.1	30-150			
Surrogate: Tetrachloro-m-xylene	*0.169*		mg/Kg wet	0.200		84.7	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.139*		mg/Kg wet	0.200		69.4	30-150			
LCS Dup (B103593-BSD1)				Prepared: 08/26/14 Analyzed: 08/28/14						
Aroclor-1016	0.19	0.10	mg/Kg wet	0.200		96.0	40-140	11.8	30	
Aroclor-1016 [2C]	0.19	0.10	mg/Kg wet	0.200		93.4	40-140	7.78	30	
Aroclor-1260	0.19	0.10	mg/Kg wet	0.200		95.9	40-140	9.08	30	
Aroclor-1260 [2C]	0.21	0.10	mg/Kg wet	0.200		103	40-140	8.11	30	
Surrogate: Decachlorobiphenyl	*0.191*		mg/Kg wet	0.200		95.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.184*		mg/Kg wet	0.200		91.8	30-150			
Surrogate: Tetrachloro-m-xylene	*0.184*		mg/Kg wet	0.200		92.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.150*		mg/Kg wet	0.200		75.2	30-150			

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103593 - SW-846 3540C										
Matrix Spike (B103593-MS1)	**Source: 14H1123-18**			Prepared: 08/26/14 Analyzed: 08/28/14						
Aroclor-1016	1.9	1.2	mg/Kg dry	2.50	0.0	76.7	40-140			
Aroclor-1016 [2C]	2.0	1.2	mg/Kg dry	2.50	0.0	79.5	40-140			
Aroclor-1260	1.7	1.2	mg/Kg dry	2.50	0.0	66.2	40-140			
Aroclor-1260 [2C]	1.9	1.2	mg/Kg dry	2.50	0.0	76.8	40-140			
Surrogate: Decachlorobiphenyl	*1.95*		mg/Kg dry	2.50		77.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.87*		mg/Kg dry	2.50		74.9	30-150			
Surrogate: Tetrachloro-m-xylene	*1.97*		mg/Kg dry	2.50		78.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*2.12*		mg/Kg dry	2.50		84.7	30-150			
Matrix Spike Dup (B103593-MSD1)	**Source: 14H1123-18**			Prepared: 08/26/14 Analyzed: 08/28/14						
Aroclor-1016	2.1	1.2	mg/Kg dry	2.45	0.0	83.8	40-140	6.85	50	
Aroclor-1016 [2C]	2.1	1.2	mg/Kg dry	2.45	0.0	86.2	40-140	6.08	50	
Aroclor-1260	1.8	1.2	mg/Kg dry	2.45	0.0	73.8	40-140	8.88	50	
Aroclor-1260 [2C]	2.1	1.2	mg/Kg dry	2.45	0.0	87.3	40-140	10.9	50	
Surrogate: Decachlorobiphenyl	*2.10*		mg/Kg dry	2.45		85.7	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.08*		mg/Kg dry	2.45		84.9	30-150			
Surrogate: Tetrachloro-m-xylene	*2.05*		mg/Kg dry	2.45		83.7	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*2.21*		mg/Kg dry	2.45		90.2	30-150			
Batch B103891 - SW-846 3540C										
Blank (B103891-BLK1)				Prepared: 08/29/14 Analyzed: 09/02/14						
Aroclor-1016	ND	0.020	mg/Kg wet							
Aroclor-1016 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1221	ND	0.020	mg/Kg wet							
Aroclor-1221 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1232	ND	0.020	mg/Kg wet							
Aroclor-1232 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1242	ND	0.020	mg/Kg wet							
Aroclor-1242 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1248	ND	0.020	mg/Kg wet							
Aroclor-1248 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1254	ND	0.020	mg/Kg wet							
Aroclor-1254 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1260	ND	0.020	mg/Kg wet							
Aroclor-1260 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1262	ND	0.020	mg/Kg wet							
Aroclor-1262 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1268	ND	0.020	mg/Kg wet							
Aroclor-1268 [2C]	ND	0.020	mg/Kg wet							
Surrogate: Decachlorobiphenyl	*0.138*		mg/Kg wet	0.200		69.2	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.131*		mg/Kg wet	0.200		65.4	30-150			
Surrogate: Tetrachloro-m-xylene	*0.139*		mg/Kg wet	0.200		69.7	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.145*		mg/Kg wet	0.200		72.6	30-150			

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103891 - SW-846 3540C										
LCS (B103891-BS1)				Prepared: 08/29/14 Analyzed: 09/02/14						
Aroclor-1016	0.20	0.10	mg/Kg wet	0.200		98.6	40-140			
Aroclor-1016 [2C]	0.18	0.10	mg/Kg wet	0.200		88.4	40-140			
Aroclor-1260	0.19	0.10	mg/Kg wet	0.200		94.2	40-140			
Aroclor-1260 [2C]	0.18	0.10	mg/Kg wet	0.200		89.1	40-140			
Surrogate: Decachlorobiphenyl	*0.175*		mg/Kg wet	0.200		87.6	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.169*		mg/Kg wet	0.200		84.5	30-150			
Surrogate: Tetrachloro-m-xylene	*0.171*		mg/Kg wet	0.200		85.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.170*		mg/Kg wet	0.200		84.9	30-150			
LCS Dup (B103891-BSD1)				Prepared: 08/29/14 Analyzed: 09/02/14						
Aroclor-1016	0.18	0.10	mg/Kg wet	0.200		88.0	40-140	11.4	30	
Aroclor-1016 [2C]	0.16	0.10	mg/Kg wet	0.200		80.7	40-140	9.16	30	
Aroclor-1260	0.17	0.10	mg/Kg wet	0.200		83.7	40-140	11.7	30	
Aroclor-1260 [2C]	0.16	0.10	mg/Kg wet	0.200		79.5	40-140	11.4	30	
Surrogate: Decachlorobiphenyl	*0.158*		mg/Kg wet	0.200		79.0	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.145*		mg/Kg wet	0.200		72.7	30-150			
Surrogate: Tetrachloro-m-xylene	*0.156*		mg/Kg wet	0.200		78.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.152*		mg/Kg wet	0.200		76.2	30-150			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103793 - SW-846 3546										
Blank (B103793-BLK1)				Prepared: 08/28/14 Analyzed: 08/29/14						
C9-C18 Aliphatics	ND	10	mg/Kg wet							
C19-C36 Aliphatics	ND	10	mg/Kg wet							
Unadjusted C11-C22 Aromatics	ND	10	mg/Kg wet							
C11-C22 Aromatics	ND	10	mg/Kg wet							
Acenaphthene	ND	0.10	mg/Kg wet							
Acenaphthylene	ND	0.10	mg/Kg wet							
Anthracene	ND	0.10	mg/Kg wet							
Benzo(a)anthracene	ND	0.10	mg/Kg wet							
Benzo(a)pyrene	ND	0.10	mg/Kg wet							
Benzo(b)fluoranthene	ND	0.10	mg/Kg wet							
Benzo(g,h,i)perylene	ND	0.10	mg/Kg wet							
Benzo(k)fluoranthene	ND	0.10	mg/Kg wet							
Chrysene	ND	0.10	mg/Kg wet							
Dibenz(a,h)anthracene	ND	0.10	mg/Kg wet							
Fluoranthene	ND	0.10	mg/Kg wet							
Fluorene	ND	0.10	mg/Kg wet							
Indeno(1,2,3-cd)pyrene	ND	0.10	mg/Kg wet							
2-Methylnaphthalene	ND	0.10	mg/Kg wet							
Naphthalene	ND	0.10	mg/Kg wet							
Phenanthrene	ND	0.10	mg/Kg wet							
Pyrene	ND	0.10	mg/Kg wet							
n-Decane	ND	0.10	mg/Kg wet							
n-Docosane	ND	0.10	mg/Kg wet							
n-Dodecane	ND	0.10	mg/Kg wet							
n-Eicosane	ND	0.10	mg/Kg wet							
n-Hexacosane	ND	0.10	mg/Kg wet							
n-Hexadecane	ND	0.10	mg/Kg wet							
n-Hexatriacontane	ND	0.10	mg/Kg wet							
n-Nonadecane	ND	0.10	mg/Kg wet							
n-Nonane	ND	0.10	mg/Kg wet							
n-Octacosane	ND	0.10	mg/Kg wet							
n-Octadecane	ND	0.10	mg/Kg wet							
n-Tetracosane	ND	0.10	mg/Kg wet							
n-Tetradecane	ND	0.10	mg/Kg wet							
n-Triacontane	ND	0.10	mg/Kg wet							
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet							
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet							
Surrogate: Chlorooctadecane (COD)	*3.36*		mg/Kg wet	5.00		67.2	40-140			
Surrogate: o-Terphenyl (OTP)	*3.55*		mg/Kg wet	5.05		70.3	40-140			
Surrogate: 2-Bromonaphthalene	*3.87*		mg/Kg wet	5.00		77.4	40-140			
Surrogate: 2-Fluorobiphenyl	*4.26*		mg/Kg wet	5.00		85.1	40-140			
LCS (B103793-BS1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Acenaphthene	3.49	0.10	mg/Kg wet	5.00		69.9	40-140			
Acenaphthylene	3.39	0.10	mg/Kg wet	5.00		67.9	40-140			
Anthracene	3.84	0.10	mg/Kg wet	5.00		76.9	40-140			
Benzo(a)anthracene	3.46	0.10	mg/Kg wet	5.00		69.2	40-140			
Benzo(a)pyrene	3.42	0.10	mg/Kg wet	5.00		68.5	40-140			
Benzo(b)fluoranthene	3.37	0.10	mg/Kg wet	5.00		67.4	40-140			
Benzo(g,h,i)perylene	3.47	0.10	mg/Kg wet	5.00		69.5	40-140			
Benzo(k)fluoranthene	3.35	0.10	mg/Kg wet	5.00		67.0	40-140			
Chrysene	3.50	0.10	mg/Kg wet	5.00		70.0	40-140			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103793 - SW-846 3546										
LCS (B103793-BS1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Dibenz(a,h)anthracene	3.39	0.10	mg/Kg wet	5.00		67.8	40-140			
Fluoranthene	3.51	0.10	mg/Kg wet	5.00		70.1	40-140			
Fluorene	3.57	0.10	mg/Kg wet	5.00		71.4	40-140			
Indeno(1,2,3-cd)pyrene	2.80	0.10	mg/Kg wet	5.00		56.1	40-140			
2-Methylnaphthalene	3.43	0.10	mg/Kg wet	5.00		68.7	40-140			
Naphthalene	3.24	0.10	mg/Kg wet	5.00		64.8	40-140			
Phenanthrene	3.54	0.10	mg/Kg wet	5.00		70.8	40-140			
Pyrene	3.50	0.10	mg/Kg wet	5.00		69.9	40-140			
n-Decane	2.43	0.10	mg/Kg wet	5.00		48.6	40-140			
n-Docosane	3.30	0.10	mg/Kg wet	5.00		66.0	40-140			
n-Dodecane	3.04	0.10	mg/Kg wet	5.00		60.9	40-140			
n-Eicosane	3.25	0.10	mg/Kg wet	5.00		65.0	40-140			
n-Hexacosane	3.16	0.10	mg/Kg wet	5.00		63.2	40-140			
n-Hexadecane	3.44	0.10	mg/Kg wet	5.00		68.7	40-140			
n-Hexatriacontane	3.73	0.10	mg/Kg wet	5.00		74.6	40-140			
n-Nonadecane	3.32	0.10	mg/Kg wet	5.00		66.4	40-140			
n-Nonane	1.76	0.10	mg/Kg wet	5.00		35.2	30-140			
n-Octacosane	3.12	0.10	mg/Kg wet	5.00		62.5	40-140			
n-Octadecane	3.38	0.10	mg/Kg wet	5.00		67.6	40-140			
n-Tetracosane	3.18	0.10	mg/Kg wet	5.00		63.6	40-140			
n-Tetradecane	3.30	0.10	mg/Kg wet	5.00		66.0	40-140			
n-Triacontane	3.23	0.10	mg/Kg wet	5.00		64.6	40-140			
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
Surrogate: Chlorooctadecane (COD)	*2.97*		mg/Kg wet	5.00		59.4	40-140			
Surrogate: o-Terphenyl (OTP)	*3.46*		mg/Kg wet	5.05		68.5	40-140			
Surrogate: 2-Bromonaphthalene	*3.91*		mg/Kg wet	5.00		78.1	40-140			
Surrogate: 2-Fluorobiphenyl	*4.39*		mg/Kg wet	5.00		87.7	40-140			
LCS Dup (B103793-BSD1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Acenaphthene	3.25	0.10	mg/Kg wet	5.00		65.0	40-140	7.23	25	
Acenaphthylene	3.15	0.10	mg/Kg wet	5.00		62.9	40-140	7.57	25	
Anthracene	3.66	0.10	mg/Kg wet	5.00		73.3	40-140	4.77	25	
Benzo(a)anthracene	3.33	0.10	mg/Kg wet	5.00		66.6	40-140	3.91	25	
Benzo(a)pyrene	3.30	0.10	mg/Kg wet	5.00		66.0	40-140	3.70	25	
Benzo(b)fluoranthene	3.25	0.10	mg/Kg wet	5.00		65.0	40-140	3.68	25	
Benzo(g,h,i)perylene	3.34	0.10	mg/Kg wet	5.00		66.7	40-140	4.07	25	
Benzo(k)fluoranthene	3.23	0.10	mg/Kg wet	5.00		64.6	40-140	3.68	25	
Chrysene	3.37	0.10	mg/Kg wet	5.00		67.5	40-140	3.61	25	
Dibenz(a,h)anthracene	3.28	0.10	mg/Kg wet	5.00		65.6	40-140	3.32	25	
Fluoranthene	3.36	0.10	mg/Kg wet	5.00		67.2	40-140	4.34	25	
Fluorene	3.38	0.10	mg/Kg wet	5.00		67.6	40-140	5.39	25	
Indeno(1,2,3-cd)pyrene	2.70	0.10	mg/Kg wet	5.00		54.1	40-140	3.59	25	
2-Methylnaphthalene	3.15	0.10	mg/Kg wet	5.00		63.1	40-140	8.53	25	
Naphthalene	2.97	0.10	mg/Kg wet	5.00		59.4	40-140	8.75	25	
Phenanthrene	3.40	0.10	mg/Kg wet	5.00		68.1	40-140	3.94	25	
Pyrene	3.35	0.10	mg/Kg wet	5.00		67.0	40-140	4.17	25	
n-Decane	2.31	0.10	mg/Kg wet	5.00		46.2	40-140	5.02	25	
n-Docosane	3.51	0.10	mg/Kg wet	5.00		70.2	40-140	6.05	25	
n-Dodecane	3.03	0.10	mg/Kg wet	5.00		60.5	40-140	0.586	25	
n-Eicosane	3.45	0.10	mg/Kg wet	5.00		68.9	40-140	5.79	25	
n-Hexacosane	3.37	0.10	mg/Kg wet	5.00		67.4	40-140	6.43	25	

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103793 - SW-846 3546										
LCS Dup (B103793-BSD1)				Prepared: 08/28/14 Analyzed: 08/29/14						
n-Hexadecane	3.59	0.10	mg/Kg wet	5.00		71.9	40-140	4.45	25	
n-Hexatriacontane	3.81	0.10	mg/Kg wet	5.00		76.1	40-140	2.04	25	
n-Nonadecane	3.52	0.10	mg/Kg wet	5.00		70.5	40-140	5.90	25	
n-Nonane	1.61	0.10	mg/Kg wet	5.00		32.2	30-140	8.98	25	
n-Octacosane	3.34	0.10	mg/Kg wet	5.00		66.7	40-140	6.57	25	
n-Octadecane	3.58	0.10	mg/Kg wet	5.00		71.7	40-140	5.81	25	
n-Tetracosane	3.40	0.10	mg/Kg wet	5.00		68.0	40-140	6.65	25	
n-Tetradecane	3.37	0.10	mg/Kg wet	5.00		67.4	40-140	2.09	25	
n-Triacontane	3.42	0.10	mg/Kg wet	5.00		68.4	40-140	5.79	25	
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
Surrogate: Chlorooctadecane (COD)	*3.00*		mg/Kg wet	5.00		59.9	40-140			
Surrogate: o-Terphenyl (OTP)	*3.24*		mg/Kg wet	5.05		64.2	40-140			
Surrogate: 2-Bromonaphthalene	*3.89*		mg/Kg wet	5.00		77.8	40-140			
Surrogate: 2-Fluorobiphenyl	*4.27*		mg/Kg wet	5.00		85.4	40-140			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - VPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103547 - MA VPH										
Blank (B103547-BLK1)				Prepared & Analyzed: 08/26/14						
Unadjusted C5-C8 Aliphatics	ND	10	mg/Kg wet							
C5-C8 Aliphatics	ND	10	mg/Kg wet							
Unadjusted C9-C12 Aliphatics	ND	10	mg/Kg wet							
C9-C12 Aliphatics	ND	10	mg/Kg wet							
C9-C10 Aromatics	ND	10	mg/Kg wet							
Benzene	ND	0.050	mg/Kg wet							
Butylcyclohexane	ND	0.050	mg/Kg wet							
Decane	ND	0.050	mg/Kg wet							
Ethylbenzene	ND	0.050	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.050	mg/Kg wet							
2-Methylpentane	ND	0.050	mg/Kg wet							
Naphthalene	ND	0.50	mg/Kg wet							
Nonane	ND	0.050	mg/Kg wet							
Pentane	ND	0.050	mg/Kg wet							
Toluene	ND	0.050	mg/Kg wet							
1,2,4-Trimethylbenzene	ND	0.050	mg/Kg wet							
2,2,4-Trimethylpentane	ND	0.050	mg/Kg wet							
m+p Xylene	ND	0.10	mg/Kg wet							
o-Xylene	ND	0.050	mg/Kg wet							
Surrogate: 2,5-Dibromotoluene (FID)	*2.55*		mg/Kg wet	3.33		76.4	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*2.53*		mg/Kg wet	3.33		75.8	70-130			
LCS (B103547-BS1)				Prepared & Analyzed: 08/26/14						
Benzene	0.0931	0.0010	mg/Kg wet	0.100		93.1	70-130			
Butylcyclohexane	0.0874	0.0010	mg/Kg wet	0.100		87.4	70-130			
Decane	0.0995	0.0010	mg/Kg wet	0.100		99.5	70-130			
Ethylbenzene	0.0860	0.0010	mg/Kg wet	0.100		86.0	70-130			
Methyl tert-Butyl Ether (MTBE)	0.0948	0.0010	mg/Kg wet	0.100		94.8	70-130			
2-Methylpentane	0.0987	0.0010	mg/Kg wet	0.100		98.7	70-130			
Naphthalene	0.0921	0.010	mg/Kg wet	0.100		92.1	70-130			
Nonane	0.0951	0.0010	mg/Kg wet	0.100		95.1	30-130			
Pentane	0.0995	0.0010	mg/Kg wet	0.100		99.5	70-130			
Toluene	0.0922	0.0010	mg/Kg wet	0.100		92.2	70-130			
1,2,4-Trimethylbenzene	0.0809	0.0010	mg/Kg wet	0.100		80.9	70-130			
2,2,4-Trimethylpentane	0.108	0.0010	mg/Kg wet	0.100		108	70-130			
m+p Xylene	0.177	0.0020	mg/Kg wet	0.200		88.7	70-130			
o-Xylene	0.0870	0.0010	mg/Kg wet	0.100		87.0	70-130			
Surrogate: 2,5-Dibromotoluene (FID)	*0.0380*		mg/Kg wet	0.0400		94.9	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*0.0350*		mg/Kg wet	0.0400		87.5	70-130			
LCS Dup (B103547-BSD1)				Prepared & Analyzed: 08/26/14						
Benzene	0.0905	0.0010	mg/Kg wet	0.100		90.5	70-130	2.80	25	
Butylcyclohexane	0.0863	0.0010	mg/Kg wet	0.100		86.3	70-130	1.23	25	
Decane	0.0983	0.0010	mg/Kg wet	0.100		98.3	70-130	1.12	25	
Ethylbenzene	0.0847	0.0010	mg/Kg wet	0.100		84.7	70-130	1.47	25	
Methyl tert-Butyl Ether (MTBE)	0.0927	0.0010	mg/Kg wet	0.100		92.7	70-130	2.21	25	
2-Methylpentane	0.0949	0.0010	mg/Kg wet	0.100		94.9	70-130	4.02	25	
Naphthalene	0.0905	0.010	mg/Kg wet	0.100		90.5	70-130	1.66	25	
Nonane	0.0961	0.0010	mg/Kg wet	0.100		96.1	30-130	0.971	25	
Pentane	0.103	0.0010	mg/Kg wet	0.100		103	70-130	3.17	25	
Toluene	0.0900	0.0010	mg/Kg wet	0.100		90.0	70-130	2.37	25	
1,2,4-Trimethylbenzene	0.0784	0.0010	mg/Kg wet	0.100		78.4	70-130	3.13	25	

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - VPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103547 - MA VPH										
LCS Dup (B103547-BSD1)				Prepared & Analyzed: 08/26/14						
2,2,4-Trimethylpentane	0.104	0.0010	mg/Kg wet	0.100		104	70-130	3.14	25	
m+p Xylene	0.174	0.0020	mg/Kg wet	0.200		87.1	70-130	1.83	25	
o-Xylene	0.0852	0.0010	mg/Kg wet	0.100		85.2	70-130	2.12	25	
Surrogate: 2,5-Dibromotoluene (FID)	*0.0394*		mg/Kg wet	0.0400		98.6	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*0.0350*		mg/Kg wet	0.0400		87.6	70-130			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103696 - SW-846 7471										
Blank (B103696-BLK1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Mercury	ND	0.025	mg/Kg wet							
LCS (B103696-BS1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Mercury	5.82	0.37	mg/Kg wet	5.76		101	71.2-128.6			
LCS Dup (B103696-BSD1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Mercury	5.56	0.39	mg/Kg wet	5.76		96.4	71.2-128.6	4.72	30	
Batch B103724 - SW-846 3050B										
Blank (B103724-BLK1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Arsenic	ND	2.5	mg/Kg wet							
Barium	ND	2.5	mg/Kg wet							
Cadmium	ND	0.25	mg/Kg wet							
Chromium	ND	0.50	mg/Kg wet							
Lead	ND	0.75	mg/Kg wet							
Selenium	ND	5.0	mg/Kg wet							
Silver	ND	0.50	mg/Kg wet							
LCS (B103724-BS1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Arsenic	123	5.0	mg/Kg wet	122		101	77.8-122.1			
Barium	166	5.0	mg/Kg wet	167		99.3	82-117.4			
Cadmium	88.0	0.50	mg/Kg wet	88.0		100	81.9-118.2			
Chromium	105	1.0	mg/Kg wet	102		103	78.7-120.6			
Lead	90.3	1.5	mg/Kg wet	94.5		95.6	82.4-117.8			
Selenium	161	10	mg/Kg wet	157		102	77.1-122.3			
Silver	32.4	1.0	mg/Kg wet	34.2		94.7	74.3-125.4			
LCS Dup (B103724-BSD1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Arsenic	121	5.0	mg/Kg wet	122		98.9	77.8-122.1	1.70	30	
Barium	168	5.0	mg/Kg wet	167		101	82-117.4	1.28	30	
Cadmium	89.0	0.50	mg/Kg wet	88.0		101	81.9-118.2	1.14	30	
Chromium	104	1.0	mg/Kg wet	102		102	78.7-120.6	0.942	30	
Lead	90.1	1.5	mg/Kg wet	94.5		95.3	82.4-117.8	0.264	30	
Selenium	162	10	mg/Kg wet	157		103	77.1-122.3	0.647	30	
Silver	32.0	1.0	mg/Kg wet	34.2		93.6	74.3-125.4	1.20	30	
MRL Check (B103724-MRL1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Lead	0.710	0.72	mg/Kg wet	0.720		98.6	80-120			
Batch B103812 - SW-846 7471										
Blank (B103812-BLK1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Mercury	ND	0.025	mg/Kg wet							

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103812 - SW-846 7471										
LCS (B103812-BS1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Mercury	5.83	0.36	mg/Kg wet	5.76		101	71.2-128.6			
LCS Dup (B103812-BSD1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Mercury	5.71	0.37	mg/Kg wet	5.76		99.1	71.2-128.6	2.10	30	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103865 - % Solids										
Duplicate (B103865-DUP5)	**Source: 14H1123-17**			Prepared: 08/29/14 Analyzed: 09/02/14						
% Solids	87.8		% Wt		87.6			0.228	20	

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-21 (0-0.5)

Lab Sample ID: 14H1123-01 Date(s) Analyzed: 08/28/2014 08/28/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.96	
	2	0.00	0.00	0.00	1.0	3.7

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-22 (0-0.5)

Lab Sample ID: 14H1123-05 Date(s) Analyzed: 08/28/2014 08/28/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.71	
	2	0.00	0.00	0.00	0.73	3.2
Aroclor-1260	1	0.00	0.00	0.00	0.48	
	2	0.00	0.00	0.00	0.64	28.6
Aroclor-1268	1	0.00	0.00	0.00	0.12	
	2	0.00	0.00	0.00	0.13	8.0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-22 (0-0.5)

Lab Sample ID: 14H1123-05RE1 Date(s) Analyzed: 09/02/2014 09/02/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.54	
	2	0.00	0.00	0.00	0.57	6.3
Aroclor-1260	1	0.00	0.00	0.00	0.45	
	2	0.00	0.00	0.00	0.51	12.3
Aroclor-1268	1	0.00	0.00	0.00	0.15	
	2	0.00	0.00	0.00	0.17	14.5

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-7 (0.5-2)

Lab Sample ID: 14H1123-10 Date(s) Analyzed: 08/28/2014 08/28/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.12	
	2	0.00	0.00	0.00	0.13	5.5

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-4 (0-0.5)

Lab Sample ID: 14H1123-13 Date(s) Analyzed: 08/28/2014 08/28/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.38	
	2	0.00	0.00	0.00	0.43	11.6

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-4 (0.5-2)

Lab Sample ID: 14H1123-14 Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.29	
	2	0.00	0.00	0.00	0.29	1.4

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B103593-BS1 Date(s) Analyzed: 08/28/2014 08/28/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.17	
	2	0.00	0.00	0.00	0.17	1
Aroclor-1260	1	0.00	0.00	0.00	0.18	
	2	0.00	0.00	0.00	0.19	8

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B103593-BSD1 Date(s) Analyzed: 08/28/2014 08/28/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.19	
	2	0.00	0.00	0.00	0.19	1
Aroclor-1260	1	0.00	0.00	0.00	0.19	
	2	0.00	0.00	0.00	0.21	9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

Matrix Spike

Lab Sample ID: B103593-MS1 Date(s) Analyzed: 08/28/2014 08/28/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	1.9	
	2	0.00	0.00	0.00	2.0	4
Aroclor-1260	1	0.00	0.00	0.00	1.7	
	2	0.00	0.00	0.00	1.9	14

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

Matrix Spike Dup

Lab Sample ID: B103593-MSD1 Date(s) Analyzed: 08/28/2014 08/28/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	2.1	
	2	0.00	0.00	0.00	2.1	2
Aroclor-1260	1	0.00	0.00	0.00	1.8	
	2	0.00	0.00	0.00	2.1	15

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B103891-BS1 Date(s) Analyzed: 09/02/2014 09/02/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.20	
	2	0.00	0.00	0.00	0.18	9
Aroclor-1260	1	0.00	0.00	0.00	0.19	
	2	0.00	0.00	0.00	0.18	4

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B103891-BSD1 Date(s) Analyzed: 09/02/2014 09/02/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.18	
	2	0.00	0.00	0.00	0.16	10
Aroclor-1260	1	0.00	0.00	0.00	0.17	
	2	0.00	0.00	0.00	0.16	4

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
L-02	Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.
L-07	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
L-14	Compound classified by MA CAM as difficult with acceptable recoveries of 40-160%. Recovery does not meet 70-130% criteria but does meet difficult compound criteria.
O-01	Soil/methanol ratio does not meet method specifications. Excess amount of soil. Sample was completely covered with methanol, but with less than the method-specified amount.
O-04	Sample fingerprint does not match standard exactly. Sample was quantitated against the closest matching standard.
O-32	A five times dilution was performed as part of the standard analytical procedure.
R-05	Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
RL-05	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
RL-06	Elevated reporting limit due to high concentration of non-target compounds. MA CAM reporting limit not met.
RL-07	Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
S-19	Surrogate recovery is outside of control limits, matrix interference suspected. Reanalysis yielded similar surrogate non-conformance.
S-24	Surrogate recovery is biased high due to the presence of Aroclor 1268 in the sample. Aroclor 1268 contains decachlorobiphenyl.
V-05	Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
V-06	Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.
V-16	Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
V-20	Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
MADEP-EPH-04-1.1 in Soil	
C9-C18 Aliphatics	CT,NC,WA,ME,ME,NH-P
C19-C36 Aliphatics	CT,NC,WA,ME,ME,NH-P
Unadjusted C11-C22 Aromatics	CT,NC,WA,ME,ME,NH-P
C11-C22 Aromatics	CT,NC,WA,ME,ME,NH-P
Acenaphthene	CT,NC,WA,ME,ME,NH-P
Acenaphthylene	CT,NC,WA,ME,ME,NH-P
Anthracene	CT,NC,WA,ME,ME,NH-P
Benzo(a)anthracene	CT,NC,WA,ME,ME,NH-P
Benzo(a)pyrene	CT,NC,WA,ME,ME,NH-P
Benzo(b)fluoranthene	CT,NC,WA,ME,ME,NH-P
Benzo(g,h,i)perylene	CT,NC,WA,ME,ME,NH-P
Benzo(k)fluoranthene	CT,NC,WA,ME,ME,NH-P
Chrysene	CT,NC,WA,ME,ME,NH-P
Dibenz(a,h)anthracene	CT,NC,WA,ME,ME,NH-P
Fluoranthene	CT,NC,WA,ME,ME,NH-P
Fluorene	CT,NC,WA,ME,ME
Indeno(1,2,3-cd)pyrene	CT,NC,WA,ME,ME,NH-P
2-Methylnaphthalene	CT,NC,WA,ME,ME
Naphthalene	CT,NC,WA,ME,ME,NH-P
Phenanthrene	CT,NC,WA,ME,ME,NH-P
Pyrene	CT,NC,WA,ME,ME,NH-P
MADEP-VPH-04-1.1 in Soil	
Unadjusted C5-C8 Aliphatics	CT,NC,WA,ME,NH-P
C5-C8 Aliphatics	CT,NC,WA,ME,NH-P
Unadjusted C9-C12 Aliphatics	CT,NC,WA,ME,NH-P
C9-C12 Aliphatics	CT,NC,WA,ME,NH-P
C9-C10 Aromatics	CT,NC,WA,ME,NH-P
Benzene	CT,NC,WA,ME,NH-P
Ethylbenzene	CT,NC,WA,ME,NH-P
Methyl tert-Butyl Ether (MTBE)	CT,NC,WA,ME,NH-P
Naphthalene	CT,NC,WA,ME,NH-P
Toluene	CT,NC,WA,ME,NH-P
m+p Xylene	CT,NC,WA,ME,NH-P
o-Xylene	CT,NC,WA,ME,NH-P
SW-846 6010C in Soil	
Arsenic	CT,NH,NY,ME,NC,VA,NJ
Barium	CT,NH,NY,ME,NC,VA,NJ
Cadmium	CT,NH,NY,ME,NC,VA,NJ
Chromium	CT,NH,NY,ME,NC,VA,NJ
Lead	CT,NH,NY,AIHA,ME,NC,VA,NJ
Selenium	CT,NH,NY,ME,NC,VA,NJ
Silver	CT,NH,NY,ME,NC,VA,NJ
SW-846 7471B in Soil	
Mercury	CT,NH,NY,NC,ME,VA,NJ
SW-846 8082A in Soil	

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Soil	
Aroclor-1016	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA,NJ
SW-846 8260C in Soil	
Acetone	CT,NH,NY,ME
Acetone	CT,NH,NY,ME
Benzene	CT,NH,NY,ME
Benzene	CT,NH,NY,ME
Bromobenzene	NH,NY,ME
Bromobenzene	NH,NY,ME
Bromochloromethane	NH,NY,ME
Bromochloromethane	NH,NY,ME
Bromodichloromethane	CT,NH,NY,ME
Bromodichloromethane	CT,NH,NY,ME
Bromoform	CT,NH,NY,ME
Bromoform	CT,NH,NY,ME
Bromomethane	CT,NH,NY,ME
Bromomethane	CT,NH,NY,ME
2-Butanone (MEK)	CT,NH,NY,ME
2-Butanone (MEK)	CT,NH,NY,ME
n-Butylbenzene	CT,NH,NY,ME
n-Butylbenzene	CT,NH,NY,ME
sec-Butylbenzene	CT,NH,NY,ME
sec-Butylbenzene	CT,NH,NY,ME
tert-Butylbenzene	CT,NH,NY,ME
tert-Butylbenzene	CT,NH,NY,ME
Carbon Disulfide	CT,NH,NY,ME
Carbon Disulfide	CT,NH,NY,ME
Carbon Tetrachloride	CT,NH,NY,ME
Carbon Tetrachloride	CT,NH,NY,ME
Chlorobenzene	CT,NH,NY,ME
Chlorobenzene	CT,NH,NY,ME
Chlorodibromomethane	CT,NH,NY,ME
Chlorodibromomethane	CT,NH,NY,ME
Chloroethane	CT,NH,NY,ME

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Analyte	Certifications
SW-846 8260C in Soil	
Chloroethane	CT,NH,NY,ME
Chloroform	CT,NH,NY,ME
Chloroform	CT,NH,NY,ME
Chloromethane	CT,NH,NY,ME
Chloromethane	CT,NH,NY,ME
2-Chlorotoluene	CT,NH,NY,ME
2-Chlorotoluene	CT,NH,NY,ME
4-Chlorotoluene	CT,NH,NY,ME
4-Chlorotoluene	CT,NH,NY,ME
Dibromomethane	NH,NY,ME
Dibromomethane	NH,NY,ME
1,2-Dichlorobenzene	CT,NH,NY,ME
1,2-Dichlorobenzene	CT,NH,NY,ME
1,3-Dichlorobenzene	CT,NH,NY,ME
1,3-Dichlorobenzene	CT,NH,NY,ME
1,4-Dichlorobenzene	CT,NH,NY,ME
1,4-Dichlorobenzene	CT,NH,NY,ME
Dichlorodifluoromethane (Freon 12)	NY,ME
Dichlorodifluoromethane (Freon 12)	NY,ME
1,1-Dichloroethane	CT,NH,NY,ME
1,1-Dichloroethane	CT,NH,NY,ME
1,2-Dichloroethane	CT,NH,NY,ME
1,2-Dichloroethane	CT,NH,NY,ME
1,1-Dichloroethylene	CT,NH,NY,ME
1,1-Dichloroethylene	CT,NH,NY,ME
cis-1,2-Dichloroethylene	CT,NH,NY,ME
cis-1,2-Dichloroethylene	CT,NH,NY,ME
trans-1,2-Dichloroethylene	CT,NH,NY,ME
trans-1,2-Dichloroethylene	CT,NH,NY,ME
1,2-Dichloropropane	CT,NH,NY,ME
1,2-Dichloropropane	CT,NH,NY,ME
1,3-Dichloropropane	NH,NY,ME
1,3-Dichloropropane	NH,NY,ME
2,2-Dichloropropane	NH,NY,ME
2,2-Dichloropropane	NH,NY,ME
1,1-Dichloropropene	NH,NY,ME
1,1-Dichloropropene	NH,NY,ME
cis-1,3-Dichloropropene	CT,NH,NY,ME
cis-1,3-Dichloropropene	CT,NH,NY,ME
trans-1,3-Dichloropropene	CT,NH,NY,ME
trans-1,3-Dichloropropene	CT,NH,NY,ME
Ethylbenzene	CT,NH,NY,ME
Ethylbenzene	CT,NH,NY,ME
Hexachlorobutadiene	NH,NY,ME
Hexachlorobutadiene	NH,NY,ME
2-Hexanone (MBK)	CT,NH,NY,ME
2-Hexanone (MBK)	CT,NH,NY,ME

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Analyte	Certifications
SW-846 8260C in Soil	
Isopropylbenzene (Cumene)	CT,NH,NY,ME
Isopropylbenzene (Cumene)	CT,NH,NY,ME
p-Isopropyltoluene (p-Cymene)	NH,NY
p-Isopropyltoluene (p-Cymene)	NH,NY
Methyl tert-Butyl Ether (MTBE)	NY
Methyl tert-Butyl Ether (MTBE)	NY
Methylene Chloride	CT,NH,NY,ME
Methylene Chloride	CT,NH,NY,ME
4-Methyl-2-pentanone (MIBK)	CT,NH,NY
4-Methyl-2-pentanone (MIBK)	CT,NH,NY
Naphthalene	NH,NY,ME
Naphthalene	NH,NY,ME
n-Propylbenzene	NH,NY
n-Propylbenzene	NH,NY
Styrene	CT,NH,NY,ME
Styrene	CT,NH,NY,ME
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME
Tetrachloroethylene	CT,NH,NY,ME
Tetrachloroethylene	CT,NH,NY,ME
Toluene	CT,NH,NY,ME
Toluene	CT,NH,NY,ME
1,2,3-Trichlorobenzene	ME
1,2,4-Trichlorobenzene	NH,NY,ME
1,2,4-Trichlorobenzene	NH,NY,ME
1,1,1-Trichloroethane	CT,NH,NY,ME
1,1,1-Trichloroethane	CT,NH,NY,ME
1,1,2-Trichloroethane	CT,NH,NY,ME
1,1,2-Trichloroethane	CT,NH,NY,ME
Trichloroethylene	CT,NH,NY,ME
Trichloroethylene	CT,NH,NY,ME
Trichlorofluoromethane (Freon 11)	CT,NH,NY,ME
Trichlorofluoromethane (Freon 11)	CT,NH,NY,ME
1,2,3-Trichloropropane	NH,NY,ME
1,2,3-Trichloropropane	NH,NY,ME
1,2,4-Trimethylbenzene	CT,NH,NY,ME
1,2,4-Trimethylbenzene	CT,NH,NY,ME
1,3,5-Trimethylbenzene	CT,NH,NY,ME
1,3,5-Trimethylbenzene	CT,NH,NY,ME
Vinyl Chloride	CT,NH,NY,ME
Vinyl Chloride	CT,NH,NY,ME
m+p Xylene	CT,NH,NY,ME
m+p Xylene	CT,NH,NY,ME
o-Xylene	CT,NH,NY,ME
o-Xylene	CT,NH,NY,ME

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The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2015
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2015
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2015
RI	Rhode Island Department of Health	LAO00112	12/30/2014
NC	North Carolina Div. of Water Quality	652	12/31/2014
NJ	New Jersey DEP	MA007 NELAP	06/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2015
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2015
WA	State of Washington Department of Ecology	C2065	02/23/2015
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2014
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2014

con-test® ANALYTICAL LABORATORY
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Email: info@contestlabs.com
www.contestlabs.com

CHAIN OF CUSTODY RECORD

14H1123
Rev 04.05.12

39 Spruce Street
East longmeadow, MA 01028

Company Name: Weston & Sampson
Telephone: 800 Sampson
Address: 5 Centennial Dr
Peabody, MA
Project # BLDG 105
Client PO#
Attention: Joe Spencer
Project Location: Charlestown, MA
Sampled By: JRS / PK

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ☒ WEBSITE
Fax #
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

ANALYSIS REQUESTED

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	PCB w/ Soxhlet	EPH w/ PAHs, RCRA8	VPH w/ NO TARGETS, 8260
01	SB - 21 (0-0.5)	8/21	1255		X	S	U	X		
02	SB - 21 (0.5-2)	↓	1300		↓	↓	↓	X		
03	SB - 21 (2-4)	↓	1310		↓	↓	↓			
04	SB - 21 (4-6)	↓	1315		↓	↓	↓	~~X~~	X	X
05	SB - 22 (0-0.5)	↓	1430		↓	↓	↓	X		
06	SB - 22 (0.5-2)	↓	1435		↓	↓	↓	X		
07	SB - 22 (2-4)	↓	1440		↓	↓	↓			
08	SB - 22 (4-6)	↓	1445		↓	↓	↓	~~X~~	X	X
09	SB - 7 (0-0.5)	8/22	1100		↓	↓	↓	X		
10	SB - 7 (0.5-2)	8/22	1105		↓	↓	↓	X		

# of Containers	1	1	2/2																
** Preservation	—	—	N/B																
***Container Code	A	A	V																

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other_____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

Comments:
PLEASE HOLD SAMPLES THAT ARE NOT MARKED FOR ANALYSIS [I.E., SB-22 (2-4)]

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature) [signature]	Date/Time: 8/22 1700	
Received by: (signature) [signature] 8/25/14	Date/Time: 12:30 pm	
Relinquished by: (signature) [signature] 8/25/14	Date/Time: 8:00 pm	
Received by: (signature) Cassie Cath 4.4° 8.25.14	Date/Time: 2000	

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5 day
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts: S-1
Connecticut:
Other:

Is your project MCP or RCP ?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

†† TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

con-test ANALYTICAL LABORATORY
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Fax: 413-525-6405
Email: info@contestlabs.com
www.contestlabs.com
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East longmeadow, MA 01028

CHAIN OF CUSTODY RECORD

14H1123
Rev 04.05.12

Company Name: WESTON & SAMPSON
Address: 5 CENTENNIAL DR PEABODY, MA
Attention: JOE SPENCER
Project Location: CHARLESTOWN, MA
Sampled By: JRS/PK

Telephone: 800 SAMPSON
Project #: BLDG 105
Client PO#:

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ☒ WEBSITE
Fax #:
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	# of Containers	** Preservation	***Container Co	ANALYSIS REQUESTED: PUB IN SCARLET	ETPH W PAHs, RCRA 8	VPH NO THREETS, 8260
11	SB-7 (2-4)	8/22	1110		☒	S	U	1	1	V			
12	SB-7 (4-6)		1115					1	-	V			
13	SB-4 (0-0.5)		1120					1	A	V	X		
14	SB-4 (0.5-2)		1125								X		
15	SB-4 (2-4)		1130								[illegible]	X	X
16	SB-4 (4-6)		1135										
17	SB-9 (0-0.5)		1140								X		
18	SB-9 (0.5-2)		1145								X		
19	SB-9 (2-4)		1150										
20	SB-9 (4-6)		1155								[illegible]	X	X

Comments:
PLEASE HOLD SAMPLES THAT ARE NOT MARKED FOR ANALYSIS
E.G. SB-9 (2-4)]

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V=vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other

Dissolved Met
○ Field Filtered
○ Lab to Filter

	Date/Time
Relinquished by: (signature)	8/22/14 1700
Received by: (signature)	8/25/14 12:30 pm
Relinquished by: (signature)	8/25/14 8:00 pm
Received by: (signature) Cassie Cote 4.4°	8.25.14 2000

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5 day
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts: S-1
Connecticut:
Other:

Is your project MCP or RCP ?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

AIHA LAP, LLC ACCREDITED LABORATORY
ACCREDITED IN ACCORDANCE TO ISO 17025
nelac
NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

†† TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

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East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
www.contestlabs.com

con-test® ANALYTICAL LABORATORY

Sample Receipt Checklist

CLIENT NAME: Weston & Sampson RECEIVED BY: CC DATE: 8.25.14

1) **Was the chain(s) of custody relinquished and signed?** (Yes) No No CoC Included

2) **Does the chain agree with the samples?** (Yes) No
If not, explain:

3) **Are all the samples in good condition?** (Yes) No
If not, explain:

4) **How were the samples received:**
On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒

Were the samples received in Temperature Compliance of (2-6°C)? (Yes) No N/A

Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.4°

5) **Are there Dissolved samples for the lab to filter?** Yes (No)
Who was notified _____ Date _____ Time _____

6) **Are there any RUSH or SHORT HOLDING TIME samples?** Yes (No)
Who was notified _____ Date _____ Time _____

7) **Location where samples are stored:** 19

Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature: _____

8) **Do all samples have the proper Acid pH:** Yes No (N/A) _____

9) **Do all samples have the proper Base pH:** Yes No (N/A) _____

10) **Was the PC notified of any discrepancies with the CoC vs the samples:** Yes No (N/A)

Containers received at Con-Test

	# of containers			# of containers
1 Liter Amber			8 oz amber/clear jar	12A
500 mL Amber			4 oz amber/clear jar	13A
250 mL Amber (8oz amber)			2 oz amber/clear jar	
1 Liter Plastic			Plastic Bag / Ziploc	
500 mL Plastic			SOC Kit	
250 mL plastic			Non-ConTest Container	
40 mL Vial - type listed below	16		Perchlorate Kit	
Colisure / bacteria bottle			Flashpoint bottle	
Dissolved Oxygen bottle			Other glass jar	
Encore			Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol 8
Bisulfate 8 # DI Water _____
Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)
Any False statement will be brought to the attention of Client

Question	Answer (True/False) T/F/NA	Comment
1) The cooler's custody seal, if present, is intact.	NA	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	T	
18) There is sufficient volume for all requsted analyses. including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	T	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	NA	
21) Samples do not require splitting or compositing.	T	

Who notified of False statements? **Date/Time:**

Log-In Technician Initials: CC **Date/Time:** 8.25.14 2000

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 14H1123
Project Location: Charlestown, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

14H1123-01 thru 14H1123-20

Matrices: Soil

CAM Protocol (check all that below)

8260 VOC CAM II A (X)	7470/7471 Hg CAM IIIB (X)	MassDEP VPH CAM IV A (X)	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A (X)	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )
6010 Metals CAM III A (X)	6020 Metals CAM III D ( )	8082 PCB CAM V A (X)	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☑ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]
	A response to questions G, H and I below is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]
	<u>Data User Note:</u> Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.		
H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☐ Yes	☑ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 09/03/14

con-test® ANALYTICAL LABORATORY
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September 3, 2014

Joe Spencer
Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960

Project Location: Charlestown, MA
Client Job Number:
Project Number: BLDG 105
Laboratory Work Order Number: 14H1125

Enclosed are results of analyses for samples received by the laboratory on August 25, 2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960
ATTN: Joe Spencer

REPORT DATE: 9/3/2014

PURCHASE ORDER NUMBER:

PROJECT NUMBER: BLDG 105

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 14H1125

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Charlestown, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
SB-13 (0-0.5)	14H1125-01	Soil		SM 2540G	
				SW-846 8082A	
SB-13 (0.5-2)	14H1125-02	Soil		SM 2540G	
				SW-846 8082A	
SB-13 (4-6)	14H1125-04	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
				SW-846 6010C	
				SW-846 7471B	
				SW-846 8260C	
SB-15 (0-0.5)	14H1125-05	Soil		SM 2540G	
				SW-846 8082A	
SB-15 (0.5-2)	14H1125-06	Soil		SM 2540G	
				SW-846 8082A	
SB-5 (0-0.5)	14H1125-09	Soil		SM 2540G	
				SW-846 8082A	
SB-5 (0.5-2)	14H1125-10	Soil		SM 2540G	
				SW-846 8082A	
SB-6 (0-0.5)	14H1125-13	Soil		SM 2540G	
				SW-846 8082A	
SB-6 (0.5-2)	14H1125-14	Soil		SM 2540G	
				SW-846 8082A	
SB-10 (0-0.5)	14H1125-17	Soil		SM 2540G	
				SW-846 8082A	
SB-10 (0.5-2)	14H1125-18	Soil		SM 2540G	
				SW-846 8082A	
SB-10 (2-4)	14H1125-19	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
				SW-846 6010C	
				SW-846 7471B	
				SW-846 8260C	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

For method 6010, only RCRA 8 metals were requested and reported.
For method MA VPH, only hydrocarbon ranges were requested and reported

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MADEP-VPH-04-1.1

Qualifications:

O-01

Soil/methanol ratio does not meet method specifications. Excess amount of soil. Sample was completely covered with methanol, but with less than the method-specified amount.

Analyte & Samples(s) Qualified:

14H1125-19[SB-10 (2-4)]

RL-05

Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.

Analyte & Samples(s) Qualified:

C5-C8 Aliphatics
14H1125-04[SB-13 (4-6)], 14H1125-19[SB-10 (2-4)]

Unadjusted C5-C8 Aliphatics
14H1125-04[SB-13 (4-6)], 14H1125-19[SB-10 (2-4)]

SW-846 8082A

Qualifications:

O-03

Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.

Analyte & Samples(s) Qualified:

Aroclor-1254
14H1125-13[SB-6 (0-0.5)]

Aroclor-1254 [2C]
14H1125-13[SB-6 (0-0.5)]

O-32

A five times dilution was performed as part of the standard analytical procedure.

Analyte & Samples(s) Qualified:

14H1125-18[SB-10 (0.5-2)]

Aroclor-1016
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Aroclor-1016 [2C]
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Aroclor-1221
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Aroclor-1221 [2C]
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Aroclor-1232
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Aroclor-1232 [2C]
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Aroclor-1242
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Aroclor-1242 [2C]
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Aroclor-1248
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Aroclor-1248 [2C]
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Aroclor-1254
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Aroclor-1254 [2C]
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Aroclor-1260
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Aroclor-1260 [2C]
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Aroclor-1262

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O-32

A five times dilution was performed as part of the standard analytical procedure.

Analyte & Samples(s) Qualified:

14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Aroclor-1262 [2C]
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Aroclor-1268
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Aroclor-1268 [2C]
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Decachlorobiphenyl
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Decachlorobiphenyl [2C]
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Tetrachloro-m-xylene
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

Tetrachloro-m-xylene [2C]
14H1125-02[SB-13 (0.5-2)], 14H1125-05[SB-15 (0-0.5)], 14H1125-06[SB-15 (0.5-2)]

P-04

Due to continuing calibration non-conformance on the confirmatory detector, the lower of two results was reported.

Analyte & Samples(s) Qualified:

Aroclor-1254
14H1125-09[SB-5 (0-0.5)], 14H1125-10[SB-5 (0.5-2)], 14H1125-14[SB-6 (0.5-2)]

S-01

The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

Analyte & Samples(s) Qualified:

Decachlorobiphenyl
14H1125-10[SB-5 (0.5-2)]

Decachlorobiphenyl [2C]
14H1125-10[SB-5 (0.5-2)]

Tetrachloro-m-xylene
14H1125-10[SB-5 (0.5-2)]

Tetrachloro-m-xylene [2C]
14H1125-10[SB-5 (0.5-2)]

SW-846 8260C

Qualifications:

L-02

Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.

Analyte & Samples(s) Qualified:

Acetone
B103519-BS1, B103519-BSD1

Bromoform
B103519-BS1, B103519-BSD1

L-14

Compound classified by MA CAM as difficult with acceptable recoveries of 40-160%. Recovery does not meet 70-130% criteria but does meet difficult compound criteria.

Analyte & Samples(s) Qualified:

1,4-Dioxane
B103519-BS1, B103519-BSD1

2-Butanone (MEK)
B103519-BS1, B103519-BSD1

2-Hexanone (MBK)
B103519-BS1, B103519-BSD1

Bromomethane
B103519-BS1

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RL-06

Elevated reporting limit due to high concentration of non-target compounds. MA CAM reporting limit not met.

Analyte & Samples(s) Qualified:

14H1125-04[SB-13 (4-6)], 14H1125-19[SB-10 (2-4)]

V-06

Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.

Analyte & Samples(s) Qualified:

n-Butylbenzene
14H1125-19[SB-10 (2-4)], B103519-BS1, B103519-BSD1

V-16

Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.

Analyte & Samples(s) Qualified:

1,4-Dioxane
14H1125-04[SB-13 (4-6)], 14H1125-19[SB-10 (2-4)], B103519-BLK1, B103519-BS1, B103519-BSD1

Tetrahydrofuran
14H1125-04[SB-13 (4-6)], 14H1125-19[SB-10 (2-4)], B103519-BLK1, B103519-BS1, B103519-BSD1

V-20

Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

1,1,2,2-Tetrachloroethane
B103519-BS1, B103519-BSD1

1,2,3-Trichlorobenzene
B103519-BS1, B103519-BSD1

1,2,3-Trichloropropane
B103519-BS1, B103519-BSD1

1,2,4-Trimethylbenzene
B103519-BS1, B103519-BSD1

Benzene
B103519-BS1, B103519-BSD1

Bromochloromethane
B103519-BS1, B103519-BSD1

Bromoform
B103519-BS1, B103519-BSD1

Dichlorodifluoromethane (Freon 12
B103519-BS1, B103519-BSD1

Naphthalene
B103519-BS1, B103519-BSD1

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MADEP-EPH-04-1.1

SPE cartridge contamination with non-petroleum compounds, if present, is verified by GC/MS in each method blank per extraction batch and excluded from C 11-C22 aromatic range fraction in all samples in the batch. No significant modifications were made to the method.

MADEP-VPH-04-1.1

No significant modifications were made to the method. All VPH samples were received preserved properly in methanol with a soil/methanol ratio of 1:1 +/- 25% completely covered by methanol in the proper containers specified on the chain-of-custody form unless specified in this narrative.

SW-846 8260C

Laboratory control sample recoveries for required MCP Data Enhancement 8260 compounds were all within limits specified by the method except for “difficult analytes” where recovery control limits of 40-160% are used and/or unless otherwise listed in this narrative. Difficult analytes: MIBK, MEK, acetone, 1,4-dioxane, chloromethane, dichlorodifluoromethane, 2-hexanone, and bromomethane.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Daren J. Damboragian
Laboratory Manager

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-13 (0-0.5) | Sampled: 8/22/2014 13:00

Sample ID: 14H1125-01

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 20:36	JMB
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 20:36	JMB
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 20:36	JMB
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 20:36	JMB
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 20:36	JMB
Aroclor-1254 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 20:36	JMB
Aroclor-1260 [1]	0.13	0.12	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 20:36	JMB
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 20:36	JMB
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 20:36	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	101	30-150		8/29/14 20:36
Decachlorobiphenyl [2]	104	30-150		8/29/14 20:36
Tetrachloro-m-xylene [1]	116	30-150		8/29/14 20:36
Tetrachloro-m-xylene [2]	106	30-150		8/29/14 20:36

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-13 (0-0.5) | Sampled: 8/22/2014 13:00

Sample ID: 14H1125-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	84.0		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-13 (0.5-2) | Sampled: 8/22/2014 13:10

Sample ID: 14H1125-02

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 20:49	JMB
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 20:49	JMB
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 20:49	JMB
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 20:49	JMB
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 20:49	JMB
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 20:49	JMB
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 20:49	JMB
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 20:49	JMB
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 20:49	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	100	30-150	O-32	8/29/14 20:49
Decachlorobiphenyl [2]	103	30-150	O-32	8/29/14 20:49
Tetrachloro-m-xylene [1]	103	30-150	O-32	8/29/14 20:49
Tetrachloro-m-xylene [2]	93.9	30-150	O-32	8/29/14 20:49

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-13 (0.5-2) | Sampled: 8/22/2014 13:10

Sample ID: 14H1125-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	88.5		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-13 (4-6) | Sampled: 8/22/2014 13:25

Sample ID: 14H1125-04

Sample Matrix: Soil

Sample Flags: RL-06

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	11	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.11	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Benzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Bromobenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Bromochloromethane	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Bromodichloromethane	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Bromoform	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Bromomethane	ND	1.1	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
2-Butanone (MEK)	ND	11	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
n-Butylbenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
sec-Butylbenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
tert-Butylbenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.11	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Carbon Disulfide	ND	2.2	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Carbon Tetrachloride	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Chlorobenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Chlorodibromomethane	ND	0.11	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Chloroethane	ND	0.43	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Chloroform	ND	0.43	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Chloromethane	ND	1.1	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
2-Chlorotoluene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
4-Chlorotoluene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	1.1	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,2-Dibromoethane (EDB)	ND	0.11	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Dibromomethane	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,2-Dichlorobenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,3-Dichlorobenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,4-Dichlorobenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.43	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,1-Dichloroethane	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,2-Dichloroethane	ND	1.1	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,1-Dichloroethylene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
cis-1,2-Dichloroethylene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
trans-1,2-Dichloroethylene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,2-Dichloropropane	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,3-Dichloropropane	ND	0.11	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
2,2-Dichloropropane	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,1-Dichloropropene	ND	0.43	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
cis-1,3-Dichloropropene	ND	0.11	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
trans-1,3-Dichloropropene	ND	0.11	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Diethyl Ether	ND	0.43	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Diisopropyl Ether (DIPE)	ND	0.11	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,4-Dioxane	ND	11	mg/Kg dry	4	V-16	SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Ethylbenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-13 (4-6) | Sampled: 8/22/2014 13:25

Sample ID: 14H1125-04

Sample Matrix: Soil

Sample Flags: RL-06

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
2-Hexanone (MBK)	ND	2.2	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Isopropylbenzene (Cumene)	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Methylene Chloride	ND	1.1	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
4-Methyl-2-pentanone (MIBK)	ND	2.2	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Naphthalene	ND	0.43	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
n-Propylbenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Styrene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,1,1,2-Tetrachloroethane	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,1,2,2-Tetrachloroethane	ND	0.11	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Tetrachloroethylene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Tetrahydrofuran	ND	0.87	mg/Kg dry	4	V-16	SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Toluene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,2,3-Trichlorobenzene	ND	0.87	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,2,4-Trichlorobenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,1,1-Trichloroethane	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,1,2-Trichloroethane	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Trichloroethylene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Trichlorofluoromethane (Freon 11)	ND	0.43	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,2,3-Trichloropropane	ND	0.43	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,2,4-Trimethylbenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
1,3,5-Trimethylbenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
Vinyl Chloride	ND	0.43	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
m+p Xylene	ND	0.43	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH
o-Xylene	ND	0.22	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 1:58	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	93.6	70-130		8/29/14 1:58
Toluene-d8	94.6	70-130		8/29/14 1:58
4-Bromofluorobenzene	97.9	70-130		8/29/14 1:58

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-13 (4-6) | Sampled: 8/22/2014 13:25

Sample ID: 14H1125-04

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	1400	230	mg/Kg dry	20		MADEP-EPH-04-1.1	8/28/14	9/3/14 13:42	SCS
C19-C36 Aliphatics	530	230	mg/Kg dry	20		MADEP-EPH-04-1.1	8/28/14	9/3/14 13:42	SCS
Unadjusted C11-C22 Aromatics	790	57	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 13:42	SCS
C11-C22 Aromatics	790	57	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 13:42	SCS
Acenaphthene	0.42	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:03	SCS
Acenaphthylene	0.66	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:03	SCS
Anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:03	SCS
Benzo(a)anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:03	SCS
Benzo(a)pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:03	SCS
Benzo(b)fluoranthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:03	SCS
Benzo(g,h,i)perylene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:03	SCS
Benzo(k)fluoranthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:03	SCS
Chrysene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:03	SCS
Dibenz(a,h)anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:03	SCS
Fluoranthene	0.32	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:03	SCS
Fluorene	1.2	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:03	SCS
Indeno(1,2,3-cd)pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:03	SCS
2-Methylnaphthalene	1.4	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:03	SCS
Naphthalene	0.43	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:03	SCS
Phenanthrene	0.20	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:03	SCS
Pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 7:03	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	74.1	40-140		9/3/14 7:03
o-Terphenyl (OTP)	81.3	40-140		9/3/14 7:03
2-Bromonaphthalene	81.5	40-140		9/3/14 7:03
2-Fluorobiphenyl	88.8	40-140		9/3/14 7:03

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-13 (4-6) | Sampled: 8/22/2014 13:25

Sample ID: 14H1125-04

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - VPH

Soil/Methanol Preservation Ratio: 1.00

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	69	mg/Kg dry	5	RL-05	MADEP-VPH-04-1.1	8/27/14	8/28/14 4:25	EEH
C5-C8 Aliphatics	ND	69	mg/Kg dry	5	RL-05	MADEP-VPH-04-1.1	8/27/14	8/28/14 4:25	EEH
Unadjusted C9-C12 Aliphatics	200	69	mg/Kg dry	5		MADEP-VPH-04-1.1	8/27/14	8/28/14 4:25	EEH
C9-C12 Aliphatics	ND	69	mg/Kg dry	5		MADEP-VPH-04-1.1	8/27/14	8/28/14 4:25	EEH
C9-C10 Aromatics	150	69	mg/Kg dry	5		MADEP-VPH-04-1.1	8/27/14	8/28/14 4:25	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
2,5-Dibromotoluene (FID)	130	70-130		8/28/14 4:25	
2,5-Dibromotoluene (PID)	112	70-130		8/28/14 4:25	

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-13 (4-6) | Sampled: 8/22/2014 13:25

Sample ID: 14H1125-04

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	2.7	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:16	OP
Barium	39	2.7	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:16	OP
Cadmium	ND	0.27	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:16	OP
Chromium	18	0.54	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:16	OP
Lead	58	0.82	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:16	OP
Mercury	0.099	0.027	mg/Kg dry	1		SW-846 7471B	8/27/14	8/28/14 12:50	JMP
Selenium	ND	5.4	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:16	OP
Silver	ND	0.54	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:16	OP

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-13 (4-6) | Sampled: 8/22/2014 13:25

Sample ID: 14H1125-04

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	86.6		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-15 (0-0.5) | Sampled: 8/22/2014 12:15

Sample ID: 14H1125-05

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 21:02	JMB
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 21:02	JMB
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 21:02	JMB
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 21:02	JMB
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 21:02	JMB
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 21:02	JMB
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 21:02	JMB
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 21:02	JMB
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 21:02	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	90.0	30-150	O-32	8/29/14 21:02
Decachlorobiphenyl [2]	95.5	30-150	O-32	8/29/14 21:02
Tetrachloro-m-xylene [1]	111	30-150	O-32	8/29/14 21:02
Tetrachloro-m-xylene [2]	103	30-150	O-32	8/29/14 21:02

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-15 (0-0.5) | Sampled: 8/22/2014 12:15

Sample ID: 14H1125-05

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	87.7		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-15 (0.5-2) | Sampled: 8/22/2014 12:20

Sample ID: 14H1125-06

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 21:15	JMB
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 21:15	JMB
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 21:15	JMB
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 21:15	JMB
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 21:15	JMB
Aroclor-1254 [1]	ND	0.12	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 21:15	JMB
Aroclor-1260 [1]	ND	0.12	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 21:15	JMB
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 21:15	JMB
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	5	O-32	SW-846 8082A	8/28/14	8/29/14 21:15	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	95.8	30-150	O-32	8/29/14 21:15
Decachlorobiphenyl [2]	98.7	30-150	O-32	8/29/14 21:15
Tetrachloro-m-xylene [1]	112	30-150	O-32	8/29/14 21:15
Tetrachloro-m-xylene [2]	105	30-150	O-32	8/29/14 21:15

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-15 (0.5-2) | Sampled: 8/22/2014 12:20

Sample ID: 14H1125-06

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	85.4		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-5 (0-0.5) | Sampled: 8/22/2014 09:30

Sample ID: 14H1125-09

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.22	mg/Kg dry	10		SW-846 8082A	8/28/14	8/30/14 10:54	JMB
Aroclor-1221 [1]	ND	0.22	mg/Kg dry	10		SW-846 8082A	8/28/14	8/30/14 10:54	JMB
Aroclor-1232 [1]	ND	0.22	mg/Kg dry	10		SW-846 8082A	8/28/14	8/30/14 10:54	JMB
Aroclor-1242 [1]	ND	0.22	mg/Kg dry	10		SW-846 8082A	8/28/14	8/30/14 10:54	JMB
Aroclor-1248 [1]	ND	0.22	mg/Kg dry	10		SW-846 8082A	8/28/14	8/30/14 10:54	JMB
Aroclor-1254 [1]	1.8	0.22	mg/Kg dry	10	P-04	SW-846 8082A	8/28/14	8/30/14 10:54	JMB
Aroclor-1260 [1]	ND	0.22	mg/Kg dry	10		SW-846 8082A	8/28/14	8/30/14 10:54	JMB
Aroclor-1262 [1]	ND	0.22	mg/Kg dry	10		SW-846 8082A	8/28/14	8/30/14 10:54	JMB
Aroclor-1268 [1]	ND	0.22	mg/Kg dry	10		SW-846 8082A	8/28/14	8/30/14 10:54	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	98.7	30-150		8/30/14 10:54
Decachlorobiphenyl [2]	104	30-150		8/30/14 10:54
Tetrachloro-m-xylene [1]	109	30-150		8/30/14 10:54
Tetrachloro-m-xylene [2]	101	30-150		8/30/14 10:54

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-5 (0-0.5) | Sampled: 8/22/2014 09:30

Sample ID: 14H1125-09

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	90.1		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-5 (0.5-2) | Sampled: 8/22/2014 09:35

Sample ID: 14H1125-10

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	8/28/14	8/30/14 11:07	JMB
Aroclor-1221 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	8/28/14	8/30/14 11:07	JMB
Aroclor-1232 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	8/28/14	8/30/14 11:07	JMB
Aroclor-1242 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	8/28/14	8/30/14 11:07	JMB
Aroclor-1248 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	8/28/14	8/30/14 11:07	JMB
Aroclor-1254 [1]	9.2	1.1	mg/Kg dry	50	P-04	SW-846 8082A	8/28/14	8/30/14 11:07	JMB
Aroclor-1260 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	8/28/14	8/30/14 11:07	JMB
Aroclor-1262 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	8/28/14	8/30/14 11:07	JMB
Aroclor-1268 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	8/28/14	8/30/14 11:07	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	*	30-150	S-01	8/30/14 11:07
Decachlorobiphenyl [2]	*	30-150	S-01	8/30/14 11:07
Tetrachloro-m-xylene [1]	*	30-150	S-01	8/30/14 11:07
Tetrachloro-m-xylene [2]	*	30-150	S-01	8/30/14 11:07

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-5 (0.5-2) | Sampled: 8/22/2014 09:35

Sample ID: 14H1125-10

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	92.2		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-6 (0-0.5) | Sampled: 8/22/2014 09:00

Sample ID: 14H1125-13

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 21:53	JMB
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 21:53	JMB
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 21:53	JMB
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 21:53	JMB
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 21:53	JMB
Aroclor-1254 [2]	0.12	0.11	mg/Kg dry	5	O-03	SW-846 8082A	8/28/14	8/29/14 21:53	JMB
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 21:53	JMB
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 21:53	JMB
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 21:53	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	88.7	30-150		8/29/14 21:53
Decachlorobiphenyl [2]	96.3	30-150		8/29/14 21:53
Tetrachloro-m-xylene [1]	103	30-150		8/29/14 21:53
Tetrachloro-m-xylene [2]	97.2	30-150		8/29/14 21:53

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-6 (0-0.5) | Sampled: 8/22/2014 09:00

Sample ID: 14H1125-13

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	88.4		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-6 (0.5-2) | Sampled: 8/22/2014 09:05

Sample ID: 14H1125-14

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/28/14	8/30/14 11:19	JMB
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/28/14	8/30/14 11:19	JMB
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/28/14	8/30/14 11:19	JMB
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/28/14	8/30/14 11:19	JMB
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/28/14	8/30/14 11:19	JMB
Aroclor-1254 [1]	0.19	0.12	mg/Kg dry	5	P-04	SW-846 8082A	8/28/14	8/30/14 11:19	JMB
Aroclor-1260 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/28/14	8/30/14 11:19	JMB
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/28/14	8/30/14 11:19	JMB
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/28/14	8/30/14 11:19	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	99.7	30-150		8/30/14 11:19
Decachlorobiphenyl [2]	104	30-150		8/30/14 11:19
Tetrachloro-m-xylene [1]	91.6	30-150		8/30/14 11:19
Tetrachloro-m-xylene [2]	93.3	30-150		8/30/14 11:19

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-6 (0.5-2) | Sampled: 8/22/2014 09:05

Sample ID: 14H1125-14

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	84.3		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-10 (0-0.5) | Sampled: 8/22/2014 08:20

Sample ID: 14H1125-17

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 22:19	JMB
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 22:19	JMB
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 22:19	JMB
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 22:19	JMB
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 22:19	JMB
Aroclor-1254 [2]	0.39	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 22:19	JMB
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 22:19	JMB
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 22:19	JMB
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 22:19	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	84.9	30-150		8/29/14 22:19
Decachlorobiphenyl [2]	85.7	30-150		8/29/14 22:19
Tetrachloro-m-xylene [1]	99.6	30-150		8/29/14 22:19
Tetrachloro-m-xylene [2]	95.2	30-150		8/29/14 22:19

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-10 (0-0.5) | Sampled: 8/22/2014 08:20

Sample ID: 14H1125-17

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	90.2		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-10 (0.5-2) | Sampled: 8/22/2014 08:25

Sample ID: 14H1125-18

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 22:32	JMB
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 22:32	JMB
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 22:32	JMB
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 22:32	JMB
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 22:32	JMB
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 22:32	JMB
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 22:32	JMB
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 22:32	JMB
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/28/14	8/29/14 22:32	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	91.3	30-150		8/29/14 22:32
Decachlorobiphenyl [2]	105	30-150		8/29/14 22:32
Tetrachloro-m-xylene [1]	96.0	30-150		8/29/14 22:32
Tetrachloro-m-xylene [2]	95.9	30-150		8/29/14 22:32

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-10 (0.5-2) | Sampled: 8/22/2014 08:25

Sample ID: 14H1125-18

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	89.6		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

con-test® ANALYTICAL LABORATORY
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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-10 (2-4) | Sampled: 8/22/2014 08:30

Sample ID: 14H1125-19

Sample Matrix: Soil

Sample Flags: RL-06

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	13	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.13	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Benzene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Bromobenzene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Bromochloromethane	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Bromodichloromethane	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Bromoform	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Bromomethane	ND	1.3	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
2-Butanone (MEK)	ND	13	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
n-Butylbenzene	0.52	0.26	mg/Kg dry	4	V-06	SW-846 8260C	8/26/14	8/29/14 2:52	EEH
sec-Butylbenzene	0.29	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
tert-Butylbenzene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.13	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Carbon Disulfide	ND	2.6	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Carbon Tetrachloride	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Chlorobenzene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Chlorodibromomethane	ND	0.13	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Chloroethane	ND	0.51	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Chloroform	ND	0.51	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Chloromethane	ND	1.3	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
2-Chlorotoluene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
4-Chlorotoluene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	1.3	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,2-Dibromoethane (EDB)	ND	0.13	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Dibromomethane	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,2-Dichlorobenzene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,3-Dichlorobenzene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,4-Dichlorobenzene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.51	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,1-Dichloroethane	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,2-Dichloroethane	ND	1.3	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,1-Dichloroethylene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
cis-1,2-Dichloroethylene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
trans-1,2-Dichloroethylene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,2-Dichloropropane	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,3-Dichloropropane	ND	0.13	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
2,2-Dichloropropane	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,1-Dichloropropene	ND	0.51	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
cis-1,3-Dichloropropene	ND	0.13	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
trans-1,3-Dichloropropene	ND	0.13	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Diethyl Ether	ND	0.51	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Diisopropyl Ether (DIPE)	ND	0.13	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,4-Dioxane	ND	13	mg/Kg dry	4	V-16	SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Ethylbenzene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-10 (2-4) | Sampled: 8/22/2014 08:30

Sample ID: 14H1125-19

Sample Matrix: Soil

Sample Flags: RL-06

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
2-Hexanone (MBK)	ND	2.6	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Isopropylbenzene (Cumene)	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Methylene Chloride	ND	1.3	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
4-Methyl-2-pentanone (MIBK)	ND	2.6	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Naphthalene	ND	0.51	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
n-Propylbenzene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Styrene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,1,1,2-Tetrachloroethane	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,1,2,2-Tetrachloroethane	ND	0.13	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Tetrachloroethylene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Tetrahydrofuran	ND	1.0	mg/Kg dry	4	V-16	SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Toluene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,2,3-Trichlorobenzene	ND	1.0	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,2,4-Trichlorobenzene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,1,1-Trichloroethane	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,1,2-Trichloroethane	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Trichloroethylene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Trichlorofluoromethane (Freon 11)	ND	0.51	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,2,3-Trichloropropane	ND	0.51	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,2,4-Trimethylbenzene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
1,3,5-Trimethylbenzene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
Vinyl Chloride	ND	0.51	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
m+p Xylene	ND	0.51	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH
o-Xylene	ND	0.26	mg/Kg dry	4		SW-846 8260C	8/26/14	8/29/14 2:52	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	91.6	70-130		8/29/14 2:52
Toluene-d8	96.9	70-130		8/29/14 2:52
4-Bromofluorobenzene	101	70-130		8/29/14 2:52

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-10 (2-4) | Sampled: 8/22/2014 08:30

Sample ID: 14H1125-19

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	16000	2300	mg/Kg dry	200		MADEP-EPH-04-1.1	8/28/14	9/3/14 14:23	SCS
C19-C36 Aliphatics	13000	2300	mg/Kg dry	200		MADEP-EPH-04-1.1	8/28/14	9/3/14 14:23	SCS
Unadjusted C11-C22 Aromatics	8900	580	mg/Kg dry	50		MADEP-EPH-04-1.1	8/28/14	9/3/14 14:23	SCS
C11-C22 Aromatics	8900	580	mg/Kg dry	50		MADEP-EPH-04-1.1	8/28/14	9/3/14 14:23	SCS
Acenaphthene	7.2	0.58	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:41	SCS
Acenaphthylene	10	0.58	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:41	SCS
Anthracene	ND	0.58	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:41	SCS
Benzo(a)anthracene	ND	0.58	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:41	SCS
Benzo(a)pyrene	ND	0.58	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:41	SCS
Benzo(b)fluoranthene	ND	0.58	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:41	SCS
Benzo(g,h,i)perylene	ND	0.58	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:41	SCS
Benzo(k)fluoranthene	ND	0.58	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:41	SCS
Chrysene	ND	0.58	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:41	SCS
Dibenz(a,h)anthracene	ND	0.58	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:41	SCS
Fluoranthene	3.5	0.58	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:41	SCS
Fluorene	9.0	0.58	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:41	SCS
Indeno(1,2,3-cd)pyrene	ND	0.58	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:41	SCS
2-Methylnaphthalene	14	0.58	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:41	SCS
Naphthalene	6.9	0.58	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:41	SCS
Phenanthrene	ND	0.58	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:41	SCS
Pyrene	ND	0.58	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 8:41	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	47.7	40-140		9/3/14 8:41
o-Terphenyl (OTP)	125	40-140		9/3/14 8:41
2-Bromonaphthalene	105	40-140		9/3/14 8:41
2-Fluorobiphenyl	114	40-140		9/3/14 8:41

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-10 (2-4) | Sampled: 8/22/2014 08:30

Sample ID: 14H1125-19

Sample Matrix: Soil

Sample Flags: O-01

Soil/Methanol Preservation Ratio: 1.28

Petroleum Hydrocarbons Analyses - VPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	110	mg/Kg dry	10	RL-05	MADEP-VPH-04-1.1	8/27/14	8/28/14 5:37	EEH
C5-C8 Aliphatics	ND	110	mg/Kg dry	10	RL-05	MADEP-VPH-04-1.1	8/27/14	8/28/14 5:37	EEH
Unadjusted C9-C12 Aliphatics	530	110	mg/Kg dry	10		MADEP-VPH-04-1.1	8/27/14	8/28/14 5:37	EEH
C9-C12 Aliphatics	120	110	mg/Kg dry	10		MADEP-VPH-04-1.1	8/27/14	8/28/14 5:37	EEH
C9-C10 Aromatics	410	110	mg/Kg dry	10		MADEP-VPH-04-1.1	8/27/14	8/28/14 5:37	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,5-Dibromotoluene (FID)	124	70-130		8/28/14 5:37
2,5-Dibromotoluene (PID)	92.1	70-130		8/28/14 5:37

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-10 (2-4) | Sampled: 8/22/2014 08:30

Sample ID: 14H1125-19

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	9.2	2.7	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:20	OP
Barium	53	2.7	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:20	OP
Cadmium	0.61	0.27	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:20	OP
Chromium	50	0.54	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:20	OP
Lead	140	0.81	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:20	OP
Mercury	0.10	0.030	mg/Kg dry	1		SW-846 7471B	8/27/14	8/28/14 12:55	JMP
Selenium	ND	5.4	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:20	OP
Silver	ND	0.54	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:20	OP

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1125

Date Received: 8/25/2014

Field Sample #: SB-10 (2-4) | Sampled: 8/22/2014 08:30

Sample ID: 14H1125-19

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	84.9		% Wt	1		SM 2540G	8/29/14	9/2/14 12:45	MXG

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Sample Extraction Data

Prep Method: SW-846 3546-MADEP-EPH-04-1.1

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1125-04RE1 [SB-13 (4-6)]	B103793	20.1	2.00	08/28/14
14H1125-19RE1 [SB-10 (2-4)]	B103793	20.2	2.00	08/28/14

Prep Method: MA VPH-MADEP-VPH-04-1.1

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1125-04 [SB-13 (4-6)]	B103663	15.0	18.0	08/27/14
14H1125-19 [SB-10 (2-4)]	B103663	19.3	18.0	08/27/14

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
14H1125-01 [SB-13 (0-0.5)]	B103865	08/29/14
14H1125-02 [SB-13 (0.5-2)]	B103865	08/29/14
14H1125-04 [SB-13 (4-6)]	B103865	08/29/14
14H1125-05 [SB-15 (0-0.5)]	B103865	08/29/14
14H1125-06 [SB-15 (0.5-2)]	B103865	08/29/14
14H1125-09 [SB-5 (0-0.5)]	B103865	08/29/14
14H1125-10 [SB-5 (0.5-2)]	B103865	08/29/14
14H1125-13 [SB-6 (0-0.5)]	B103865	08/29/14
14H1125-14 [SB-6 (0.5-2)]	B103865	08/29/14
14H1125-17 [SB-10 (0-0.5)]	B103865	08/29/14
14H1125-18 [SB-10 (0.5-2)]	B103865	08/29/14
14H1125-19 [SB-10 (2-4)]	B103865	08/29/14

Prep Method: SW-846 3050B-SW-846 6010C

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1125-04 [SB-13 (4-6)]	B103724	1.06	50.0	08/27/14
14H1125-19 [SB-10 (2-4)]	B103724	1.09	50.0	08/27/14

Prep Method: SW-846 7471-SW-846 7471B

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1125-04 [SB-13 (4-6)]	B103696	0.640	50.0	08/27/14
14H1125-19 [SB-10 (2-4)]	B103696	0.584	50.0	08/27/14

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1125-01 [SB-13 (0-0.5)]	B103738	10.3	10.0	08/28/14
14H1125-02 [SB-13 (0.5-2)]	B103738	10.4	10.0	08/28/14
14H1125-05 [SB-15 (0-0.5)]	B103738	10.3	10.0	08/28/14
14H1125-06 [SB-15 (0.5-2)]	B103738	10.1	10.0	08/28/14
14H1125-09 [SB-5 (0-0.5)]	B103738	10.3	10.0	08/28/14
14H1125-10 [SB-5 (0.5-2)]	B103738	10.2	10.0	08/28/14
14H1125-13 [SB-6 (0-0.5)]	B103738	10.4	10.0	08/28/14
14H1125-14 [SB-6 (0.5-2)]	B103738	10.2	10.0	08/28/14
14H1125-17 [SB-10 (0-0.5)]	B103738	10.4	10.0	08/28/14

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Sample Extraction Data

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1125-18 [SB-10 (0.5-2)]	B103738	10.4	10.0	08/28/14

Prep Method: SW-846 5035-SW-846 8260C

Lab Number [Field ID]	Batch	Sample Amount(g)	Methanol Volume(mL)	Methanol Aliquot(mL)	Final Volume(mL)	Date
14H1125-04 [SB-13 (4-6)]	B103519	18.7	17.5	0.25	50	08/26/14
14H1125-19 [SB-10 (2-4)]	B103519	16.0	17.4	0.25	50	08/26/14

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103519 - SW-846 5035										
Blank (B103519-BLK1)				Prepared: 08/26/14 Analyzed: 08/28/14						
Acetone	ND	2.5	mg/Kg wet							
tert-Amyl Methyl Ether (TAME)	ND	0.025	mg/Kg wet							
Benzene	ND	0.050	mg/Kg wet							
Bromobenzene	ND	0.050	mg/Kg wet							
Bromochloromethane	ND	0.050	mg/Kg wet							
Bromodichloromethane	ND	0.050	mg/Kg wet							
Bromoform	ND	0.050	mg/Kg wet							
Bromomethane	ND	0.25	mg/Kg wet							
2-Butanone (MEK)	ND	2.5	mg/Kg wet							
n-Butylbenzene	ND	0.050	mg/Kg wet							
sec-Butylbenzene	ND	0.050	mg/Kg wet							
tert-Butylbenzene	ND	0.050	mg/Kg wet							
tert-Butyl Ethyl Ether (TBEE)	ND	0.025	mg/Kg wet							
Carbon Disulfide	ND	0.50	mg/Kg wet							
Carbon Tetrachloride	ND	0.050	mg/Kg wet							
Chlorobenzene	ND	0.050	mg/Kg wet							
Chlorodibromomethane	ND	0.025	mg/Kg wet							
Chloroethane	ND	0.10	mg/Kg wet							
Chloroform	ND	0.10	mg/Kg wet							
Chloromethane	ND	0.25	mg/Kg wet							
2-Chlorotoluene	ND	0.050	mg/Kg wet							
4-Chlorotoluene	ND	0.050	mg/Kg wet							
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.25	mg/Kg wet							
1,2-Dibromoethane (EDB)	ND	0.025	mg/Kg wet							
Dibromomethane	ND	0.050	mg/Kg wet							
1,2-Dichlorobenzene	ND	0.050	mg/Kg wet							
1,3-Dichlorobenzene	ND	0.050	mg/Kg wet							
1,4-Dichlorobenzene	ND	0.050	mg/Kg wet							
Dichlorodifluoromethane (Freon 12)	ND	0.10	mg/Kg wet							
1,1-Dichloroethane	ND	0.050	mg/Kg wet							
1,2-Dichloroethane	ND	0.25	mg/Kg wet							
1,1-Dichloroethylene	ND	0.050	mg/Kg wet							
cis-1,2-Dichloroethylene	ND	0.050	mg/Kg wet							
trans-1,2-Dichloroethylene	ND	0.050	mg/Kg wet							
1,2-Dichloropropane	ND	0.050	mg/Kg wet							
1,3-Dichloropropane	ND	0.025	mg/Kg wet							
2,2-Dichloropropane	ND	0.050	mg/Kg wet							
1,1-Dichloropropene	ND	0.10	mg/Kg wet							
cis-1,3-Dichloropropene	ND	0.025	mg/Kg wet							
trans-1,3-Dichloropropene	ND	0.025	mg/Kg wet							
Diethyl Ether	ND	0.10	mg/Kg wet							
Diisopropyl Ether (DIPE)	ND	0.025	mg/Kg wet							
1,4-Dioxane	ND	2.5	mg/Kg wet							V-16
Ethylbenzene	ND	0.050	mg/Kg wet							
Hexachlorobutadiene	ND	0.050	mg/Kg wet							
2-Hexanone (MBK)	ND	0.50	mg/Kg wet							
Isopropylbenzene (Cumene)	ND	0.050	mg/Kg wet							
p-Isopropyltoluene (p-Cymene)	ND	0.050	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.050	mg/Kg wet							
Methylene Chloride	ND	0.25	mg/Kg wet							
4-Methyl-2-pentanone (MIBK)	ND	0.50	mg/Kg wet							
Naphthalene	ND	0.10	mg/Kg wet							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B103519 - SW-846 5035												
Blank (B103519-BLK1)				Prepared: 08/26/14 Analyzed: 08/28/14								
n-Propylbenzene	ND	0.050	mg/Kg wet									
Styrene	ND	0.050	mg/Kg wet									
1,1,1,2-Tetrachloroethane	ND	0.050	mg/Kg wet									
1,1,2,2-Tetrachloroethane	ND	0.025	mg/Kg wet									
Tetrachloroethylene	ND	0.050	mg/Kg wet									
Tetrahydrofuran	ND	0.20	mg/Kg wet								V-16	
Toluene	ND	0.050	mg/Kg wet									
1,2,3-Trichlorobenzene	ND	0.20	mg/Kg wet									
1,2,4-Trichlorobenzene	ND	0.050	mg/Kg wet									
1,1,1-Trichloroethane	ND	0.050	mg/Kg wet									
1,1,2-Trichloroethane	ND	0.050	mg/Kg wet									
Trichloroethylene	ND	0.050	mg/Kg wet									
Trichlorofluoromethane (Freon 11)	ND	0.10	mg/Kg wet									
1,2,3-Trichloropropane	ND	0.10	mg/Kg wet									
1,2,4-Trimethylbenzene	ND	0.050	mg/Kg wet									
1,3,5-Trimethylbenzene	ND	0.050	mg/Kg wet									
Vinyl Chloride	ND	0.10	mg/Kg wet									
m+p Xylene	ND	0.10	mg/Kg wet									
o-Xylene	ND	0.050	mg/Kg wet									
Surrogate: 1,2-Dichloroethane-d4	*0.0226*		mg/Kg wet	0.0250		90.2		70-130				
Surrogate: Toluene-d8	*0.0239*		mg/Kg wet	0.0250		95.6		70-130				
Surrogate: 4-Bromofluorobenzene	*0.0233*		mg/Kg wet	0.0250		93.2		70-130				
LCS (B103519-BS1)				Prepared: 08/26/14 Analyzed: 08/28/14								
Acetone	0.222	0.057	mg/Kg wet	0.113		**196**	*	40-160			L-02	†
tert-Amyl Methyl Ether (TAME)	0.0109	0.00057	mg/Kg wet	0.0113		96.6		70-130				
Benzene	0.0127	0.0011	mg/Kg wet	0.0113		112		70-130			V-20	
Bromobenzene	0.0124	0.0011	mg/Kg wet	0.0113		110		70-130				
Bromochloromethane	0.0137	0.0011	mg/Kg wet	0.0113		121		70-130			V-20	
Bromodichloromethane	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130				
Bromoform	0.0166	0.0011	mg/Kg wet	0.0113		**147**	*	70-130			L-02, V-20	
Bromomethane	0.00726	0.0057	mg/Kg wet	0.0113		64.1		40-160			L-14	†
2-Butanone (MEK)	0.154	0.057	mg/Kg wet	0.113		136		40-160			L-14	†
n-Butylbenzene	0.0143	0.0011	mg/Kg wet	0.0113		126		70-130			V-06	
sec-Butylbenzene	0.0133	0.0011	mg/Kg wet	0.0113		117		70-130				
tert-Butylbenzene	0.0133	0.0011	mg/Kg wet	0.0113		118		70-130				
tert-Butyl Ethyl Ether (TBEE)	0.0121	0.00057	mg/Kg wet	0.0113		106		70-130				
Carbon Disulfide	0.0132	0.011	mg/Kg wet	0.0113		117		70-130				
Carbon Tetrachloride	0.0138	0.0011	mg/Kg wet	0.0113		121		70-130				
Chlorobenzene	0.0124	0.0011	mg/Kg wet	0.0113		109		70-130				
Chlorodibromomethane	0.0128	0.00057	mg/Kg wet	0.0113		113		70-130				
Chloroethane	0.0114	0.0023	mg/Kg wet	0.0113		100		70-130				
Chloroform	0.0123	0.0023	mg/Kg wet	0.0113		109		70-130				
Chloromethane	0.0104	0.0057	mg/Kg wet	0.0113		91.9		40-160				†
2-Chlorotoluene	0.0109	0.0011	mg/Kg wet	0.0113		96.0		70-130				
4-Chlorotoluene	0.0119	0.0011	mg/Kg wet	0.0113		105		70-130				
1,2-Dibromo-3-chloropropane (DBCP)	0.0125	0.0057	mg/Kg wet	0.0113		110		70-130				
1,2-Dibromoethane (EDB)	0.0130	0.00057	mg/Kg wet	0.0113		115		70-130				
Dibromomethane	0.0135	0.0011	mg/Kg wet	0.0113		119		70-130				
1,2-Dichlorobenzene	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130				
1,3-Dichlorobenzene	0.0127	0.0011	mg/Kg wet	0.0113		112		70-130				
1,4-Dichlorobenzene	0.0130	0.0011	mg/Kg wet	0.0113		115		70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B103519 - SW-846 5035											
LCS (B103519-BS1)				Prepared: 08/26/14 Analyzed: 08/28/14							
Dichlorodifluoromethane (Freon 12)	0.0103	0.0023	mg/Kg wet	0.0113		90.5	40-160			V-20	†
1,1-Dichloroethane	0.0130	0.0011	mg/Kg wet	0.0113		115	70-130				
1,2-Dichloroethane	0.0125	0.0057	mg/Kg wet	0.0113		110	70-130				
1,1-Dichloroethylene	0.0108	0.0011	mg/Kg wet	0.0113		95.2	70-130				
cis-1,2-Dichloroethylene	0.0122	0.0011	mg/Kg wet	0.0113		108	70-130				
trans-1,2-Dichloroethylene	0.0126	0.0011	mg/Kg wet	0.0113		111	70-130				
1,2-Dichloropropane	0.0132	0.0011	mg/Kg wet	0.0113		116	70-130				
1,3-Dichloropropane	0.0130	0.00057	mg/Kg wet	0.0113		115	70-130				
2,2-Dichloropropane	0.0121	0.0011	mg/Kg wet	0.0113		107	70-130				
1,1-Dichloropropene	0.0130	0.0023	mg/Kg wet	0.0113		115	70-130				
cis-1,3-Dichloropropene	0.0119	0.00057	mg/Kg wet	0.0113		105	70-130				
trans-1,3-Dichloropropene	0.0131	0.00057	mg/Kg wet	0.0113		116	70-130				
Diethyl Ether	0.0121	0.0023	mg/Kg wet	0.0113		107	70-130				
Diisopropyl Ether (DIPE)	0.0113	0.00057	mg/Kg wet	0.0113		99.7	70-130				
1,4-Dioxane	0.0757	0.057	mg/Kg wet	0.113		66.8	40-160			V-16, L-14	†
Ethylbenzene	0.0127	0.0011	mg/Kg wet	0.0113		112	70-130				
Hexachlorobutadiene	0.0137	0.0011	mg/Kg wet	0.0113		121	70-130				
2-Hexanone (MBK)	0.160	0.011	mg/Kg wet	0.113		141	40-160			L-14	†
Isopropylbenzene (Cumene)	0.0122	0.0011	mg/Kg wet	0.0113		107	70-130				
p-Isopropyltoluene (p-Cymene)	0.0141	0.0011	mg/Kg wet	0.0113		124	70-130				
Methyl tert-Butyl Ether (MTBE)	0.0125	0.0011	mg/Kg wet	0.0113		110	70-130				
Methylene Chloride	0.0112	0.0057	mg/Kg wet	0.0113		98.4	70-130				
4-Methyl-2-pentanone (MIBK)	0.113	0.011	mg/Kg wet	0.113		99.3	40-160				†
Naphthalene	0.0136	0.0023	mg/Kg wet	0.0113		120	70-130			V-20	
n-Propylbenzene	0.0125	0.0011	mg/Kg wet	0.0113		110	70-130				
Styrene	0.0126	0.0011	mg/Kg wet	0.0113		111	70-130				
1,1,1,2-Tetrachloroethane	0.0133	0.0011	mg/Kg wet	0.0113		118	70-130				
1,1,2,2-Tetrachloroethane	0.0131	0.00057	mg/Kg wet	0.0113		116	70-130			V-20	
Tetrachloroethylene	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130				
Tetrahydrofuran	0.0124	0.0045	mg/Kg wet	0.0113		110	70-130			V-16	
Toluene	0.0124	0.0011	mg/Kg wet	0.0113		109	70-130				
1,2,3-Trichlorobenzene	0.0136	0.0045	mg/Kg wet	0.0113		120	70-130			V-20	
1,2,4-Trichlorobenzene	0.0141	0.0011	mg/Kg wet	0.0113		124	70-130				
1,1,1-Trichloroethane	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130				
1,1,2-Trichloroethane	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130				
Trichloroethylene	0.0132	0.0011	mg/Kg wet	0.0113		117	70-130				
Trichlorofluoromethane (Freon 11)	0.0115	0.0023	mg/Kg wet	0.0113		101	70-130				
1,2,3-Trichloropropane	0.0128	0.0023	mg/Kg wet	0.0113		113	70-130			V-20	
1,2,4-Trimethylbenzene	0.0137	0.0011	mg/Kg wet	0.0113		121	70-130			V-20	
1,3,5-Trimethylbenzene	0.0124	0.0011	mg/Kg wet	0.0113		109	70-130				
Vinyl Chloride	0.00798	0.0023	mg/Kg wet	0.0113		70.4	70-130				
m+p Xylene	0.0242	0.0023	mg/Kg wet	0.0227		107	70-130				
o-Xylene	0.0121	0.0011	mg/Kg wet	0.0113		107	70-130				
Surrogate: 1,2-Dichloroethane-d4	*0.0267*		mg/Kg wet	0.0283		94.2	70-130				
Surrogate: Toluene-d8	*0.0273*		mg/Kg wet	0.0283		96.4	70-130				
Surrogate: 4-Bromofluorobenzene	*0.0267*		mg/Kg wet	0.0283		94.2	70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B103519 - SW-846 5035												
LCS Dup (B103519-BSD1)				Prepared: 08/26/14 Analyzed: 08/28/14								
Acetone	0.232	0.057	mg/Kg wet	0.113		**204**	*	40-160	4.01	20	L-02	†
tert-Amyl Methyl Ether (TAME)	0.0110	0.00057	mg/Kg wet	0.0113		97.3		70-130	0.722	20		
Benzene	0.0132	0.0011	mg/Kg wet	0.0113		116		70-130	3.68	20	V-20	
Bromobenzene	0.0124	0.0011	mg/Kg wet	0.0113		110		70-130	0.182	20		
Bromochloromethane	0.0143	0.0011	mg/Kg wet	0.0113		127		70-130	4.28	20	V-20	
Bromodichloromethane	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130	0.354	20		
Bromoform	0.0164	0.0011	mg/Kg wet	0.0113		**145**	*	70-130	1.51	20	L-02, V-20	
Bromomethane	0.00823	0.0057	mg/Kg wet	0.0113		72.6		40-160	12.4	20		†
2-Butanone (MEK)	0.157	0.057	mg/Kg wet	0.113		139		40-160	2.26	20	L-14	†
n-Butylbenzene	0.0139	0.0011	mg/Kg wet	0.0113		123		70-130	2.81	20	V-06	
sec-Butylbenzene	0.0131	0.0011	mg/Kg wet	0.0113		116		70-130	1.37	20		
tert-Butylbenzene	0.0133	0.0011	mg/Kg wet	0.0113		117		70-130	0.512	20		
tert-Butyl Ethyl Ether (TBEE)	0.0121	0.00057	mg/Kg wet	0.0113		107		70-130	0.469	20		
Carbon Disulfide	0.0133	0.011	mg/Kg wet	0.0113		117		70-130	0.256	20		
Carbon Tetrachloride	0.0140	0.0011	mg/Kg wet	0.0113		124		70-130	1.71	20		
Chlorobenzene	0.0124	0.0011	mg/Kg wet	0.0113		110		70-130	0.549	20		
Chlorodibromomethane	0.0125	0.00057	mg/Kg wet	0.0113		110		70-130	2.60	20		
Chloroethane	0.0121	0.0023	mg/Kg wet	0.0113		107		70-130	6.08	20		
Chloroform	0.0124	0.0023	mg/Kg wet	0.0113		110		70-130	1.10	20		
Chloromethane	0.0110	0.0057	mg/Kg wet	0.0113		97.4		40-160	5.81	20		†
2-Chlorotoluene	0.0113	0.0011	mg/Kg wet	0.0113		99.7		70-130	3.78	20		
4-Chlorotoluene	0.0123	0.0011	mg/Kg wet	0.0113		109		70-130	3.37	20		
1,2-Dibromo-3-chloropropane (DBCP)	0.0125	0.0057	mg/Kg wet	0.0113		110		70-130	0.272	20		
1,2-Dibromoethane (EDB)	0.0131	0.00057	mg/Kg wet	0.0113		115		70-130	0.522	20		
Dibromomethane	0.0133	0.0011	mg/Kg wet	0.0113		118		70-130	1.02	20		
1,2-Dichlorobenzene	0.0124	0.0011	mg/Kg wet	0.0113		109		70-130	3.33	20		
1,3-Dichlorobenzene	0.0125	0.0011	mg/Kg wet	0.0113		110		70-130	1.35	20		
1,4-Dichlorobenzene	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130	1.75	20		
Dichlorodifluoromethane (Freon 12)	0.0107	0.0023	mg/Kg wet	0.0113		94.4		40-160	4.22	20	V-20	†
1,1-Dichloroethane	0.0135	0.0011	mg/Kg wet	0.0113		119		70-130	3.59	20		
1,2-Dichloroethane	0.0124	0.0057	mg/Kg wet	0.0113		109		70-130	1.18	20		
1,1-Dichloroethylene	0.0110	0.0011	mg/Kg wet	0.0113		97.0		70-130	1.87	20		
cis-1,2-Dichloroethylene	0.0123	0.0011	mg/Kg wet	0.0113		109		70-130	0.740	20		
trans-1,2-Dichloroethylene	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130	1.97	20		
1,2-Dichloropropane	0.0129	0.0011	mg/Kg wet	0.0113		114		70-130	1.91	20		
1,3-Dichloropropane	0.0125	0.00057	mg/Kg wet	0.0113		110		70-130	4.01	20		
2,2-Dichloropropane	0.0124	0.0011	mg/Kg wet	0.0113		110		70-130	2.68	20		
1,1-Dichloropropene	0.0132	0.0023	mg/Kg wet	0.0113		116		70-130	1.30	20		
cis-1,3-Dichloropropene	0.0123	0.00057	mg/Kg wet	0.0113		109		70-130	3.47	20		
trans-1,3-Dichloropropene	0.0134	0.00057	mg/Kg wet	0.0113		118		70-130	1.79	20		
Diethyl Ether	0.0119	0.0023	mg/Kg wet	0.0113		105		70-130	1.60	20		
Diisopropyl Ether (DIPE)	0.0121	0.00057	mg/Kg wet	0.0113		107		70-130	6.88	20		
1,4-Dioxane	0.0759	0.057	mg/Kg wet	0.113		67.0		40-160	0.269	20	L-14, V-16	†
Ethylbenzene	0.0131	0.0011	mg/Kg wet	0.0113		116		70-130	3.33	20		
Hexachlorobutadiene	0.0139	0.0011	mg/Kg wet	0.0113		123		70-130	1.56	20		
2-Hexanone (MBK)	0.158	0.011	mg/Kg wet	0.113		139		40-160	1.36	20	L-14	†
Isopropylbenzene (Cumene)	0.0122	0.0011	mg/Kg wet	0.0113		108		70-130	0.0930	20		
p-Isopropyltoluene (p-Cymene)	0.0136	0.0011	mg/Kg wet	0.0113		120		70-130	3.60	20		
Methyl tert-Butyl Ether (MTBE)	0.0125	0.0011	mg/Kg wet	0.0113		110		70-130	0.272	20		
Methylene Chloride	0.0114	0.0057	mg/Kg wet	0.0113		100		70-130	1.91	20		
4-Methyl-2-pentanone (MIBK)	0.111	0.011	mg/Kg wet	0.113		98.3		40-160	1.04	20		†
Naphthalene	0.0135	0.0023	mg/Kg wet	0.0113		119		70-130	1.17	20	V-20	

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103519 - SW-846 5035										
LCS Dup (B103519-BSD1)				Prepared: 08/26/14 Analyzed: 08/28/14						
n-Propylbenzene	0.0128	0.0011	mg/Kg wet	0.0113		113	70-130	2.60	20	
Styrene	0.0125	0.0011	mg/Kg wet	0.0113		110	70-130	0.451	20	
1,1,1,2-Tetrachloroethane	0.0136	0.0011	mg/Kg wet	0.0113		120	70-130	2.02	20	
1,1,2,2-Tetrachloroethane	0.0133	0.00057	mg/Kg wet	0.0113		118	70-130	1.72	20	V-20
Tetrachloroethylene	0.0133	0.0011	mg/Kg wet	0.0113		118	70-130	3.46	20	
Tetrahydrofuran	0.0121	0.0045	mg/Kg wet	0.0113		107	70-130	2.59	20	V-16
Toluene	0.0123	0.0011	mg/Kg wet	0.0113		109	70-130	0.184	20	
1,2,3-Trichlorobenzene	0.0132	0.0045	mg/Kg wet	0.0113		116	70-130	3.47	20	V-20
1,2,4-Trichlorobenzene	0.0139	0.0011	mg/Kg wet	0.0113		123	70-130	1.30	20	
1,1,1-Trichloroethane	0.0133	0.0011	mg/Kg wet	0.0113		118	70-130	3.11	20	
1,1,2-Trichloroethane	0.0126	0.0011	mg/Kg wet	0.0113		111	70-130	2.32	20	
Trichloroethylene	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130	2.52	20	
Trichlorofluoromethane (Freon 11)	0.0121	0.0023	mg/Kg wet	0.0113		106	70-130	5.00	20	
1,2,3-Trichloropropane	0.0129	0.0023	mg/Kg wet	0.0113		114	70-130	0.352	20	V-20
1,2,4-Trimethylbenzene	0.0132	0.0011	mg/Kg wet	0.0113		117	70-130	3.20	20	V-20
1,3,5-Trimethylbenzene	0.0125	0.0011	mg/Kg wet	0.0113		110	70-130	1.27	20	
Vinyl Chloride	0.00822	0.0023	mg/Kg wet	0.0113		72.5	70-130	2.94	20	
m+p Xylene	0.0250	0.0023	mg/Kg wet	0.0227		110	70-130	3.37	20	
o-Xylene	0.0124	0.0011	mg/Kg wet	0.0113		109	70-130	2.13	20	
Surrogate: 1,2-Dichloroethane-d4	*0.0275*		mg/Kg wet	0.0283		97.0	70-130			
Surrogate: Toluene-d8	*0.0266*		mg/Kg wet	0.0283		93.9	70-130			
Surrogate: 4-Bromofluorobenzene	*0.0264*		mg/Kg wet	0.0283		93.2	70-130			

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103738 - SW-846 3540C										
Blank (B103738-BLK1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Aroclor-1016	ND	0.020	mg/Kg wet							
Aroclor-1016 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1221	ND	0.020	mg/Kg wet							
Aroclor-1221 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1232	ND	0.020	mg/Kg wet							
Aroclor-1232 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1242	ND	0.020	mg/Kg wet							
Aroclor-1242 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1248	ND	0.020	mg/Kg wet							
Aroclor-1248 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1254	ND	0.020	mg/Kg wet							
Aroclor-1254 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1260	ND	0.020	mg/Kg wet							
Aroclor-1260 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1262	ND	0.020	mg/Kg wet							
Aroclor-1262 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1268	ND	0.020	mg/Kg wet							
Aroclor-1268 [2C]	ND	0.020	mg/Kg wet							
Surrogate: Decachlorobiphenyl	*0.178*		mg/Kg wet	0.200		88.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.174*		mg/Kg wet	0.200		86.8	30-150			
Surrogate: Tetrachloro-m-xylene	*0.215*		mg/Kg wet	0.200		108	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.195*		mg/Kg wet	0.200		97.7	30-150			
LCS (B103738-BS1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Aroclor-1016	0.23	0.10	mg/Kg wet	0.200		115	40-140			
Aroclor-1016 [2C]	0.22	0.10	mg/Kg wet	0.200		108	40-140			
Aroclor-1260	0.21	0.10	mg/Kg wet	0.200		104	40-140			
Aroclor-1260 [2C]	0.21	0.10	mg/Kg wet	0.200		107	40-140			
Surrogate: Decachlorobiphenyl	*0.195*		mg/Kg wet	0.200		97.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.191*		mg/Kg wet	0.200		95.3	30-150			
Surrogate: Tetrachloro-m-xylene	*0.231*		mg/Kg wet	0.200		115	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.207*		mg/Kg wet	0.200		103	30-150			
LCS Dup (B103738-BSD1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Aroclor-1016	0.22	0.10	mg/Kg wet	0.200		110	40-140	4.10	30	
Aroclor-1016 [2C]	0.21	0.10	mg/Kg wet	0.200		104	40-140	4.09	30	
Aroclor-1260	0.19	0.10	mg/Kg wet	0.200		97.3	40-140	6.34	30	
Aroclor-1260 [2C]	0.20	0.10	mg/Kg wet	0.200		101	40-140	5.30	30	
Surrogate: Decachlorobiphenyl	*0.183*		mg/Kg wet	0.200		91.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.179*		mg/Kg wet	0.200		89.6	30-150			
Surrogate: Tetrachloro-m-xylene	*0.222*		mg/Kg wet	0.200		111	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.198*		mg/Kg wet	0.200		99.1	30-150			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103793 - SW-846 3546										
Blank (B103793-BLK1)				Prepared: 08/28/14 Analyzed: 08/29/14						
C9-C18 Aliphatics	ND	10	mg/Kg wet							
C19-C36 Aliphatics	ND	10	mg/Kg wet							
Unadjusted C11-C22 Aromatics	ND	10	mg/Kg wet							
C11-C22 Aromatics	ND	10	mg/Kg wet							
Acenaphthene	ND	0.10	mg/Kg wet							
Acenaphthylene	ND	0.10	mg/Kg wet							
Anthracene	ND	0.10	mg/Kg wet							
Benzo(a)anthracene	ND	0.10	mg/Kg wet							
Benzo(a)pyrene	ND	0.10	mg/Kg wet							
Benzo(b)fluoranthene	ND	0.10	mg/Kg wet							
Benzo(g,h,i)perylene	ND	0.10	mg/Kg wet							
Benzo(k)fluoranthene	ND	0.10	mg/Kg wet							
Chrysene	ND	0.10	mg/Kg wet							
Dibenz(a,h)anthracene	ND	0.10	mg/Kg wet							
Fluoranthene	ND	0.10	mg/Kg wet							
Fluorene	ND	0.10	mg/Kg wet							
Indeno(1,2,3-cd)pyrene	ND	0.10	mg/Kg wet							
2-Methylnaphthalene	ND	0.10	mg/Kg wet							
Naphthalene	ND	0.10	mg/Kg wet							
Phenanthrene	ND	0.10	mg/Kg wet							
Pyrene	ND	0.10	mg/Kg wet							
n-Decane	ND	0.10	mg/Kg wet							
n-Docosane	ND	0.10	mg/Kg wet							
n-Dodecane	ND	0.10	mg/Kg wet							
n-Eicosane	ND	0.10	mg/Kg wet							
n-Hexacosane	ND	0.10	mg/Kg wet							
n-Hexadecane	ND	0.10	mg/Kg wet							
n-Hexatriacontane	ND	0.10	mg/Kg wet							
n-Nonadecane	ND	0.10	mg/Kg wet							
n-Nonane	ND	0.10	mg/Kg wet							
n-Octacosane	ND	0.10	mg/Kg wet							
n-Octadecane	ND	0.10	mg/Kg wet							
n-Tetracosane	ND	0.10	mg/Kg wet							
n-Tetradecane	ND	0.10	mg/Kg wet							
n-Triacontane	ND	0.10	mg/Kg wet							
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet							
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet							
Surrogate: Chlorooctadecane (COD)	*3.36*		mg/Kg wet	5.00		67.2	40-140			
Surrogate: o-Terphenyl (OTP)	*3.55*		mg/Kg wet	5.05		70.3	40-140			
Surrogate: 2-Bromonaphthalene	*3.87*		mg/Kg wet	5.00		77.4	40-140			
Surrogate: 2-Fluorobiphenyl	*4.26*		mg/Kg wet	5.00		85.1	40-140			
LCS (B103793-BS1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Acenaphthene	3.49	0.10	mg/Kg wet	5.00		69.9	40-140			
Acenaphthylene	3.39	0.10	mg/Kg wet	5.00		67.9	40-140			
Anthracene	3.84	0.10	mg/Kg wet	5.00		76.9	40-140			
Benzo(a)anthracene	3.46	0.10	mg/Kg wet	5.00		69.2	40-140			
Benzo(a)pyrene	3.42	0.10	mg/Kg wet	5.00		68.5	40-140			
Benzo(b)fluoranthene	3.37	0.10	mg/Kg wet	5.00		67.4	40-140			
Benzo(g,h,i)perylene	3.47	0.10	mg/Kg wet	5.00		69.5	40-140			
Benzo(k)fluoranthene	3.35	0.10	mg/Kg wet	5.00		67.0	40-140			
Chrysene	3.50	0.10	mg/Kg wet	5.00		70.0	40-140			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103793 - SW-846 3546										
LCS (B103793-BS1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Dibenz(a,h)anthracene	3.39	0.10	mg/Kg wet	5.00		67.8	40-140			
Fluoranthene	3.51	0.10	mg/Kg wet	5.00		70.1	40-140			
Fluorene	3.57	0.10	mg/Kg wet	5.00		71.4	40-140			
Indeno(1,2,3-cd)pyrene	2.80	0.10	mg/Kg wet	5.00		56.1	40-140			
2-Methylnaphthalene	3.43	0.10	mg/Kg wet	5.00		68.7	40-140			
Naphthalene	3.24	0.10	mg/Kg wet	5.00		64.8	40-140			
Phenanthrene	3.54	0.10	mg/Kg wet	5.00		70.8	40-140			
Pyrene	3.50	0.10	mg/Kg wet	5.00		69.9	40-140			
n-Decane	2.43	0.10	mg/Kg wet	5.00		48.6	40-140			
n-Docosane	3.30	0.10	mg/Kg wet	5.00		66.0	40-140			
n-Dodecane	3.04	0.10	mg/Kg wet	5.00		60.9	40-140			
n-Eicosane	3.25	0.10	mg/Kg wet	5.00		65.0	40-140			
n-Hexacosane	3.16	0.10	mg/Kg wet	5.00		63.2	40-140			
n-Hexadecane	3.44	0.10	mg/Kg wet	5.00		68.7	40-140			
n-Hexatriacontane	3.73	0.10	mg/Kg wet	5.00		74.6	40-140			
n-Nonadecane	3.32	0.10	mg/Kg wet	5.00		66.4	40-140			
n-Nonane	1.76	0.10	mg/Kg wet	5.00		35.2	30-140			
n-Octacosane	3.12	0.10	mg/Kg wet	5.00		62.5	40-140			
n-Octadecane	3.38	0.10	mg/Kg wet	5.00		67.6	40-140			
n-Tetracosane	3.18	0.10	mg/Kg wet	5.00		63.6	40-140			
n-Tetradecane	3.30	0.10	mg/Kg wet	5.00		66.0	40-140			
n-Triacontane	3.23	0.10	mg/Kg wet	5.00		64.6	40-140			
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
Surrogate: Chlorooctadecane (COD)	*2.97*		mg/Kg wet	5.00		59.4	40-140			
Surrogate: o-Terphenyl (OTP)	*3.46*		mg/Kg wet	5.05		68.5	40-140			
Surrogate: 2-Bromonaphthalene	*3.91*		mg/Kg wet	5.00		78.1	40-140			
Surrogate: 2-Fluorobiphenyl	*4.39*		mg/Kg wet	5.00		87.7	40-140			
LCS Dup (B103793-BSD1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Acenaphthene	3.25	0.10	mg/Kg wet	5.00		65.0	40-140	7.23	25	
Acenaphthylene	3.15	0.10	mg/Kg wet	5.00		62.9	40-140	7.57	25	
Anthracene	3.66	0.10	mg/Kg wet	5.00		73.3	40-140	4.77	25	
Benzo(a)anthracene	3.33	0.10	mg/Kg wet	5.00		66.6	40-140	3.91	25	
Benzo(a)pyrene	3.30	0.10	mg/Kg wet	5.00		66.0	40-140	3.70	25	
Benzo(b)fluoranthene	3.25	0.10	mg/Kg wet	5.00		65.0	40-140	3.68	25	
Benzo(g,h,i)perylene	3.34	0.10	mg/Kg wet	5.00		66.7	40-140	4.07	25	
Benzo(k)fluoranthene	3.23	0.10	mg/Kg wet	5.00		64.6	40-140	3.68	25	
Chrysene	3.37	0.10	mg/Kg wet	5.00		67.5	40-140	3.61	25	
Dibenz(a,h)anthracene	3.28	0.10	mg/Kg wet	5.00		65.6	40-140	3.32	25	
Fluoranthene	3.36	0.10	mg/Kg wet	5.00		67.2	40-140	4.34	25	
Fluorene	3.38	0.10	mg/Kg wet	5.00		67.6	40-140	5.39	25	
Indeno(1,2,3-cd)pyrene	2.70	0.10	mg/Kg wet	5.00		54.1	40-140	3.59	25	
2-Methylnaphthalene	3.15	0.10	mg/Kg wet	5.00		63.1	40-140	8.53	25	
Naphthalene	2.97	0.10	mg/Kg wet	5.00		59.4	40-140	8.75	25	
Phenanthrene	3.40	0.10	mg/Kg wet	5.00		68.1	40-140	3.94	25	
Pyrene	3.35	0.10	mg/Kg wet	5.00		67.0	40-140	4.17	25	
n-Decane	2.31	0.10	mg/Kg wet	5.00		46.2	40-140	5.02	25	
n-Docosane	3.51	0.10	mg/Kg wet	5.00		70.2	40-140	6.05	25	
n-Dodecane	3.03	0.10	mg/Kg wet	5.00		60.5	40-140	0.586	25	
n-Eicosane	3.45	0.10	mg/Kg wet	5.00		68.9	40-140	5.79	25	
n-Hexacosane	3.37	0.10	mg/Kg wet	5.00		67.4	40-140	6.43	25	

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103793 - SW-846 3546										
LCS Dup (B103793-BSD1)				Prepared: 08/28/14 Analyzed: 08/29/14						
n-Hexadecane	3.59	0.10	mg/Kg wet	5.00		71.9	40-140	4.45	25	
n-Hexatriacontane	3.81	0.10	mg/Kg wet	5.00		76.1	40-140	2.04	25	
n-Nonadecane	3.52	0.10	mg/Kg wet	5.00		70.5	40-140	5.90	25	
n-Nonane	1.61	0.10	mg/Kg wet	5.00		32.2	30-140	8.98	25	
n-Octacosane	3.34	0.10	mg/Kg wet	5.00		66.7	40-140	6.57	25	
n-Octadecane	3.58	0.10	mg/Kg wet	5.00		71.7	40-140	5.81	25	
n-Tetracosane	3.40	0.10	mg/Kg wet	5.00		68.0	40-140	6.65	25	
n-Tetradecane	3.37	0.10	mg/Kg wet	5.00		67.4	40-140	2.09	25	
n-Triacontane	3.42	0.10	mg/Kg wet	5.00		68.4	40-140	5.79	25	
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
Surrogate: Chlorooctadecane (COD)	*3.00*		mg/Kg wet	5.00		59.9	40-140			
Surrogate: o-Terphenyl (OTP)	*3.24*		mg/Kg wet	5.05		64.2	40-140			
Surrogate: 2-Bromonaphthalene	*3.89*		mg/Kg wet	5.00		77.8	40-140			
Surrogate: 2-Fluorobiphenyl	*4.27*		mg/Kg wet	5.00		85.4	40-140			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - VPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103663 - MA VPH										
Blank (B103663-BLK1)				Prepared & Analyzed: 08/27/14						
Unadjusted C5-C8 Aliphatics	ND	10	mg/Kg wet							
C5-C8 Aliphatics	ND	10	mg/Kg wet							
Unadjusted C9-C12 Aliphatics	ND	10	mg/Kg wet							
C9-C12 Aliphatics	ND	10	mg/Kg wet							
C9-C10 Aromatics	ND	10	mg/Kg wet							
Benzene	ND	0.050	mg/Kg wet							
Butylcyclohexane	ND	0.050	mg/Kg wet							
Decane	ND	0.050	mg/Kg wet							
Ethylbenzene	ND	0.050	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.050	mg/Kg wet							
2-Methylpentane	ND	0.050	mg/Kg wet							
Naphthalene	ND	0.50	mg/Kg wet							
Nonane	ND	0.050	mg/Kg wet							
Pentane	ND	0.050	mg/Kg wet							
Toluene	ND	0.050	mg/Kg wet							
1,2,4-Trimethylbenzene	ND	0.050	mg/Kg wet							
2,2,4-Trimethylpentane	ND	0.050	mg/Kg wet							
m+p Xylene	ND	0.10	mg/Kg wet							
o-Xylene	ND	0.050	mg/Kg wet							
Surrogate: 2,5-Dibromotoluene (FID)	*2.58*		mg/Kg wet	3.33		77.3	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*2.53*		mg/Kg wet	3.33		75.8	70-130			
LCS (B103663-BS1)				Prepared & Analyzed: 08/27/14						
Benzene	0.0958	0.0010	mg/Kg wet	0.100		95.8	70-130			
Butylcyclohexane	0.0855	0.0010	mg/Kg wet	0.100		85.5	70-130			
Decane	0.0977	0.0010	mg/Kg wet	0.100		97.7	70-130			
Ethylbenzene	0.0849	0.0010	mg/Kg wet	0.100		84.9	70-130			
Methyl tert-Butyl Ether (MTBE)	0.0998	0.0010	mg/Kg wet	0.100		99.8	70-130			
2-Methylpentane	0.0965	0.0010	mg/Kg wet	0.100		96.5	70-130			
Naphthalene	0.0877	0.010	mg/Kg wet	0.100		87.7	70-130			
Nonane	0.0948	0.0010	mg/Kg wet	0.100		94.8	30-130			
Pentane	0.103	0.0010	mg/Kg wet	0.100		103	70-130			
Toluene	0.0917	0.0010	mg/Kg wet	0.100		91.7	70-130			
1,2,4-Trimethylbenzene	0.0774	0.0010	mg/Kg wet	0.100		77.4	70-130			
2,2,4-Trimethylpentane	0.108	0.0010	mg/Kg wet	0.100		108	70-130			
m+p Xylene	0.173	0.0020	mg/Kg wet	0.200		86.5	70-130			
o-Xylene	0.0846	0.0010	mg/Kg wet	0.100		84.6	70-130			
Surrogate: 2,5-Dibromotoluene (FID)	*0.0403*		mg/Kg wet	0.0400		101	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*0.0343*		mg/Kg wet	0.0400		85.7	70-130			
LCS Dup (B103663-BSD1)				Prepared & Analyzed: 08/27/14						
Benzene	0.0958	0.0010	mg/Kg wet	0.100		95.8	70-130	0.0344	25	
Butylcyclohexane	0.0902	0.0010	mg/Kg wet	0.100		90.2	70-130	5.42	25	
Decane	0.103	0.0010	mg/Kg wet	0.100		103	70-130	5.16	25	
Ethylbenzene	0.0858	0.0010	mg/Kg wet	0.100		85.8	70-130	1.05	25	
Methyl tert-Butyl Ether (MTBE)	0.0953	0.0010	mg/Kg wet	0.100		95.3	70-130	4.61	25	
2-Methylpentane	0.0965	0.0010	mg/Kg wet	0.100		96.5	70-130	0.0135	25	
Naphthalene	0.0899	0.010	mg/Kg wet	0.100		89.9	70-130	2.42	25	
Nonane	0.100	0.0010	mg/Kg wet	0.100		100	30-130	5.44	25	
Pentane	0.103	0.0010	mg/Kg wet	0.100		103	70-130	0.428	25	
Toluene	0.0923	0.0010	mg/Kg wet	0.100		92.3	70-130	0.689	25	
1,2,4-Trimethylbenzene	0.0781	0.0010	mg/Kg wet	0.100		78.1	70-130	0.922	25	

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - VPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103663 - MA VPH										
LCS Dup (B103663-BSD1)				Prepared & Analyzed: 08/27/14						
2,2,4-Trimethylpentane	0.106	0.0010	mg/Kg wet	0.100		106	70-130	1.95	25	
m+p Xylene	0.175	0.0020	mg/Kg wet	0.200		87.7	70-130	1.39	25	
o-Xylene	0.0857	0.0010	mg/Kg wet	0.100		85.7	70-130	1.26	25	
Surrogate: 2,5-Dibromotoluene (FID)	*0.0414*		mg/Kg wet	0.0400		104	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*0.0374*		mg/Kg wet	0.0400		93.5	70-130			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103696 - SW-846 7471										
Blank (B103696-BLK1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Mercury	ND	0.025	mg/Kg wet							
LCS (B103696-BS1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Mercury	5.82	0.37	mg/Kg wet	5.76		101	71.2-128.6			
LCS Dup (B103696-BSD1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Mercury	5.56	0.39	mg/Kg wet	5.76		96.4	71.2-128.6	4.72	30	
Batch B103724 - SW-846 3050B										
Blank (B103724-BLK1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Arsenic	ND	2.5	mg/Kg wet							
Barium	ND	2.5	mg/Kg wet							
Cadmium	ND	0.25	mg/Kg wet							
Chromium	ND	0.50	mg/Kg wet							
Lead	ND	0.75	mg/Kg wet							
Selenium	ND	5.0	mg/Kg wet							
Silver	ND	0.50	mg/Kg wet							
LCS (B103724-BS1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Arsenic	123	5.0	mg/Kg wet	122		101	77.8-122.1			
Barium	166	5.0	mg/Kg wet	167		99.3	82-117.4			
Cadmium	88.0	0.50	mg/Kg wet	88.0		100	81.9-118.2			
Chromium	105	1.0	mg/Kg wet	102		103	78.7-120.6			
Lead	90.3	1.5	mg/Kg wet	94.5		95.6	82.4-117.8			
Selenium	161	10	mg/Kg wet	157		102	77.1-122.3			
Silver	32.4	1.0	mg/Kg wet	34.2		94.7	74.3-125.4			
LCS Dup (B103724-BSD1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Arsenic	121	5.0	mg/Kg wet	122		98.9	77.8-122.1	1.70	30	
Barium	168	5.0	mg/Kg wet	167		101	82-117.4	1.28	30	
Cadmium	89.0	0.50	mg/Kg wet	88.0		101	81.9-118.2	1.14	30	
Chromium	104	1.0	mg/Kg wet	102		102	78.7-120.6	0.942	30	
Lead	90.1	1.5	mg/Kg wet	94.5		95.3	82.4-117.8	0.264	30	
Selenium	162	10	mg/Kg wet	157		103	77.1-122.3	0.647	30	
Silver	32.0	1.0	mg/Kg wet	34.2		93.6	74.3-125.4	1.20	30	
MRL Check (B103724-MRL1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Lead	0.710	0.72	mg/Kg wet	0.720		98.6	80-120			

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103865 - % Solids										
Duplicate (B103865-DUP6)	**Source: 14H1125-19**		Prepared: 08/29/14 Analyzed: 09/02/14							
% Solids	86.0		% Wt		84.9			1.29	20	

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-5 (0-0.5)

Lab Sample ID: 14H1125-09 Date(s) Analyzed: 08/30/2014 08/30/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	1.8	
	2	0.00	0.00	0.00	2.0	10.5

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-5 (0.5-2)

Lab Sample ID: 14H1125-10 Date(s) Analyzed: 08/30/2014 08/30/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	9.2	
	2	0.00	0.00	0.00	11	17.9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-6 (0.5-2)

Lab Sample ID: 14H1125-14 Date(s) Analyzed: 08/30/2014 08/30/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.19	
	2	0.00	0.00	0.00	0.26	31.1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-10 (0-0.5)

Lab Sample ID: 14H1125-17 Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.30	
	2	0.00	0.00	0.00	0.39	27.1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B103738-BS1 Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.23	
	2	0.00	0.00	0.00	0.22	4
Aroclor-1260	1	0.00	0.00	0.00	0.21	
	2	0.00	0.00	0.00	0.21	1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B103738-BSD1 Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.22	
	2	0.00	0.00	0.00	0.21	5
Aroclor-1260	1	0.00	0.00	0.00	0.19	
	2	0.00	0.00	0.00	0.20	3

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
L-02	Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.
L-14	Compound classified by MA CAM as difficult with acceptable recoveries of 40-160%. Recovery does not meet 70-130% criteria but does meet difficult compound criteria.
O-01	Soil/methanol ratio does not meet method specifications. Excess amount of soil. Sample was completely covered with methanol, but with less than the method-specified amount.
O-03	Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
O-32	A five times dilution was performed as part of the standard analytical procedure.
P-04	Due to continuing calibration non-conformance on the confirmatory detector, the lower of two results was reported.
RL-05	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
RL-06	Elevated reporting limit due to high concentration of non-target compounds. MA CAM reporting limit not met.
S-01	The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
V-06	Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.
V-16	Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
V-20	Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
MADEP-EPH-04-1.1 in Soil	
C9-C18 Aliphatics	CT,NC,WA,ME,ME,NH-P
C19-C36 Aliphatics	CT,NC,WA,ME,ME,NH-P
Unadjusted C11-C22 Aromatics	CT,NC,WA,ME,ME,NH-P
C11-C22 Aromatics	CT,NC,WA,ME,ME,NH-P
Acenaphthene	CT,NC,WA,ME,ME,NH-P
Acenaphthylene	CT,NC,WA,ME,ME,NH-P
Anthracene	CT,NC,WA,ME,ME,NH-P
Benzo(a)anthracene	CT,NC,WA,ME,ME,NH-P
Benzo(a)pyrene	CT,NC,WA,ME,ME,NH-P
Benzo(b)fluoranthene	CT,NC,WA,ME,ME,NH-P
Benzo(g,h,i)perylene	CT,NC,WA,ME,ME,NH-P
Benzo(k)fluoranthene	CT,NC,WA,ME,ME,NH-P
Chrysene	CT,NC,WA,ME,ME,NH-P
Dibenz(a,h)anthracene	CT,NC,WA,ME,ME,NH-P
Fluoranthene	CT,NC,WA,ME,ME,NH-P
Fluorene	CT,NC,WA,ME,ME
Indeno(1,2,3-cd)pyrene	CT,NC,WA,ME,ME,NH-P
2-Methylnaphthalene	CT,NC,WA,ME,ME
Naphthalene	CT,NC,WA,ME,ME,NH-P
Phenanthrene	CT,NC,WA,ME,ME,NH-P
Pyrene	CT,NC,WA,ME,ME,NH-P
MADEP-VPH-04-1.1 in Soil	
Unadjusted C5-C8 Aliphatics	CT,NC,WA,ME,NH-P
C5-C8 Aliphatics	CT,NC,WA,ME,NH-P
Unadjusted C9-C12 Aliphatics	CT,NC,WA,ME,NH-P
C9-C12 Aliphatics	CT,NC,WA,ME,NH-P
C9-C10 Aromatics	CT,NC,WA,ME,NH-P
Benzene	CT,NC,WA,ME,NH-P
Ethylbenzene	CT,NC,WA,ME,NH-P
Methyl tert-Butyl Ether (MTBE)	CT,NC,WA,ME,NH-P
Naphthalene	CT,NC,WA,ME,NH-P
Toluene	CT,NC,WA,ME,NH-P
m+p Xylene	CT,NC,WA,ME,NH-P
o-Xylene	CT,NC,WA,ME,NH-P
SW-846 6010C in Soil	
Arsenic	CT,NH,NY,ME,NC,VA,NJ
Barium	CT,NH,NY,ME,NC,VA,NJ
Cadmium	CT,NH,NY,ME,NC,VA,NJ
Chromium	CT,NH,NY,ME,NC,VA,NJ
Lead	CT,NH,NY,AIHA,ME,NC,VA,NJ
Selenium	CT,NH,NY,ME,NC,VA,NJ
Silver	CT,NH,NY,ME,NC,VA,NJ
SW-846 7471B in Soil	
Mercury	CT,NH,NY,NC,ME,VA,NJ
SW-846 8082A in Soil	

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Soil	
Aroclor-1016	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA,NJ
SW-846 8260C in Soil	
Acetone	CT,NH,NY,ME
Benzene	CT,NH,NY,ME
Bromobenzene	NH,NY,ME
Bromochloromethane	NH,NY,ME
Bromodichloromethane	CT,NH,NY,ME
Bromoform	CT,NH,NY,ME
Bromomethane	CT,NH,NY,ME
2-Butanone (MEK)	CT,NH,NY,ME
n-Butylbenzene	CT,NH,NY,ME
sec-Butylbenzene	CT,NH,NY,ME
tert-Butylbenzene	CT,NH,NY,ME
Carbon Disulfide	CT,NH,NY,ME
Carbon Tetrachloride	CT,NH,NY,ME
Chlorobenzene	CT,NH,NY,ME
Chlorodibromomethane	CT,NH,NY,ME
Chloroethane	CT,NH,NY,ME
Chloroform	CT,NH,NY,ME
Chloromethane	CT,NH,NY,ME
2-Chlorotoluene	CT,NH,NY,ME
4-Chlorotoluene	CT,NH,NY,ME
Dibromomethane	NH,NY,ME
1,2-Dichlorobenzene	CT,NH,NY,ME
1,3-Dichlorobenzene	CT,NH,NY,ME
1,4-Dichlorobenzene	CT,NH,NY,ME
Dichlorodifluoromethane (Freon 12)	NY,ME
1,1-Dichloroethane	CT,NH,NY,ME
1,2-Dichloroethane	CT,NH,NY,ME
1,1-Dichloroethylene	CT,NH,NY,ME
cis-1,2-Dichloroethylene	CT,NH,NY,ME
trans-1,2-Dichloroethylene	CT,NH,NY,ME
1,2-Dichloropropane	CT,NH,NY,ME

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260C in Soil	
1,3-Dichloropropane	NH,NY,ME
2,2-Dichloropropane	NH,NY,ME
1,1-Dichloropropene	NH,NY,ME
cis-1,3-Dichloropropene	CT,NH,NY,ME
trans-1,3-Dichloropropene	CT,NH,NY,ME
Ethylbenzene	CT,NH,NY,ME
Hexachlorobutadiene	NH,NY,ME
2-Hexanone (MBK)	CT,NH,NY,ME
Isopropylbenzene (Cumene)	CT,NH,NY,ME
p-Isopropyltoluene (p-Cymene)	NH,NY
Methyl tert-Butyl Ether (MTBE)	NY
Methylene Chloride	CT,NH,NY,ME
4-Methyl-2-pentanone (MIBK)	CT,NH,NY
Naphthalene	NH,NY,ME
n-Propylbenzene	NH,NY
Styrene	CT,NH,NY,ME
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME
Tetrachloroethylene	CT,NH,NY,ME
Toluene	CT,NH,NY,ME
1,2,3-Trichlorobenzene	ME
1,2,4-Trichlorobenzene	NH,NY,ME
1,1,1-Trichloroethane	CT,NH,NY,ME
1,1,2-Trichloroethane	CT,NH,NY,ME
Trichloroethylene	CT,NH,NY,ME
Trichlorofluoromethane (Freon 11)	CT,NH,NY,ME
1,2,3-Trichloropropane	NH,NY,ME
1,2,4-Trimethylbenzene	CT,NH,NY,ME
1,3,5-Trimethylbenzene	CT,NH,NY,ME
Vinyl Chloride	CT,NH,NY,ME
m+p Xylene	CT,NH,NY,ME
o-Xylene	CT,NH,NY,ME

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The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2015
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2015
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2015
RI	Rhode Island Department of Health	LAO00112	12/30/2014
NC	North Carolina Div. of Water Quality	652	12/31/2014
NJ	New Jersey DEP	MA007 NELAP	06/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2015
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2015
WA	State of Washington Department of Ecology	C2065	02/23/2015
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2014
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2014

con-test® ANALYTICAL LABORATORY
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www.contestlabs.com

CHAIN OF CUSTODY RECORD

14A1125

Rev 04.05.12

39 Spruce Street
East longmeadow, MA 01028

Company Name: WESTON & SAMPSON
Telephone: 800 SAMPSON
Address: 5 Centennial Dr
PEABODY, MA
Project # BLDG 105
Client PO#
Attention: JOE SPENCER
Project Location: CHARLESTOWN, MA
Sampled By: JRC / PK

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ☒ WEBSITE
Fax #
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

ANALYSIS REQUESTED

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	PCB w/ SOXHLET	EPH w/ PAHs, RCRA 8	VPH NO TARGETS, 8260
01	SB-13 (0-0.5)	8/22	1300		X	S	U	X		
02	SB-13 (0.5-2)		1310					X		
03	SB-13 (2-4)		1320							
04	SB-13 (4-6)		1325					~~X~~	X	X
05	SB-15 (0-0.5)		1215					X		
06	SB-15 (0.5-2)		1220					X		
07	SB-15 (2-4)		1225							
08	SB-15 (4-6)		1230							
09	SB-5 (0-0.5)		0930					X		
10	SB-5 (0.5-2)		0935					X		

# of Containers: 1 | 1 | 2/2
** Preservation: — | — | MB
***Container Co: A | A | V

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V=vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other

Comments:
PLEASE HOLD ~~#~~ SAMPLES THAT ARE NOT MARKED FOR ANALYSIS [LE, SB-15 (2-4)]

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	[signature]	Date/Time: 8/22 1700
Received by: (signature)	[signature] 8/25/14	Date/Time: 12:30pm
Relinquished by: (signature)	[signature] 8/25/14	Date/Time: 8:00pm
Received by: (signature)	Cassie Cuth 4.4° 8.25.14	Date/Time: 2000

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5-day

RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts: S-1
Connecticut:
Other:

Is your project MCP or RCP?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

†† TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

con-test ANALYTICAL LABORATORY
Phone: 413-525-2332
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Email: info@contestlabs.com
www.contestlabs.com

CHAIN OF CUSTODY RECORD

14H1125

Rev 04.05.12

39 Spruce Street
East longmeadow, MA 01028

Company Name: WESTON & SAMPSON
Address: 5 Centennial Dr
PEABODY, MA
Attention: JOE SPENCER
Project Location: CHARLESTOWN, MA
Sampled By: JRS / PK

Telephone: 800 SAMPSON
Project #: BUDG 105
Client PO#:

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ☒ WEBSITE
Fax #:
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	PUBS W SOXHLET	EAH W PAHs, RCRA 8	VPH W NO TARGETS, 8260	# of Containers	** Preservation	***Container Co
											1	1	2/2
											1	-	8/M
											A	A	V
11	SB-5 (2-4)	8/22	0940		X	S	4						
12	SB-5 (4-6)		0945										
13	SB-6 (0-0.5)		0900					X					
14	SB-6 (0.5-2)		0905					X					
15	SB-6 (2-4)		0910										
16	SB-6 (4-6)		0915										
17	SB-10 (0-0.5)		0820					X					
18	SB-10 (0.5-2)		0825					X					
19	SB-10 (2-4)		0830		V		V		X	X			
20	SB-10 (4-6)		0835										

ANALYSIS REQUESTED

NO PUB

Comments:
PLEASE HOLD SAMPLES THAT ARE NOT MARKED FOR ANALYSIS [I.E., SB-6 (2-4)]

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V=vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other_____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL= sludge
O = other_____

Dissolved Met
○ Field Filtered
○ Lab to Filter

Relinquished by: (signature)	Date/Time:
	8/25/14 1700
Received by: (signature)	Date/Time:
	8/25/14 12:30 pm
Relinquished by: (signature)	Date/Time:
	8/25/14 8:00 pm
Received by: (signature)	Date/Time:
Cassiletti 4.4°	8.25.14 2000

Turnaround ††
☐ 7-Day
☐ 10-Day
☑ Other 5-Day
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts: S1
Connecticut:
Other:

Is your project MCP or RCP ?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

†† TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

39 Spruce St.
East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
www.contestlabs.com

con-test® ANALYTICAL LABORATORY

Sample Receipt Checklist

CLIENT NAME: Weston & Sampson RECEIVED BY: CC DATE: 8.25.14

1) **Was the chain(s) of custody relinquished and signed?** (Yes) No No CoC Included

2) **Does the chain agree with the samples?** (Yes) No
If not, explain:

3) **Are all the samples in good condition?** (Yes) No
If not, explain:

4) **How were the samples received:**
On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒

Were the samples received in Temperature Compliance of (2-6°C)? (Yes) No N/A

Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.4°

5) **Are there Dissolved samples for the lab to filter?** Yes (No)
Who was notified _____ Date _____ Time _____

6) **Are there any RUSH or SHORT HOLDING TIME samples?** Yes (No)
Who was notified _____ Date _____ Time _____

7) **Location where samples are stored:** 19

Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature: _____

8) **Do all samples have the proper Acid pH:** Yes No (N/A) _____

9) **Do all samples have the proper Base pH:** Yes No (N/A) _____

10) **Was the PC notified of any discrepancies with the CoC vs the samples:** Yes No (N/A)

Containers received at Con-Test

	# of containers			# of containers
1 Liter Amber			8 oz amber/clear jar	2A
500 mL Amber			4 oz amber/clear jar	20A
250 mL Amber (8oz amber)			2 oz amber/clear jar	
1 Liter Plastic			Plastic Bag / Ziploc	
500 mL Plastic			SOC Kit	
250 mL plastic			Non-ConTest Container	
40 mL Vial - type listed below	8		Perchlorate Kit	
Colisure / bacteria bottle			Flashpoint bottle	
Dissolved Oxygen bottle			Other glass jar	
Encore			Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol 4
Bisulfate 4 # DI Water _____
Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)
Any False statement will be brought to the attention of Client

Question	Answer (True/False) T/F/NA	Comment
1) The cooler's custody seal, if present, is intact.	NA	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	T	
18) There is sufficient volume for all requsted analyses. including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	T	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	NA	
21) Samples do not require splitting or compositing.	T	

Who notified of False statements? **Date/Time:**

Log-In Technician Initials: CC **Date/Time:** 8.25.14 2000

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 14H1125
Project Location: Charlestown, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

14H1125-01 thru 14H1125-19

Matrices: Soil

CAM Protocol (check all that below)

8260 VOC CAM II A (X)	7470/7471 Hg CAM IIIB (X)	MassDEP VPH CAM IV A (X)	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A (X)	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )
6010 Metals CAM III A (X)	6020 Metals CAM III D ( )	8082 PCB CAM V A (X)	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☑ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]
	A response to questions G, H and I below is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]
	<u>Data User Note:</u> Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.		
H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☐ Yes	☑ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 09/03/14

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

September 3, 2014

Joe Spencer
Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960

Project Location: Charlestown, MA
Client Job Number:
Project Number: BLDG 105
Laboratory Work Order Number: 14H1126

Enclosed are results of analyses for samples received by the laboratory on August 25, 2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960
ATTN: Joe Spencer

REPORT DATE: 9/3/2014

PURCHASE ORDER NUMBER:

PROJECT NUMBER: BLDG 105

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 14H1126

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Charlestown, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
SB-8 (0-0.5)	14H1126-01	Soil		SM 2540G	
				SW-846 8082A	
SB-8 (0.5-2)	14H1126-02	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
				SW-846 6010C	
				SW-846 7471B	
				SW-846 8082A	
				SW-846 8260C	
SB-14 (0-2)	14H1126-04	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
				SW-846 6010C	
				SW-846 7471B	
				SW-846 8082A	
				SW-846 8260C	
SB-DUP-1	14H1126-05	Soil		SM 2540G	
				SW-846 8082A	
SB-DUP-2	14H1126-06	Soil		SM 2540G	
				SW-846 8082A	
SB-DUP-3	14H1126-07	Soil		SM 2540G	
				SW-846 8082A	
CS-15	14H1126-08	Product/Solid		SW-846 8082A	
CS-14	14H1126-09	Product/Solid		SW-846 8082A	
CS-5	14H1126-10	Product/Solid		SW-846 8082A	
CS-4	14H1126-11	Product/Solid		SW-846 8082A	
CS-13	14H1126-12	Product/Solid		SW-846 8082A	
CS-16	14H1126-13	Product/Solid		SW-846 8082A	
CS-3	14H1126-14	Product/Solid		SW-846 8082A	
CS-6	14H1126-15	Product/Solid		SW-846 8082A	
CS-DUP-1	14H1126-16	Product/Solid		SW-846 8082A	
Trip Blank	14H1126-17	Trip Blank Soil		SW-846 8260C	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

For method MA VPH, only hydrocarbon ranges were requested and reported

For method 6010, only RCRA 8 metals were requested and reported.

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SW-846 8082A

Qualifications:

MS-21

Matrix spike and/or spike duplicate recovery bias high due to contribution of other Aroclors present in the source sample.

Analyte & Samples(s) Qualified:

Aroclor-1016
B103589-MS1, B103589-MSD1

Aroclor-1016 [2C]
B103589-MS1, B103589-MSD1

Aroclor-1260
B103589-MS1, B103589-MSD1

Aroclor-1260 [2C]
B103589-MS1, B103589-MSD1

O-03

Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.

Analyte & Samples(s) Qualified:

Aroclor-1254
14H1126-09[CS-14], 14H1126-10[CS-5], 14H1126-11[CS-4], 14H1126-16[CS-DUP-1]

Aroclor-1254 [2C]
14H1126-09[CS-14], 14H1126-10[CS-5], 14H1126-11[CS-4], 14H1126-16[CS-DUP-1]

O-04

Sample fingerprint does not match standard exactly. Sample was quantitated against the closest matching standard.

Analyte & Samples(s) Qualified:

Aroclor-1254
14H1126-05[SB-DUP-1]

Aroclor-1254 [2C]
14H1126-05[SB-DUP-1]

O-32

A five times dilution was performed as part of the standard analytical procedure.

Analyte & Samples(s) Qualified:

14H1126-06[SB-DUP-2], 14H1126-07[SB-DUP-3]

S-01

The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

Analyte & Samples(s) Qualified:

Decachlorobiphenyl
14H1126-08[CS-15], 14H1126-13[CS-16]

Decachlorobiphenyl [2C]
14H1126-08[CS-15], 14H1126-13[CS-16]

Tetrachloro-m-xylene
14H1126-08[CS-15], 14H1126-13[CS-16]

Tetrachloro-m-xylene [2C]
14H1126-08[CS-15], 14H1126-13[CS-16]

V-06

Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.

Analyte & Samples(s) Qualified:

Aroclor-1016
B103590-BS1, B103590-BSD1

SW-846 8260C

Qualifications:

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L-02

Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.

Analyte & Samples(s) Qualified:

Acetone
B103519-BS1, B103519-BSD1

Bromoform
B103519-BS1, B103519-BSD1

L-14

Compound classified by MA CAM as difficult with acceptable recoveries of 40-160%. Recovery does not meet 70-130% criteria but does meet difficult compound criteria.

Analyte & Samples(s) Qualified:

1,4-Dioxane
B103519-BS1, B103519-BSD1

2-Butanone (MEK)
B103519-BS1, B103519-BSD1

2-Hexanone (MBK)
B103519-BS1, B103519-BSD1

Bromomethane
B103519-BS1, B103679-BS1

RL-07

Elevated reporting limit based on lowest point in calibration.
MA CAM reporting limit not met.

Analyte & Samples(s) Qualified:

1,2-Dibromo-3-chloropropane (DB
14H1126-17[Trip Blank]

1,2-Dichloroethane
14H1126-17[Trip Blank]

Bromomethane
14H1126-17[Trip Blank]

Carbon Disulfide
14H1126-17[Trip Blank]

Chloromethane
14H1126-17[Trip Blank]

Methylene Chloride
14H1126-17[Trip Blank]

V-06

Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.

Analyte & Samples(s) Qualified:

n-Butylbenzene
B103519-BS1, B103519-BSD1

V-16

Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.

Analyte & Samples(s) Qualified:

1,4-Dioxane
14H1126-02[SB-8 (0.5-2)], 14H1126-04[SB-14 (0-2)], 14H1126-17[Trip Blank], B103519-BLK1, B103519-BS1, B103519-BSD1, B103679-BLK1, B103679-BS1, B103679-BSD1

Tetrahydrofuran
14H1126-17[Trip Blank], B103519-BLK1, B103519-BS1, B103519-BSD1

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V-20

Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

1,1,2,2-Tetrachloroethane
B103519-BS1, B103519-BSD1

1,2,3-Trichlorobenzene
B103519-BS1, B103519-BSD1

1,2,3-Trichloropropane
B103519-BS1, B103519-BSD1

1,2,4-Trimethylbenzene
B103519-BS1, B103519-BSD1

Benzene
B103519-BS1, B103519-BSD1

Bromochloromethane
B103519-BS1, B103519-BSD1

Bromoform
B103519-BS1, B103519-BSD1

Dichlorodifluoromethane (Freon 12
B103519-BS1, B103519-BSD1

Naphthalene
B103519-BS1, B103519-BSD1

MADEP-EPH-04-1.1

SPE cartridge contamination with non-petroleum compounds, if present, is verified by GC/MS in each method blank per extraction batch and excluded from C 11-C22 aromatic range fraction in all samples in the batch. No significant modifications were made to the method.

MADEP-VPH-04-1.1

No significant modifications were made to the method. All VPH samples were received preserved properly in methanol with a soil/methanol ratio of 1:1 +/- 25% completely covered by methanol in the proper containers specified on the chain-of-custody form unless specified in this narrative.

SW-846 8260C

Laboratory control sample recoveries for required MCP Data Enhancement 8260 compounds were all within limits specified by the method except for “difficult analytes” where recovery control limits of 40-160% are used and/or unless otherwise listed in this narrative. Difficult analytes: MIBK, MEK, acetone, 1,4-dioxane, chloromethane, dichlorodifluoromethane, 2-hexanone, and bromomethane.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Daren J. Damboragian
Laboratory Manager

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-8 (0-0.5) | Sampled: 8/22/2014 10:10

Sample ID: 14H1126-01

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 13:59	JMB
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 13:59	JMB
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 13:59	JMB
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 13:59	JMB
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 13:59	JMB
Aroclor-1254 [1]	1.1	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 13:59	JMB
Aroclor-1260 [2]	0.36	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 13:59	JMB
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 13:59	JMB
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 13:59	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	89.6	30-150		8/29/14 13:59
Decachlorobiphenyl [2]	86.6	30-150		8/29/14 13:59
Tetrachloro-m-xylene [1]	80.8	30-150		8/29/14 13:59
Tetrachloro-m-xylene [2]	91.2	30-150		8/29/14 13:59

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-8 (0-0.5) | Sampled: 8/22/2014 10:10

Sample ID: 14H1126-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	86.4		% Wt	1		SM 2540G	9/2/14	9/2/14 16:17	WAL

con-test® ANALYTICAL LABORATORY
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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-8 (0.5-2) | Sampled: 8/22/2014 10:15

Sample ID: 14H1126-02

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.11	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Benzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Bromobenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Bromochloromethane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Bromodichloromethane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Bromoform	ND	0.011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Bromomethane	ND	0.011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
2-Butanone (MEK)	ND	0.043	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
n-Butylbenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
sec-Butylbenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
tert-Butylbenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Carbon Disulfide	ND	0.021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Carbon Tetrachloride	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Chlorobenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Chlorodibromomethane	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Chloroethane	ND	0.011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Chloroform	ND	0.0043	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Chloromethane	ND	0.011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
2-Chlorotoluene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
4-Chlorotoluene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,2-Dibromoethane (EDB)	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Dibromomethane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,2-Dichlorobenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,3-Dichlorobenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,4-Dichlorobenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,1-Dichloroethane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,2-Dichloroethane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,1-Dichloroethylene	ND	0.0043	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
cis-1,2-Dichloroethylene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
trans-1,2-Dichloroethylene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,2-Dichloropropane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,3-Dichloropropane	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
2,2-Dichloropropane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,1-Dichloropropene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
cis-1,3-Dichloropropene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
trans-1,3-Dichloropropene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Diethyl Ether	ND	0.011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Diisopropyl Ether (DIPE)	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,4-Dioxane	ND	0.11	mg/Kg dry	1	V-16	SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Ethylbenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-8 (0.5-2) | Sampled: 8/22/2014 10:15

Sample ID: 14H1126-02

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
2-Hexanone (MBK)	ND	0.021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Isopropylbenzene (Cumene)	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0043	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Methylene Chloride	ND	0.011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Naphthalene	ND	0.011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
n-Propylbenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Styrene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,1,1,2-Tetrachloroethane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,1,2,2-Tetrachloroethane	ND	0.0011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Tetrachloroethylene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Tetrahydrofuran	ND	0.011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Toluene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,2,3-Trichlorobenzene	ND	0.011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,2,4-Trichlorobenzene	ND	0.0043	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,1,1-Trichloroethane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,1,2-Trichloroethane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Trichloroethylene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Trichlorofluoromethane (Freon 11)	ND	0.011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,2,3-Trichloropropane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,2,4-Trimethylbenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
1,3,5-Trimethylbenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
Vinyl Chloride	ND	0.011	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
m+p Xylene	ND	0.0043	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF
o-Xylene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:22	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	117	70-130		8/27/14 15:22
Toluene-d8	97.4	70-130		8/27/14 15:22
4-Bromofluorobenzene	95.2	70-130		8/27/14 15:22

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-8 (0.5-2) | Sampled: 8/22/2014 10:15

Sample ID: 14H1126-02

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:12	JMB
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:12	JMB
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:12	JMB
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:12	JMB
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:12	JMB
Aroclor-1254 [1]	0.32	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:12	JMB
Aroclor-1260 [2]	0.15	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:12	JMB
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:12	JMB
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:12	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	77.6	30-150		8/29/14 14:12
Decachlorobiphenyl [2]	75.0	30-150		8/29/14 14:12
Tetrachloro-m-xylene [1]	67.8	30-150		8/29/14 14:12
Tetrachloro-m-xylene [2]	73.2	30-150		8/29/14 14:12

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-8 (0.5-2) | Sampled: 8/22/2014 10:15

Sample ID: 14H1126-02

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	1800	250	mg/Kg dry	20		MADEP-EPH-04-1.1	8/28/14	9/3/14 13:22	SCS
C19-C36 Aliphatics	660	120	mg/Kg dry	10		MADEP-EPH-04-1.1	8/28/14	9/3/14 12:20	SCS
Unadjusted C11-C22 Aromatics	620	61	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 12:20	SCS
C11-C22 Aromatics	600	61	mg/Kg dry	5		MADEP-EPH-04-1.1	8/28/14	9/3/14 12:20	SCS
Acenaphthene	0.45	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:22	SCS
Acenaphthylene	0.16	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:22	SCS
Anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:22	SCS
Benzo(a)anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:22	SCS
Benzo(a)pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:22	SCS
Benzo(b)fluoranthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:22	SCS
Benzo(g,h,i)perylene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:22	SCS
Benzo(k)fluoranthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:22	SCS
Chrysene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:22	SCS
Dibenz(a,h)anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:22	SCS
Fluoranthene	0.30	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:22	SCS
Fluorene	0.84	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:22	SCS
Indeno(1,2,3-cd)pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:22	SCS
2-Methylnaphthalene	8.2	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:22	SCS
Naphthalene	3.9	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:22	SCS
Phenanthrene	0.75	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:22	SCS
Pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:22	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	67.8	40-140		9/3/14 6:22
o-Terphenyl (OTP)	84.9	40-140		9/3/14 6:22
2-Bromonaphthalene	92.4	40-140		9/3/14 6:22
2-Fluorobiphenyl	108	40-140		9/3/14 6:22

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-8 (0.5-2) | Sampled: 8/22/2014 10:15

Sample ID: 14H1126-02

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - VPH

Soil/Methanol Preservation Ratio: 0.79

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	18	mg/Kg dry	1		MADEP-VPH-04-1.1	8/27/14	8/27/14 20:39	EEH
C5-C8 Aliphatics	ND	18	mg/Kg dry	1		MADEP-VPH-04-1.1	8/27/14	8/27/14 20:39	EEH
Unadjusted C9-C12 Aliphatics	33	18	mg/Kg dry	1		MADEP-VPH-04-1.1	8/27/14	8/27/14 20:39	EEH
C9-C12 Aliphatics	ND	18	mg/Kg dry	1		MADEP-VPH-04-1.1	8/27/14	8/27/14 20:39	EEH
C9-C10 Aromatics	22	18	mg/Kg dry	1		MADEP-VPH-04-1.1	8/27/14	8/27/14 20:39	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,5-Dibromotoluene (FID)	104	70-130		8/27/14 20:39
2,5-Dibromotoluene (PID)	99.1	70-130		8/27/14 20:39

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-8 (0.5-2) | Sampled: 8/22/2014 10:15

Sample ID: 14H1126-02

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	12	2.9	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:25	OP
Barium	90	2.9	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:25	OP
Cadmium	1.1	0.29	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:25	OP
Chromium	76	0.59	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:25	OP
Lead	450	0.88	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:25	OP
Mercury	0.25	0.031	mg/Kg dry	1		SW-846 7471B	8/27/14	8/28/14 12:57	JMP
Selenium	ND	5.9	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:25	OP
Silver	ND	0.59	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:25	OP

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-8 (0.5-2) | Sampled: 8/22/2014 10:15

Sample ID: 14H1126-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	80.4		% Wt	1		SM 2540G	8/29/14	9/2/14 12:24	MXG

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-14 (0-2) | Sampled: 8/21/2014 10:50

Sample ID: 14H1126-04

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Benzene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Bromobenzene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Bromochloromethane	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Bromodichloromethane	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Bromoform	ND	0.0060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Bromomethane	ND	0.0060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
2-Butanone (MEK)	ND	0.024	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
n-Butylbenzene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
sec-Butylbenzene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
tert-Butylbenzene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Carbon Disulfide	ND	0.012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Carbon Tetrachloride	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Chlorobenzene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Chlorodibromomethane	ND	0.00060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Chloroethane	ND	0.0060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Chloroform	ND	0.0024	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Chloromethane	ND	0.0060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
2-Chlorotoluene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
4-Chlorotoluene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,2-Dibromoethane (EDB)	ND	0.00060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Dibromomethane	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,2-Dichlorobenzene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,3-Dichlorobenzene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,4-Dichlorobenzene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.0060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,1-Dichloroethane	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,2-Dichloroethane	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,1-Dichloroethylene	ND	0.0024	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
cis-1,2-Dichloroethylene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
trans-1,2-Dichloroethylene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,2-Dichloropropane	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,3-Dichloropropane	ND	0.00060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
2,2-Dichloropropane	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,1-Dichloropropene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
cis-1,3-Dichloropropene	ND	0.00060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
trans-1,3-Dichloropropene	ND	0.00060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Diethyl Ether	ND	0.0060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Diisopropyl Ether (DIPE)	ND	0.00060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,4-Dioxane	ND	0.060	mg/Kg dry	1	V-16	SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Ethylbenzene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-14 (0-2) | Sampled: 8/21/2014 10:50

Sample ID: 14H1126-04

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
2-Hexanone (MBK)	ND	0.012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Isopropylbenzene (Cumene)	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0024	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Methylene Chloride	ND	0.0060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Naphthalene	ND	0.0060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
n-Propylbenzene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Styrene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,1,1,2-Tetrachloroethane	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,1,2,2-Tetrachloroethane	ND	0.00060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Tetrachloroethylene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Tetrahydrofuran	ND	0.0060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Toluene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,2,3-Trichlorobenzene	ND	0.0060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,2,4-Trichlorobenzene	ND	0.0024	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,1,1-Trichloroethane	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,1,2-Trichloroethane	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Trichloroethylene	0.0013	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,2,3-Trichloropropane	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,2,4-Trimethylbenzene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
1,3,5-Trimethylbenzene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
Vinyl Chloride	ND	0.0060	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
m+p Xylene	ND	0.0024	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF
o-Xylene	ND	0.0012	mg/Kg dry	1		SW-846 8260C	8/27/14	8/27/14 15:50	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	114	70-130		8/27/14 15:50
Toluene-d8	96.8	70-130		8/27/14 15:50
4-Bromofluorobenzene	97.0	70-130		8/27/14 15:50

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-14 (0-2) | Sampled: 8/21/2014 10:50

Sample ID: 14H1126-04

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.24	mg/Kg dry	10		SW-846 8082A	8/26/14	8/29/14 16:27	JMB
Aroclor-1221 [1]	ND	0.24	mg/Kg dry	10		SW-846 8082A	8/26/14	8/29/14 16:27	JMB
Aroclor-1232 [1]	ND	0.24	mg/Kg dry	10		SW-846 8082A	8/26/14	8/29/14 16:27	JMB
Aroclor-1242 [1]	ND	0.24	mg/Kg dry	10		SW-846 8082A	8/26/14	8/29/14 16:27	JMB
Aroclor-1248 [1]	ND	0.24	mg/Kg dry	10		SW-846 8082A	8/26/14	8/29/14 16:27	JMB
Aroclor-1254 [1]	1.8	0.24	mg/Kg dry	10		SW-846 8082A	8/26/14	8/29/14 16:27	JMB
Aroclor-1260 [1]	ND	0.24	mg/Kg dry	10		SW-846 8082A	8/26/14	8/29/14 16:27	JMB
Aroclor-1262 [1]	ND	0.24	mg/Kg dry	10		SW-846 8082A	8/26/14	8/29/14 16:27	JMB
Aroclor-1268 [1]	ND	0.24	mg/Kg dry	10		SW-846 8082A	8/26/14	8/29/14 16:27	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	93.8	30-150		8/29/14 16:27
Decachlorobiphenyl [2]	85.2	30-150		8/29/14 16:27
Tetrachloro-m-xylene [1]	90.1	30-150		8/29/14 16:27
Tetrachloro-m-xylene [2]	89.4	30-150		8/29/14 16:27

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-14 (0-2) | Sampled: 8/21/2014 10:50

Sample ID: 14H1126-04

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	44	12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS
C19-C36 Aliphatics	29	12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS
Unadjusted C11-C22 Aromatics	86	12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS
C11-C22 Aromatics	86	12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS
Acenaphthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS
Acenaphthylene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS
Anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS
Benzo(a)anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS
Benzo(a)pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS
Benzo(b)fluoranthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS
Benzo(g,h,i)perylene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS
Benzo(k)fluoranthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS
Chrysene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS
Dibenz(a,h)anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS
Fluoranthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS
Fluorene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS
Indeno(1,2,3-cd)pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS
2-Methylnaphthalene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS
Naphthalene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS
Phenanthrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS
Pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/28/14	9/3/14 6:43	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	73.6	40-140		9/3/14 6:43
o-Terphenyl (OTP)	85.3	40-140		9/3/14 6:43
2-Bromonaphthalene	94.2	40-140		9/3/14 6:43
2-Fluorobiphenyl	105	40-140		9/3/14 6:43

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-14 (0-2) | Sampled: 8/21/2014 10:50

Sample ID: 14H1126-04

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - VPH

Soil/Methanol Preservation Ratio: 1.15

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	13	mg/Kg dry	1		MADEP-VPH-04-1.1	8/27/14	8/27/14 21:15	EEH
C5-C8 Aliphatics	ND	13	mg/Kg dry	1		MADEP-VPH-04-1.1	8/27/14	8/27/14 21:15	EEH
Unadjusted C9-C12 Aliphatics	ND	13	mg/Kg dry	1		MADEP-VPH-04-1.1	8/27/14	8/27/14 21:15	EEH
C9-C12 Aliphatics	ND	13	mg/Kg dry	1		MADEP-VPH-04-1.1	8/27/14	8/27/14 21:15	EEH
C9-C10 Aromatics	ND	13	mg/Kg dry	1		MADEP-VPH-04-1.1	8/27/14	8/27/14 21:15	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,5-Dibromotoluene (FID)	82.3	70-130		8/27/14 21:15
2,5-Dibromotoluene (PID)	78.6	70-130		8/27/14 21:15

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-14 (0-2) | Sampled: 8/21/2014 10:50

Sample ID: 14H1126-04

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	3.4	3.0	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:30	OP
Barium	43	3.0	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:30	OP
Cadmium	1.2	0.30	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:30	OP
Chromium	29	0.60	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:30	OP
Lead	110	0.90	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:30	OP
Mercury	0.090	0.030	mg/Kg dry	1		SW-846 7471B	8/27/14	8/28/14 12:58	JMP
Selenium	ND	6.0	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:30	OP
Silver	ND	0.60	mg/Kg dry	1		SW-846 6010C	8/27/14	8/28/14 20:30	OP

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-14 (0-2) | Sampled: 8/21/2014 10:50

Sample ID: 14H1126-04

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	82.6		% Wt	1		SM 2540G	8/29/14	9/2/14 12:24	MXG

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-DUP-1 | Sampled: 8/21/2014 00:00

Sample ID: 14H1126-05

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:36	JMB
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:36	JMB
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:36	JMB
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:36	JMB
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:36	JMB
Aroclor-1254 [2]	0.87	0.12	mg/Kg dry	5	O-04	SW-846 8082A	8/26/14	8/29/14 14:36	JMB
Aroclor-1260 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:36	JMB
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:36	JMB
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:36	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	85.6	30-150		8/29/14 14:36
Decachlorobiphenyl [2]	83.7	30-150		8/29/14 14:36
Tetrachloro-m-xylene [1]	76.0	30-150		8/29/14 14:36
Tetrachloro-m-xylene [2]	77.7	30-150		8/29/14 14:36

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-DUP-1 | Sampled: 8/21/2014 00:00

Sample ID: 14H1126-05

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	81.9		% Wt	1		SM 2540G	8/29/14	9/2/14 12:24	MXG

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-DUP-2 | Sampled: 8/22/2014 00:00

Sample ID: 14H1126-06

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:49	JMB
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:49	JMB
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:49	JMB
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:49	JMB
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:49	JMB
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:49	JMB
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:49	JMB
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:49	JMB
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 14:49	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	87.7	30-150		8/29/14 14:49
Decachlorobiphenyl [2]	91.7	30-150		8/29/14 14:49
Tetrachloro-m-xylene [1]	90.2	30-150		8/29/14 14:49
Tetrachloro-m-xylene [2]	90.6	30-150		8/29/14 14:49

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-DUP-2 | Sampled: 8/22/2014 00:00

Sample ID: 14H1126-06

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	87.2		% Wt	1		SM 2540G	8/29/14	9/2/14 12:24	MXG

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-DUP-3 | Sampled: 8/22/2014 00:00

Sample ID: 14H1126-07

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 15:01	JMB
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 15:01	JMB
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 15:01	JMB
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 15:01	JMB
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 15:01	JMB
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 15:01	JMB
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 15:01	JMB
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 15:01	JMB
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	8/26/14	8/29/14 15:01	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	89.8	30-150		8/29/14 15:01
Decachlorobiphenyl [2]	84.8	30-150		8/29/14 15:01
Tetrachloro-m-xylene [1]	91.8	30-150		8/29/14 15:01
Tetrachloro-m-xylene [2]	92.5	30-150		8/29/14 15:01

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: SB-DUP-3 | Sampled: 8/22/2014 00:00

Sample ID: 14H1126-07

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	86.9		% Wt	1		SM 2540G	9/2/14	9/2/14 16:17	WAL

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: CS-15 | Sampled: 8/21/2014 11:00

Sample ID: 14H1126-08

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	19	mg/Kg	200		SW-846 8082A	8/26/14	8/29/14 20:49	JMB
Aroclor-1221 [1]	ND	19	mg/Kg	200		SW-846 8082A	8/26/14	8/29/14 20:49	JMB
Aroclor-1232 [1]	ND	19	mg/Kg	200		SW-846 8082A	8/26/14	8/29/14 20:49	JMB
Aroclor-1242 [1]	ND	19	mg/Kg	200		SW-846 8082A	8/26/14	8/29/14 20:49	JMB
Aroclor-1248 [1]	ND	19	mg/Kg	200		SW-846 8082A	8/26/14	8/29/14 20:49	JMB
Aroclor-1254 [1]	100	19	mg/Kg	200		SW-846 8082A	8/26/14	8/29/14 20:49	JMB
Aroclor-1260 [1]	ND	19	mg/Kg	200		SW-846 8082A	8/26/14	8/29/14 20:49	JMB
Aroclor-1262 [1]	ND	19	mg/Kg	200		SW-846 8082A	8/26/14	8/29/14 20:49	JMB
Aroclor-1268 [1]	ND	19	mg/Kg	200		SW-846 8082A	8/26/14	8/29/14 20:49	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	*	30-150	S-01	8/29/14 20:49
Decachlorobiphenyl [2]	*	30-150	S-01	8/29/14 20:49
Tetrachloro-m-xylene [1]	*	30-150	S-01	8/29/14 20:49
Tetrachloro-m-xylene [2]	*	30-150	S-01	8/29/14 20:49

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: CS-14 | Sampled: 8/21/2014 12:45

Sample ID: 14H1126-09

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 21:01	JMB
Aroclor-1221 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 21:01	JMB
Aroclor-1232 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 21:01	JMB
Aroclor-1242 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 21:01	JMB
Aroclor-1248 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 21:01	JMB
Aroclor-1254 [1]	8.3	0.99	mg/Kg	10	O-03	SW-846 8082A	8/26/14	8/29/14 21:01	JMB
Aroclor-1260 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 21:01	JMB
Aroclor-1262 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 21:01	JMB
Aroclor-1268 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 21:01	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	107	30-150		8/29/14 21:01
Decachlorobiphenyl [2]	99.9	30-150		8/29/14 21:01
Tetrachloro-m-xylene [1]	107	30-150		8/29/14 21:01
Tetrachloro-m-xylene [2]	104	30-150		8/29/14 21:01

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: CS-5 | Sampled: 8/21/2014 15:00

Sample ID: 14H1126-10

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:13	JMB
Aroclor-1221 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:13	JMB
Aroclor-1232 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:13	JMB
Aroclor-1242 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:13	JMB
Aroclor-1248 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:13	JMB
Aroclor-1254 [1]	1.9	0.50	mg/Kg	5	O-03	SW-846 8082A	8/26/14	8/29/14 21:13	JMB
Aroclor-1260 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:13	JMB
Aroclor-1262 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:13	JMB
Aroclor-1268 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:13	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	79.7	30-150		8/29/14 21:13
Decachlorobiphenyl [2]	75.7	30-150		8/29/14 21:13
Tetrachloro-m-xylene [1]	84.7	30-150		8/29/14 21:13
Tetrachloro-m-xylene [2]	84.1	30-150		8/29/14 21:13

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: CS-4 | Sampled: 8/21/2014 15:15

Sample ID: 14H1126-11

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:26	JMB
Aroclor-1221 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:26	JMB
Aroclor-1232 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:26	JMB
Aroclor-1242 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:26	JMB
Aroclor-1248 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:26	JMB
Aroclor-1254 [1]	4.1	0.50	mg/Kg	5	O-03	SW-846 8082A	8/26/14	8/29/14 21:26	JMB
Aroclor-1260 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:26	JMB
Aroclor-1262 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:26	JMB
Aroclor-1268 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:26	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	89.7	30-150		8/29/14 21:26
Decachlorobiphenyl [2]	84.6	30-150		8/29/14 21:26
Tetrachloro-m-xylene [1]	90.6	30-150		8/29/14 21:26
Tetrachloro-m-xylene [2]	90.6	30-150		8/29/14 21:26

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: CS-13 | Sampled: 8/21/2014 11:30

Sample ID: 14H1126-12

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:38	JMB
Aroclor-1221 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:38	JMB
Aroclor-1232 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:38	JMB
Aroclor-1242 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:38	JMB
Aroclor-1248 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:38	JMB
Aroclor-1254 [2]	2.0	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:38	JMB
Aroclor-1260 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:38	JMB
Aroclor-1262 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:38	JMB
Aroclor-1268 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 21:38	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	60.8	30-150		8/29/14 21:38
Decachlorobiphenyl [2]	56.6	30-150		8/29/14 21:38
Tetrachloro-m-xylene [1]	73.0	30-150		8/29/14 21:38
Tetrachloro-m-xylene [2]	73.4	30-150		8/29/14 21:38

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: CS-16 | Sampled: 8/21/2014 11:10

Sample ID: 14H1126-13

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	20	mg/Kg	200		SW-846 8082A	8/26/14	8/29/14 21:50	JMB
Aroclor-1221 [1]	ND	20	mg/Kg	200		SW-846 8082A	8/26/14	8/29/14 21:50	JMB
Aroclor-1232 [1]	ND	20	mg/Kg	200		SW-846 8082A	8/26/14	8/29/14 21:50	JMB
Aroclor-1242 [1]	ND	20	mg/Kg	200		SW-846 8082A	8/26/14	8/29/14 21:50	JMB
Aroclor-1248 [1]	ND	20	mg/Kg	200		SW-846 8082A	8/26/14	8/29/14 21:50	JMB
Aroclor-1254 [1]	120	20	mg/Kg	200		SW-846 8082A	8/26/14	8/29/14 21:50	JMB
Aroclor-1260 [1]	ND	20	mg/Kg	200		SW-846 8082A	8/26/14	8/29/14 21:50	JMB
Aroclor-1262 [1]	ND	20	mg/Kg	200		SW-846 8082A	8/26/14	8/29/14 21:50	JMB
Aroclor-1268 [1]	ND	20	mg/Kg	200		SW-846 8082A	8/26/14	8/29/14 21:50	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	*	30-150	S-01	8/29/14 21:50
Decachlorobiphenyl [2]	*	30-150	S-01	8/29/14 21:50
Tetrachloro-m-xylene [1]	*	30-150	S-01	8/29/14 21:50
Tetrachloro-m-xylene [2]	*	30-150	S-01	8/29/14 21:50

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: CS-3 | Sampled: 8/21/2014 15:20

Sample ID: 14H1126-14

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 22:03	JMB
Aroclor-1221 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 22:03	JMB
Aroclor-1232 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 22:03	JMB
Aroclor-1242 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 22:03	JMB
Aroclor-1248 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 22:03	JMB
Aroclor-1254 [1]	2.1	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 22:03	JMB
Aroclor-1260 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 22:03	JMB
Aroclor-1262 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 22:03	JMB
Aroclor-1268 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/26/14	8/29/14 22:03	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	92.6	30-150		8/29/14 22:03
Decachlorobiphenyl [2]	85.9	30-150		8/29/14 22:03
Tetrachloro-m-xylene [1]	94.0	30-150		8/29/14 22:03
Tetrachloro-m-xylene [2]	95.8	30-150		8/29/14 22:03

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: CS-6 | Sampled: 8/21/2014 15:05

Sample ID: 14H1126-15

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.98	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 22:39	JMB
Aroclor-1221 [1]	ND	0.98	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 22:39	JMB
Aroclor-1232 [1]	ND	0.98	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 22:39	JMB
Aroclor-1242 [1]	ND	0.98	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 22:39	JMB
Aroclor-1248 [1]	ND	0.98	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 22:39	JMB
Aroclor-1254 [1]	3.9	0.98	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 22:39	JMB
Aroclor-1260 [1]	ND	0.98	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 22:39	JMB
Aroclor-1262 [1]	ND	0.98	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 22:39	JMB
Aroclor-1268 [1]	ND	0.98	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 22:39	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	63.6	30-150		8/29/14 22:39
Decachlorobiphenyl [2]	66.7	30-150		8/29/14 22:39
Tetrachloro-m-xylene [1]	54.8	30-150		8/29/14 22:39
Tetrachloro-m-xylene [2]	73.7	30-150		8/29/14 22:39

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: CS-DUP-1 | Sampled: 8/21/2014 00:00

Sample ID: 14H1126-16

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 22:52	JMB
Aroclor-1221 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 22:52	JMB
Aroclor-1232 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 22:52	JMB
Aroclor-1242 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 22:52	JMB
Aroclor-1248 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 22:52	JMB
Aroclor-1254 [2]	8.7	0.99	mg/Kg	10	O-03	SW-846 8082A	8/26/14	8/29/14 22:52	JMB
Aroclor-1260 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 22:52	JMB
Aroclor-1262 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 22:52	JMB
Aroclor-1268 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/26/14	8/29/14 22:52	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	104	30-150		8/29/14 22:52
Decachlorobiphenyl [2]	99.9	30-150		8/29/14 22:52
Tetrachloro-m-xylene [1]	106	30-150		8/29/14 22:52
Tetrachloro-m-xylene [2]	109	30-150		8/29/14 22:52

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: Trip Blank | Sampled: 8/21/2014 00:00

Sample ID: 14H1126-17

Sample Matrix: Trip Blank Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	2.5	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.025	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Benzene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Bromobenzene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Bromochloromethane	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Bromodichloromethane	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Bromoform	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Bromomethane	ND	0.25	mg/Kg wet	1	RL-07	SW-846 8260C	8/26/14	8/28/14 18:00	EEH
2-Butanone (MEK)	ND	2.5	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
n-Butylbenzene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
sec-Butylbenzene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
tert-Butylbenzene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.025	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Carbon Disulfide	ND	0.50	mg/Kg wet	1	RL-07	SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Carbon Tetrachloride	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Chlorobenzene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Chlorodibromomethane	ND	0.025	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Chloroethane	ND	0.10	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Chloroform	ND	0.10	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Chloromethane	ND	0.25	mg/Kg wet	1	RL-07	SW-846 8260C	8/26/14	8/28/14 18:00	EEH
2-Chlorotoluene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
4-Chlorotoluene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.25	mg/Kg wet	1	RL-07	SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,2-Dibromoethane (EDB)	ND	0.025	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Dibromomethane	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,2-Dichlorobenzene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,3-Dichlorobenzene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,4-Dichlorobenzene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.10	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,1-Dichloroethane	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,2-Dichloroethane	ND	0.25	mg/Kg wet	1	RL-07	SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,1-Dichloroethylene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
cis-1,2-Dichloroethylene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
trans-1,2-Dichloroethylene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,2-Dichloropropane	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,3-Dichloropropane	ND	0.025	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
2,2-Dichloropropane	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,1-Dichloropropene	ND	0.10	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
cis-1,3-Dichloropropene	ND	0.025	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
trans-1,3-Dichloropropene	ND	0.025	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Diethyl Ether	ND	0.10	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Diisopropyl Ether (DIPE)	ND	0.025	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,4-Dioxane	ND	2.5	mg/Kg wet	1	V-16	SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Ethylbenzene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14H1126

Date Received: 8/25/2014

Field Sample #: Trip Blank | Sampled: 8/21/2014 00:00

Sample ID: 14H1126-17

Sample Matrix: Trip Blank Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
2-Hexanone (MBK)	ND	0.50	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Isopropylbenzene (Cumene)	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Methylene Chloride	ND	0.25	mg/Kg wet	1	RL-07	SW-846 8260C	8/26/14	8/28/14 18:00	EEH
4-Methyl-2-pentanone (MIBK)	ND	0.50	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Naphthalene	ND	0.10	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
n-Propylbenzene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Styrene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,1,1,2-Tetrachloroethane	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,1,2,2-Tetrachloroethane	ND	0.025	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Tetrachloroethylene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Tetrahydrofuran	ND	0.20	mg/Kg wet	1	V-16	SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Toluene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,2,3-Trichlorobenzene	ND	0.20	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,2,4-Trichlorobenzene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,1,1-Trichloroethane	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,1,2-Trichloroethane	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Trichloroethylene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Trichlorofluoromethane (Freon 11)	ND	0.10	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,2,3-Trichloropropane	ND	0.10	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,2,4-Trimethylbenzene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
1,3,5-Trimethylbenzene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
Vinyl Chloride	ND	0.10	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
m+p Xylene	ND	0.10	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH
o-Xylene	ND	0.050	mg/Kg wet	1		SW-846 8260C	8/26/14	8/28/14 18:00	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	93.3	70-130		8/28/14 18:00
Toluene-d8	98.0	70-130		8/28/14 18:00
4-Bromofluorobenzene	93.7	70-130		8/28/14 18:00

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Sample Extraction Data

Prep Method: SW-846 3546-MADEP-EPH-04-1.1

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1126-02RE1 [SB-8 (0.5-2)]	B103793	20.3	2.00	08/28/14
14H1126-04RE1 [SB-14 (0-2)]	B103793	20.2	2.00	08/28/14

Prep Method: MA VPH-MADEP-VPH-04-1.1

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1126-02 [SB-8 (0.5-2)]	B103663	11.8	17.4	08/27/14
14H1126-04 [SB-14 (0-2)]	B103663	17.3	18.1	08/27/14

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
14H1126-02 [SB-8 (0.5-2)]	B103892	08/29/14
14H1126-04 [SB-14 (0-2)]	B103892	08/29/14
14H1126-05 [SB-DUP-1]	B103892	08/29/14
14H1126-06 [SB-DUP-2]	B103892	08/29/14

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
14H1126-01 [SB-8 (0-0.5)]	B103959	09/02/14
14H1126-07 [SB-DUP-3]	B103959	09/02/14

Prep Method: SW-846 3050B-SW-846 6010C

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1126-02 [SB-8 (0.5-2)]	B103724	1.06	50.0	08/27/14
14H1126-04 [SB-14 (0-2)]	B103724	1.01	50.0	08/27/14

Prep Method: SW-846 7471-SW-846 7471B

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1126-02 [SB-8 (0.5-2)]	B103696	0.602	50.0	08/27/14
14H1126-04 [SB-14 (0-2)]	B103696	0.609	50.0	08/27/14

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1126-08 [CS-15]	B103589	2.07	10.0	08/26/14
14H1126-09 [CS-14]	B103589	2.03	10.0	08/26/14
14H1126-10 [CS-5]	B103589	2.00	10.0	08/26/14
14H1126-11 [CS-4]	B103589	2.00	10.0	08/26/14
14H1126-12 [CS-13]	B103589	2.01	10.0	08/26/14
14H1126-13 [CS-16]	B103589	2.00	10.0	08/26/14
14H1126-14 [CS-3]	B103589	2.02	10.0	08/26/14
14H1126-15 [CS-6]	B103589	2.04	10.0	08/26/14
14H1126-16 [CS-DUP-1]	B103589	2.02	10.0	08/26/14

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Sample Extraction Data

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1126-01 [SB-8 (0-0.5)]	B103590	10.2	10.0	08/26/14
14H1126-02 [SB-8 (0.5-2)]	B103590	10.2	10.0	08/26/14
14H1126-04 [SB-14 (0-2)]	B103590	10.2	10.0	08/26/14
14H1126-05 [SB-DUP-1]	B103590	10.5	10.0	08/26/14
14H1126-06 [SB-DUP-2]	B103590	10.2	10.0	08/26/14
14H1126-07 [SB-DUP-3]	B103590	10.3	10.0	08/26/14

Prep Method: SW-846 5035-SW-846 8260C

Lab Number [Field ID]	Batch	Sample Amount(g)	Methanol Volume(mL)	Methanol Aliquot(mL)	Final Volume(mL)	Date
14H1126-17 [Trip Blank]	B103519	15.0	15.0	1	50	08/26/14

Prep Method: SW-846 5035-SW-846 8260C

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1126-02 [SB-8 (0.5-2)]	B103679	5.85	10.0	08/27/14
14H1126-04 [SB-14 (0-2)]	B103679	10.1	10.0	08/27/14

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103519 - SW-846 5035										
Blank (B103519-BLK1)				Prepared: 08/26/14 Analyzed: 08/28/14						
Acetone	ND	2.5	mg/Kg wet							
tert-Amyl Methyl Ether (TAME)	ND	0.025	mg/Kg wet							
Benzene	ND	0.050	mg/Kg wet							
Bromobenzene	ND	0.050	mg/Kg wet							
Bromochloromethane	ND	0.050	mg/Kg wet							
Bromodichloromethane	ND	0.050	mg/Kg wet							
Bromoform	ND	0.050	mg/Kg wet							
Bromomethane	ND	0.25	mg/Kg wet							
2-Butanone (MEK)	ND	2.5	mg/Kg wet							
n-Butylbenzene	ND	0.050	mg/Kg wet							
sec-Butylbenzene	ND	0.050	mg/Kg wet							
tert-Butylbenzene	ND	0.050	mg/Kg wet							
tert-Butyl Ethyl Ether (TBEE)	ND	0.025	mg/Kg wet							
Carbon Disulfide	ND	0.50	mg/Kg wet							
Carbon Tetrachloride	ND	0.050	mg/Kg wet							
Chlorobenzene	ND	0.050	mg/Kg wet							
Chlorodibromomethane	ND	0.025	mg/Kg wet							
Chloroethane	ND	0.10	mg/Kg wet							
Chloroform	ND	0.10	mg/Kg wet							
Chloromethane	ND	0.25	mg/Kg wet							
2-Chlorotoluene	ND	0.050	mg/Kg wet							
4-Chlorotoluene	ND	0.050	mg/Kg wet							
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.25	mg/Kg wet							
1,2-Dibromoethane (EDB)	ND	0.025	mg/Kg wet							
Dibromomethane	ND	0.050	mg/Kg wet							
1,2-Dichlorobenzene	ND	0.050	mg/Kg wet							
1,3-Dichlorobenzene	ND	0.050	mg/Kg wet							
1,4-Dichlorobenzene	ND	0.050	mg/Kg wet							
Dichlorodifluoromethane (Freon 12)	ND	0.10	mg/Kg wet							
1,1-Dichloroethane	ND	0.050	mg/Kg wet							
1,2-Dichloroethane	ND	0.25	mg/Kg wet							
1,1-Dichloroethylene	ND	0.050	mg/Kg wet							
cis-1,2-Dichloroethylene	ND	0.050	mg/Kg wet							
trans-1,2-Dichloroethylene	ND	0.050	mg/Kg wet							
1,2-Dichloropropane	ND	0.050	mg/Kg wet							
1,3-Dichloropropane	ND	0.025	mg/Kg wet							
2,2-Dichloropropane	ND	0.050	mg/Kg wet							
1,1-Dichloropropene	ND	0.10	mg/Kg wet							
cis-1,3-Dichloropropene	ND	0.025	mg/Kg wet							
trans-1,3-Dichloropropene	ND	0.025	mg/Kg wet							
Diethyl Ether	ND	0.10	mg/Kg wet							
Diisopropyl Ether (DIPE)	ND	0.025	mg/Kg wet							
1,4-Dioxane	ND	2.5	mg/Kg wet							V-16
Ethylbenzene	ND	0.050	mg/Kg wet							
Hexachlorobutadiene	ND	0.050	mg/Kg wet							
2-Hexanone (MBK)	ND	0.50	mg/Kg wet							
Isopropylbenzene (Cumene)	ND	0.050	mg/Kg wet							
p-Isopropyltoluene (p-Cymene)	ND	0.050	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.050	mg/Kg wet							
Methylene Chloride	ND	0.25	mg/Kg wet							
4-Methyl-2-pentanone (MIBK)	ND	0.50	mg/Kg wet							
Naphthalene	ND	0.10	mg/Kg wet							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B103519 - SW-846 5035											
Blank (B103519-BLK1)				Prepared: 08/26/14 Analyzed: 08/28/14							
n-Propylbenzene	ND	0.050	mg/Kg wet								
Styrene	ND	0.050	mg/Kg wet								
1,1,1,2-Tetrachloroethane	ND	0.050	mg/Kg wet								
1,1,2,2-Tetrachloroethane	ND	0.025	mg/Kg wet								
Tetrachloroethylene	ND	0.050	mg/Kg wet								
Tetrahydrofuran	ND	0.20	mg/Kg wet							V-16	
Toluene	ND	0.050	mg/Kg wet								
1,2,3-Trichlorobenzene	ND	0.20	mg/Kg wet								
1,2,4-Trichlorobenzene	ND	0.050	mg/Kg wet								
1,1,1-Trichloroethane	ND	0.050	mg/Kg wet								
1,1,2-Trichloroethane	ND	0.050	mg/Kg wet								
Trichloroethylene	ND	0.050	mg/Kg wet								
Trichlorofluoromethane (Freon 11)	ND	0.10	mg/Kg wet								
1,2,3-Trichloropropane	ND	0.10	mg/Kg wet								
1,2,4-Trimethylbenzene	ND	0.050	mg/Kg wet								
1,3,5-Trimethylbenzene	ND	0.050	mg/Kg wet								
Vinyl Chloride	ND	0.10	mg/Kg wet								
m+p Xylene	ND	0.10	mg/Kg wet								
o-Xylene	ND	0.050	mg/Kg wet								
Surrogate: 1,2-Dichloroethane-d4	*0.0226*		mg/Kg wet	0.0250		90.2	70-130				
Surrogate: Toluene-d8	*0.0239*		mg/Kg wet	0.0250		95.6	70-130				
Surrogate: 4-Bromofluorobenzene	*0.0233*		mg/Kg wet	0.0250		93.2	70-130				
LCS (B103519-BS1)				Prepared: 08/26/14 Analyzed: 08/28/14							
Acetone	0.222	0.057	mg/Kg wet	0.113		**196** *	40-160			L-02	†
tert-Amyl Methyl Ether (TAME)	0.0109	0.00057	mg/Kg wet	0.0113		96.6	70-130				
Benzene	0.0127	0.0011	mg/Kg wet	0.0113		112	70-130			V-20	
Bromobenzene	0.0124	0.0011	mg/Kg wet	0.0113		110	70-130				
Bromochloromethane	0.0137	0.0011	mg/Kg wet	0.0113		121	70-130			V-20	
Bromodichloromethane	0.0128	0.0011	mg/Kg wet	0.0113		113	70-130				
Bromoform	0.0166	0.0011	mg/Kg wet	0.0113		**147** *	70-130			L-02, V-20	
Bromomethane	0.00726	0.0057	mg/Kg wet	0.0113		64.1	40-160			L-14	†
2-Butanone (MEK)	0.154	0.057	mg/Kg wet	0.113		136	40-160			L-14	†
n-Butylbenzene	0.0143	0.0011	mg/Kg wet	0.0113		126	70-130			V-06	
sec-Butylbenzene	0.0133	0.0011	mg/Kg wet	0.0113		117	70-130				
tert-Butylbenzene	0.0133	0.0011	mg/Kg wet	0.0113		118	70-130				
tert-Butyl Ethyl Ether (TBEE)	0.0121	0.00057	mg/Kg wet	0.0113		106	70-130				
Carbon Disulfide	0.0132	0.011	mg/Kg wet	0.0113		117	70-130				
Carbon Tetrachloride	0.0138	0.0011	mg/Kg wet	0.0113		121	70-130				
Chlorobenzene	0.0124	0.0011	mg/Kg wet	0.0113		109	70-130				
Chlorodibromomethane	0.0128	0.00057	mg/Kg wet	0.0113		113	70-130				
Chloroethane	0.0114	0.0023	mg/Kg wet	0.0113		100	70-130				
Chloroform	0.0123	0.0023	mg/Kg wet	0.0113		109	70-130				
Chloromethane	0.0104	0.0057	mg/Kg wet	0.0113		91.9	40-160				†
2-Chlorotoluene	0.0109	0.0011	mg/Kg wet	0.0113		96.0	70-130				
4-Chlorotoluene	0.0119	0.0011	mg/Kg wet	0.0113		105	70-130				
1,2-Dibromo-3-chloropropane (DBCP)	0.0125	0.0057	mg/Kg wet	0.0113		110	70-130				
1,2-Dibromoethane (EDB)	0.0130	0.00057	mg/Kg wet	0.0113		115	70-130				
Dibromomethane	0.0135	0.0011	mg/Kg wet	0.0113		119	70-130				
1,2-Dichlorobenzene	0.0128	0.0011	mg/Kg wet	0.0113		113	70-130				
1,3-Dichlorobenzene	0.0127	0.0011	mg/Kg wet	0.0113		112	70-130				
1,4-Dichlorobenzene	0.0130	0.0011	mg/Kg wet	0.0113		115	70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B103519 - SW-846 5035											
LCS (B103519-BS1)				Prepared: 08/26/14 Analyzed: 08/28/14							
Dichlorodifluoromethane (Freon 12)	0.0103	0.0023	mg/Kg wet	0.0113		90.5	40-160			V-20	†
1,1-Dichloroethane	0.0130	0.0011	mg/Kg wet	0.0113		115	70-130				
1,2-Dichloroethane	0.0125	0.0057	mg/Kg wet	0.0113		110	70-130				
1,1-Dichloroethylene	0.0108	0.0011	mg/Kg wet	0.0113		95.2	70-130				
cis-1,2-Dichloroethylene	0.0122	0.0011	mg/Kg wet	0.0113		108	70-130				
trans-1,2-Dichloroethylene	0.0126	0.0011	mg/Kg wet	0.0113		111	70-130				
1,2-Dichloropropane	0.0132	0.0011	mg/Kg wet	0.0113		116	70-130				
1,3-Dichloropropane	0.0130	0.00057	mg/Kg wet	0.0113		115	70-130				
2,2-Dichloropropane	0.0121	0.0011	mg/Kg wet	0.0113		107	70-130				
1,1-Dichloropropene	0.0130	0.0023	mg/Kg wet	0.0113		115	70-130				
cis-1,3-Dichloropropene	0.0119	0.00057	mg/Kg wet	0.0113		105	70-130				
trans-1,3-Dichloropropene	0.0131	0.00057	mg/Kg wet	0.0113		116	70-130				
Diethyl Ether	0.0121	0.0023	mg/Kg wet	0.0113		107	70-130				
Diisopropyl Ether (DIPE)	0.0113	0.00057	mg/Kg wet	0.0113		99.7	70-130				
1,4-Dioxane	0.0757	0.057	mg/Kg wet	0.113		66.8	40-160			L-14, V-16	†
Ethylbenzene	0.0127	0.0011	mg/Kg wet	0.0113		112	70-130				
Hexachlorobutadiene	0.0137	0.0011	mg/Kg wet	0.0113		121	70-130				
2-Hexanone (MBK)	0.160	0.011	mg/Kg wet	0.113		141	40-160			L-14	†
Isopropylbenzene (Cumene)	0.0122	0.0011	mg/Kg wet	0.0113		107	70-130				
p-Isopropyltoluene (p-Cymene)	0.0141	0.0011	mg/Kg wet	0.0113		124	70-130				
Methyl tert-Butyl Ether (MTBE)	0.0125	0.0011	mg/Kg wet	0.0113		110	70-130				
Methylene Chloride	0.0112	0.0057	mg/Kg wet	0.0113		98.4	70-130				
4-Methyl-2-pentanone (MIBK)	0.113	0.011	mg/Kg wet	0.113		99.3	40-160				†
Naphthalene	0.0136	0.0023	mg/Kg wet	0.0113		120	70-130			V-20	
n-Propylbenzene	0.0125	0.0011	mg/Kg wet	0.0113		110	70-130				
Styrene	0.0126	0.0011	mg/Kg wet	0.0113		111	70-130				
1,1,1,2-Tetrachloroethane	0.0133	0.0011	mg/Kg wet	0.0113		118	70-130				
1,1,2,2-Tetrachloroethane	0.0131	0.00057	mg/Kg wet	0.0113		116	70-130			V-20	
Tetrachloroethylene	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130				
Tetrahydrofuran	0.0124	0.0045	mg/Kg wet	0.0113		110	70-130			V-16	
Toluene	0.0124	0.0011	mg/Kg wet	0.0113		109	70-130				
1,2,3-Trichlorobenzene	0.0136	0.0045	mg/Kg wet	0.0113		120	70-130			V-20	
1,2,4-Trichlorobenzene	0.0141	0.0011	mg/Kg wet	0.0113		124	70-130				
1,1,1-Trichloroethane	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130				
1,1,2-Trichloroethane	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130				
Trichloroethylene	0.0132	0.0011	mg/Kg wet	0.0113		117	70-130				
Trichlorofluoromethane (Freon 11)	0.0115	0.0023	mg/Kg wet	0.0113		101	70-130				
1,2,3-Trichloropropane	0.0128	0.0023	mg/Kg wet	0.0113		113	70-130			V-20	
1,2,4-Trimethylbenzene	0.0137	0.0011	mg/Kg wet	0.0113		121	70-130			V-20	
1,3,5-Trimethylbenzene	0.0124	0.0011	mg/Kg wet	0.0113		109	70-130				
Vinyl Chloride	0.00798	0.0023	mg/Kg wet	0.0113		70.4	70-130				
m+p Xylene	0.0242	0.0023	mg/Kg wet	0.0227		107	70-130				
o-Xylene	0.0121	0.0011	mg/Kg wet	0.0113		107	70-130				
Surrogate: 1,2-Dichloroethane-d4	*0.0267*		mg/Kg wet	0.0283		94.2	70-130				
Surrogate: Toluene-d8	*0.0273*		mg/Kg wet	0.0283		96.4	70-130				
Surrogate: 4-Bromofluorobenzene	*0.0267*		mg/Kg wet	0.0283		94.2	70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B103519 - SW-846 5035												
LCS Dup (B103519-BSD1)				Prepared: 08/26/14 Analyzed: 08/28/14								
Acetone	0.232	0.057	mg/Kg wet	0.113		**204**	*	40-160	4.01	20	L-02	†
tert-Amyl Methyl Ether (TAME)	0.0110	0.00057	mg/Kg wet	0.0113		97.3		70-130	0.722	20		
Benzene	0.0132	0.0011	mg/Kg wet	0.0113		116		70-130	3.68	20	V-20	
Bromobenzene	0.0124	0.0011	mg/Kg wet	0.0113		110		70-130	0.182	20		
Bromochloromethane	0.0143	0.0011	mg/Kg wet	0.0113		127		70-130	4.28	20	V-20	
Bromodichloromethane	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130	0.354	20		
Bromoform	0.0164	0.0011	mg/Kg wet	0.0113		**145**	*	70-130	1.51	20	L-02, V-20	
Bromomethane	0.00823	0.0057	mg/Kg wet	0.0113		72.6		40-160	12.4	20		†
2-Butanone (MEK)	0.157	0.057	mg/Kg wet	0.113		139		40-160	2.26	20	L-14	†
n-Butylbenzene	0.0139	0.0011	mg/Kg wet	0.0113		123		70-130	2.81	20	V-06	
sec-Butylbenzene	0.0131	0.0011	mg/Kg wet	0.0113		116		70-130	1.37	20		
tert-Butylbenzene	0.0133	0.0011	mg/Kg wet	0.0113		117		70-130	0.512	20		
tert-Butyl Ethyl Ether (TBEE)	0.0121	0.00057	mg/Kg wet	0.0113		107		70-130	0.469	20		
Carbon Disulfide	0.0133	0.011	mg/Kg wet	0.0113		117		70-130	0.256	20		
Carbon Tetrachloride	0.0140	0.0011	mg/Kg wet	0.0113		124		70-130	1.71	20		
Chlorobenzene	0.0124	0.0011	mg/Kg wet	0.0113		110		70-130	0.549	20		
Chlorodibromomethane	0.0125	0.00057	mg/Kg wet	0.0113		110		70-130	2.60	20		
Chloroethane	0.0121	0.0023	mg/Kg wet	0.0113		107		70-130	6.08	20		
Chloroform	0.0124	0.0023	mg/Kg wet	0.0113		110		70-130	1.10	20		
Chloromethane	0.0110	0.0057	mg/Kg wet	0.0113		97.4		40-160	5.81	20		†
2-Chlorotoluene	0.0113	0.0011	mg/Kg wet	0.0113		99.7		70-130	3.78	20		
4-Chlorotoluene	0.0123	0.0011	mg/Kg wet	0.0113		109		70-130	3.37	20		
1,2-Dibromo-3-chloropropane (DBCP)	0.0125	0.0057	mg/Kg wet	0.0113		110		70-130	0.272	20		
1,2-Dibromoethane (EDB)	0.0131	0.00057	mg/Kg wet	0.0113		115		70-130	0.522	20		
Dibromomethane	0.0133	0.0011	mg/Kg wet	0.0113		118		70-130	1.02	20		
1,2-Dichlorobenzene	0.0124	0.0011	mg/Kg wet	0.0113		109		70-130	3.33	20		
1,3-Dichlorobenzene	0.0125	0.0011	mg/Kg wet	0.0113		110		70-130	1.35	20		
1,4-Dichlorobenzene	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130	1.75	20		
Dichlorodifluoromethane (Freon 12)	0.0107	0.0023	mg/Kg wet	0.0113		94.4		40-160	4.22	20	V-20	†
1,1-Dichloroethane	0.0135	0.0011	mg/Kg wet	0.0113		119		70-130	3.59	20		
1,2-Dichloroethane	0.0124	0.0057	mg/Kg wet	0.0113		109		70-130	1.18	20		
1,1-Dichloroethylene	0.0110	0.0011	mg/Kg wet	0.0113		97.0		70-130	1.87	20		
cis-1,2-Dichloroethylene	0.0123	0.0011	mg/Kg wet	0.0113		109		70-130	0.740	20		
trans-1,2-Dichloroethylene	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130	1.97	20		
1,2-Dichloropropane	0.0129	0.0011	mg/Kg wet	0.0113		114		70-130	1.91	20		
1,3-Dichloropropane	0.0125	0.00057	mg/Kg wet	0.0113		110		70-130	4.01	20		
2,2-Dichloropropane	0.0124	0.0011	mg/Kg wet	0.0113		110		70-130	2.68	20		
1,1-Dichloropropene	0.0132	0.0023	mg/Kg wet	0.0113		116		70-130	1.30	20		
cis-1,3-Dichloropropene	0.0123	0.00057	mg/Kg wet	0.0113		109		70-130	3.47	20		
trans-1,3-Dichloropropene	0.0134	0.00057	mg/Kg wet	0.0113		118		70-130	1.79	20		
Diethyl Ether	0.0119	0.0023	mg/Kg wet	0.0113		105		70-130	1.60	20		
Diisopropyl Ether (DIPE)	0.0121	0.00057	mg/Kg wet	0.0113		107		70-130	6.88	20		
1,4-Dioxane	0.0759	0.057	mg/Kg wet	0.113		67.0		40-160	0.269	20	L-14, V-16	†
Ethylbenzene	0.0131	0.0011	mg/Kg wet	0.0113		116		70-130	3.33	20		
Hexachlorobutadiene	0.0139	0.0011	mg/Kg wet	0.0113		123		70-130	1.56	20		
2-Hexanone (MBK)	0.158	0.011	mg/Kg wet	0.113		139		40-160	1.36	20	L-14	†
Isopropylbenzene (Cumene)	0.0122	0.0011	mg/Kg wet	0.0113		108		70-130	0.0930	20		
p-Isopropyltoluene (p-Cymene)	0.0136	0.0011	mg/Kg wet	0.0113		120		70-130	3.60	20		
Methyl tert-Butyl Ether (MTBE)	0.0125	0.0011	mg/Kg wet	0.0113		110		70-130	0.272	20		
Methylene Chloride	0.0114	0.0057	mg/Kg wet	0.0113		100		70-130	1.91	20		
4-Methyl-2-pentanone (MIBK)	0.111	0.011	mg/Kg wet	0.113		98.3		40-160	1.04	20		†
Naphthalene	0.0135	0.0023	mg/Kg wet	0.0113		119		70-130	1.17	20	V-20	

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103519 - SW-846 5035										
LCS Dup (B103519-BSD1)				Prepared: 08/26/14 Analyzed: 08/28/14						
n-Propylbenzene	0.0128	0.0011	mg/Kg wet	0.0113		113	70-130	2.60	20	
Styrene	0.0125	0.0011	mg/Kg wet	0.0113		110	70-130	0.451	20	
1,1,1,2-Tetrachloroethane	0.0136	0.0011	mg/Kg wet	0.0113		120	70-130	2.02	20	
1,1,2,2-Tetrachloroethane	0.0133	0.00057	mg/Kg wet	0.0113		118	70-130	1.72	20	V-20
Tetrachloroethylene	0.0133	0.0011	mg/Kg wet	0.0113		118	70-130	3.46	20	
Tetrahydrofuran	0.0121	0.0045	mg/Kg wet	0.0113		107	70-130	2.59	20	V-16
Toluene	0.0123	0.0011	mg/Kg wet	0.0113		109	70-130	0.184	20	
1,2,3-Trichlorobenzene	0.0132	0.0045	mg/Kg wet	0.0113		116	70-130	3.47	20	V-20
1,2,4-Trichlorobenzene	0.0139	0.0011	mg/Kg wet	0.0113		123	70-130	1.30	20	
1,1,1-Trichloroethane	0.0133	0.0011	mg/Kg wet	0.0113		118	70-130	3.11	20	
1,1,2-Trichloroethane	0.0126	0.0011	mg/Kg wet	0.0113		111	70-130	2.32	20	
Trichloroethylene	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130	2.52	20	
Trichlorofluoromethane (Freon 11)	0.0121	0.0023	mg/Kg wet	0.0113		106	70-130	5.00	20	
1,2,3-Trichloropropane	0.0129	0.0023	mg/Kg wet	0.0113		114	70-130	0.352	20	V-20
1,2,4-Trimethylbenzene	0.0132	0.0011	mg/Kg wet	0.0113		117	70-130	3.20	20	V-20
1,3,5-Trimethylbenzene	0.0125	0.0011	mg/Kg wet	0.0113		110	70-130	1.27	20	
Vinyl Chloride	0.00822	0.0023	mg/Kg wet	0.0113		72.5	70-130	2.94	20	
m+p Xylene	0.0250	0.0023	mg/Kg wet	0.0227		110	70-130	3.37	20	
o-Xylene	0.0124	0.0011	mg/Kg wet	0.0113		109	70-130	2.13	20	
Surrogate: 1,2-Dichloroethane-d4	*0.0275*		mg/Kg wet	0.0283		97.0	70-130			
Surrogate: Toluene-d8	*0.0266*		mg/Kg wet	0.0283		93.9	70-130			
Surrogate: 4-Bromofluorobenzene	*0.0264*		mg/Kg wet	0.0283		93.2	70-130			
Batch B103679 - SW-846 5035										
Blank (B103679-BLK1)				Prepared & Analyzed: 08/27/14						
Acetone	ND	0.10	mg/Kg wet							
tert-Amyl Methyl Ether (TAME)	ND	0.0010	mg/Kg wet							
Benzene	ND	0.0020	mg/Kg wet							
Bromobenzene	ND	0.0020	mg/Kg wet							
Bromochloromethane	ND	0.0020	mg/Kg wet							
Bromodichloromethane	ND	0.0020	mg/Kg wet							
Bromoform	ND	0.010	mg/Kg wet							
Bromomethane	ND	0.010	mg/Kg wet							
2-Butanone (MEK)	ND	0.040	mg/Kg wet							
n-Butylbenzene	ND	0.0020	mg/Kg wet							
sec-Butylbenzene	ND	0.0020	mg/Kg wet							
tert-Butylbenzene	ND	0.0020	mg/Kg wet							
tert-Butyl Ethyl Ether (TBEE)	ND	0.0010	mg/Kg wet							
Carbon Disulfide	ND	0.020	mg/Kg wet							
Carbon Tetrachloride	ND	0.0020	mg/Kg wet							
Chlorobenzene	ND	0.0020	mg/Kg wet							
Chlorodibromomethane	ND	0.0010	mg/Kg wet							
Chloroethane	ND	0.010	mg/Kg wet							
Chloroform	ND	0.0040	mg/Kg wet							
Chloromethane	ND	0.010	mg/Kg wet							
2-Chlorotoluene	ND	0.0020	mg/Kg wet							
4-Chlorotoluene	ND	0.0020	mg/Kg wet							
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0020	mg/Kg wet							
1,2-Dibromoethane (EDB)	ND	0.0010	mg/Kg wet							
Dibromomethane	ND	0.0020	mg/Kg wet							
1,2-Dichlorobenzene	ND	0.0020	mg/Kg wet							
1,3-Dichlorobenzene	ND	0.0020	mg/Kg wet							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103679 - SW-846 5035										
Blank (B103679-BLK1)				Prepared & Analyzed: 08/27/14						
1,4-Dichlorobenzene	ND	0.0020	mg/Kg wet							
Dichlorodifluoromethane (Freon 12)	ND	0.010	mg/Kg wet							
1,1-Dichloroethane	ND	0.0020	mg/Kg wet							
1,2-Dichloroethane	ND	0.0020	mg/Kg wet							
1,1-Dichloroethylene	ND	0.0040	mg/Kg wet							
cis-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
trans-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
1,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,3-Dichloropropane	ND	0.0010	mg/Kg wet							
2,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,1-Dichloropropene	ND	0.0020	mg/Kg wet							
cis-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
trans-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
Diethyl Ether	ND	0.010	mg/Kg wet							
Diisopropyl Ether (DIPE)	ND	0.0010	mg/Kg wet							
1,4-Dioxane	ND	0.10	mg/Kg wet							V-16
Ethylbenzene	ND	0.0020	mg/Kg wet							
Hexachlorobutadiene	ND	0.0020	mg/Kg wet							
2-Hexanone (MBK)	ND	0.020	mg/Kg wet							
Isopropylbenzene (Cumene)	ND	0.0020	mg/Kg wet							
p-Isopropyltoluene (p-Cymene)	ND	0.0020	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.0040	mg/Kg wet							
Methylene Chloride	ND	0.010	mg/Kg wet							
4-Methyl-2-pentanone (MIBK)	ND	0.020	mg/Kg wet							
Naphthalene	ND	0.010	mg/Kg wet							
n-Propylbenzene	ND	0.0020	mg/Kg wet							
Styrene	ND	0.0020	mg/Kg wet							
1,1,1,2-Tetrachloroethane	ND	0.0020	mg/Kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0010	mg/Kg wet							
Tetrachloroethylene	ND	0.0020	mg/Kg wet							
Tetrahydrofuran	ND	0.010	mg/Kg wet							
Toluene	ND	0.0020	mg/Kg wet							
1,2,3-Trichlorobenzene	ND	0.010	mg/Kg wet							
1,2,4-Trichlorobenzene	ND	0.0040	mg/Kg wet							
1,1,1-Trichloroethane	ND	0.0020	mg/Kg wet							
1,1,2-Trichloroethane	ND	0.0020	mg/Kg wet							
Trichloroethylene	ND	0.0020	mg/Kg wet							
Trichlorofluoromethane (Freon 11)	ND	0.010	mg/Kg wet							
1,2,3-Trichloropropane	ND	0.0020	mg/Kg wet							
1,2,4-Trimethylbenzene	ND	0.0020	mg/Kg wet							
1,3,5-Trimethylbenzene	ND	0.0020	mg/Kg wet							
Vinyl Chloride	ND	0.010	mg/Kg wet							
m+p Xylene	ND	0.0040	mg/Kg wet							
o-Xylene	ND	0.0020	mg/Kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0545*		mg/Kg wet	0.0500		109	70-130			
Surrogate: Toluene-d8	*0.0482*		mg/Kg wet	0.0500		96.4	70-130			
Surrogate: 4-Bromofluorobenzene	*0.0480*		mg/Kg wet	0.0500		96.0	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B103679 - SW-846 5035											
LCS (B103679-BS1)				Prepared & Analyzed: 08/27/14							
Acetone	0.224	0.10	mg/Kg wet	0.200		112	40-160				†
tert-Amyl Methyl Ether (TAME)	0.0188	0.0010	mg/Kg wet	0.0200		94.0	70-130				
Benzene	0.0195	0.0020	mg/Kg wet	0.0200		97.5	70-130				
Bromobenzene	0.0207	0.0020	mg/Kg wet	0.0200		103	70-130				
Bromochloromethane	0.0211	0.0020	mg/Kg wet	0.0200		106	70-130				
Bromodichloromethane	0.0233	0.0020	mg/Kg wet	0.0200		116	70-130				
Bromoform	0.0222	0.010	mg/Kg wet	0.0200		111	70-130				
Bromomethane	0.0135	0.010	mg/Kg wet	0.0200		67.6	40-160			L-14	†
2-Butanone (MEK)	0.217	0.040	mg/Kg wet	0.200		109	40-160				†
n-Butylbenzene	0.0216	0.0020	mg/Kg wet	0.0200		108	70-130				
sec-Butylbenzene	0.0220	0.0020	mg/Kg wet	0.0200		110	70-130				
tert-Butylbenzene	0.0215	0.0020	mg/Kg wet	0.0200		108	70-130				
tert-Butyl Ethyl Ether (TBEE)	0.0197	0.0010	mg/Kg wet	0.0200		98.6	70-130				
Carbon Disulfide	0.0191	0.020	mg/Kg wet	0.0200		95.5	70-130				
Carbon Tetrachloride	0.0223	0.0020	mg/Kg wet	0.0200		111	70-130				
Chlorobenzene	0.0213	0.0020	mg/Kg wet	0.0200		106	70-130				
Chlorodibromomethane	0.0233	0.0010	mg/Kg wet	0.0200		116	70-130				
Chloroethane	0.0190	0.010	mg/Kg wet	0.0200		94.8	70-130				
Chloroform	0.0215	0.0040	mg/Kg wet	0.0200		108	70-130				
Chloromethane	0.0150	0.010	mg/Kg wet	0.0200		75.2	40-160				†
2-Chlorotoluene	0.0221	0.0020	mg/Kg wet	0.0200		110	70-130				
4-Chlorotoluene	0.0224	0.0020	mg/Kg wet	0.0200		112	70-130				
1,2-Dibromo-3-chloropropane (DBCP)	0.0231	0.0020	mg/Kg wet	0.0200		115	70-130				
1,2-Dibromoethane (EDB)	0.0220	0.0010	mg/Kg wet	0.0200		110	70-130				
Dibromomethane	0.0224	0.0020	mg/Kg wet	0.0200		112	70-130				
1,2-Dichlorobenzene	0.0212	0.0020	mg/Kg wet	0.0200		106	70-130				
1,3-Dichlorobenzene	0.0203	0.0020	mg/Kg wet	0.0200		102	70-130				
1,4-Dichlorobenzene	0.0206	0.0020	mg/Kg wet	0.0200		103	70-130				
Dichlorodifluoromethane (Freon 12)	0.0156	0.010	mg/Kg wet	0.0200		78.0	40-160				†
1,1-Dichloroethane	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130				
1,2-Dichloroethane	0.0246	0.0020	mg/Kg wet	0.0200		123	70-130				
1,1-Dichloroethylene	0.0210	0.0040	mg/Kg wet	0.0200		105	70-130				
cis-1,2-Dichloroethylene	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130				
trans-1,2-Dichloroethylene	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130				
1,2-Dichloropropane	0.0209	0.0020	mg/Kg wet	0.0200		104	70-130				
1,3-Dichloropropane	0.0211	0.0010	mg/Kg wet	0.0200		106	70-130				
2,2-Dichloropropane	0.0197	0.0020	mg/Kg wet	0.0200		98.7	70-130				
1,1-Dichloropropene	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130				
cis-1,3-Dichloropropene	0.0212	0.0010	mg/Kg wet	0.0200		106	70-130				
trans-1,3-Dichloropropene	0.0236	0.0010	mg/Kg wet	0.0200		118	70-130				
Diethyl Ether	0.0211	0.010	mg/Kg wet	0.0200		106	70-130				
Diisopropyl Ether (DIPE)	0.0192	0.0010	mg/Kg wet	0.0200		96.0	70-130				
1,4-Dioxane	0.224	0.10	mg/Kg wet	0.200		112	40-160			V-16	†
Ethylbenzene	0.0213	0.0020	mg/Kg wet	0.0200		107	70-130				
Hexachlorobutadiene	0.0226	0.0020	mg/Kg wet	0.0200		113	70-130				
2-Hexanone (MBK)	0.214	0.020	mg/Kg wet	0.200		107	40-160				†
Isopropylbenzene (Cumene)	0.0224	0.0020	mg/Kg wet	0.0200		112	70-130				
p-Isopropyltoluene (p-Cymene)	0.0209	0.0020	mg/Kg wet	0.0200		105	70-130				
Methyl tert-Butyl Ether (MTBE)	0.0204	0.0040	mg/Kg wet	0.0200		102	70-130				
Methylene Chloride	0.0183	0.010	mg/Kg wet	0.0200		91.5	70-130				
4-Methyl-2-pentanone (MIBK)	0.193	0.020	mg/Kg wet	0.200		96.7	40-160				†
Naphthalene	0.0208	0.010	mg/Kg wet	0.0200		104	70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103679 - SW-846 5035										
LCS (B103679-BS1)				Prepared & Analyzed: 08/27/14						
n-Propylbenzene	0.0228	0.0020	mg/Kg wet	0.0200		114	70-130			
Styrene	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130			
1,1,1,2-Tetrachloroethane	0.0234	0.0020	mg/Kg wet	0.0200		117	70-130			
1,1,2,2-Tetrachloroethane	0.0212	0.0010	mg/Kg wet	0.0200		106	70-130			
Tetrachloroethylene	0.0217	0.0020	mg/Kg wet	0.0200		108	70-130			
Tetrahydrofuran	0.0196	0.010	mg/Kg wet	0.0200		97.9	70-130			
Toluene	0.0211	0.0020	mg/Kg wet	0.0200		105	70-130			
1,2,3-Trichlorobenzene	0.0201	0.010	mg/Kg wet	0.0200		100	70-130			
1,2,4-Trichlorobenzene	0.0196	0.0040	mg/Kg wet	0.0200		98.0	70-130			
1,1,1-Trichloroethane	0.0216	0.0020	mg/Kg wet	0.0200		108	70-130			
1,1,2-Trichloroethane	0.0220	0.0020	mg/Kg wet	0.0200		110	70-130			
Trichloroethylene	0.0230	0.0020	mg/Kg wet	0.0200		115	70-130			
Trichlorofluoromethane (Freon 11)	0.0219	0.010	mg/Kg wet	0.0200		110	70-130			
1,2,3-Trichloropropane	0.0217	0.0020	mg/Kg wet	0.0200		108	70-130			
1,2,4-Trimethylbenzene	0.0207	0.0020	mg/Kg wet	0.0200		104	70-130			
1,3,5-Trimethylbenzene	0.0216	0.0020	mg/Kg wet	0.0200		108	70-130			
Vinyl Chloride	0.0142	0.010	mg/Kg wet	0.0200		70.9	70-130			
m+p Xylene	0.0442	0.0040	mg/Kg wet	0.0400		111	70-130			
o-Xylene	0.0220	0.0020	mg/Kg wet	0.0200		110	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0531*		mg/Kg wet	0.0500		106	70-130			
Surrogate: Toluene-d8	*0.0491*		mg/Kg wet	0.0500		98.2	70-130			
Surrogate: 4-Bromofluorobenzene	*0.0499*		mg/Kg wet	0.0500		99.9	70-130			
LCS Dup (B103679-BSD1)				Prepared & Analyzed: 08/27/14						
Acetone	0.250	0.10	mg/Kg wet	0.200		125	40-160	11.1	20	†
tert-Amyl Methyl Ether (TAME)	0.0185	0.0010	mg/Kg wet	0.0200		92.6	70-130	1.50	20	
Benzene	0.0194	0.0020	mg/Kg wet	0.0200		97.0	70-130	0.514	20	
Bromobenzene	0.0203	0.0020	mg/Kg wet	0.0200		101	70-130	1.96	20	
Bromochloromethane	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130	3.27	20	
Bromodichloromethane	0.0228	0.0020	mg/Kg wet	0.0200		114	70-130	2.26	20	
Bromoform	0.0215	0.010	mg/Kg wet	0.0200		107	70-130	3.30	20	
Bromomethane	0.0164	0.010	mg/Kg wet	0.0200		82.0	40-160	19.3	20	†
2-Butanone (MEK)	0.234	0.040	mg/Kg wet	0.200		117	40-160	7.26	20	†
n-Butylbenzene	0.0212	0.0020	mg/Kg wet	0.0200		106	70-130	1.68	20	
sec-Butylbenzene	0.0218	0.0020	mg/Kg wet	0.0200		109	70-130	0.912	20	
tert-Butylbenzene	0.0213	0.0020	mg/Kg wet	0.0200		106	70-130	1.12	20	
tert-Butyl Ethyl Ether (TBEE)	0.0192	0.0010	mg/Kg wet	0.0200		96.1	70-130	2.57	20	
Carbon Disulfide	0.0201	0.020	mg/Kg wet	0.0200		101	70-130	5.20	20	
Carbon Tetrachloride	0.0215	0.0020	mg/Kg wet	0.0200		108	70-130	3.29	20	
Chlorobenzene	0.0208	0.0020	mg/Kg wet	0.0200		104	70-130	2.00	20	
Chlorodibromomethane	0.0231	0.0010	mg/Kg wet	0.0200		116	70-130	0.862	20	
Chloroethane	0.0207	0.010	mg/Kg wet	0.0200		103	70-130	8.58	20	
Chloroform	0.0210	0.0040	mg/Kg wet	0.0200		105	70-130	2.63	20	
Chloromethane	0.0160	0.010	mg/Kg wet	0.0200		80.0	40-160	6.19	20	†
2-Chlorotoluene	0.0217	0.0020	mg/Kg wet	0.0200		109	70-130	1.73	20	
4-Chlorotoluene	0.0216	0.0020	mg/Kg wet	0.0200		108	70-130	3.55	20	
1,2-Dibromo-3-chloropropane (DBCP)	0.0226	0.0020	mg/Kg wet	0.0200		113	70-130	2.19	20	
1,2-Dibromoethane (EDB)	0.0216	0.0010	mg/Kg wet	0.0200		108	70-130	2.20	20	
Dibromomethane	0.0220	0.0020	mg/Kg wet	0.0200		110	70-130	1.89	20	
1,2-Dichlorobenzene	0.0208	0.0020	mg/Kg wet	0.0200		104	70-130	2.10	20	
1,3-Dichlorobenzene	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130	0.691	20	
1,4-Dichlorobenzene	0.0200	0.0020	mg/Kg wet	0.0200		100	70-130	2.66	20	

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B103679 - SW-846 5035											
LCS Dup (B103679-BSD1)				Prepared & Analyzed: 08/27/14							
Dichlorodifluoromethane (Freon 12)	0.0168	0.010	mg/Kg wet	0.0200		83.8	40-160	7.17	20		†
1,1-Dichloroethane	0.0201	0.0020	mg/Kg wet	0.0200		101	70-130	0.199	20		
1,2-Dichloroethane	0.0237	0.0020	mg/Kg wet	0.0200		119	70-130	3.40	20		
1,1-Dichloroethylene	0.0216	0.0040	mg/Kg wet	0.0200		108	70-130	2.82	20		
cis-1,2-Dichloroethylene	0.0201	0.0020	mg/Kg wet	0.0200		100	70-130	1.68	20		
trans-1,2-Dichloroethylene	0.0205	0.0020	mg/Kg wet	0.0200		103	70-130	0.391	20		
1,2-Dichloropropane	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130	2.03	20		
1,3-Dichloropropane	0.0204	0.0010	mg/Kg wet	0.0200		102	70-130	3.66	20		
2,2-Dichloropropane	0.0193	0.0020	mg/Kg wet	0.0200		96.7	70-130	2.05	20		
1,1-Dichloropropene	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130	0.689	20		
cis-1,3-Dichloropropene	0.0204	0.0010	mg/Kg wet	0.0200		102	70-130	3.75	20		
trans-1,3-Dichloropropene	0.0226	0.0010	mg/Kg wet	0.0200		113	70-130	4.15	20		
Diethyl Ether	0.0212	0.010	mg/Kg wet	0.0200		106	70-130	0.378	20		
Diisopropyl Ether (DIPE)	0.0189	0.0010	mg/Kg wet	0.0200		94.4	70-130	1.68	20		
1,4-Dioxane	0.196	0.10	mg/Kg wet	0.200		98.1	40-160	13.4	20	V-16	†
Ethylbenzene	0.0209	0.0020	mg/Kg wet	0.0200		104	70-130	2.09	20		
Hexachlorobutadiene	0.0226	0.0020	mg/Kg wet	0.0200		113	70-130	0.0885	20		
2-Hexanone (MBK)	0.232	0.020	mg/Kg wet	0.200		116	40-160	8.06	20		†
Isopropylbenzene (Cumene)	0.0220	0.0020	mg/Kg wet	0.0200		110	70-130	1.80	20		
p-Isopropyltoluene (p-Cymene)	0.0207	0.0020	mg/Kg wet	0.0200		103	70-130	1.15	20		
Methyl tert-Butyl Ether (MTBE)	0.0199	0.0040	mg/Kg wet	0.0200		99.4	70-130	2.78	20		
Methylene Chloride	0.0182	0.010	mg/Kg wet	0.0200		90.9	70-130	0.658	20		
4-Methyl-2-pentanone (MIBK)	0.189	0.020	mg/Kg wet	0.200		94.5	40-160	2.36	20		†
Naphthalene	0.0206	0.010	mg/Kg wet	0.0200		103	70-130	1.16	20		
n-Propylbenzene	0.0224	0.0020	mg/Kg wet	0.0200		112	70-130	1.86	20		
Styrene	0.0196	0.0020	mg/Kg wet	0.0200		98.2	70-130	3.60	20		
1,1,1,2-Tetrachloroethane	0.0230	0.0020	mg/Kg wet	0.0200		115	70-130	1.73	20		
1,1,2,2-Tetrachloroethane	0.0204	0.0010	mg/Kg wet	0.0200		102	70-130	4.04	20		
Tetrachloroethylene	0.0214	0.0020	mg/Kg wet	0.0200		107	70-130	1.11	20		
Tetrahydrofuran	0.0185	0.010	mg/Kg wet	0.0200		92.5	70-130	5.67	20		
Toluene	0.0207	0.0020	mg/Kg wet	0.0200		104	70-130	1.72	20		
1,2,3-Trichlorobenzene	0.0198	0.010	mg/Kg wet	0.0200		99.2	70-130	1.20	20		
1,2,4-Trichlorobenzene	0.0194	0.0040	mg/Kg wet	0.0200		97.0	70-130	1.03	20		
1,1,1-Trichloroethane	0.0215	0.0020	mg/Kg wet	0.0200		108	70-130	0.464	20		
1,1,2-Trichloroethane	0.0210	0.0020	mg/Kg wet	0.0200		105	70-130	4.74	20		
Trichloroethylene	0.0223	0.0020	mg/Kg wet	0.0200		112	70-130	2.91	20		
Trichlorofluoromethane (Freon 11)	0.0230	0.010	mg/Kg wet	0.0200		115	70-130	4.99	20		
1,2,3-Trichloropropane	0.0212	0.0020	mg/Kg wet	0.0200		106	70-130	2.14	20		
1,2,4-Trimethylbenzene	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130	2.44	20		
1,3,5-Trimethylbenzene	0.0211	0.0020	mg/Kg wet	0.0200		106	70-130	2.25	20		
Vinyl Chloride	0.0145	0.010	mg/Kg wet	0.0200		72.7	70-130	2.51	20		
m+p Xylene	0.0432	0.0040	mg/Kg wet	0.0400		108	70-130	2.24	20		
o-Xylene	0.0216	0.0020	mg/Kg wet	0.0200		108	70-130	2.11	20		
Surrogate: 1,2-Dichloroethane-d4	*0.0522*		mg/Kg wet	0.0500		104	70-130				
Surrogate: Toluene-d8	*0.0490*		mg/Kg wet	0.0500		98.0	70-130				
Surrogate: 4-Bromofluorobenzene	*0.0497*		mg/Kg wet	0.0500		99.4	70-130				

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103589 - SW-846 3540C										
Blank (B103589-BLK1)				Prepared: 08/26/14 Analyzed: 08/27/14						
Aroclor-1016	ND	0.10	mg/Kg							
Aroclor-1016 [2C]	ND	0.10	mg/Kg							
Aroclor-1221	ND	0.10	mg/Kg							
Aroclor-1221 [2C]	ND	0.10	mg/Kg							
Aroclor-1232	ND	0.10	mg/Kg							
Aroclor-1232 [2C]	ND	0.10	mg/Kg							
Aroclor-1242	ND	0.10	mg/Kg							
Aroclor-1242 [2C]	ND	0.10	mg/Kg							
Aroclor-1248	ND	0.10	mg/Kg							
Aroclor-1248 [2C]	ND	0.10	mg/Kg							
Aroclor-1254	ND	0.10	mg/Kg							
Aroclor-1254 [2C]	ND	0.10	mg/Kg							
Aroclor-1260	ND	0.10	mg/Kg							
Aroclor-1260 [2C]	ND	0.10	mg/Kg							
Aroclor-1262	ND	0.10	mg/Kg							
Aroclor-1262 [2C]	ND	0.10	mg/Kg							
Aroclor-1268	ND	0.10	mg/Kg							
Aroclor-1268 [2C]	ND	0.10	mg/Kg							
Surrogate: Decachlorobiphenyl	*0.922*		mg/Kg	1.00		92.2	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.846*		mg/Kg	1.00		84.6	30-150			
Surrogate: Tetrachloro-m-xylene	*0.815*		mg/Kg	1.00		81.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.815*		mg/Kg	1.00		81.5	30-150			
LCS (B103589-BS1)				Prepared: 08/26/14 Analyzed: 08/27/14						
Aroclor-1016	0.24	0.10	mg/Kg	0.250		94.5	40-140			
Aroclor-1016 [2C]	0.21	0.10	mg/Kg	0.250		84.0	40-140			
Aroclor-1260	0.23	0.10	mg/Kg	0.250		92.0	40-140			
Aroclor-1260 [2C]	0.23	0.10	mg/Kg	0.250		90.7	40-140			
Surrogate: Decachlorobiphenyl	*0.964*		mg/Kg	1.00		96.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.889*		mg/Kg	1.00		88.9	30-150			
Surrogate: Tetrachloro-m-xylene	*0.850*		mg/Kg	1.00		85.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.853*		mg/Kg	1.00		85.3	30-150			
LCS Dup (B103589-BSD1)				Prepared: 08/26/14 Analyzed: 08/27/14						
Aroclor-1016	0.23	0.10	mg/Kg	0.250		91.5	40-140	3.19	30	
Aroclor-1016 [2C]	0.20	0.10	mg/Kg	0.250		81.0	40-140	3.57	30	
Aroclor-1260	0.22	0.10	mg/Kg	0.250		87.6	40-140	4.88	30	
Aroclor-1260 [2C]	0.22	0.10	mg/Kg	0.250		87.8	40-140	3.18	30	
Surrogate: Decachlorobiphenyl	*0.955*		mg/Kg	1.00		95.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.873*		mg/Kg	1.00		87.3	30-150			
Surrogate: Tetrachloro-m-xylene	*0.812*		mg/Kg	1.00		81.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.813*		mg/Kg	1.00		81.3	30-150			

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B103589 - SW-846 3540C											
Matrix Spike (B103589-MS1)	**Source: 14H1126-15**			Prepared: 08/26/14 Analyzed: 08/29/14							
Aroclor-1016	0.40	0.10	mg/Kg	0.250	0.0	**161**	*	40-140			MS-21
Aroclor-1016 [2C]	0.39	0.10	mg/Kg	0.250	0.0	**157**	*	40-140			MS-21
Aroclor-1260	1.9	0.10	mg/Kg	0.250	0.0	**762**	*	40-140			MS-21
Aroclor-1260 [2C]	2.2	0.10	mg/Kg	0.250	0.0	**891**	*	40-140			MS-21
Surrogate: Decachlorobiphenyl	*0.867*		mg/Kg	1.00		86.7		30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.835*		mg/Kg	1.00		83.5		30-150			
Surrogate: Tetrachloro-m-xylene	*0.818*		mg/Kg	1.00		81.8		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.854*		mg/Kg	1.00		85.4		30-150			
Matrix Spike Dup (B103589-MSD1)	**Source: 14H1126-15**			Prepared: 08/26/14 Analyzed: 08/29/14							
Aroclor-1016	0.41	0.10	mg/Kg	0.250	0.0	**166**	*	40-140	2.57	50	MS-21
Aroclor-1016 [2C]	0.42	0.10	mg/Kg	0.250	0.0	**169**	*	40-140	7.53	50	MS-21
Aroclor-1260	2.0	0.10	mg/Kg	0.250	0.0	**799**	*	40-140	4.69	50	MS-21
Aroclor-1260 [2C]	2.4	0.10	mg/Kg	0.250	0.0	**958**	*	40-140	7.21	50	MS-21
Surrogate: Decachlorobiphenyl	*0.905*		mg/Kg	1.00		90.5		30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.899*		mg/Kg	1.00		89.9		30-150			
Surrogate: Tetrachloro-m-xylene	*0.903*		mg/Kg	1.00		90.3		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.947*		mg/Kg	1.00		94.7		30-150			
Batch B103590 - SW-846 3540C											
Blank (B103590-BLK1)				Prepared: 08/26/14 Analyzed: 08/27/14							
Aroclor-1016	ND	0.020	mg/Kg wet								
Aroclor-1016 [2C]	ND	0.020	mg/Kg wet								
Aroclor-1221	ND	0.020	mg/Kg wet								
Aroclor-1221 [2C]	ND	0.020	mg/Kg wet								
Aroclor-1232	ND	0.020	mg/Kg wet								
Aroclor-1232 [2C]	ND	0.020	mg/Kg wet								
Aroclor-1242	ND	0.020	mg/Kg wet								
Aroclor-1242 [2C]	ND	0.020	mg/Kg wet								
Aroclor-1248	ND	0.020	mg/Kg wet								
Aroclor-1248 [2C]	ND	0.020	mg/Kg wet								
Aroclor-1254	ND	0.020	mg/Kg wet								
Aroclor-1254 [2C]	ND	0.020	mg/Kg wet								
Aroclor-1260	ND	0.020	mg/Kg wet								
Aroclor-1260 [2C]	ND	0.020	mg/Kg wet								
Aroclor-1262	ND	0.020	mg/Kg wet								
Aroclor-1262 [2C]	ND	0.020	mg/Kg wet								
Aroclor-1268	ND	0.020	mg/Kg wet								
Aroclor-1268 [2C]	ND	0.020	mg/Kg wet								
Surrogate: Decachlorobiphenyl	*0.166*		mg/Kg wet	0.200		82.8		30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.185*		mg/Kg wet	0.200		92.5		30-150			
Surrogate: Tetrachloro-m-xylene	*0.164*		mg/Kg wet	0.200		82.0		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.176*		mg/Kg wet	0.200		88.2		30-150			

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103590 - SW-846 3540C										
LCS (B103590-BS1)				Prepared: 08/26/14 Analyzed: 08/27/14						
Aroclor-1016	0.23	0.10	mg/Kg wet	0.200		116	40-140			V-06
Aroclor-1016 [2C]	0.19	0.10	mg/Kg wet	0.200		93.8	40-140			
Aroclor-1260	0.22	0.10	mg/Kg wet	0.200		109	40-140			
Aroclor-1260 [2C]	0.20	0.10	mg/Kg wet	0.200		98.6	40-140			
Surrogate: Decachlorobiphenyl	*0.209*		mg/Kg wet	0.200		104	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.219*		mg/Kg wet	0.200		109	30-150			
Surrogate: Tetrachloro-m-xylene	*0.191*		mg/Kg wet	0.200		95.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.194*		mg/Kg wet	0.200		97.1	30-150			
LCS Dup (B103590-BSD1)				Prepared: 08/26/14 Analyzed: 08/27/14						
Aroclor-1016	0.23	0.10	mg/Kg wet	0.200		114	40-140	2.36	30	V-06
Aroclor-1016 [2C]	0.18	0.10	mg/Kg wet	0.200		90.1	40-140	4.03	30	
Aroclor-1260	0.21	0.10	mg/Kg wet	0.200		104	40-140	4.21	30	
Aroclor-1260 [2C]	0.19	0.10	mg/Kg wet	0.200		94.7	40-140	4.08	30	
Surrogate: Decachlorobiphenyl	*0.193*		mg/Kg wet	0.200		96.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.198*		mg/Kg wet	0.200		98.8	30-150			
Surrogate: Tetrachloro-m-xylene	*0.191*		mg/Kg wet	0.200		95.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.188*		mg/Kg wet	0.200		93.8	30-150			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103793 - SW-846 3546										
Blank (B103793-BLK1)				Prepared: 08/28/14 Analyzed: 08/29/14						
C9-C18 Aliphatics	ND	10	mg/Kg wet							
C19-C36 Aliphatics	ND	10	mg/Kg wet							
Unadjusted C11-C22 Aromatics	ND	10	mg/Kg wet							
C11-C22 Aromatics	ND	10	mg/Kg wet							
Acenaphthene	ND	0.10	mg/Kg wet							
Acenaphthylene	ND	0.10	mg/Kg wet							
Anthracene	ND	0.10	mg/Kg wet							
Benzo(a)anthracene	ND	0.10	mg/Kg wet							
Benzo(a)pyrene	ND	0.10	mg/Kg wet							
Benzo(b)fluoranthene	ND	0.10	mg/Kg wet							
Benzo(g,h,i)perylene	ND	0.10	mg/Kg wet							
Benzo(k)fluoranthene	ND	0.10	mg/Kg wet							
Chrysene	ND	0.10	mg/Kg wet							
Dibenz(a,h)anthracene	ND	0.10	mg/Kg wet							
Fluoranthene	ND	0.10	mg/Kg wet							
Fluorene	ND	0.10	mg/Kg wet							
Indeno(1,2,3-cd)pyrene	ND	0.10	mg/Kg wet							
2-Methylnaphthalene	ND	0.10	mg/Kg wet							
Naphthalene	ND	0.10	mg/Kg wet							
Phenanthrene	ND	0.10	mg/Kg wet							
Pyrene	ND	0.10	mg/Kg wet							
n-Decane	ND	0.10	mg/Kg wet							
n-Docosane	ND	0.10	mg/Kg wet							
n-Dodecane	ND	0.10	mg/Kg wet							
n-Eicosane	ND	0.10	mg/Kg wet							
n-Hexacosane	ND	0.10	mg/Kg wet							
n-Hexadecane	ND	0.10	mg/Kg wet							
n-Hexatriacontane	ND	0.10	mg/Kg wet							
n-Nonadecane	ND	0.10	mg/Kg wet							
n-Nonane	ND	0.10	mg/Kg wet							
n-Octacosane	ND	0.10	mg/Kg wet							
n-Octadecane	ND	0.10	mg/Kg wet							
n-Tetracosane	ND	0.10	mg/Kg wet							
n-Tetradecane	ND	0.10	mg/Kg wet							
n-Triacontane	ND	0.10	mg/Kg wet							
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet							
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet							
Surrogate: Chlorooctadecane (COD)	*3.36*		mg/Kg wet	5.00		67.2	40-140			
Surrogate: o-Terphenyl (OTP)	*3.55*		mg/Kg wet	5.05		70.3	40-140			
Surrogate: 2-Bromonaphthalene	*3.87*		mg/Kg wet	5.00		77.4	40-140			
Surrogate: 2-Fluorobiphenyl	*4.26*		mg/Kg wet	5.00		85.1	40-140			
LCS (B103793-BS1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Acenaphthene	3.49	0.10	mg/Kg wet	5.00		69.9	40-140			
Acenaphthylene	3.39	0.10	mg/Kg wet	5.00		67.9	40-140			
Anthracene	3.84	0.10	mg/Kg wet	5.00		76.9	40-140			
Benzo(a)anthracene	3.46	0.10	mg/Kg wet	5.00		69.2	40-140			
Benzo(a)pyrene	3.42	0.10	mg/Kg wet	5.00		68.5	40-140			
Benzo(b)fluoranthene	3.37	0.10	mg/Kg wet	5.00		67.4	40-140			
Benzo(g,h,i)perylene	3.47	0.10	mg/Kg wet	5.00		69.5	40-140			
Benzo(k)fluoranthene	3.35	0.10	mg/Kg wet	5.00		67.0	40-140			
Chrysene	3.50	0.10	mg/Kg wet	5.00		70.0	40-140			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103793 - SW-846 3546										
LCS (B103793-BS1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Dibenz(a,h)anthracene	3.39	0.10	mg/Kg wet	5.00		67.8	40-140			
Fluoranthene	3.51	0.10	mg/Kg wet	5.00		70.1	40-140			
Fluorene	3.57	0.10	mg/Kg wet	5.00		71.4	40-140			
Indeno(1,2,3-cd)pyrene	2.80	0.10	mg/Kg wet	5.00		56.1	40-140			
2-Methylnaphthalene	3.43	0.10	mg/Kg wet	5.00		68.7	40-140			
Naphthalene	3.24	0.10	mg/Kg wet	5.00		64.8	40-140			
Phenanthrene	3.54	0.10	mg/Kg wet	5.00		70.8	40-140			
Pyrene	3.50	0.10	mg/Kg wet	5.00		69.9	40-140			
n-Decane	2.43	0.10	mg/Kg wet	5.00		48.6	40-140			
n-Docosane	3.30	0.10	mg/Kg wet	5.00		66.0	40-140			
n-Dodecane	3.04	0.10	mg/Kg wet	5.00		60.9	40-140			
n-Eicosane	3.25	0.10	mg/Kg wet	5.00		65.0	40-140			
n-Hexacosane	3.16	0.10	mg/Kg wet	5.00		63.2	40-140			
n-Hexadecane	3.44	0.10	mg/Kg wet	5.00		68.7	40-140			
n-Hexatriacontane	3.73	0.10	mg/Kg wet	5.00		74.6	40-140			
n-Nonadecane	3.32	0.10	mg/Kg wet	5.00		66.4	40-140			
n-Nonane	1.76	0.10	mg/Kg wet	5.00		35.2	30-140			
n-Octacosane	3.12	0.10	mg/Kg wet	5.00		62.5	40-140			
n-Octadecane	3.38	0.10	mg/Kg wet	5.00		67.6	40-140			
n-Tetracosane	3.18	0.10	mg/Kg wet	5.00		63.6	40-140			
n-Tetradecane	3.30	0.10	mg/Kg wet	5.00		66.0	40-140			
n-Triacontane	3.23	0.10	mg/Kg wet	5.00		64.6	40-140			
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
Surrogate: Chlorooctadecane (COD)	*2.97*		mg/Kg wet	5.00		59.4	40-140			
Surrogate: o-Terphenyl (OTP)	*3.46*		mg/Kg wet	5.05		68.5	40-140			
Surrogate: 2-Bromonaphthalene	*3.91*		mg/Kg wet	5.00		78.1	40-140			
Surrogate: 2-Fluorobiphenyl	*4.39*		mg/Kg wet	5.00		87.7	40-140			
LCS Dup (B103793-BSD1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Acenaphthene	3.25	0.10	mg/Kg wet	5.00		65.0	40-140	7.23	25	
Acenaphthylene	3.15	0.10	mg/Kg wet	5.00		62.9	40-140	7.57	25	
Anthracene	3.66	0.10	mg/Kg wet	5.00		73.3	40-140	4.77	25	
Benzo(a)anthracene	3.33	0.10	mg/Kg wet	5.00		66.6	40-140	3.91	25	
Benzo(a)pyrene	3.30	0.10	mg/Kg wet	5.00		66.0	40-140	3.70	25	
Benzo(b)fluoranthene	3.25	0.10	mg/Kg wet	5.00		65.0	40-140	3.68	25	
Benzo(g,h,i)perylene	3.34	0.10	mg/Kg wet	5.00		66.7	40-140	4.07	25	
Benzo(k)fluoranthene	3.23	0.10	mg/Kg wet	5.00		64.6	40-140	3.68	25	
Chrysene	3.37	0.10	mg/Kg wet	5.00		67.5	40-140	3.61	25	
Dibenz(a,h)anthracene	3.28	0.10	mg/Kg wet	5.00		65.6	40-140	3.32	25	
Fluoranthene	3.36	0.10	mg/Kg wet	5.00		67.2	40-140	4.34	25	
Fluorene	3.38	0.10	mg/Kg wet	5.00		67.6	40-140	5.39	25	
Indeno(1,2,3-cd)pyrene	2.70	0.10	mg/Kg wet	5.00		54.1	40-140	3.59	25	
2-Methylnaphthalene	3.15	0.10	mg/Kg wet	5.00		63.1	40-140	8.53	25	
Naphthalene	2.97	0.10	mg/Kg wet	5.00		59.4	40-140	8.75	25	
Phenanthrene	3.40	0.10	mg/Kg wet	5.00		68.1	40-140	3.94	25	
Pyrene	3.35	0.10	mg/Kg wet	5.00		67.0	40-140	4.17	25	
n-Decane	2.31	0.10	mg/Kg wet	5.00		46.2	40-140	5.02	25	
n-Docosane	3.51	0.10	mg/Kg wet	5.00		70.2	40-140	6.05	25	
n-Dodecane	3.03	0.10	mg/Kg wet	5.00		60.5	40-140	0.586	25	
n-Eicosane	3.45	0.10	mg/Kg wet	5.00		68.9	40-140	5.79	25	
n-Hexacosane	3.37	0.10	mg/Kg wet	5.00		67.4	40-140	6.43	25	

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103793 - SW-846 3546										
LCS Dup (B103793-BSD1)				Prepared: 08/28/14 Analyzed: 08/29/14						
n-Hexadecane	3.59	0.10	mg/Kg wet	5.00		71.9	40-140	4.45	25	
n-Hexatriacontane	3.81	0.10	mg/Kg wet	5.00		76.1	40-140	2.04	25	
n-Nonadecane	3.52	0.10	mg/Kg wet	5.00		70.5	40-140	5.90	25	
n-Nonane	1.61	0.10	mg/Kg wet	5.00		32.2	30-140	8.98	25	
n-Octacosane	3.34	0.10	mg/Kg wet	5.00		66.7	40-140	6.57	25	
n-Octadecane	3.58	0.10	mg/Kg wet	5.00		71.7	40-140	5.81	25	
n-Tetracosane	3.40	0.10	mg/Kg wet	5.00		68.0	40-140	6.65	25	
n-Tetradecane	3.37	0.10	mg/Kg wet	5.00		67.4	40-140	2.09	25	
n-Triacontane	3.42	0.10	mg/Kg wet	5.00		68.4	40-140	5.79	25	
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
Surrogate: Chlorooctadecane (COD)	*3.00*		mg/Kg wet	5.00		59.9	40-140			
Surrogate: o-Terphenyl (OTP)	*3.24*		mg/Kg wet	5.05		64.2	40-140			
Surrogate: 2-Bromonaphthalene	*3.89*		mg/Kg wet	5.00		77.8	40-140			
Surrogate: 2-Fluorobiphenyl	*4.27*		mg/Kg wet	5.00		85.4	40-140			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - VPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103663 - MA VPH										
Blank (B103663-BLK1)				Prepared & Analyzed: 08/27/14						
Unadjusted C5-C8 Aliphatics	ND	10	mg/Kg wet							
C5-C8 Aliphatics	ND	10	mg/Kg wet							
Unadjusted C9-C12 Aliphatics	ND	10	mg/Kg wet							
C9-C12 Aliphatics	ND	10	mg/Kg wet							
C9-C10 Aromatics	ND	10	mg/Kg wet							
Benzene	ND	0.050	mg/Kg wet							
Butylcyclohexane	ND	0.050	mg/Kg wet							
Decane	ND	0.050	mg/Kg wet							
Ethylbenzene	ND	0.050	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.050	mg/Kg wet							
2-Methylpentane	ND	0.050	mg/Kg wet							
Naphthalene	ND	0.50	mg/Kg wet							
Nonane	ND	0.050	mg/Kg wet							
Pentane	ND	0.050	mg/Kg wet							
Toluene	ND	0.050	mg/Kg wet							
1,2,4-Trimethylbenzene	ND	0.050	mg/Kg wet							
2,2,4-Trimethylpentane	ND	0.050	mg/Kg wet							
m+p Xylene	ND	0.10	mg/Kg wet							
o-Xylene	ND	0.050	mg/Kg wet							
Surrogate: 2,5-Dibromotoluene (FID)	*2.58*		mg/Kg wet	3.33		77.3	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*2.53*		mg/Kg wet	3.33		75.8	70-130			
LCS (B103663-BS1)				Prepared & Analyzed: 08/27/14						
Benzene	0.0958	0.0010	mg/Kg wet	0.100		95.8	70-130			
Butylcyclohexane	0.0855	0.0010	mg/Kg wet	0.100		85.5	70-130			
Decane	0.0977	0.0010	mg/Kg wet	0.100		97.7	70-130			
Ethylbenzene	0.0849	0.0010	mg/Kg wet	0.100		84.9	70-130			
Methyl tert-Butyl Ether (MTBE)	0.0998	0.0010	mg/Kg wet	0.100		99.8	70-130			
2-Methylpentane	0.0965	0.0010	mg/Kg wet	0.100		96.5	70-130			
Naphthalene	0.0877	0.010	mg/Kg wet	0.100		87.7	70-130			
Nonane	0.0948	0.0010	mg/Kg wet	0.100		94.8	30-130			
Pentane	0.103	0.0010	mg/Kg wet	0.100		103	70-130			
Toluene	0.0917	0.0010	mg/Kg wet	0.100		91.7	70-130			
1,2,4-Trimethylbenzene	0.0774	0.0010	mg/Kg wet	0.100		77.4	70-130			
2,2,4-Trimethylpentane	0.108	0.0010	mg/Kg wet	0.100		108	70-130			
m+p Xylene	0.173	0.0020	mg/Kg wet	0.200		86.5	70-130			
o-Xylene	0.0846	0.0010	mg/Kg wet	0.100		84.6	70-130			
Surrogate: 2,5-Dibromotoluene (FID)	*0.0403*		mg/Kg wet	0.0400		101	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*0.0343*		mg/Kg wet	0.0400		85.7	70-130			
LCS Dup (B103663-BSD1)				Prepared & Analyzed: 08/27/14						
Benzene	0.0958	0.0010	mg/Kg wet	0.100		95.8	70-130	0.0344	25	
Butylcyclohexane	0.0902	0.0010	mg/Kg wet	0.100		90.2	70-130	5.42	25	
Decane	0.103	0.0010	mg/Kg wet	0.100		103	70-130	5.16	25	
Ethylbenzene	0.0858	0.0010	mg/Kg wet	0.100		85.8	70-130	1.05	25	
Methyl tert-Butyl Ether (MTBE)	0.0953	0.0010	mg/Kg wet	0.100		95.3	70-130	4.61	25	
2-Methylpentane	0.0965	0.0010	mg/Kg wet	0.100		96.5	70-130	0.0135	25	
Naphthalene	0.0899	0.010	mg/Kg wet	0.100		89.9	70-130	2.42	25	
Nonane	0.100	0.0010	mg/Kg wet	0.100		100	30-130	5.44	25	
Pentane	0.103	0.0010	mg/Kg wet	0.100		103	70-130	0.428	25	
Toluene	0.0923	0.0010	mg/Kg wet	0.100		92.3	70-130	0.689	25	
1,2,4-Trimethylbenzene	0.0781	0.0010	mg/Kg wet	0.100		78.1	70-130	0.922	25	

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - VPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103663 - MA VPH										
LCS Dup (B103663-BSD1)				Prepared & Analyzed: 08/27/14						
2,2,4-Trimethylpentane	0.106	0.0010	mg/Kg wet	0.100		106	70-130	1.95	25	
m+p Xylene	0.175	0.0020	mg/Kg wet	0.200		87.7	70-130	1.39	25	
o-Xylene	0.0857	0.0010	mg/Kg wet	0.100		85.7	70-130	1.26	25	
Surrogate: 2,5-Dibromotoluene (FID)	*0.0414*		mg/Kg wet	0.0400		104	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*0.0374*		mg/Kg wet	0.0400		93.5	70-130			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103696 - SW-846 7471										
Blank (B103696-BLK1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Mercury	ND	0.025	mg/Kg wet							
LCS (B103696-BS1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Mercury	5.82	0.37	mg/Kg wet	5.76		101	71.2-128.6			
LCS Dup (B103696-BSD1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Mercury	5.56	0.39	mg/Kg wet	5.76		96.4	71.2-128.6	4.72	30	
Batch B103724 - SW-846 3050B										
Blank (B103724-BLK1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Arsenic	ND	2.5	mg/Kg wet							
Barium	ND	2.5	mg/Kg wet							
Cadmium	ND	0.25	mg/Kg wet							
Chromium	ND	0.50	mg/Kg wet							
Lead	ND	0.75	mg/Kg wet							
Selenium	ND	5.0	mg/Kg wet							
Silver	ND	0.50	mg/Kg wet							
LCS (B103724-BS1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Arsenic	123	5.0	mg/Kg wet	122		101	77.8-122.1			
Barium	166	5.0	mg/Kg wet	167		99.3	82-117.4			
Cadmium	88.0	0.50	mg/Kg wet	88.0		100	81.9-118.2			
Chromium	105	1.0	mg/Kg wet	102		103	78.7-120.6			
Lead	90.3	1.5	mg/Kg wet	94.5		95.6	82.4-117.8			
Selenium	161	10	mg/Kg wet	157		102	77.1-122.3			
Silver	32.4	1.0	mg/Kg wet	34.2		94.7	74.3-125.4			
LCS Dup (B103724-BSD1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Arsenic	121	5.0	mg/Kg wet	122		98.9	77.8-122.1	1.70	30	
Barium	168	5.0	mg/Kg wet	167		101	82-117.4	1.28	30	
Cadmium	89.0	0.50	mg/Kg wet	88.0		101	81.9-118.2	1.14	30	
Chromium	104	1.0	mg/Kg wet	102		102	78.7-120.6	0.942	30	
Lead	90.1	1.5	mg/Kg wet	94.5		95.3	82.4-117.8	0.264	30	
Selenium	162	10	mg/Kg wet	157		103	77.1-122.3	0.647	30	
Silver	32.0	1.0	mg/Kg wet	34.2		93.6	74.3-125.4	1.20	30	
MRL Check (B103724-MRL1)				Prepared: 08/27/14 Analyzed: 08/28/14						
Lead	0.710	0.72	mg/Kg wet	0.720		98.6	80-120			

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103892 - % Solids										
Duplicate (B103892-DUP1)	**Source: 14H1126-04**		Prepared: 08/29/14 Analyzed: 09/02/14							
% Solids	79.2		% Wt		82.6			4.20	20	

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-8 (0-0.5)

Lab Sample ID: 14H1126-01 Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	1.1	
	2	0.00	0.00	0.00	1.1	3.6
Aroclor-1260	1	0.00	0.00	0.00	0.35	
	2	0.00	0.00	0.00	0.36	3.1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-8 (0.5-2)

Lab Sample ID: 14H1126-02 Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.32	
	2	0.00	0.00	0.00	0.32	1.2
Aroclor-1260	1	0.00	0.00	0.00	0.14	
	2	0.00	0.00	0.00	0.15	9.1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-14 (0-2)

Lab Sample ID: 14H1126-04 Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	1.8	
	2	0.00	0.00	0.00	1.6	9.5

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-DUP-1

Lab Sample ID: 14H1126-05 Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.76	
	2	0.00	0.00	0.00	0.87	13.0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS-15

Lab Sample ID: 14H1126-08

Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	100	
	2	0.00	0.00	0.00	89	16.5

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS-14

Lab Sample ID: 14H1126-09 Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	8.3	
	2	0.00	0.00	0.00	8.3	0.2

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS-5

Lab Sample ID: 14H1126-10

Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	1.9	
	2	0.00	0.00	0.00	1.9	1.1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS-4

Lab Sample ID: 14H1126-11

Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	4.1	
	2	0.00	0.00	0.00	4.0	2.5

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS-13

Lab Sample ID: 14H1126-12

Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	1.8	
	2	0.00	0.00	0.00	2.0	9.4

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS-16

Lab Sample ID: 14H1126-13 Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	120	
	2	0.00	0.00	0.00	100	17.4

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS-3

Lab Sample ID: 14H1126-14

Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	2.1	
	2	0.00	0.00	0.00	2.1	1.9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS-6

Lab Sample ID: 14H1126-15

Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	3.9	
	2	0.00	0.00	0.00	3.8	1.6

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS-DUP-1

Lab Sample ID: 14H1126-16 Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	8.5	
	2	0.00	0.00	0.00	8.7	2.8

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B103589-BS1

Date(s) Analyzed: 08/27/2014 08/27/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.24	
	2	0.00	0.00	0.00	0.21	12
Aroclor-1260	1	0.00	0.00	0.00	0.23	
	2	0.00	0.00	0.00	0.23	0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B103589-BSD1 Date(s) Analyzed: 08/27/2014 08/27/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.23	
	2	0.00	0.00	0.00	0.20	14
Aroclor-1260	1	0.00	0.00	0.00	0.22	
	2	0.00	0.00	0.00	0.22	0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

Matrix Spike

Lab Sample ID: B103589-MS1 Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.40	
	2	0.00	0.00	0.00	0.39	4
Aroclor-1260	1	0.00	0.00	0.00	1.9	
	2	0.00	0.00	0.00	2.2	14

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

Matrix Spike Dup

Lab Sample ID: B103589-MSD1 Date(s) Analyzed: 08/29/2014 08/29/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.41	
	2	0.00	0.00	0.00	0.42	1
Aroclor-1260	1	0.00	0.00	0.00	2.0	
	2	0.00	0.00	0.00	2.4	18

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B103590-BS1 Date(s) Analyzed: 08/27/2014 08/27/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.23	
	2	0.00	0.00	0.00	0.19	20
Aroclor-1260	1	0.00	0.00	0.00	0.22	
	2	0.00	0.00	0.00	0.20	9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B103590-BSD1 Date(s) Analyzed: 08/27/2014 08/27/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.23	
	2	0.00	0.00	0.00	0.18	23
Aroclor-1260	1	0.00	0.00	0.00	0.21	
	2	0.00	0.00	0.00	0.19	10

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
L-02	Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.
L-14	Compound classified by MA CAM as difficult with acceptable recoveries of 40-160%. Recovery does not meet 70-130% criteria but does meet difficult compound criteria.
MS-21	Matrix spike and/or spike duplicate recovery bias high due to contribution of other Aroclors present in the source sample.
O-03	Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
O-04	Sample fingerprint does not match standard exactly. Sample was quantitated against the closest matching standard.
O-32	A five times dilution was performed as part of the standard analytical procedure.
RL-07	Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
S-01	The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
V-06	Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.
V-16	Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
V-20	Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
MADEP-EPH-04-1.1 in Soil	
C9-C18 Aliphatics	CT,NC,WA,ME,ME,NH-P
C19-C36 Aliphatics	CT,NC,WA,ME,ME,NH-P
Unadjusted C11-C22 Aromatics	CT,NC,WA,ME,ME,NH-P
C11-C22 Aromatics	CT,NC,WA,ME,ME,NH-P
Acenaphthene	CT,NC,WA,ME,ME,NH-P
Acenaphthylene	CT,NC,WA,ME,ME,NH-P
Anthracene	CT,NC,WA,ME,ME,NH-P
Benzo(a)anthracene	CT,NC,WA,ME,ME,NH-P
Benzo(a)pyrene	CT,NC,WA,ME,ME,NH-P
Benzo(b)fluoranthene	CT,NC,WA,ME,ME,NH-P
Benzo(g,h,i)perylene	CT,NC,WA,ME,ME,NH-P
Benzo(k)fluoranthene	CT,NC,WA,ME,ME,NH-P
Chrysene	CT,NC,WA,ME,ME,NH-P
Dibenz(a,h)anthracene	CT,NC,WA,ME,ME,NH-P
Fluoranthene	CT,NC,WA,ME,ME,NH-P
Fluorene	CT,NC,WA,ME,ME
Indeno(1,2,3-cd)pyrene	CT,NC,WA,ME,ME,NH-P
2-Methylnaphthalene	CT,NC,WA,ME,ME
Naphthalene	CT,NC,WA,ME,ME,NH-P
Phenanthrene	CT,NC,WA,ME,ME,NH-P
Pyrene	CT,NC,WA,ME,ME,NH-P
MADEP-VPH-04-1.1 in Soil	
Unadjusted C5-C8 Aliphatics	CT,NC,WA,ME,NH-P
C5-C8 Aliphatics	CT,NC,WA,ME,NH-P
Unadjusted C9-C12 Aliphatics	CT,NC,WA,ME,NH-P
C9-C12 Aliphatics	CT,NC,WA,ME,NH-P
C9-C10 Aromatics	CT,NC,WA,ME,NH-P
Benzene	CT,NC,WA,ME,NH-P
Ethylbenzene	CT,NC,WA,ME,NH-P
Methyl tert-Butyl Ether (MTBE)	CT,NC,WA,ME,NH-P
Naphthalene	CT,NC,WA,ME,NH-P
Toluene	CT,NC,WA,ME,NH-P
m+p Xylene	CT,NC,WA,ME,NH-P
o-Xylene	CT,NC,WA,ME,NH-P
SW-846 6010C in Soil	
Arsenic	CT,NH,NY,ME,NC,VA,NJ
Barium	CT,NH,NY,ME,NC,VA,NJ
Cadmium	CT,NH,NY,ME,NC,VA,NJ
Chromium	CT,NH,NY,ME,NC,VA,NJ
Lead	CT,NH,NY,AIHA,ME,NC,VA,NJ
Selenium	CT,NH,NY,ME,NC,VA,NJ
Silver	CT,NH,NY,ME,NC,VA,NJ
SW-846 7471B in Soil	
Mercury	CT,NH,NY,NC,ME,VA,NJ
SW-846 8082A in Product/Solid	

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Product/Solid	
Aroclor-1016	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA,NJ
SW-846 8082A in Soil	
Aroclor-1016	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA,NJ
SW-846 8260C in Soil	
Acetone	CT,NH,NY,ME
Acetone	CT,NH,NY,ME
Benzene	CT,NH,NY,ME
Benzene	CT,NH,NY,ME
Bromobenzene	NH,NY,ME
Bromobenzene	NH,NY,ME
Bromochloromethane	NH,NY,ME
Bromochloromethane	NH,NY,ME
Bromodichloromethane	CT,NH,NY,ME
Bromodichloromethane	CT,NH,NY,ME
Bromoform	CT,NH,NY,ME
Bromoform	CT,NH,NY,ME
Bromomethane	CT,NH,NY,ME
Bromomethane	CT,NH,NY,ME
2-Butanone (MEK)	CT,NH,NY,ME
2-Butanone (MEK)	CT,NH,NY,ME

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260C in Soil	
n-Butylbenzene	CT,NH,NY,ME
n-Butylbenzene	CT,NH,NY,ME
sec-Butylbenzene	CT,NH,NY,ME
sec-Butylbenzene	CT,NH,NY,ME
tert-Butylbenzene	CT,NH,NY,ME
tert-Butylbenzene	CT,NH,NY,ME
Carbon Disulfide	CT,NH,NY,ME
Carbon Disulfide	CT,NH,NY,ME
Carbon Tetrachloride	CT,NH,NY,ME
Carbon Tetrachloride	CT,NH,NY,ME
Chlorobenzene	CT,NH,NY,ME
Chlorobenzene	CT,NH,NY,ME
Chlorodibromomethane	CT,NH,NY,ME
Chlorodibromomethane	CT,NH,NY,ME
Chloroethane	CT,NH,NY,ME
Chloroethane	CT,NH,NY,ME
Chloroform	CT,NH,NY,ME
Chloroform	CT,NH,NY,ME
Chloromethane	CT,NH,NY,ME
Chloromethane	CT,NH,NY,ME
2-Chlorotoluene	CT,NH,NY,ME
2-Chlorotoluene	CT,NH,NY,ME
4-Chlorotoluene	CT,NH,NY,ME
4-Chlorotoluene	CT,NH,NY,ME
Dibromomethane	NH,NY,ME
Dibromomethane	NH,NY,ME
1,2-Dichlorobenzene	CT,NH,NY,ME
1,2-Dichlorobenzene	CT,NH,NY,ME
1,3-Dichlorobenzene	CT,NH,NY,ME
1,3-Dichlorobenzene	CT,NH,NY,ME
1,4-Dichlorobenzene	CT,NH,NY,ME
1,4-Dichlorobenzene	CT,NH,NY,ME
Dichlorodifluoromethane (Freon 12)	NY,ME
Dichlorodifluoromethane (Freon 12)	NY,ME
1,1-Dichloroethane	CT,NH,NY,ME
1,1-Dichloroethane	CT,NH,NY,ME
1,2-Dichloroethane	CT,NH,NY,ME
1,2-Dichloroethane	CT,NH,NY,ME
1,1-Dichloroethylene	CT,NH,NY,ME
1,1-Dichloroethylene	CT,NH,NY,ME
cis-1,2-Dichloroethylene	CT,NH,NY,ME
cis-1,2-Dichloroethylene	CT,NH,NY,ME
trans-1,2-Dichloroethylene	CT,NH,NY,ME
trans-1,2-Dichloroethylene	CT,NH,NY,ME
1,2-Dichloropropane	CT,NH,NY,ME
1,2-Dichloropropane	CT,NH,NY,ME
1,3-Dichloropropane	NH,NY,ME

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CERTIFICATIONS

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Analyte	Certifications
SW-846 8260C in Soil	
1,3-Dichloropropane	NH,NY,ME
2,2-Dichloropropane	NH,NY,ME
2,2-Dichloropropane	NH,NY,ME
1,1-Dichloropropene	NH,NY,ME
1,1-Dichloropropene	NH,NY,ME
cis-1,3-Dichloropropene	CT,NH,NY,ME
cis-1,3-Dichloropropene	CT,NH,NY,ME
trans-1,3-Dichloropropene	CT,NH,NY,ME
trans-1,3-Dichloropropene	CT,NH,NY,ME
Ethylbenzene	CT,NH,NY,ME
Ethylbenzene	CT,NH,NY,ME
Hexachlorobutadiene	NH,NY,ME
Hexachlorobutadiene	NH,NY,ME
2-Hexanone (MBK)	CT,NH,NY,ME
2-Hexanone (MBK)	CT,NH,NY,ME
Isopropylbenzene (Cumene)	CT,NH,NY,ME
Isopropylbenzene (Cumene)	CT,NH,NY,ME
p-Isopropyltoluene (p-Cymene)	NH,NY
p-Isopropyltoluene (p-Cymene)	NH,NY
Methyl tert-Butyl Ether (MTBE)	NY
Methyl tert-Butyl Ether (MTBE)	NY
Methylene Chloride	CT,NH,NY,ME
Methylene Chloride	CT,NH,NY,ME
4-Methyl-2-pentanone (MIBK)	CT,NH,NY
4-Methyl-2-pentanone (MIBK)	CT,NH,NY
Naphthalene	NH,NY,ME
Naphthalene	NH,NY,ME
n-Propylbenzene	NH,NY
n-Propylbenzene	NH,NY
Styrene	CT,NH,NY,ME
Styrene	CT,NH,NY,ME
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME
Tetrachloroethylene	CT,NH,NY,ME
Tetrachloroethylene	CT,NH,NY,ME
Toluene	CT,NH,NY,ME
Toluene	CT,NH,NY,ME
1,2,3-Trichlorobenzene	ME
1,2,4-Trichlorobenzene	NH,NY,ME
1,2,4-Trichlorobenzene	NH,NY,ME
1,1,1-Trichloroethane	CT,NH,NY,ME
1,1,1-Trichloroethane	CT,NH,NY,ME
1,1,2-Trichloroethane	CT,NH,NY,ME
1,1,2-Trichloroethane	CT,NH,NY,ME
Trichloroethylene	CT,NH,NY,ME

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260C in Soil	
Trichloroethylene	CT,NH,NY,ME
Trichlorofluoromethane (Freon 11)	CT,NH,NY,ME
Trichlorofluoromethane (Freon 11)	CT,NH,NY,ME
1,2,3-Trichloropropane	NH,NY,ME
1,2,3-Trichloropropane	NH,NY,ME
1,2,4-Trimethylbenzene	CT,NH,NY,ME
1,2,4-Trimethylbenzene	CT,NH,NY,ME
1,3,5-Trimethylbenzene	CT,NH,NY,ME
1,3,5-Trimethylbenzene	CT,NH,NY,ME
Vinyl Chloride	CT,NH,NY,ME
Vinyl Chloride	CT,NH,NY,ME
m+p Xylene	CT,NH,NY,ME
m+p Xylene	CT,NH,NY,ME
o-Xylene	CT,NH,NY,ME
o-Xylene	CT,NH,NY,ME

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2015
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2015
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2015
RI	Rhode Island Department of Health	LAO00112	12/30/2014
NC	North Carolina Div. of Water Quality	652	12/31/2014
NJ	New Jersey DEP	MA007 NELAP	06/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2015
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2015
WA	State of Washington Department of Ecology	C2065	02/23/2015
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2014
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2014

con-test ANALYTICAL LABORATORY
Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com
www.contestlabs.com
39 Spruce Street
East longmeadow, MA 01028

CHAIN OF CUSTODY RECORD

14H1126

Rev 04.05.12

Company Name: WESTON & SAMPSON
Address: 5 Centennial Dr PEABODY, MA
Attention: JOE SPENCER
Project Location: CHARLESTOWN, MA
Sampled By: ~~CHARLESTOWN, MA~~ JRS | PK

Telephone: 617 SAMPSON
Project # BLDG 105
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ☒ WEBSITE
Fax #
Email: spencerj@wseinc.com bridgeof@wseinc.com
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	PCBs in Soil	EPH in Soil, PAHs, Pest & VPH No Targets, 8260	# of Containers	** Preservation	***Container Co
										1	1	3/2
										1	1	2G
										A	A	V
01	SB-8 (0-0.5)	8/22	1010		X	S	U	X				
02	SB-8 (0.5-2)	8/22	1015			S		X	X X			
03	SB-8 (2-4)	8/22	1020			S						
04	SB-14 (0-2)	8/21	1050			S		X	X X			
05	SB-DUP-1	8/21	—			S		X				
06	SB-DUP-2	8/22	—			S		X				
07	SB-DUP-3	8/22	—			S		X				
08	CS-15	8/21	1100			O		X				
09	CS-14	8/21	1245			O		X				
10	CS-5	8/21	1500			O		X				

ANALYSIS REQUESTED

Comments: PLEASE ~~HOLD~~ HOLD SAMPLES THAT ARE NOT MARKED FOR ANALYSIS (I.E., SB-8 (2-4))

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Dissolved Met...
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other _____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other CONCRETE

Relinquished by: (signature)	Date/Time: 8/22 1900
Received by: (signature)	Date/Time: 8/25/14 12:30 pm
Relinquished by: (signature)	Date/Time: 8/25/14 8:00 pm
Received by: (signature) Cassie Cutts 4.4° 8.25.14	Date/Time: 2000

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5 day
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts: S-1
Connecticut:
Other:

Is your project MCP or RCP ?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

†† TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

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Email: info@contestlabs.com
www.contestlabs.com
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East longmeadow, MA 01028

CHAIN OF CUSTODY RECORD

14H1126
Rev 04.05.12

Company Name: WESTON & SAMPSON
Address: 5 Centennial Dr
PEABODY, MA
Attention: JOE SPENCER
Project Location: CHARLESTOWN, MA
Sampled By: JRS / PK

Telephone: Rob Stimpson
Project #: BUDG 105
Client PO#:

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ☒ WEBSITE
Fax #: spencerj@wseinc.com
Email: bridgeot@wseinc.com
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	# of Containers	** Preservation	*** Container Co	PCBs in Soil/Liquid	8260
11	CS-4	8/21	1515		X	O	4	8			X	
12	CS-13	↓	1130		↓	O	↓	8			X	
13	CS-16		1110			O		8			X	
14	CS-3		1520			O		8			X	
15	CS-6		1505			O		8			X	
16	CS-DUP-1	↓	—		↓	O	↓	8			X	
17	TRIP BLANK					S		1				X

ANALYSIS REQUESTED

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V=vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other _____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other Concrete

Comments:

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)		Date/Time: 8/22/14 1700
Received by: (signature)	8/25/14	Date/Time: 12:30 pm
Relinquished by: (signature)	8/25/14	Date/Time: 8:00 pm
Received by: (signature)	Cassie Cote 4.4° 8.25.14	Date/Time: 2000

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5 day
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts: S-1
Connecticut:
Other:

Is your project MCP or RCP ?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

†† TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

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39 Spruce St.
East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
www.contestlabs.com

con-test® ANALYTICAL LABORATORY

Sample Receipt Checklist

CLIENT NAME: Weston & Sampson RECEIVED BY: CC DATE: 8.25.14

1) Was the chain(s) of custody relinquished and signed? (Yes) No No CoC Included

2) Does the chain agree with the samples? (Yes) No
If not, explain:

3) Are all the samples in good condition? (Yes) No
If not, explain:

4) How were the samples received:
On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒

Were the samples received in Temperature Compliance of (2-6°C)? (Yes) No N/A

Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.4°

5) Are there Dissolved samples for the lab to filter? Yes (No)
Who was notified _____ Date _____ Time _____

6) Are there any RUSH or SHORT HOLDING TIME samples? Yes (No)
Who was notified _____ Date _____ Time _____

7) Location where samples are stored: 19

Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature: _____

8) Do all samples have the proper Acid pH: Yes No (N/A) _____

9) Do all samples have the proper Base pH: Yes No (N/A) _____

10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No (N/A)

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	12A
500 mL Amber		4 oz amber/clear jar	5A
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below	9	Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol 5
Bisulfate 4 # DI Water _____
Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)

Any False statement will be brought to the attention of Client

Question	Answer (True/False) T/F/NA	Comment
1) The cooler's custody seal, if present, is intact.	NA	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	T	
18) There is sufficient volume for all requsted analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	T	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	NA	
21) Samples do not require splitting or compositing.	T	

Who notified of False statements? **Date/Time:**

Log-In Technician Initials: CC **Date/Time:** 8.25.14 2000

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 14H1126
Project Location: Charlestown, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

14H1126-01 thru 14H1126-17

Matrices: Product/Solid Soil

CAM Protocol (check all that below)

8260 VOC CAM II A (X)	7470/7471 Hg CAM IIIB (X)	MassDEP VPH CAM IV A (X)	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A (X)	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )
6010 Metals CAM III A (X)	6020 Metals CAM III D ( )	8082 PCB CAM V A (X)	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☑ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]
	A response to questions G, H and I below is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]
	<u>Data User Note:</u> Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.		
H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☐ Yes	☑ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 09/03/14

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

September 5, 2014

Todd Bridgeo
Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960

Project Location: Charlestown
Client Job Number:
Project Number: 2140398
Laboratory Work Order Number: 14H1273

Enclosed are results of analyses for samples received by the laboratory on August 27, 2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960
ATTN: Todd Bridgeo

REPORT DATE: 9/5/2014

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 2140398

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 14H1273

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Charlestown

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
SB-1 (0-6")	14H1273-01	Soil		SM 2540G	
				SW-846 8082A	
SB-1 (6"-2')	14H1273-02	Soil		SM 2540G	
				SW-846 8082A	
SB-1 (4-6')	14H1273-04	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
				SW-846 6010C	
				SW-846 7471B	
				SW-846 8260C	
SB-11 (0-6")	14H1273-05	Soil		SM 2540G	
				SW-846 8082A	
SB-11 (6"-2')	14H1273-06	Soil		SM 2540G	
				SW-846 8082A	
SB-11 (4-6')	14H1273-08	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
				SW-846 6010C	
				SW-846 7471B	
				SW-846 8260C	
SB-12 (0-6")	14H1273-09	Soil		SM 2540G	
				SW-846 8082A	
SB-12 (6"-2')	14H1273-10	Soil		SM 2540G	
				SW-846 8082A	
SB-12 (2-4')	14H1273-11	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
				SW-846 6010C	
				SW-846 7471B	
				SW-846 8260C	
SB-19 (0-6")	14H1273-13	Soil		SM 2540G	
				SW-846 8082A	
SB-19 (6"-2')	14H1273-14	Soil		SM 2540G	
				SW-846 8082A	
SB-19 (2-4')	14H1273-15	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
				SW-846 6010C	
				SW-846 7471B	
				SW-846 8260C	

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Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960
ATTN: Todd Bridgeo

REPORT DATE: 9/5/2014

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 2140398

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 14H1273

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Charlestown

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
SB-23 (0-6")	14H1273-17	Soil		SM 2540G	
				SW-846 8082A	
SB-23 (6"-2')	14H1273-18	Soil		SM 2540G	
				SW-846 8082A	
SB-23 (2-4')	14H1273-19	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
				SW-846 6010C	
				SW-846 7471B	
				SW-846 8260C	
SB-3 (0-6")	14H1273-21	Soil		SM 2540G	
				SW-846 8082A	
SB-3 (6"-2')	14H1273-22	Soil		SM 2540G	
				SW-846 8082A	
CS-1	14H1273-23	Concrete		SW-846 8082A	
CS-2	14H1273-24	Concrete		SW-846 8082A	
CS-7	14H1273-25	Concrete		SW-846 8082A	
CS-8	14H1273-26	Concrete		SW-846 8082A	
CS-9	14H1273-27	Concrete		SW-846 8082A	
CS-10	14H1273-28	Concrete		SW-846 8082A	
CS-11	14H1273-29	Concrete		SW-846 8082A	
CS-12	14H1273-30	Concrete		SW-846 8082A	
CS-17	14H1273-31	Concrete		SW-846 8082A	
CS-18	14H1273-32	Concrete		SW-846 8082A	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

For method 6010, only RCRA 8 metals were requested and reported.
For MA VPH, only hydrocarbon ranges were requested and reported.

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MADEP-VPH-04-1.1

Qualifications:

O-01

Soil/methanol ratio does not meet method specifications. Excess amount of soil. Sample was completely covered with methanol, but with less than the method-specified amount.

Analyte & Samples(s) Qualified:

14H1273-04[SB-1 (4-6')], 14H1273-08[SB-11 (4-6')]

RL-05

Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.

Analyte & Samples(s) Qualified:

C5-C8 Aliphatics
14H1273-04[SB-1 (4-6')], 14H1273-08[SB-11 (4-6')], 14H1273-11[SB-12 (2-4')], 14H1273-15[SB-19 (2-4')], 14H1273-19[SB-23 (2-4')]

Unadjusted C5-C8 Aliphatics
14H1273-04[SB-1 (4-6')], 14H1273-08[SB-11 (4-6')], 14H1273-11[SB-12 (2-4')], 14H1273-15[SB-19 (2-4')], 14H1273-19[SB-23 (2-4')]

S-01

The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

Analyte & Samples(s) Qualified:

2,5-Dibromotoluene (FID)
14H1273-15[SB-19 (2-4')]

2,5-Dibromotoluene (PID)
14H1273-15[SB-19 (2-4')]

S-15

Surrogate recovery outside of control limits due to suspected sample matrix interference. Chromatogram(s) is attached.

Analyte & Samples(s) Qualified:

2,5-Dibromotoluene (FID)
14H1273-04[SB-1 (4-6')]

SW-846 8082A

Qualifications:

MS-21

Matrix spike and/or spike duplicate recovery bias high due to contribution of other Aroclors present in the source sample.

Analyte & Samples(s) Qualified:

Aroclor-1260
B103893-MS1, B103893-MSD1

Aroclor-1260 [2C]
B103893-MS1, B103893-MSD1

O-03

Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.

Analyte & Samples(s) Qualified:

Aroclor-1254
14H1273-05[SB-11 (0-6")], 14H1273-24[CS-2]

Aroclor-1254 [2C]
14H1273-05[SB-11 (0-6")], 14H1273-24[CS-2]

Aroclor-1260
14H1273-27[CS-9], 14H1273-30[CS-12], 14H1273-32[CS-18]

Aroclor-1260 [2C]
14H1273-27[CS-9], 14H1273-30[CS-12], 14H1273-32[CS-18]

O-32

A five times dilution was performed as part of the standard analytical procedure.

Analyte & Samples(s) Qualified:

14H1273-01[SB-1 (0-6")], 14H1273-09[SB-12 (0-6")], 14H1273-10[SB-12 (6"-2')], 14H1273-14[SB-19 (6"-2')], 14H1273-18[SB-23 (6"-2')], 14H1273-22[SB-3 (6"-2')]

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P-04

Due to continuing calibration non-conformance on the confirmatory detector, the lower of two results was reported.

Analyte & Samples(s) Qualified:

Aroclor-1254
14H1273-24[CS-2]

S-01

The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

Analyte & Samples(s) Qualified:

Decachlorobiphenyl
14H1273-13[SB-19 (0-6")], 14H1273-17[SB-23 (0-6")]

Decachlorobiphenyl [2C]
14H1273-13[SB-19 (0-6")], 14H1273-17[SB-23 (0-6")]

Tetrachloro-m-xylene
14H1273-13[SB-19 (0-6")], 14H1273-17[SB-23 (0-6")]

Tetrachloro-m-xylene [2C]
14H1273-13[SB-19 (0-6")], 14H1273-17[SB-23 (0-6")]

V-24

Continuing calibration verification was outside of control limits on the confirmation column, but within control limits on the primary column. All sample results are reported from the column within control criteria.

Analyte & Samples(s) Qualified:

Aroclor-1254
14H1273-24[CS-2], 14H1273-25[CS-7], 14H1273-31[CS-17]

Aroclor-1260
14H1273-25[CS-7], 14H1273-31[CS-17]

SW-846 8260C

Qualifications:

L-02

Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.

Analyte & Samples(s) Qualified:

Acetone
B104045-BS1, B104045-BSD1

Bromoform
B104045-BS1, B104045-BSD1

L-04

Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

Vinyl Chloride
14H1273-19[SB-23 (2-4')], B103882-BLK1, B103882-BS1, B103882-BSD1

L-14

Compound classified by MA CAM as difficult with acceptable recoveries of 40-160%. Recovery does not meet 70-130% criteria but does meet difficult compound criteria.

Analyte & Samples(s) Qualified:

2-Butanone (MEK)
B104045-BS1

2-Hexanone (MBK)
B104045-BS1, B104045-BSD1

Bromomethane
B103882-BS1, B104045-BS1, B104045-BSD1

Chloromethane
B103882-BS1, B103882-BSD1

Dichlorodifluoromethane (Freon 1
B103882-BS1, B103882-BSD1

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RL-06

Elevated reporting limit due to high concentration of non-target compounds. MA CAM reporting limit not met.

Analyte & Samples(s) Qualified:

14H1273-04[SB-1 (4-6')], 14H1273-11[SB-12 (2-4')], 14H1273-15[SB-19 (2-4')]

RL-07

Elevated reporting limit based on lowest point in calibration.
MA CAM reporting limit not met.

Analyte & Samples(s) Qualified:

1,2-Dibromo-3-chloropropane (DB
14H1273-08[SB-11 (4-6')]

1,2-Dichloroethane
14H1273-08[SB-11 (4-6')]

Bromomethane
14H1273-08[SB-11 (4-6')]

Carbon Disulfide
14H1273-08[SB-11 (4-6')]

Chloromethane
14H1273-08[SB-11 (4-6')]

Methylene Chloride
14H1273-08[SB-11 (4-6')]

V-05

Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

1,4-Dioxane
14H1273-04[SB-1 (4-6')], 14H1273-08[SB-11 (4-6')], 14H1273-11[SB-12 (2-4')], 14H1273-15[SB-19 (2-4')], B104045-BLK1, B104045-BS1, B104045-BSD1

2-Butanone (MEK)
14H1273-19[SB-23 (2-4')], B103882-BLK1, B103882-BS1, B103882-BSD1

2-Hexanone (MBK)
14H1273-19[SB-23 (2-4')], B103882-BLK1, B103882-BS1, B103882-BSD1

Acetone
14H1273-19[SB-23 (2-4')], B103882-BLK1, B103882-BS1, B103882-BSD1

Tetrahydrofuran
14H1273-19[SB-23 (2-4')], B103882-BLK1, B103882-BS1, B103882-BSD1

V-16

Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.

Analyte & Samples(s) Qualified:

1,4-Dioxane
14H1273-04[SB-1 (4-6')], 14H1273-08[SB-11 (4-6')], 14H1273-11[SB-12 (2-4')], 14H1273-15[SB-19 (2-4')], 14H1273-19[SB-23 (2-4')], B103882-BLK1, B103882-BS1, B103882-BSD1, B104045-BLK1, B104045-BS1, B104045-BSD1

Tetrahydrofuran
14H1273-04[SB-1 (4-6')], 14H1273-08[SB-11 (4-6')], 14H1273-11[SB-12 (2-4')], 14H1273-15[SB-19 (2-4')], B104045-BLK1, B104045-BS1, B104045-BSD1

V-20

Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

Bromochloromethane
B104045-BS1, B104045-BSD1

Bromoform
B104045-BS1, B104045-BSD1

Dichlorodifluoromethane (Freon 1
B104045-BS1, B104045-BSD1

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MADEP-EPH-04-1.1

SPE cartridge contamination with non-petroleum compounds, if present, is verified by GC/MS in each method blank per extraction batch and excluded from C11-C22 aromatic range fraction in all samples in the batch. No significant modifications were made to the method.

MADEP-VPH-04-1.1

No significant modifications were made to the method. All VPH samples were received preserved properly in methanol with a soil/methanol ratio of 1:1 +/- 25% completely covered by methanol in the proper containers specified on the chain-of-custody form unless specified in this narrative.

SW-846 8260C

Laboratory control sample recoveries for required MCP Data Enhancement 8260 compounds were all within limits specified by the method except for “difficult analytes” where recovery control limits of 40-160% are used and/or unless otherwise listed in this narrative. Difficult analytes: MIBK, MEK, acetone, 1,4-dioxane, chloromethane, dichlorodifluoromethane, 2-hexanone, and bromomethane.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Daren J. Damboragian
Laboratory Manager

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-1 (0-6") | Sampled: 8/25/2014 14:00

Sample ID: 14H1273-01

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:02	MJC
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:02	MJC
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:02	MJC
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:02	MJC
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:02	MJC
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:02	MJC
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:02	MJC
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:02	MJC
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:02	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	71.2	30-150		9/4/14 2:02
Decachlorobiphenyl [2]	74.3	30-150		9/4/14 2:02
Tetrachloro-m-xylene [1]	80.4	30-150		9/4/14 2:02
Tetrachloro-m-xylene [2]	85.7	30-150		9/4/14 2:02

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-1 (0-6") | Sampled: 8/25/2014 14:00

Sample ID: 14H1273-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	92.1		% Wt	1		SM 2540G	9/2/14	9/3/14 7:48	MRL

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-1 (6"-2') | Sampled: 8/25/2014 14:05

Sample ID: 14H1273-02

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 18:42	MJC
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 18:42	MJC
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 18:42	MJC
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 18:42	MJC
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 18:42	MJC
Aroclor-1254 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 18:42	MJC
Aroclor-1260 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 18:42	MJC
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 18:42	MJC
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 18:42	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	84.5	30-150		9/3/14 18:42
Decachlorobiphenyl [2]	85.9	30-150		9/3/14 18:42
Tetrachloro-m-xylene [1]	94.4	30-150		9/3/14 18:42
Tetrachloro-m-xylene [2]	98.1	30-150		9/3/14 18:42

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-1 (6"-2') | Sampled: 8/25/2014 14:05

Sample ID: 14H1273-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	82.0		% Wt	1		SM 2540G	9/2/14	9/3/14 7:48	MRL

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-1 (4-6') | Sampled: 8/25/2014 14:15

Sample ID: 14H1273-04

Sample Matrix: Soil

Sample Flags: RL-06

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	11	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.11	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Benzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Bromobenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Bromochloromethane	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Bromodichloromethane	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Bromoform	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Bromomethane	ND	1.1	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
2-Butanone (MEK)	ND	11	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
n-Butylbenzene	0.70	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
sec-Butylbenzene	0.47	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
tert-Butylbenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.11	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Carbon Disulfide	ND	2.2	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Carbon Tetrachloride	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Chlorobenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Chlorodibromomethane	ND	0.11	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Chloroethane	ND	0.45	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Chloroform	ND	0.45	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Chloromethane	ND	1.1	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
2-Chlorotoluene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
4-Chlorotoluene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	1.1	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,2-Dibromoethane (EDB)	ND	0.11	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Dibromomethane	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,2-Dichlorobenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,3-Dichlorobenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,4-Dichlorobenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.45	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,1-Dichloroethane	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,2-Dichloroethane	ND	1.1	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,1-Dichloroethylene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
cis-1,2-Dichloroethylene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
trans-1,2-Dichloroethylene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,2-Dichloropropane	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,3-Dichloropropane	ND	0.11	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
2,2-Dichloropropane	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,1-Dichloropropene	ND	0.45	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
cis-1,3-Dichloropropene	ND	0.11	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
trans-1,3-Dichloropropene	ND	0.11	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Diethyl Ether	ND	0.45	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Diisopropyl Ether (DIPE)	ND	0.11	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,4-Dioxane	ND	11	mg/Kg dry	4	V-05, V-16	SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Ethylbenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-1 (4-6') | Sampled: 8/25/2014 14:15

Sample ID: 14H1273-04

Sample Matrix: Soil

Sample Flags: RL-06

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
2-Hexanone (MBK)	ND	2.2	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Isopropylbenzene (Cumene)	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Methylene Chloride	ND	1.1	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
4-Methyl-2-pentanone (MIBK)	ND	2.2	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Naphthalene	ND	0.45	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
n-Propylbenzene	0.33	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Styrene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,1,1,2-Tetrachloroethane	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,1,2,2-Tetrachloroethane	ND	0.11	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Tetrachloroethylene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Tetrahydrofuran	ND	0.90	mg/Kg dry	4	V-16	SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Toluene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,2,3-Trichlorobenzene	ND	0.90	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,2,4-Trichlorobenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,1,1-Trichloroethane	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,1,2-Trichloroethane	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Trichloroethylene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Trichlorofluoromethane (Freon 11)	ND	0.45	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,2,3-Trichloropropane	ND	0.45	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,2,4-Trimethylbenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
1,3,5-Trimethylbenzene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
Vinyl Chloride	ND	0.45	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
m+p Xylene	ND	0.45	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH
o-Xylene	ND	0.22	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 8:55	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	92.7	70-130		9/4/14 8:55
Toluene-d8	95.1	70-130		9/4/14 8:55
4-Bromofluorobenzene	97.2	70-130		9/4/14 8:55

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-1 (4-6') | Sampled: 8/25/2014 14:15

Sample ID: 14H1273-04

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	3700	510	mg/Kg dry	40		MADEP-EPH-04-1.1	8/29/14	9/5/14 10:31	SCS
C19-C36 Aliphatics	860	510	mg/Kg dry	40		MADEP-EPH-04-1.1	8/29/14	9/5/14 10:31	SCS
Unadjusted C11-C22 Aromatics	1100	63	mg/Kg dry	5		MADEP-EPH-04-1.1	8/29/14	9/4/14 20:52	SCS
C11-C22 Aromatics	1100	63	mg/Kg dry	5		MADEP-EPH-04-1.1	8/29/14	9/4/14 20:52	SCS
Acenaphthene	1.1	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 22:48	SCS
Acenaphthylene	3.4	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 22:48	SCS
Anthracene	ND	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 22:48	SCS
Benzo(a)anthracene	ND	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 22:48	SCS
Benzo(a)pyrene	ND	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 22:48	SCS
Benzo(b)fluoranthene	ND	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 22:48	SCS
Benzo(g,h,i)perylene	ND	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 22:48	SCS
Benzo(k)fluoranthene	ND	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 22:48	SCS
Chrysene	ND	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 22:48	SCS
Dibenz(a,h)anthracene	ND	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 22:48	SCS
Fluoranthene	0.42	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 22:48	SCS
Fluorene	3.2	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 22:48	SCS
Indeno(1,2,3-cd)pyrene	ND	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 22:48	SCS
2-Methylnaphthalene	3.1	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 22:48	SCS
Naphthalene	1.1	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 22:48	SCS
Phenanthrene	1.6	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 22:48	SCS
Pyrene	ND	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 22:48	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	68.0	40-140		9/3/14 22:48
o-Terphenyl (OTP)	113	40-140		9/3/14 22:48
2-Bromonaphthalene	94.1	40-140		9/3/14 22:48
2-Fluorobiphenyl	103	40-140		9/3/14 22:48

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-1 (4-6') | Sampled: 8/25/2014 14:15

Sample ID: 14H1273-04

Sample Matrix: Soil

Sample Flags: O-01

Soil/Methanol Preservation Ratio: 1.67

Petroleum Hydrocarbons Analyses - VPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	110	mg/Kg dry	10	RL-05	MADEP-VPH-04-1.1	9/2/14	9/2/14 23:29	EEH
C5-C8 Aliphatics	ND	110	mg/Kg dry	10	RL-05	MADEP-VPH-04-1.1	9/2/14	9/2/14 23:29	EEH
Unadjusted C9-C12 Aliphatics	280	110	mg/Kg dry	10		MADEP-VPH-04-1.1	9/2/14	9/2/14 23:29	EEH
C9-C12 Aliphatics	ND	110	mg/Kg dry	10		MADEP-VPH-04-1.1	9/2/14	9/2/14 23:29	EEH
C9-C10 Aromatics	230	110	mg/Kg dry	10		MADEP-VPH-04-1.1	9/2/14	9/2/14 23:29	EEH

Surrogates	% Recovery		Recovery Limits	Flag/Qual		
2,5-Dibromotoluene (FID)	**251**	*	70-130	S-15	9/2/14	23:29
2,5-Dibromotoluene (PID)	129		70-130		9/2/14	23:29

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-1 (4-6') | Sampled: 8/25/2014 14:15

Sample ID: 14H1273-04

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	5.6	3.2	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:19	OP
Barium	65	3.2	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:19	OP
Cadmium	0.53	0.32	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:19	OP
Chromium	32	0.64	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:19	OP
Lead	37	0.96	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:19	OP
Mercury	0.13	0.030	mg/Kg dry	1		SW-846 7471B	8/30/14	9/2/14 12:43	JMP
Selenium	ND	6.4	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:19	OP
Silver	ND	0.64	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:19	OP

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-1 (4-6') | Sampled: 8/25/2014 14:15

Sample ID: 14H1273-04

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	77.2		% Wt	1		SM 2540G	9/2/14	9/3/14 7:48	MRL

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-11 (0-6") | Sampled: 8/25/2014 13:00

Sample ID: 14H1273-05

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.10	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 18:54	MJC
Aroclor-1221 [1]	ND	0.10	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 18:54	MJC
Aroclor-1232 [1]	ND	0.10	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 18:54	MJC
Aroclor-1242 [1]	ND	0.10	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 18:54	MJC
Aroclor-1248 [2]	0.13	0.10	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 18:54	MJC
Aroclor-1254 [2]	0.27	0.10	mg/Kg dry	5	O-03	SW-846 8082A	9/2/14	9/3/14 18:54	MJC
Aroclor-1260 [1]	ND	0.10	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 18:54	MJC
Aroclor-1262 [1]	ND	0.10	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 18:54	MJC
Aroclor-1268 [1]	ND	0.10	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 18:54	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	74.4	30-150		9/3/14 18:54
Decachlorobiphenyl [2]	78.6	30-150		9/3/14 18:54
Tetrachloro-m-xylene [1]	72.2	30-150		9/3/14 18:54
Tetrachloro-m-xylene [2]	82.0	30-150		9/3/14 18:54

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-11 (0-6") | Sampled: 8/25/2014 13:00

Sample ID: 14H1273-05

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	94.9		% Wt	1		SM 2540G	9/2/14	9/3/14 7:48	MRL

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-11 (6''-2') | Sampled: 8/25/2014 13:05

Sample ID: 14H1273-06

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 19:07	MJC
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 19:07	MJC
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 19:07	MJC
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 19:07	MJC
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 19:07	MJC
Aroclor-1254 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 19:07	MJC
Aroclor-1260 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 19:07	MJC
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 19:07	MJC
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 19:07	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	75.2	30-150		9/3/14 19:07
Decachlorobiphenyl [2]	78.7	30-150		9/3/14 19:07
Tetrachloro-m-xylene [1]	86.2	30-150		9/3/14 19:07
Tetrachloro-m-xylene [2]	93.9	30-150		9/3/14 19:07

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-11 (6''-2') | Sampled: 8/25/2014 13:05

Sample ID: 14H1273-06

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	77.9		% Wt	1		SM 2540G	9/2/14	9/3/14 7:48	MRL

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-11 (4-6') | Sampled: 8/25/2014 13:15

Sample ID: 14H1273-08

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	2.8	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.028	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Benzene	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Bromobenzene	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Bromochloromethane	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Bromodichloromethane	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Bromoform	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Bromomethane	ND	0.28	mg/Kg dry	1	RL-07	SW-846 8260C	9/3/14	9/4/14 9:21	EEH
2-Butanone (MEK)	ND	2.8	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
n-Butylbenzene	0.16	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
sec-Butylbenzene	0.13	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
tert-Butylbenzene	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.028	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Carbon Disulfide	ND	0.56	mg/Kg dry	1	RL-07	SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Carbon Tetrachloride	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Chlorobenzene	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Chlorodibromomethane	ND	0.028	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Chloroethane	ND	0.11	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Chloroform	ND	0.11	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Chloromethane	ND	0.28	mg/Kg dry	1	RL-07	SW-846 8260C	9/3/14	9/4/14 9:21	EEH
2-Chlorotoluene	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
4-Chlorotoluene	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.28	mg/Kg dry	1	RL-07	SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,2-Dibromoethane (EDB)	ND	0.028	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Dibromomethane	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,2-Dichlorobenzene	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,3-Dichlorobenzene	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,4-Dichlorobenzene	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.11	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,1-Dichloroethane	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,2-Dichloroethane	ND	0.28	mg/Kg dry	1	RL-07	SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,1-Dichloroethylene	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
cis-1,2-Dichloroethylene	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
trans-1,2-Dichloroethylene	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,2-Dichloropropane	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,3-Dichloropropane	ND	0.028	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
2,2-Dichloropropane	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,1-Dichloropropene	ND	0.11	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
cis-1,3-Dichloropropene	ND	0.028	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
trans-1,3-Dichloropropene	ND	0.028	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Diethyl Ether	ND	0.11	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Diisopropyl Ether (DIPE)	ND	0.028	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,4-Dioxane	ND	2.8	mg/Kg dry	1	V-05, V-16	SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Ethylbenzene	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-11 (4-6') | Sampled: 8/25/2014 13:15

Sample ID: 14H1273-08

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
2-Hexanone (MBK)	ND	0.56	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Isopropylbenzene (Cumene)	0.085	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
p-Isopropyltoluene (p-Cymene)	0.11	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Methylene Chloride	ND	0.28	mg/Kg dry	1	RL-07	SW-846 8260C	9/3/14	9/4/14 9:21	EEH
4-Methyl-2-pentanone (MIBK)	ND	0.56	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Naphthalene	0.90	0.11	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
n-Propylbenzene	0.12	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Styrene	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,1,1,2-Tetrachloroethane	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,1,2,2-Tetrachloroethane	ND	0.028	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Tetrachloroethylene	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Tetrahydrofuran	ND	0.22	mg/Kg dry	1	V-16	SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Toluene	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,2,3-Trichlorobenzene	ND	0.22	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,2,4-Trichlorobenzene	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,1,1-Trichloroethane	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,1,2-Trichloroethane	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Trichloroethylene	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Trichlorofluoromethane (Freon 11)	ND	0.11	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,2,3-Trichloropropane	ND	0.11	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,2,4-Trimethylbenzene	0.17	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
1,3,5-Trimethylbenzene	0.063	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
Vinyl Chloride	ND	0.11	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
m+p Xylene	ND	0.11	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH
o-Xylene	ND	0.056	mg/Kg dry	1		SW-846 8260C	9/3/14	9/4/14 9:21	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	97.8	70-130		9/4/14 9:21
Toluene-d8	96.4	70-130		9/4/14 9:21
4-Bromofluorobenzene	98.8	70-130		9/4/14 9:21

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-11 (4-6') | Sampled: 8/25/2014 13:15

Sample ID: 14H1273-08

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	550	250	mg/Kg dry	20		MADEP-EPH-04-1.1	8/29/14	9/5/14 10:51	SCS
C19-C36 Aliphatics	1400	250	mg/Kg dry	20		MADEP-EPH-04-1.1	8/29/14	9/5/14 10:51	SCS
Unadjusted C11-C22 Aromatics	660	63	mg/Kg dry	5		MADEP-EPH-04-1.1	8/29/14	9/4/14 21:12	SCS
C11-C22 Aromatics	660	63	mg/Kg dry	5		MADEP-EPH-04-1.1	8/29/14	9/4/14 21:12	SCS
Acenaphthene	0.67	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:09	SCS
Acenaphthylene	ND	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:09	SCS
Anthracene	ND	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:09	SCS
Benzo(a)anthracene	ND	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:09	SCS
Benzo(a)pyrene	ND	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:09	SCS
Benzo(b)fluoranthene	ND	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:09	SCS
Benzo(g,h,i)perylene	ND	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:09	SCS
Benzo(k)fluoranthene	ND	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:09	SCS
Chrysene	ND	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:09	SCS
Dibenz(a,h)anthracene	ND	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:09	SCS
Fluoranthene	0.38	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:09	SCS
Fluorene	1.4	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:09	SCS
Indeno(1,2,3-cd)pyrene	ND	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:09	SCS
2-Methylnaphthalene	1.1	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:09	SCS
Naphthalene	0.36	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:09	SCS
Phenanthrene	0.67	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:09	SCS
Pyrene	0.13	0.13	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:09	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	62.0	40-140		9/3/14 23:09
o-Terphenyl (OTP)	90.3	40-140		9/3/14 23:09
2-Bromonaphthalene	95.7	40-140		9/3/14 23:09
2-Fluorobiphenyl	111	40-140		9/3/14 23:09

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-11 (4-6') | Sampled: 8/25/2014 13:15

Sample ID: 14H1273-08

Sample Matrix: Soil

Sample Flags: O-01

Soil/Methanol Preservation Ratio: 1.52

Petroleum Hydrocarbons Analyses - VPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	22	mg/Kg dry	2	RL-05	MADEP-VPH-04-1.1	9/2/14	9/2/14 22:17	EEH
C5-C8 Aliphatics	ND	22	mg/Kg dry	2	RL-05	MADEP-VPH-04-1.1	9/2/14	9/2/14 22:17	EEH
Unadjusted C9-C12 Aliphatics	51	22	mg/Kg dry	2		MADEP-VPH-04-1.1	9/2/14	9/2/14 22:17	EEH
C9-C12 Aliphatics	ND	22	mg/Kg dry	2		MADEP-VPH-04-1.1	9/2/14	9/2/14 22:17	EEH
C9-C10 Aromatics	40	22	mg/Kg dry	2		MADEP-VPH-04-1.1	9/2/14	9/2/14 22:17	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
2,5-Dibromotoluene (FID)	110	70-130		9/2/14	22:17
2,5-Dibromotoluene (PID)	87.8	70-130		9/2/14	22:17

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-11 (4-6') | Sampled: 8/25/2014 13:15

Sample ID: 14H1273-08

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	11	3.0	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:24	OP
Barium	81	3.0	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:24	OP
Cadmium	1.2	0.30	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:24	OP
Chromium	85	0.59	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:24	OP
Lead	84	0.89	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:24	OP
Mercury	0.17	0.031	mg/Kg dry	1		SW-846 7471B	8/28/14	8/29/14 11:42	JMP
Selenium	ND	5.9	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:24	OP
Silver	ND	0.59	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:24	OP

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-11 (4-6') | Sampled: 8/25/2014 13:15

Sample ID: 14H1273-08

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	78.8		% Wt	1		SM 2540G	9/2/14	9/3/14 7:48	MRL

con-test® ANALYTICAL LABORATORY
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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-12 (0-6'') | Sampled: 8/25/2014 12:00

Sample ID: 14H1273-09

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:15	MJC
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:15	MJC
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:15	MJC
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:15	MJC
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:15	MJC
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:15	MJC
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:15	MJC
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:15	MJC
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:15	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	73.3	30-150		9/4/14 2:15
Decachlorobiphenyl [2]	76.2	30-150		9/4/14 2:15
Tetrachloro-m-xylene [1]	86.2	30-150		9/4/14 2:15
Tetrachloro-m-xylene [2]	93.0	30-150		9/4/14 2:15

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-12 (0-6") | Sampled: 8/25/2014 12:00

Sample ID: 14H1273-09

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	89.8		% Wt	1		SM 2540G	9/2/14	9/3/14 7:48	MRL

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-12 (6''-2') | Sampled: 8/25/2014 12:05

Sample ID: 14H1273-10

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:28	MJC
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:28	MJC
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:28	MJC
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:28	MJC
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:28	MJC
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:28	MJC
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:28	MJC
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:28	MJC
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:28	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	65.3	30-150		9/4/14 2:28
Decachlorobiphenyl [2]	70.6	30-150		9/4/14 2:28
Tetrachloro-m-xylene [1]	65.4	30-150		9/4/14 2:28
Tetrachloro-m-xylene [2]	75.2	30-150		9/4/14 2:28

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-12 (6''-2') | Sampled: 8/25/2014 12:05

Sample ID: 14H1273-10

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	90.2		% Wt	1		SM 2540G	9/2/14	9/3/14 7:48	MRL

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-12 (2-4') | Sampled: 8/25/2014 12:10

Sample ID: 14H1273-11

Sample Matrix: Soil

Sample Flags: RL-06

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	4.3	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.043	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Benzene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Bromobenzene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Bromochloromethane	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Bromodichloromethane	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Bromoform	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Bromomethane	ND	0.43	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
2-Butanone (MEK)	ND	4.3	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
n-Butylbenzene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
sec-Butylbenzene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
tert-Butylbenzene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.043	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Carbon Disulfide	ND	0.85	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Carbon Tetrachloride	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Chlorobenzene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Chlorodibromomethane	ND	0.043	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Chloroethane	ND	0.17	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Chloroform	ND	0.17	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Chloromethane	ND	0.43	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
2-Chlorotoluene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
4-Chlorotoluene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.43	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,2-Dibromoethane (EDB)	ND	0.043	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Dibromomethane	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,2-Dichlorobenzene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,3-Dichlorobenzene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,4-Dichlorobenzene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.17	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,1-Dichloroethane	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,2-Dichloroethane	ND	0.43	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,1-Dichloroethylene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
cis-1,2-Dichloroethylene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
trans-1,2-Dichloroethylene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,2-Dichloropropane	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,3-Dichloropropane	ND	0.043	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
2,2-Dichloropropane	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,1-Dichloropropene	ND	0.17	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
cis-1,3-Dichloropropene	ND	0.043	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
trans-1,3-Dichloropropene	ND	0.043	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Diethyl Ether	ND	0.17	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Diisopropyl Ether (DIPE)	ND	0.043	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,4-Dioxane	ND	4.3	mg/Kg dry	2	V-05, V-16	SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Ethylbenzene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-12 (2-4') | Sampled: 8/25/2014 12:10

Sample ID: 14H1273-11

Sample Matrix: Soil

Sample Flags: RL-06

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
2-Hexanone (MBK)	ND	0.85	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Isopropylbenzene (Cumene)	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Methylene Chloride	ND	0.43	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
4-Methyl-2-pentanone (MIBK)	ND	0.85	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Naphthalene	ND	0.17	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
n-Propylbenzene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Styrene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,1,1,2-Tetrachloroethane	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,1,2,2-Tetrachloroethane	ND	0.043	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Tetrachloroethylene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Tetrahydrofuran	ND	0.34	mg/Kg dry	2	V-16	SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Toluene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,2,3-Trichlorobenzene	ND	0.34	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,2,4-Trichlorobenzene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,1,1-Trichloroethane	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,1,2-Trichloroethane	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Trichloroethylene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Trichlorofluoromethane (Freon 11)	ND	0.17	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,2,3-Trichloropropane	ND	0.17	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,2,4-Trimethylbenzene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
1,3,5-Trimethylbenzene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
Vinyl Chloride	ND	0.17	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
m+p Xylene	ND	0.17	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH
o-Xylene	ND	0.085	mg/Kg dry	2		SW-846 8260C	9/3/14	9/4/14 9:47	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	94.1	70-130		9/4/14 9:47
Toluene-d8	97.0	70-130		9/4/14 9:47
4-Bromofluorobenzene	94.2	70-130		9/4/14 9:47

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-12 (2-4') | Sampled: 8/25/2014 12:10

Sample ID: 14H1273-11

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	790	120	mg/Kg dry	10		MADEP-EPH-04-1.1	8/29/14	9/4/14 21:33	SCS
C19-C36 Aliphatics	600	120	mg/Kg dry	10		MADEP-EPH-04-1.1	8/29/14	9/4/14 21:33	SCS
Unadjusted C11-C22 Aromatics	620	58	mg/Kg dry	5		MADEP-EPH-04-1.1	8/29/14	9/4/14 21:33	SCS
C11-C22 Aromatics	620	58	mg/Kg dry	5		MADEP-EPH-04-1.1	8/29/14	9/4/14 21:33	SCS
Acenaphthene	0.41	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:29	SCS
Acenaphthylene	0.46	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:29	SCS
Anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:29	SCS
Benzo(a)anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:29	SCS
Benzo(a)pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:29	SCS
Benzo(b)fluoranthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:29	SCS
Benzo(g,h,i)perylene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:29	SCS
Benzo(k)fluoranthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:29	SCS
Chrysene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:29	SCS
Dibenz(a,h)anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:29	SCS
Fluoranthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:29	SCS
Fluorene	1.0	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:29	SCS
Indeno(1,2,3-cd)pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:29	SCS
2-Methylnaphthalene	0.88	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:29	SCS
Naphthalene	0.31	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:29	SCS
Phenanthrene	0.78	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:29	SCS
Pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:29	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	59.1	40-140		9/3/14 23:29
o-Terphenyl (OTP)	89.4	40-140		9/3/14 23:29
2-Bromonaphthalene	93.9	40-140		9/3/14 23:29
2-Fluorobiphenyl	106	40-140		9/3/14 23:29

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-12 (2-4') | Sampled: 8/25/2014 12:10

Sample ID: 14H1273-11

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - VPH

Soil/Methanol Preservation Ratio: 1.65

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	91	mg/Kg dry	10	RL-05	MADEP-VPH-04-1.1	8/29/14	8/30/14 4:25	EEH
C5-C8 Aliphatics	ND	91	mg/Kg dry	10	RL-05	MADEP-VPH-04-1.1	8/29/14	8/30/14 4:25	EEH
Unadjusted C9-C12 Aliphatics	200	91	mg/Kg dry	10		MADEP-VPH-04-1.1	8/29/14	8/30/14 4:25	EEH
C9-C12 Aliphatics	ND	91	mg/Kg dry	10		MADEP-VPH-04-1.1	8/29/14	8/30/14 4:25	EEH
C9-C10 Aromatics	190	91	mg/Kg dry	10		MADEP-VPH-04-1.1	8/29/14	8/30/14 4:25	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
2,5-Dibromotoluene (FID)	128	70-130		8/30/14 4:25	
2,5-Dibromotoluene (PID)	116	70-130		8/30/14 4:25	

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-12 (2-4') | Sampled: 8/25/2014 12:10

Sample ID: 14H1273-11

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	2.9	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:28	OP
Barium	41	2.9	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:28	OP
Cadmium	ND	0.29	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:28	OP
Chromium	19	0.58	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:28	OP
Lead	10	0.87	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:28	OP
Mercury	ND	0.031	mg/Kg dry	1		SW-846 7471B	8/28/14	8/29/14 12:32	JMP
Selenium	ND	5.8	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:28	OP
Silver	ND	0.58	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:28	OP

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-12 (2-4') | Sampled: 8/25/2014 12:10

Sample ID: 14H1273-11

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	84.4		% Wt	1		SM 2540G	9/2/14	9/3/14 7:48	MRL

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-19 (0-6'') | Sampled: 8/25/2014 10:00

Sample ID: 14H1273-13

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	11	mg/Kg dry	500		SW-846 8082A	9/2/14	9/4/14 2:41	MJC
Aroclor-1221 [1]	ND	11	mg/Kg dry	500		SW-846 8082A	9/2/14	9/4/14 2:41	MJC
Aroclor-1232 [1]	ND	11	mg/Kg dry	500		SW-846 8082A	9/2/14	9/4/14 2:41	MJC
Aroclor-1242 [1]	ND	11	mg/Kg dry	500		SW-846 8082A	9/2/14	9/4/14 2:41	MJC
Aroclor-1248 [1]	ND	11	mg/Kg dry	500		SW-846 8082A	9/2/14	9/4/14 2:41	MJC
Aroclor-1254 [2]	72	11	mg/Kg dry	500		SW-846 8082A	9/2/14	9/4/14 2:41	MJC
Aroclor-1260 [1]	ND	11	mg/Kg dry	500		SW-846 8082A	9/2/14	9/4/14 2:41	MJC
Aroclor-1262 [1]	ND	11	mg/Kg dry	500		SW-846 8082A	9/2/14	9/4/14 2:41	MJC
Aroclor-1268 [1]	ND	11	mg/Kg dry	500		SW-846 8082A	9/2/14	9/4/14 2:41	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	*	30-150	S-01	9/4/14 2:41
Decachlorobiphenyl [2]	*	30-150	S-01	9/4/14 2:41
Tetrachloro-m-xylene [1]	*	30-150	S-01	9/4/14 2:41
Tetrachloro-m-xylene [2]	*	30-150	S-01	9/4/14 2:41

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-19 (0-6") | Sampled: 8/25/2014 10:00

Sample ID: 14H1273-13

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	85.1		% Wt	1		SM 2540G	9/2/14	9/3/14 7:48	MRL

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-19 (6''-2') | Sampled: 8/25/2014 10:05

Sample ID: 14H1273-14

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:54	MJC
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:54	MJC
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:54	MJC
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:54	MJC
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:54	MJC
Aroclor-1254 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:54	MJC
Aroclor-1260 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:54	MJC
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:54	MJC
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 2:54	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	82.4	30-150		9/4/14 2:54
Decachlorobiphenyl [2]	84.5	30-150		9/4/14 2:54
Tetrachloro-m-xylene [1]	81.3	30-150		9/4/14 2:54
Tetrachloro-m-xylene [2]	89.9	30-150		9/4/14 2:54

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-19 (6''-2') | Sampled: 8/25/2014 10:05

Sample ID: 14H1273-14

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	81.3		% Wt	1		SM 2540G	9/2/14	9/3/14 7:48	MRL

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-19 (2-4') | Sampled: 8/25/2014 10:10

Sample ID: 14H1273-15

Sample Matrix: Soil

Sample Flags: RL-06

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	8.8	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.088	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Benzene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Bromobenzene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Bromochloromethane	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Bromodichloromethane	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Bromoform	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Bromomethane	ND	0.88	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
2-Butanone (MEK)	ND	8.8	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
n-Butylbenzene	1.6	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
sec-Butylbenzene	1.2	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
tert-Butylbenzene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.088	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Carbon Disulfide	ND	1.8	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Carbon Tetrachloride	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Chlorobenzene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Chlorodibromomethane	ND	0.088	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Chloroethane	ND	0.35	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Chloroform	ND	0.35	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Chloromethane	ND	0.88	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
2-Chlorotoluene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
4-Chlorotoluene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.88	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,2-Dibromoethane (EDB)	ND	0.088	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Dibromomethane	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,2-Dichlorobenzene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,3-Dichlorobenzene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,4-Dichlorobenzene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.35	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,1-Dichloroethane	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,2-Dichloroethane	ND	0.88	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,1-Dichloroethylene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
cis-1,2-Dichloroethylene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
trans-1,2-Dichloroethylene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,2-Dichloropropane	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,3-Dichloropropane	ND	0.088	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
2,2-Dichloropropane	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,1-Dichloropropene	ND	0.35	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
cis-1,3-Dichloropropene	ND	0.088	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
trans-1,3-Dichloropropene	ND	0.088	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Diethyl Ether	ND	0.35	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Diisopropyl Ether (DIPE)	ND	0.088	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,4-Dioxane	ND	8.8	mg/Kg dry	4	V-05, V-16	SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Ethylbenzene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-19 (2-4') | Sampled: 8/25/2014 10:10

Sample ID: 14H1273-15

Sample Matrix: Soil

Sample Flags: RL-06

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
2-Hexanone (MBK)	ND	1.8	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Isopropylbenzene (Cumene)	0.53	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Methylene Chloride	ND	0.88	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
4-Methyl-2-pentanone (MIBK)	ND	1.8	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Naphthalene	ND	0.35	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
n-Propylbenzene	0.89	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Styrene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,1,1,2-Tetrachloroethane	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,1,2,2-Tetrachloroethane	ND	0.088	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Tetrachloroethylene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Tetrahydrofuran	ND	0.70	mg/Kg dry	4	V-16	SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Toluene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,2,3-Trichlorobenzene	ND	0.70	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,2,4-Trichlorobenzene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,1,1-Trichloroethane	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,1,2-Trichloroethane	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Trichloroethylene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Trichlorofluoromethane (Freon 11)	ND	0.35	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,2,3-Trichloropropane	ND	0.35	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,2,4-Trimethylbenzene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
1,3,5-Trimethylbenzene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
Vinyl Chloride	ND	0.35	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
m+p Xylene	ND	0.35	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH
o-Xylene	ND	0.18	mg/Kg dry	4		SW-846 8260C	9/3/14	9/4/14 10:40	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	91.2	70-130		9/4/14 10:40
Toluene-d8	95.2	70-130		9/4/14 10:40
4-Bromofluorobenzene	101	70-130		9/4/14 10:40

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-19 (2-4') | Sampled: 8/25/2014 10:10

Sample ID: 14H1273-15

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	290	59	mg/Kg dry	5		MADEP-EPH-04-1.1	8/29/14	9/4/14 23:36	SCS
C19-C36 Aliphatics	110	12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:50	SCS
Unadjusted C11-C22 Aromatics	230	12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:50	SCS
C11-C22 Aromatics	230	12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:50	SCS
Acenaphthene	0.39	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:50	SCS
Acenaphthylene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:50	SCS
Anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:50	SCS
Benzo(a)anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:50	SCS
Benzo(a)pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:50	SCS
Benzo(b)fluoranthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:50	SCS
Benzo(g,h,i)perylene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:50	SCS
Benzo(k)fluoranthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:50	SCS
Chrysene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:50	SCS
Dibenz(a,h)anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:50	SCS
Fluoranthene	0.13	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:50	SCS
Fluorene	1.3	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:50	SCS
Indeno(1,2,3-cd)pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:50	SCS
2-Methylnaphthalene	2.2	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:50	SCS
Naphthalene	0.50	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:50	SCS
Phenanthrene	0.70	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:50	SCS
Pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/3/14 23:50	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	58.1	40-140		9/3/14 23:50
o-Terphenyl (OTP)	90.0	40-140		9/3/14 23:50
2-Bromonaphthalene	90.5	40-140		9/3/14 23:50
2-Fluorobiphenyl	108	40-140		9/3/14 23:50

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-19 (2-4') | Sampled: 8/25/2014 10:10

Sample ID: 14H1273-15

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - VPH

Soil/Methanol Preservation Ratio: 1.86

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	170	mg/Kg dry	20	RL-05	MADEP-VPH-04-1.1	8/29/14	8/30/14 3:13	EEH
C5-C8 Aliphatics	ND	170	mg/Kg dry	20	RL-05	MADEP-VPH-04-1.1	8/29/14	8/30/14 3:13	EEH
Unadjusted C9-C12 Aliphatics	400	170	mg/Kg dry	20		MADEP-VPH-04-1.1	8/29/14	8/30/14 3:13	EEH
C9-C12 Aliphatics	ND	170	mg/Kg dry	20		MADEP-VPH-04-1.1	8/29/14	8/30/14 3:13	EEH
C9-C10 Aromatics	360	170	mg/Kg dry	20		MADEP-VPH-04-1.1	8/29/14	8/30/14 3:13	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,5-Dibromotoluene (FID)	*	70-130	S-01	8/30/14 3:13
2,5-Dibromotoluene (PID)	*	70-130	S-01	8/30/14 3:13

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-19 (2-4') | Sampled: 8/25/2014 10:10

Sample ID: 14H1273-15

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	2.9	mg/Kg dry	1		SW-846 6010C	8/30/14	9/2/14 20:00	OP
Barium	31	2.9	mg/Kg dry	1		SW-846 6010C	8/30/14	9/2/14 20:00	OP
Cadmium	0.85	0.29	mg/Kg dry	1		SW-846 6010C	8/30/14	9/2/14 20:00	OP
Chromium	25	0.57	mg/Kg dry	1		SW-846 6010C	8/30/14	9/2/14 20:00	OP
Lead	11	0.86	mg/Kg dry	1		SW-846 6010C	8/30/14	9/2/14 20:00	OP
Mercury	0.048	0.028	mg/Kg dry	1		SW-846 7471B	8/28/14	8/29/14 12:37	JMP
Selenium	ND	5.7	mg/Kg dry	1		SW-846 6010C	8/30/14	9/2/14 20:00	OP
Silver	ND	0.57	mg/Kg dry	1		SW-846 6010C	8/30/14	9/2/14 20:00	OP

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-19 (2-4') | Sampled: 8/25/2014 10:10

Sample ID: 14H1273-15

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	83.2		% Wt	1		SM 2540G	9/2/14	9/3/14 7:48	MRL

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-23 (0-6'') | Sampled: 8/25/2014 11:00

Sample ID: 14H1273-17

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	9/2/14	9/4/14 3:06	MJC
Aroclor-1221 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	9/2/14	9/4/14 3:06	MJC
Aroclor-1232 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	9/2/14	9/4/14 3:06	MJC
Aroclor-1242 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	9/2/14	9/4/14 3:06	MJC
Aroclor-1248 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	9/2/14	9/4/14 3:06	MJC
Aroclor-1254 [2]	8.4	1.1	mg/Kg dry	50		SW-846 8082A	9/2/14	9/4/14 3:06	MJC
Aroclor-1260 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	9/2/14	9/4/14 3:06	MJC
Aroclor-1262 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	9/2/14	9/4/14 3:06	MJC
Aroclor-1268 [1]	ND	1.1	mg/Kg dry	50		SW-846 8082A	9/2/14	9/4/14 3:06	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	*	30-150	S-01	9/4/14 3:06
Decachlorobiphenyl [2]	*	30-150	S-01	9/4/14 3:06
Tetrachloro-m-xylene [1]	*	30-150	S-01	9/4/14 3:06
Tetrachloro-m-xylene [2]	*	30-150	S-01	9/4/14 3:06

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-23 (0-6") | Sampled: 8/25/2014 11:00

Sample ID: 14H1273-17

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	87.6		% Wt	1		SM 2540G	9/2/14	9/3/14 7:48	MRL

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-23 (6''-2') | Sampled: 8/25/2014 11:05

Sample ID: 14H1273-18

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 3:19	MJC
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 3:19	MJC
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 3:19	MJC
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 3:19	MJC
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 3:19	MJC
Aroclor-1254 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 3:19	MJC
Aroclor-1260 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 3:19	MJC
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 3:19	MJC
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 3:19	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
Decachlorobiphenyl [1]	84.2	30-150		9/4/14	3:19
Decachlorobiphenyl [2]	86.5	30-150		9/4/14	3:19
Tetrachloro-m-xylene [1]	74.9	30-150		9/4/14	3:19
Tetrachloro-m-xylene [2]	86.8	30-150		9/4/14	3:19

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-23 (6''-2') | Sampled: 8/25/2014 11:05

Sample ID: 14H1273-18

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	85.9		% Wt	1		SM 2540G	9/2/14	9/3/14 7:48	MRL

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-23 (2-4') | Sampled: 8/25/2014 11:10

Sample ID: 14H1273-19

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.080	mg/Kg dry	1	V-05	SW-846 8260C	8/29/14	8/29/14 9:17	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00080	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Benzene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Bromobenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Bromochloromethane	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Bromodichloromethane	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Bromoform	ND	0.0080	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Bromomethane	ND	0.0080	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
2-Butanone (MEK)	ND	0.032	mg/Kg dry	1	V-05	SW-846 8260C	8/29/14	8/29/14 9:17	MFF
n-Butylbenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
sec-Butylbenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
tert-Butylbenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00080	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Carbon Disulfide	ND	0.016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Carbon Tetrachloride	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Chlorobenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Chlorodibromomethane	ND	0.00080	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Chloroethane	ND	0.0080	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Chloroform	ND	0.0032	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Chloromethane	ND	0.0080	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
2-Chlorotoluene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
4-Chlorotoluene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,2-Dibromoethane (EDB)	ND	0.00080	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Dibromomethane	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,2-Dichlorobenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,3-Dichlorobenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,4-Dichlorobenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.0080	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,1-Dichloroethane	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,2-Dichloroethane	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,1-Dichloroethylene	ND	0.0032	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
cis-1,2-Dichloroethylene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
trans-1,2-Dichloroethylene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,2-Dichloropropane	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,3-Dichloropropane	ND	0.00080	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
2,2-Dichloropropane	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,1-Dichloropropene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
cis-1,3-Dichloropropene	ND	0.00080	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
trans-1,3-Dichloropropene	ND	0.00080	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Diethyl Ether	ND	0.0080	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Diisopropyl Ether (DIPE)	ND	0.00080	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,4-Dioxane	ND	0.080	mg/Kg dry	1	V-16	SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Ethylbenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-23 (2-4') | Sampled: 8/25/2014 11:10

Sample ID: 14H1273-19

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
2-Hexanone (MBK)	ND	0.016	mg/Kg dry	1	V-05	SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Isopropylbenzene (Cumene)	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0032	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Methylene Chloride	ND	0.0080	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Naphthalene	ND	0.0080	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
n-Propylbenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Styrene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,1,1,2-Tetrachloroethane	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,1,2,2-Tetrachloroethane	ND	0.00080	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Tetrachloroethylene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Tetrahydrofuran	ND	0.0080	mg/Kg dry	1	V-05	SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Toluene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,2,3-Trichlorobenzene	ND	0.0080	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,2,4-Trichlorobenzene	ND	0.0032	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,1,1-Trichloroethane	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,1,2-Trichloroethane	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Trichloroethylene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0080	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,2,3-Trichloropropane	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,2,4-Trimethylbenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
1,3,5-Trimethylbenzene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
Vinyl Chloride	ND	0.0080	mg/Kg dry	1	L-04	SW-846 8260C	8/29/14	8/29/14 9:17	MFF
m+p Xylene	ND	0.0032	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF
o-Xylene	ND	0.0016	mg/Kg dry	1		SW-846 8260C	8/29/14	8/29/14 9:17	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	101	70-130		8/29/14 9:17
Toluene-d8	95.6	70-130		8/29/14 9:17
4-Bromofluorobenzene	95.1	70-130		8/29/14 9:17

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-23 (2-4') | Sampled: 8/25/2014 11:10

Sample ID: 14H1273-19

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	250	57	mg/Kg dry	5		MADEP-EPH-04-1.1	8/29/14	9/4/14 23:56	SCS
C19-C36 Aliphatics	72	57	mg/Kg dry	5		MADEP-EPH-04-1.1	8/29/14	9/4/14 23:56	SCS
Unadjusted C11-C22 Aromatics	280	11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/4/14 0:10	SCS
C11-C22 Aromatics	280	11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/4/14 0:10	SCS
Acenaphthene	0.33	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/4/14 0:10	SCS
Acenaphthylene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/4/14 0:10	SCS
Anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/4/14 0:10	SCS
Benzo(a)anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/4/14 0:10	SCS
Benzo(a)pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/4/14 0:10	SCS
Benzo(b)fluoranthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/4/14 0:10	SCS
Benzo(g,h,i)perylene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/4/14 0:10	SCS
Benzo(k)fluoranthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/4/14 0:10	SCS
Chrysene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/4/14 0:10	SCS
Dibenz(a,h)anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/4/14 0:10	SCS
Fluoranthene	0.25	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/4/14 0:10	SCS
Fluorene	0.90	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/4/14 0:10	SCS
Indeno(1,2,3-cd)pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/4/14 0:10	SCS
2-Methylnaphthalene	0.59	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/4/14 0:10	SCS
Naphthalene	0.34	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/4/14 0:10	SCS
Phenanthrene	0.56	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/4/14 0:10	SCS
Pyrene	0.24	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	8/29/14	9/4/14 0:10	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
Chlorooctadecane (COD)	51.7	40-140		9/4/14	0:10
o-Terphenyl (OTP)	75.1	40-140		9/4/14	0:10
2-Bromonaphthalene	95.0	40-140		9/4/14	0:10
2-Fluorobiphenyl	109	40-140		9/4/14	0:10

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-23 (2-4') | Sampled: 8/25/2014 11:10

Sample ID: 14H1273-19

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - VPH

Soil/Methanol Preservation Ratio: 1.55

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	90	mg/Kg dry	10	RL-05	MADEP-VPH-04-1.1	8/29/14	8/30/14 5:01	EEH
C5-C8 Aliphatics	ND	90	mg/Kg dry	10	RL-05	MADEP-VPH-04-1.1	8/29/14	8/30/14 5:01	EEH
Unadjusted C9-C12 Aliphatics	180	90	mg/Kg dry	10		MADEP-VPH-04-1.1	8/29/14	8/30/14 5:01	EEH
C9-C12 Aliphatics	ND	90	mg/Kg dry	10		MADEP-VPH-04-1.1	8/29/14	8/30/14 5:01	EEH
C9-C10 Aromatics	170	90	mg/Kg dry	10		MADEP-VPH-04-1.1	8/29/14	8/30/14 5:01	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,5-Dibromotoluene (FID)	117	70-130		8/30/14 5:01
2,5-Dibromotoluene (PID)	115	70-130		8/30/14 5:01

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-23 (2-4') | Sampled: 8/25/2014 11:10

Sample ID: 14H1273-19

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	23	2.6	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:33	OP
Barium	180	2.6	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:33	OP
Cadmium	120	0.26	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:33	OP
Chromium	220	0.53	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:33	OP
Lead	1500	0.79	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:33	OP
Mercury	1.2	0.14	mg/Kg dry	5		SW-846 7471B	8/28/14	8/29/14 12:55	JMP
Selenium	ND	5.3	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:33	OP
Silver	1.3	0.53	mg/Kg dry	1		SW-846 6010C	8/28/14	8/29/14 15:33	OP

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-23 (2-4') | Sampled: 8/25/2014 11:10

Sample ID: 14H1273-19

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	86.9		% Wt	1		SM 2540G	9/2/14	9/3/14 7:48	MRL

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-3 (0-6") | Sampled: 8/25/2014 16:00

Sample ID: 14H1273-21

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 21:03	MJC
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 21:03	MJC
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 21:03	MJC
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 21:03	MJC
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 21:03	MJC
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 21:03	MJC
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 21:03	MJC
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 21:03	MJC
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/2/14	9/3/14 21:03	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	66.7	30-150		9/3/14 21:03
Decachlorobiphenyl [2]	71.3	30-150		9/3/14 21:03
Tetrachloro-m-xylene [1]	79.2	30-150		9/3/14 21:03
Tetrachloro-m-xylene [2]	86.2	30-150		9/3/14 21:03

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-3 (0-6") | Sampled: 8/25/2014 16:00

Sample ID: 14H1273-21

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	89.5		% Wt	1		SM 2540G	9/2/14	9/3/14 7:48	MRL

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-3 (6"-2') | Sampled: 8/25/2014 16:05

Sample ID: 14H1273-22

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 3:32	MJC
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 3:32	MJC
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 3:32	MJC
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 3:32	MJC
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 3:32	MJC
Aroclor-1254 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 3:32	MJC
Aroclor-1260 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 3:32	MJC
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 3:32	MJC
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/2/14	9/4/14 3:32	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
Decachlorobiphenyl [1]	80.4	30-150		9/4/14	3:32
Decachlorobiphenyl [2]	81.1	30-150		9/4/14	3:32
Tetrachloro-m-xylene [1]	85.2	30-150		9/4/14	3:32
Tetrachloro-m-xylene [2]	90.2	30-150		9/4/14	3:32

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: SB-3 (6"-2') | Sampled: 8/25/2014 16:05

Sample ID: 14H1273-22

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	83.3		% Wt	1		SM 2540G	9/2/14	9/3/14 7:48	MRL

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: CS-1 | Sampled: 8/26/2014 10:30

Sample ID: 14H1273-23

Sample Matrix: Concrete

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/29/14	9/3/14 21:25	MJC
Aroclor-1221 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/29/14	9/3/14 21:25	MJC
Aroclor-1232 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/29/14	9/3/14 21:25	MJC
Aroclor-1242 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/29/14	9/3/14 21:25	MJC
Aroclor-1248 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/29/14	9/3/14 21:25	MJC
Aroclor-1254 [1]	3.1	0.99	mg/Kg	10		SW-846 8082A	8/29/14	9/3/14 21:25	MJC
Aroclor-1260 [2]	1.5	0.99	mg/Kg	10		SW-846 8082A	8/29/14	9/3/14 21:25	MJC
Aroclor-1262 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/29/14	9/3/14 21:25	MJC
Aroclor-1268 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	8/29/14	9/3/14 21:25	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	84.9	30-150		9/3/14 21:25
Decachlorobiphenyl [2]	84.0	30-150		9/3/14 21:25
Tetrachloro-m-xylene [1]	95.8	30-150		9/3/14 21:25
Tetrachloro-m-xylene [2]	88.6	30-150		9/3/14 21:25

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: CS-2 | Sampled: 8/26/2014 11:00

Sample ID: 14H1273-24

Sample Matrix: Concrete

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 10:26	KAL
Aroclor-1221 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 10:26	KAL
Aroclor-1232 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 10:26	KAL
Aroclor-1242 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 10:26	KAL
Aroclor-1248 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 10:26	KAL
Aroclor-1254 [1]	0.20	0.099	mg/Kg	1	O-03, P-04, V-24	SW-846 8082A	8/29/14	9/4/14 10:26	KAL
Aroclor-1260 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 10:26	KAL
Aroclor-1262 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 10:26	KAL
Aroclor-1268 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 10:26	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	77.4	30-150		9/4/14 10:26
Decachlorobiphenyl [2]	75.4	30-150		9/4/14 10:26
Tetrachloro-m-xylene [1]	60.7	30-150		9/4/14 10:26
Tetrachloro-m-xylene [2]	57.1	30-150		9/4/14 10:26

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: CS-7 | Sampled: 8/26/2014 11:20

Sample ID: 14H1273-25

Sample Matrix: Concrete

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 11:17	KAL
Aroclor-1221 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 11:17	KAL
Aroclor-1232 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 11:17	KAL
Aroclor-1242 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 11:17	KAL
Aroclor-1248 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 11:17	KAL
Aroclor-1254 [1]	0.11	0.099	mg/Kg	1	V-24	SW-846 8082A	8/29/14	9/4/14 11:17	KAL
Aroclor-1260 [1]	0.19	0.099	mg/Kg	1	V-24	SW-846 8082A	8/29/14	9/4/14 11:17	KAL
Aroclor-1262 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 11:17	KAL
Aroclor-1268 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 11:17	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	85.6	30-150		9/4/14 11:17
Decachlorobiphenyl [2]	85.4	30-150		9/4/14 11:17
Tetrachloro-m-xylene [1]	93.7	30-150		9/4/14 11:17
Tetrachloro-m-xylene [2]	85.1	30-150		9/4/14 11:17

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: CS-8 | Sampled: 8/26/2014 12:15

Sample ID: 14H1273-26

Sample Matrix: Concrete

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 10:39	KAL
Aroclor-1221 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 10:39	KAL
Aroclor-1232 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 10:39	KAL
Aroclor-1242 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 10:39	KAL
Aroclor-1248 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 10:39	KAL
Aroclor-1254 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 10:39	KAL
Aroclor-1260 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 10:39	KAL
Aroclor-1262 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 10:39	KAL
Aroclor-1268 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	8/29/14	9/4/14 10:39	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	30.5	30-150		9/4/14 10:39
Decachlorobiphenyl [2]	30.1	30-150		9/4/14 10:39
Tetrachloro-m-xylene [1]	33.8	30-150		9/4/14 10:39
Tetrachloro-m-xylene [2]	32.0	30-150		9/4/14 10:39

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: CS-9 | Sampled: 8/26/2014 12:30

Sample ID: 14H1273-27

Sample Matrix: Concrete

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/29/14	9/3/14 19:37	MJC
Aroclor-1221 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/29/14	9/3/14 19:37	MJC
Aroclor-1232 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/29/14	9/3/14 19:37	MJC
Aroclor-1242 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/29/14	9/3/14 19:37	MJC
Aroclor-1248 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/29/14	9/3/14 19:37	MJC
Aroclor-1254 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/29/14	9/3/14 19:37	MJC
Aroclor-1260 [1]	0.96	0.50	mg/Kg	5	O-03	SW-846 8082A	8/29/14	9/3/14 19:37	MJC
Aroclor-1262 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/29/14	9/3/14 19:37	MJC
Aroclor-1268 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	8/29/14	9/3/14 19:37	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	81.6	30-150		9/3/14 19:37
Decachlorobiphenyl [2]	88.9	30-150		9/3/14 19:37
Tetrachloro-m-xylene [1]	102	30-150		9/3/14 19:37
Tetrachloro-m-xylene [2]	98.8	30-150		9/3/14 19:37

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: CS-10 | Sampled: 8/26/2014 13:00

Sample ID: 14H1273-28

Sample Matrix: Concrete

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	9/4/14	9/5/14 12:25	KAL
Aroclor-1221 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	9/4/14	9/5/14 12:25	KAL
Aroclor-1232 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	9/4/14	9/5/14 12:25	KAL
Aroclor-1242 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	9/4/14	9/5/14 12:25	KAL
Aroclor-1248 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	9/4/14	9/5/14 12:25	KAL
Aroclor-1254 [1]	0.14	0.099	mg/Kg	1		SW-846 8082A	9/4/14	9/5/14 12:25	KAL
Aroclor-1260 [1]	0.27	0.099	mg/Kg	1		SW-846 8082A	9/4/14	9/5/14 12:25	KAL
Aroclor-1262 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	9/4/14	9/5/14 12:25	KAL
Aroclor-1268 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	9/4/14	9/5/14 12:25	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	75.8	30-150		9/5/14 12:25
Decachlorobiphenyl [2]	74.1	30-150		9/5/14 12:25
Tetrachloro-m-xylene [1]	84.9	30-150		9/5/14 12:25
Tetrachloro-m-xylene [2]	77.8	30-150		9/5/14 12:25

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: CS-11 | Sampled: 8/26/2014 13:30

Sample ID: 14H1273-29

Sample Matrix: Concrete

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 20:13	MJC
Aroclor-1221 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 20:13	MJC
Aroclor-1232 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 20:13	MJC
Aroclor-1242 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 20:13	MJC
Aroclor-1248 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 20:13	MJC
Aroclor-1254 [1]	0.25	0.097	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 20:13	MJC
Aroclor-1260 [1]	0.44	0.097	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 20:13	MJC
Aroclor-1262 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 20:13	MJC
Aroclor-1268 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 20:13	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	89.2	30-150		9/3/14 20:13
Decachlorobiphenyl [2]	92.7	30-150		9/3/14 20:13
Tetrachloro-m-xylene [1]	104	30-150		9/3/14 20:13
Tetrachloro-m-xylene [2]	97.5	30-150		9/3/14 20:13

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: CS-12 | Sampled: 8/26/2014 14:15

Sample ID: 14H1273-30

Sample Matrix: Concrete

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 20:31	MJC
Aroclor-1221 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 20:31	MJC
Aroclor-1232 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 20:31	MJC
Aroclor-1242 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 20:31	MJC
Aroclor-1248 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 20:31	MJC
Aroclor-1254 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 20:31	MJC
Aroclor-1260 [1]	0.96	0.098	mg/Kg	1	O-03	SW-846 8082A	8/29/14	9/3/14 20:31	MJC
Aroclor-1262 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 20:31	MJC
Aroclor-1268 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 20:31	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	84.5	30-150		9/3/14 20:31
Decachlorobiphenyl [2]	84.2	30-150		9/3/14 20:31
Tetrachloro-m-xylene [1]	92.4	30-150		9/3/14 20:31
Tetrachloro-m-xylene [2]	84.7	30-150		9/3/14 20:31

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: CS-17 | Sampled: 8/26/2014 14:45

Sample ID: 14H1273-31

Sample Matrix: Concrete

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	mg/Kg	2		SW-846 8082A	8/29/14	9/4/14 11:04	KAL
Aroclor-1221 [1]	ND	0.20	mg/Kg	2		SW-846 8082A	8/29/14	9/4/14 11:04	KAL
Aroclor-1232 [1]	ND	0.20	mg/Kg	2		SW-846 8082A	8/29/14	9/4/14 11:04	KAL
Aroclor-1242 [1]	ND	0.20	mg/Kg	2		SW-846 8082A	8/29/14	9/4/14 11:04	KAL
Aroclor-1248 [1]	ND	0.20	mg/Kg	2		SW-846 8082A	8/29/14	9/4/14 11:04	KAL
Aroclor-1254 [1]	1.2	0.20	mg/Kg	2	V-24	SW-846 8082A	8/29/14	9/4/14 11:04	KAL
Aroclor-1260 [1]	0.32	0.20	mg/Kg	2	V-24	SW-846 8082A	8/29/14	9/4/14 11:04	KAL
Aroclor-1262 [1]	ND	0.20	mg/Kg	2		SW-846 8082A	8/29/14	9/4/14 11:04	KAL
Aroclor-1268 [1]	ND	0.20	mg/Kg	2		SW-846 8082A	8/29/14	9/4/14 11:04	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	92.6	30-150		9/4/14 11:04
Decachlorobiphenyl [2]	92.6	30-150		9/4/14 11:04
Tetrachloro-m-xylene [1]	100	30-150		9/4/14 11:04
Tetrachloro-m-xylene [2]	94.3	30-150		9/4/14 11:04

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Project Location: Charlestown | Sample Description: | Work Order: 14H1273

Date Received: 8/27/2014

Field Sample #: CS-18 | Sampled: 8/26/2014 15:15

Sample ID: 14H1273-32

Sample Matrix: Concrete

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 21:07	MJC
Aroclor-1221 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 21:07	MJC
Aroclor-1232 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 21:07	MJC
Aroclor-1242 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 21:07	MJC
Aroclor-1248 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 21:07	MJC
Aroclor-1254 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 21:07	MJC
Aroclor-1260 [2]	0.54	0.10	mg/Kg	1	O-03	SW-846 8082A	8/29/14	9/3/14 21:07	MJC
Aroclor-1262 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 21:07	MJC
Aroclor-1268 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	8/29/14	9/3/14 21:07	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	100	30-150		9/3/14 21:07
Decachlorobiphenyl [2]	98.3	30-150		9/3/14 21:07
Tetrachloro-m-xylene [1]	108	30-150		9/3/14 21:07
Tetrachloro-m-xylene [2]	97.3	30-150		9/3/14 21:07

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Sample Extraction Data

Prep Method: SW-846 3546-MADEP-EPH-04-1.1

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1273-04 [SB-1 (4-6')]	B103904	20.4	2.00	08/29/14
14H1273-08 [SB-11 (4-6')]	B103904	20.2	2.00	08/29/14
14H1273-11 [SB-12 (2-4')]	B103904	20.3	2.00	08/29/14
14H1273-15 [SB-19 (2-4')]	B103904	20.3	2.00	08/29/14
14H1273-19 [SB-23 (2-4')]	B103904	20.3	2.00	08/29/14

Prep Method: MA VPH-MADEP-VPH-04-1.1

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1273-11 [SB-12 (2-4')]	B103863	24.7	19.0	08/29/14
14H1273-15 [SB-19 (2-4')]	B103863	27.9	19.8	08/29/14
14H1273-19 [SB-23 (2-4')]	B103863	23.2	18.1	08/29/14

Prep Method: MA VPH-MADEP-VPH-04-1.1

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1273-04 [SB-1 (4-6')]	B103945	25.0	20.8	09/02/14
14H1273-08 [SB-11 (4-6')]	B103945	22.8	19.9	09/02/14

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
14H1273-01 [SB-1 (0-6")]	B104020	09/02/14
14H1273-02 [SB-1 (6"-2')]	B104020	09/02/14
14H1273-04 [SB-1 (4-6')]	B104020	09/02/14
14H1273-05 [SB-11 (0-6")]	B104020	09/02/14
14H1273-06 [SB-11 (6"-2')]	B104020	09/02/14
14H1273-08 [SB-11 (4-6')]	B104020	09/02/14
14H1273-09 [SB-12 (0-6")]	B104020	09/02/14
14H1273-10 [SB-12 (6"-2')]	B104020	09/02/14
14H1273-11 [SB-12 (2-4')]	B104020	09/02/14
14H1273-13 [SB-19 (0-6")]	B104020	09/02/14
14H1273-14 [SB-19 (6"-2')]	B104020	09/02/14
14H1273-15 [SB-19 (2-4')]	B104020	09/02/14
14H1273-17 [SB-23 (0-6")]	B104020	09/02/14
14H1273-18 [SB-23 (6"-2')]	B104020	09/02/14
14H1273-19 [SB-23 (2-4')]	B104020	09/02/14
14H1273-21 [SB-3 (0-6")]	B104020	09/02/14
14H1273-22 [SB-3 (6"-2')]	B104020	09/02/14

Prep Method: SW-846 3050B-SW-846 6010C

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1273-04 [SB-1 (4-6')]	B103810	1.01	50.0	08/28/14
14H1273-08 [SB-11 (4-6')]	B103810	1.07	50.0	08/28/14
14H1273-11 [SB-12 (2-4')]	B103810	1.02	50.0	08/28/14
14H1273-19 [SB-23 (2-4')]	B103810	1.09	50.0	08/28/14

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Sample Extraction Data

Prep Method: SW-846 3050B-SW-846 6010C

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1273-15 [SB-19 (2-4')]	B103933	1.05	50.0	08/30/14

Prep Method: SW-846 7471-SW-846 7471B

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1273-11 [SB-12 (2-4')]	B103812	0.583	50.0	08/28/14
14H1273-15 [SB-19 (2-4')]	B103812	0.653	50.0	08/28/14
14H1273-19 [SB-23 (2-4')]	B103812	0.611	50.0	08/28/14

Prep Method: SW-846 7471-SW-846 7471B

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1273-08 [SB-11 (4-6')]	B103821	0.613	50.0	08/28/14

Prep Method: SW-846 7471-SW-846 7471B

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1273-04 [SB-1 (4-6')]	B103934	0.648	50.0	08/30/14

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1273-23 [CS-1]	B103893	2.03	10.0	08/29/14
14H1273-24 [CS-2]	B103893	2.03	10.0	08/29/14
14H1273-25 [CS-7]	B103893	2.03	10.0	08/29/14
14H1273-26 [CS-8]	B103893	2.05	10.0	08/29/14
14H1273-27 [CS-9]	B103893	2.00	10.0	08/29/14
14H1273-29 [CS-11]	B103893	2.06	10.0	08/29/14
14H1273-30 [CS-12]	B103893	2.05	10.0	08/29/14
14H1273-31 [CS-17]	B103893	2.03	10.0	08/29/14
14H1273-32 [CS-18]	B103893	2.00	10.0	08/29/14

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1273-28RE1 [CS-10]	B104190	2.02	10.0	09/04/14

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1273-01 [SB-1 (0-6")]	B104025	10.2	10.0	09/02/14
14H1273-02 [SB-1 (6"-2')]	B104025	10.1	10.0	09/02/14
14H1273-05 [SB-11 (0-6")]	B104025	10.4	10.0	09/02/14
14H1273-06 [SB-11 (6"-2')]	B104025	10.3	10.0	09/02/14
14H1273-09 [SB-12 (0-6")]	B104025	10.4	10.0	09/02/14
14H1273-10 [SB-12 (6"-2')]	B104025	10.0	10.0	09/02/14
14H1273-13 [SB-19 (0-6")]	B104025	10.4	10.0	09/02/14

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Sample Extraction Data

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1273-14 [SB-19 (6"-2')]	B104025	10.4	10.0	09/02/14
14H1273-17 [SB-23 (0-6")]	B104025	10.3	10.0	09/02/14
14H1273-18 [SB-23 (6"-2')]	B104025	10.1	10.0	09/02/14
14H1273-21 [SB-3 (0-6")]	B104025	10.4	10.0	09/02/14
14H1273-22 [SB-3 (6"-2')]	B104025	10.4	10.0	09/02/14

Prep Method: SW-846 5035-SW-846 8260C

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14H1273-19 [SB-23 (2-4')]	B103882	7.17	10.0	08/29/14

Prep Method: SW-846 5035-SW-846 8260C

Lab Number [Field ID]	Batch	Sample Amount(g)	Methanol Volume(mL)	Methanol Aliquot(mL)	Final Volume(mL)	Date
14H1273-04 [SB-1 (4-6')]	B104045	23.6	20.4	0.25	50	09/03/14
14H1273-08 [SB-11 (4-6')]	B104045	22.2	19.7	1	50	09/03/14
14H1273-11 [SB-12 (2-4')]	B104045	26.6	19.2	0.5	50	09/03/14
14H1273-15 [SB-19 (2-4')]	B104045	26.6	19.5	0.25	50	09/03/14

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103882 - SW-846 5035										
Blank (B103882-BLK1)				Prepared & Analyzed: 08/29/14						
Acetone	ND	0.10	mg/Kg wet							V-05
tert-Amyl Methyl Ether (TAME)	ND	0.0010	mg/Kg wet							
Benzene	ND	0.0020	mg/Kg wet							
Bromobenzene	ND	0.0020	mg/Kg wet							
Bromochloromethane	ND	0.0020	mg/Kg wet							
Bromodichloromethane	ND	0.0020	mg/Kg wet							
Bromoform	ND	0.010	mg/Kg wet							
Bromomethane	ND	0.010	mg/Kg wet							
2-Butanone (MEK)	ND	0.040	mg/Kg wet							V-05
n-Butylbenzene	ND	0.0020	mg/Kg wet							
sec-Butylbenzene	ND	0.0020	mg/Kg wet							
tert-Butylbenzene	ND	0.0020	mg/Kg wet							
tert-Butyl Ethyl Ether (TBEE)	ND	0.0010	mg/Kg wet							
Carbon Disulfide	ND	0.020	mg/Kg wet							
Carbon Tetrachloride	ND	0.0020	mg/Kg wet							
Chlorobenzene	ND	0.0020	mg/Kg wet							
Chlorodibromomethane	ND	0.0010	mg/Kg wet							
Chloroethane	ND	0.010	mg/Kg wet							
Chloroform	ND	0.0040	mg/Kg wet							
Chloromethane	ND	0.010	mg/Kg wet							
2-Chlorotoluene	ND	0.0020	mg/Kg wet							
4-Chlorotoluene	ND	0.0020	mg/Kg wet							
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0020	mg/Kg wet							
1,2-Dibromoethane (EDB)	ND	0.0010	mg/Kg wet							
Dibromomethane	ND	0.0020	mg/Kg wet							
1,2-Dichlorobenzene	ND	0.0020	mg/Kg wet							
1,3-Dichlorobenzene	ND	0.0020	mg/Kg wet							
1,4-Dichlorobenzene	ND	0.0020	mg/Kg wet							
Dichlorodifluoromethane (Freon 12)	ND	0.010	mg/Kg wet							
1,1-Dichloroethane	ND	0.0020	mg/Kg wet							
1,2-Dichloroethane	ND	0.0020	mg/Kg wet							
1,1-Dichloroethylene	ND	0.0040	mg/Kg wet							
cis-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
trans-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
1,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,3-Dichloropropane	ND	0.0010	mg/Kg wet							
2,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,1-Dichloropropene	ND	0.0020	mg/Kg wet							
cis-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
trans-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
Diethyl Ether	ND	0.010	mg/Kg wet							
Diisopropyl Ether (DIPE)	ND	0.0010	mg/Kg wet							
1,4-Dioxane	ND	0.10	mg/Kg wet							V-16
Ethylbenzene	ND	0.0020	mg/Kg wet							
Hexachlorobutadiene	ND	0.0020	mg/Kg wet							
2-Hexanone (MBK)	ND	0.020	mg/Kg wet							V-05
Isopropylbenzene (Cumene)	ND	0.0020	mg/Kg wet							
p-Isopropyltoluene (p-Cymene)	ND	0.0020	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.0040	mg/Kg wet							
Methylene Chloride	ND	0.010	mg/Kg wet							
4-Methyl-2-pentanone (MIBK)	ND	0.020	mg/Kg wet							
Naphthalene	ND	0.010	mg/Kg wet							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B103882 - SW-846 5035											
Blank (B103882-BLK1)				Prepared & Analyzed: 08/29/14							
n-Propylbenzene	ND	0.0020	mg/Kg wet								
Styrene	ND	0.0020	mg/Kg wet								
1,1,1,2-Tetrachloroethane	ND	0.0020	mg/Kg wet								
1,1,2,2-Tetrachloroethane	ND	0.0010	mg/Kg wet								
Tetrachloroethylene	ND	0.0020	mg/Kg wet								
Tetrahydrofuran	ND	0.010	mg/Kg wet							V-05	
Toluene	ND	0.0020	mg/Kg wet								
1,2,3-Trichlorobenzene	ND	0.010	mg/Kg wet								
1,2,4-Trichlorobenzene	ND	0.0040	mg/Kg wet								
1,1,1-Trichloroethane	ND	0.0020	mg/Kg wet								
1,1,2-Trichloroethane	ND	0.0020	mg/Kg wet								
Trichloroethylene	ND	0.0020	mg/Kg wet								
Trichlorofluoromethane (Freon 11)	ND	0.010	mg/Kg wet								
1,2,3-Trichloropropane	ND	0.0020	mg/Kg wet								
1,2,4-Trimethylbenzene	ND	0.0020	mg/Kg wet								
1,3,5-Trimethylbenzene	ND	0.0020	mg/Kg wet								
Vinyl Chloride	ND	0.010	mg/Kg wet							L-04	
m+p Xylene	ND	0.0040	mg/Kg wet								
o-Xylene	ND	0.0020	mg/Kg wet								
Surrogate: 1,2-Dichloroethane-d4	*0.0504*		mg/Kg wet	0.0500		101	70-130				
Surrogate: Toluene-d8	*0.0478*		mg/Kg wet	0.0500		95.5	70-130				
Surrogate: 4-Bromofluorobenzene	*0.0468*		mg/Kg wet	0.0500		93.7	70-130				
LCS (B103882-BS1)				Prepared & Analyzed: 08/29/14							
Acetone	0.160	0.10	mg/Kg wet	0.200		80.0	40-160			V-05	†
tert-Amyl Methyl Ether (TAME)	0.0164	0.0010	mg/Kg wet	0.0200		81.8	70-130				
Benzene	0.0173	0.0020	mg/Kg wet	0.0200		86.4	70-130				
Bromobenzene	0.0178	0.0020	mg/Kg wet	0.0200		89.1	70-130				
Bromochloromethane	0.0182	0.0020	mg/Kg wet	0.0200		90.8	70-130				
Bromodichloromethane	0.0205	0.0020	mg/Kg wet	0.0200		102	70-130				
Bromoform	0.0201	0.010	mg/Kg wet	0.0200		100	70-130				
Bromomethane	0.0122	0.010	mg/Kg wet	0.0200		61.0	40-160			L-14	†
2-Butanone (MEK)	0.160	0.040	mg/Kg wet	0.200		80.0	40-160			V-05	†
n-Butylbenzene	0.0191	0.0020	mg/Kg wet	0.0200		95.3	70-130				
sec-Butylbenzene	0.0195	0.0020	mg/Kg wet	0.0200		97.5	70-130				
tert-Butylbenzene	0.0192	0.0020	mg/Kg wet	0.0200		96.2	70-130				
tert-Butyl Ethyl Ether (TBEE)	0.0173	0.0010	mg/Kg wet	0.0200		86.3	70-130				
Carbon Disulfide	0.0182	0.020	mg/Kg wet	0.0200		91.0	70-130				
Carbon Tetrachloride	0.0196	0.0020	mg/Kg wet	0.0200		97.8	70-130				
Chlorobenzene	0.0189	0.0020	mg/Kg wet	0.0200		94.7	70-130				
Chlorodibromomethane	0.0207	0.0010	mg/Kg wet	0.0200		103	70-130				
Chloroethane	0.0186	0.010	mg/Kg wet	0.0200		92.9	70-130				
Chloroform	0.0191	0.0040	mg/Kg wet	0.0200		95.4	70-130				
Chloromethane	0.0135	0.010	mg/Kg wet	0.0200		67.7	40-160			L-14	†
2-Chlorotoluene	0.0193	0.0020	mg/Kg wet	0.0200		96.7	70-130				
4-Chlorotoluene	0.0196	0.0020	mg/Kg wet	0.0200		97.8	70-130				
1,2-Dibromo-3-chloropropane (DBCP)	0.0192	0.0020	mg/Kg wet	0.0200		96.2	70-130				
1,2-Dibromoethane (EDB)	0.0191	0.0010	mg/Kg wet	0.0200		95.7	70-130				
Dibromomethane	0.0200	0.0020	mg/Kg wet	0.0200		99.8	70-130				
1,2-Dichlorobenzene	0.0185	0.0020	mg/Kg wet	0.0200		92.4	70-130				
1,3-Dichlorobenzene	0.0182	0.0020	mg/Kg wet	0.0200		90.9	70-130				
1,4-Dichlorobenzene	0.0181	0.0020	mg/Kg wet	0.0200		90.6	70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B103882 - SW-846 5035												
LCS (B103882-BS1)				Prepared & Analyzed: 08/29/14								
Dichlorodifluoromethane (Freon 12)	0.0127	0.010	mg/Kg wet	0.0200		63.5		40-160			L-14	†
1,1-Dichloroethane	0.0181	0.0020	mg/Kg wet	0.0200		90.6		70-130				
1,2-Dichloroethane	0.0209	0.0020	mg/Kg wet	0.0200		105		70-130				
1,1-Dichloroethylene	0.0190	0.0040	mg/Kg wet	0.0200		94.9		70-130				
cis-1,2-Dichloroethylene	0.0181	0.0020	mg/Kg wet	0.0200		90.6		70-130				
trans-1,2-Dichloroethylene	0.0185	0.0020	mg/Kg wet	0.0200		92.7		70-130				
1,2-Dichloropropane	0.0185	0.0020	mg/Kg wet	0.0200		92.5		70-130				
1,3-Dichloropropane	0.0184	0.0010	mg/Kg wet	0.0200		91.8		70-130				
2,2-Dichloropropane	0.0175	0.0020	mg/Kg wet	0.0200		87.7		70-130				
1,1-Dichloropropene	0.0185	0.0020	mg/Kg wet	0.0200		92.5		70-130				
cis-1,3-Dichloropropene	0.0185	0.0010	mg/Kg wet	0.0200		92.5		70-130				
trans-1,3-Dichloropropene	0.0207	0.0010	mg/Kg wet	0.0200		103		70-130				
Diethyl Ether	0.0185	0.010	mg/Kg wet	0.0200		92.6		70-130				
Diisopropyl Ether (DIPE)	0.0168	0.0010	mg/Kg wet	0.0200		83.9		70-130				
1,4-Dioxane	0.186	0.10	mg/Kg wet	0.200		93.1		40-160			V-16	†
Ethylbenzene	0.0189	0.0020	mg/Kg wet	0.0200		94.5		70-130				
Hexachlorobutadiene	0.0205	0.0020	mg/Kg wet	0.0200		102		70-130				
2-Hexanone (MBK)	0.159	0.020	mg/Kg wet	0.200		79.5		40-160			V-05	†
Isopropylbenzene (Cumene)	0.0200	0.0020	mg/Kg wet	0.0200		100		70-130				
p-Isopropyltoluene (p-Cymene)	0.0185	0.0020	mg/Kg wet	0.0200		92.3		70-130				
Methyl tert-Butyl Ether (MTBE)	0.0181	0.0040	mg/Kg wet	0.0200		90.7		70-130				
Methylene Chloride	0.0154	0.010	mg/Kg wet	0.0200		77.2		70-130				
4-Methyl-2-pentanone (MIBK)	0.162	0.020	mg/Kg wet	0.200		81.2		40-160				†
Naphthalene	0.0170	0.010	mg/Kg wet	0.0200		85.1		70-130				
n-Propylbenzene	0.0203	0.0020	mg/Kg wet	0.0200		101		70-130				
Styrene	0.0179	0.0020	mg/Kg wet	0.0200		89.6		70-130				
1,1,1,2-Tetrachloroethane	0.0210	0.0020	mg/Kg wet	0.0200		105		70-130				
1,1,2,2-Tetrachloroethane	0.0183	0.0010	mg/Kg wet	0.0200		91.6		70-130				
Tetrachloroethylene	0.0193	0.0020	mg/Kg wet	0.0200		96.4		70-130				
Tetrahydrofuran	0.0171	0.010	mg/Kg wet	0.0200		85.5		70-130			V-05	
Toluene	0.0188	0.0020	mg/Kg wet	0.0200		94.1		70-130				
1,2,3-Trichlorobenzene	0.0164	0.010	mg/Kg wet	0.0200		82.2		70-130				
1,2,4-Trichlorobenzene	0.0166	0.0040	mg/Kg wet	0.0200		82.8		70-130				
1,1,1-Trichloroethane	0.0192	0.0020	mg/Kg wet	0.0200		95.9		70-130				
1,1,2-Trichloroethane	0.0191	0.0020	mg/Kg wet	0.0200		95.3		70-130				
Trichloroethylene	0.0203	0.0020	mg/Kg wet	0.0200		102		70-130				
Trichlorofluoromethane (Freon 11)	0.0198	0.010	mg/Kg wet	0.0200		99.2		70-130				
1,2,3-Trichloropropane	0.0184	0.0020	mg/Kg wet	0.0200		92.1		70-130				
1,2,4-Trimethylbenzene	0.0182	0.0020	mg/Kg wet	0.0200		90.8		70-130				
1,3,5-Trimethylbenzene	0.0190	0.0020	mg/Kg wet	0.0200		95.2		70-130				
Vinyl Chloride	0.0129	0.010	mg/Kg wet	0.0200		**64.7**	*	70-130			L-04	
m+p Xylene	0.0393	0.0040	mg/Kg wet	0.0400		98.2		70-130				
o-Xylene	0.0192	0.0020	mg/Kg wet	0.0200		96.1		70-130				
Surrogate: 1,2-Dichloroethane-d4	*0.0501*		mg/Kg wet	0.0500		100		70-130				
Surrogate: Toluene-d8	*0.0493*		mg/Kg wet	0.0500		98.6		70-130				
Surrogate: 4-Bromofluorobenzene	*0.0491*		mg/Kg wet	0.0500		98.2		70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B103882 - SW-846 5035											
LCS Dup (B103882-BSD1)				Prepared & Analyzed: 08/29/14							
Acetone	0.142	0.10	mg/Kg wet	0.200		71.0	40-160	11.9	20	V-05	†
tert-Amyl Methyl Ether (TAME)	0.0173	0.0010	mg/Kg wet	0.0200		86.7	70-130	5.82	20		
Benzene	0.0185	0.0020	mg/Kg wet	0.0200		92.4	70-130	6.71	20		
Bromobenzene	0.0189	0.0020	mg/Kg wet	0.0200		94.3	70-130	5.67	20		
Bromochloromethane	0.0192	0.0020	mg/Kg wet	0.0200		95.9	70-130	5.46	20		
Bromodichloromethane	0.0212	0.0020	mg/Kg wet	0.0200		106	70-130	3.55	20		
Bromoform	0.0207	0.010	mg/Kg wet	0.0200		103	70-130	2.95	20		
Bromomethane	0.0144	0.010	mg/Kg wet	0.0200		72.1	40-160	16.7	20		†
2-Butanone (MEK)	0.154	0.040	mg/Kg wet	0.200		76.8	40-160	4.09	20	V-05	†
n-Butylbenzene	0.0203	0.0020	mg/Kg wet	0.0200		101	70-130	6.10	20		
sec-Butylbenzene	0.0208	0.0020	mg/Kg wet	0.0200		104	70-130	6.64	20		
tert-Butylbenzene	0.0203	0.0020	mg/Kg wet	0.0200		102	70-130	5.46	20		
tert-Butyl Ethyl Ether (TBEE)	0.0184	0.0010	mg/Kg wet	0.0200		91.8	70-130	6.18	20		
Carbon Disulfide	0.0188	0.020	mg/Kg wet	0.0200		94.2	70-130	3.46	20		
Carbon Tetrachloride	0.0207	0.0020	mg/Kg wet	0.0200		104	70-130	5.66	20		
Chlorobenzene	0.0199	0.0020	mg/Kg wet	0.0200		99.4	70-130	4.84	20		
Chlorodibromomethane	0.0211	0.0010	mg/Kg wet	0.0200		106	70-130	2.20	20		
Chloroethane	0.0193	0.010	mg/Kg wet	0.0200		96.3	70-130	3.59	20		
Chloroform	0.0198	0.0040	mg/Kg wet	0.0200		99.2	70-130	3.91	20		
Chloromethane	0.0140	0.010	mg/Kg wet	0.0200		69.8	40-160	3.05	20	L-14	†
2-Chlorotoluene	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130	5.43	20		
4-Chlorotoluene	0.0205	0.0020	mg/Kg wet	0.0200		102	70-130	4.69	20		
1,2-Dibromo-3-chloropropane (DBCP)	0.0198	0.0020	mg/Kg wet	0.0200		99.1	70-130	2.97	20		
1,2-Dibromoethane (EDB)	0.0204	0.0010	mg/Kg wet	0.0200		102	70-130	6.57	20		
Dibromomethane	0.0207	0.0020	mg/Kg wet	0.0200		103	70-130	3.45	20		
1,2-Dichlorobenzene	0.0198	0.0020	mg/Kg wet	0.0200		99.1	70-130	7.00	20		
1,3-Dichlorobenzene	0.0192	0.0020	mg/Kg wet	0.0200		95.8	70-130	5.25	20		
1,4-Dichlorobenzene	0.0191	0.0020	mg/Kg wet	0.0200		95.7	70-130	5.48	20		
Dichlorodifluoromethane (Freon 12)	0.0131	0.010	mg/Kg wet	0.0200		65.5	40-160	3.10	20	L-14	†
1,1-Dichloroethane	0.0193	0.0020	mg/Kg wet	0.0200		96.6	70-130	6.41	20		
1,2-Dichloroethane	0.0222	0.0020	mg/Kg wet	0.0200		111	70-130	6.03	20		
1,1-Dichloroethylene	0.0200	0.0040	mg/Kg wet	0.0200		100	70-130	5.33	20		
cis-1,2-Dichloroethylene	0.0189	0.0020	mg/Kg wet	0.0200		94.6	70-130	4.32	20		
trans-1,2-Dichloroethylene	0.0199	0.0020	mg/Kg wet	0.0200		99.4	70-130	6.98	20		
1,2-Dichloropropane	0.0191	0.0020	mg/Kg wet	0.0200		95.4	70-130	3.09	20		
1,3-Dichloropropane	0.0194	0.0010	mg/Kg wet	0.0200		96.9	70-130	5.41	20		
2,2-Dichloropropane	0.0187	0.0020	mg/Kg wet	0.0200		93.3	70-130	6.19	20		
1,1-Dichloropropene	0.0190	0.0020	mg/Kg wet	0.0200		95.2	70-130	2.88	20		
cis-1,3-Dichloropropene	0.0196	0.0010	mg/Kg wet	0.0200		97.8	70-130	5.57	20		
trans-1,3-Dichloropropene	0.0214	0.0010	mg/Kg wet	0.0200		107	70-130	3.33	20		
Diethyl Ether	0.0197	0.010	mg/Kg wet	0.0200		98.6	70-130	6.28	20		
Diisopropyl Ether (DIPE)	0.0175	0.0010	mg/Kg wet	0.0200		87.6	70-130	4.31	20		
1,4-Dioxane	0.186	0.10	mg/Kg wet	0.200		93.1	40-160	0.0107	20	V-16	†
Ethylbenzene	0.0197	0.0020	mg/Kg wet	0.0200		98.7	70-130	4.35	20		
Hexachlorobutadiene	0.0219	0.0020	mg/Kg wet	0.0200		109	70-130	6.42	20		
2-Hexanone (MBK)	0.156	0.020	mg/Kg wet	0.200		78.1	40-160	1.75	20	V-05	†
Isopropylbenzene (Cumene)	0.0208	0.0020	mg/Kg wet	0.0200		104	70-130	4.11	20		
p-Isopropyltoluene (p-Cymene)	0.0197	0.0020	mg/Kg wet	0.0200		98.3	70-130	6.30	20		
Methyl tert-Butyl Ether (MTBE)	0.0190	0.0040	mg/Kg wet	0.0200		95.0	70-130	4.63	20		
Methylene Chloride	0.0167	0.010	mg/Kg wet	0.0200		83.3	70-130	7.60	20		
4-Methyl-2-pentanone (MIBK)	0.170	0.020	mg/Kg wet	0.200		85.1	40-160	4.71	20		†
Naphthalene	0.0177	0.010	mg/Kg wet	0.0200		88.7	70-130	4.14	20		

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B103882 - SW-846 5035											
LCS Dup (B103882-BSD1)				Prepared & Analyzed: 08/29/14							
n-Propylbenzene	0.0211	0.0020	mg/Kg wet	0.0200		106		70-130	4.15	20	
Styrene	0.0190	0.0020	mg/Kg wet	0.0200		94.8		70-130	5.64	20	
1,1,1,2-Tetrachloroethane	0.0219	0.0020	mg/Kg wet	0.0200		110		70-130	4.19	20	
1,1,2,2-Tetrachloroethane	0.0191	0.0010	mg/Kg wet	0.0200		95.5		70-130	4.17	20	
Tetrachloroethylene	0.0203	0.0020	mg/Kg wet	0.0200		101		70-130	4.96	20	
Tetrahydrofuran	0.0174	0.010	mg/Kg wet	0.0200		87.2		70-130	1.97	20	V-05
Toluene	0.0196	0.0020	mg/Kg wet	0.0200		98.2		70-130	4.26	20	
1,2,3-Trichlorobenzene	0.0174	0.010	mg/Kg wet	0.0200		87.1		70-130	5.79	20	
1,2,4-Trichlorobenzene	0.0173	0.0040	mg/Kg wet	0.0200		86.3		70-130	4.14	20	
1,1,1-Trichloroethane	0.0202	0.0020	mg/Kg wet	0.0200		101		70-130	4.98	20	
1,1,2-Trichloroethane	0.0200	0.0020	mg/Kg wet	0.0200		99.9		70-130	4.71	20	
Trichloroethylene	0.0210	0.0020	mg/Kg wet	0.0200		105		70-130	3.39	20	
Trichlorofluoromethane (Freon 11)	0.0210	0.010	mg/Kg wet	0.0200		105		70-130	5.87	20	
1,2,3-Trichloropropane	0.0186	0.0020	mg/Kg wet	0.0200		92.8		70-130	0.757	20	
1,2,4-Trimethylbenzene	0.0193	0.0020	mg/Kg wet	0.0200		96.3		70-130	5.88	20	
1,3,5-Trimethylbenzene	0.0200	0.0020	mg/Kg wet	0.0200		100		70-130	4.92	20	
Vinyl Chloride	0.0136	0.010	mg/Kg wet	0.0200		**68.0**	*	70-130	4.97	20	L-04
m+p Xylene	0.0403	0.0040	mg/Kg wet	0.0400		101		70-130	2.56	20	
o-Xylene	0.0202	0.0020	mg/Kg wet	0.0200		101		70-130	5.07	20	
Surrogate: 1,2-Dichloroethane-d4	*0.0502*		mg/Kg wet	0.0500		100		70-130			
Surrogate: Toluene-d8	*0.0489*		mg/Kg wet	0.0500		97.7		70-130			
Surrogate: 4-Bromofluorobenzene	*0.0490*		mg/Kg wet	0.0500		98.0		70-130			
Batch B104045 - SW-846 5035											
Blank (B104045-BLK1)				Prepared: 09/03/14 Analyzed: 09/04/14							
Acetone	ND	2.5	mg/Kg wet								
tert-Amyl Methyl Ether (TAME)	ND	0.025	mg/Kg wet								
Benzene	ND	0.050	mg/Kg wet								
Bromobenzene	ND	0.050	mg/Kg wet								
Bromochloromethane	ND	0.050	mg/Kg wet								
Bromodichloromethane	ND	0.050	mg/Kg wet								
Bromoform	ND	0.050	mg/Kg wet								
Bromomethane	ND	0.10	mg/Kg wet								
2-Butanone (MEK)	ND	1.0	mg/Kg wet								
n-Butylbenzene	ND	0.050	mg/Kg wet								
sec-Butylbenzene	ND	0.050	mg/Kg wet								
tert-Butylbenzene	ND	0.050	mg/Kg wet								
tert-Butyl Ethyl Ether (TBEE)	ND	0.025	mg/Kg wet								
Carbon Disulfide	ND	0.50	mg/Kg wet								
Carbon Tetrachloride	ND	0.050	mg/Kg wet								
Chlorobenzene	ND	0.050	mg/Kg wet								
Chlorodibromomethane	ND	0.025	mg/Kg wet								
Chloroethane	ND	0.10	mg/Kg wet								
Chloroform	ND	0.10	mg/Kg wet								
Chloromethane	ND	0.10	mg/Kg wet								
2-Chlorotoluene	ND	0.050	mg/Kg wet								
4-Chlorotoluene	ND	0.050	mg/Kg wet								
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.20	mg/Kg wet								
1,2-Dibromoethane (EDB)	ND	0.025	mg/Kg wet								
Dibromomethane	ND	0.050	mg/Kg wet								
1,2-Dichlorobenzene	ND	0.050	mg/Kg wet								
1,3-Dichlorobenzene	ND	0.050	mg/Kg wet								

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B104045 - SW-846 5035										
Blank (B104045-BLK1)				Prepared: 09/03/14 Analyzed: 09/04/14						
1,4-Dichlorobenzene	ND	0.050	mg/Kg wet							
Dichlorodifluoromethane (Freon 12)	ND	0.10	mg/Kg wet							
1,1-Dichloroethane	ND	0.050	mg/Kg wet							
1,2-Dichloroethane	ND	0.050	mg/Kg wet							
1,1-Dichloroethylene	ND	0.050	mg/Kg wet							
cis-1,2-Dichloroethylene	ND	0.050	mg/Kg wet							
trans-1,2-Dichloroethylene	ND	0.050	mg/Kg wet							
1,2-Dichloropropane	ND	0.050	mg/Kg wet							
1,3-Dichloropropane	ND	0.025	mg/Kg wet							
2,2-Dichloropropane	ND	0.050	mg/Kg wet							
1,1-Dichloropropene	ND	0.10	mg/Kg wet							
cis-1,3-Dichloropropene	ND	0.025	mg/Kg wet							
trans-1,3-Dichloropropene	ND	0.025	mg/Kg wet							
Diethyl Ether	ND	0.10	mg/Kg wet							
Diisopropyl Ether (DIPE)	ND	0.025	mg/Kg wet							
1,4-Dioxane	ND	2.5	mg/Kg wet							V-05, V-16
Ethylbenzene	ND	0.050	mg/Kg wet							
Hexachlorobutadiene	ND	0.050	mg/Kg wet							
2-Hexanone (MBK)	ND	0.50	mg/Kg wet							
Isopropylbenzene (Cumene)	ND	0.050	mg/Kg wet							
p-Isopropyltoluene (p-Cymene)	ND	0.050	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.050	mg/Kg wet							
Methylene Chloride	ND	0.25	mg/Kg wet							
4-Methyl-2-pentanone (MIBK)	ND	0.50	mg/Kg wet							
Naphthalene	ND	0.10	mg/Kg wet							
n-Propylbenzene	ND	0.050	mg/Kg wet							
Styrene	ND	0.050	mg/Kg wet							
1,1,1,2-Tetrachloroethane	ND	0.050	mg/Kg wet							
1,1,2,2-Tetrachloroethane	ND	0.025	mg/Kg wet							
Tetrachloroethylene	ND	0.050	mg/Kg wet							
Tetrahydrofuran	ND	0.20	mg/Kg wet							V-16
Toluene	ND	0.050	mg/Kg wet							
1,2,3-Trichlorobenzene	ND	0.20	mg/Kg wet							
1,2,4-Trichlorobenzene	ND	0.050	mg/Kg wet							
1,1,1-Trichloroethane	ND	0.050	mg/Kg wet							
1,1,2-Trichloroethane	ND	0.050	mg/Kg wet							
Trichloroethylene	ND	0.050	mg/Kg wet							
Trichlorofluoromethane (Freon 11)	ND	0.10	mg/Kg wet							
1,2,3-Trichloropropane	ND	0.10	mg/Kg wet							
1,2,4-Trimethylbenzene	ND	0.050	mg/Kg wet							
1,3,5-Trimethylbenzene	ND	0.050	mg/Kg wet							
Vinyl Chloride	ND	0.10	mg/Kg wet							
m+p Xylene	ND	0.10	mg/Kg wet							
o-Xylene	ND	0.050	mg/Kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0221*		mg/Kg wet	0.0250		88.4	70-130			
Surrogate: Toluene-d8	*0.0242*		mg/Kg wet	0.0250		97.0	70-130			
Surrogate: 4-Bromofluorobenzene	*0.0229*		mg/Kg wet	0.0250		91.6	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B104045 - SW-846 5035												
LCS (B104045-BS1)				Prepared: 09/03/14 Analyzed: 09/04/14								
Acetone	0.217	0.057	mg/Kg wet	0.113		**191**	*	40-160			L-02	†
tert-Amyl Methyl Ether (TAME)	0.0117	0.00057	mg/Kg wet	0.0113		103		70-130				
Benzene	0.0138	0.0011	mg/Kg wet	0.0113		122		70-130				
Bromobenzene	0.0123	0.0011	mg/Kg wet	0.0113		108		70-130				
Bromochloromethane	0.0136	0.0011	mg/Kg wet	0.0113		120		70-130			V-20	
Bromodichloromethane	0.0131	0.0011	mg/Kg wet	0.0113		116		70-130				
Bromoform	0.0168	0.0011	mg/Kg wet	0.0113		**148**	*	70-130			L-02, V-20	
Bromomethane	0.00688	0.0023	mg/Kg wet	0.0113		60.7		40-160			L-14	†
2-Butanone (MEK)	0.159	0.023	mg/Kg wet	0.113		140		40-160			L-14	†
n-Butylbenzene	0.0131	0.0011	mg/Kg wet	0.0113		116		70-130				
sec-Butylbenzene	0.0127	0.0011	mg/Kg wet	0.0113		112		70-130				
tert-Butylbenzene	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130				
tert-Butyl Ethyl Ether (TBEE)	0.0127	0.00057	mg/Kg wet	0.0113		112		70-130				
Carbon Disulfide	0.0121	0.011	mg/Kg wet	0.0113		107		70-130				
Carbon Tetrachloride	0.0137	0.0011	mg/Kg wet	0.0113		121		70-130				
Chlorobenzene	0.0124	0.0011	mg/Kg wet	0.0113		110		70-130				
Chlorodibromomethane	0.0128	0.00057	mg/Kg wet	0.0113		113		70-130				
Chloroethane	0.0123	0.0023	mg/Kg wet	0.0113		108		70-130				
Chloroform	0.0120	0.0023	mg/Kg wet	0.0113		106		70-130				
Chloromethane	0.0114	0.0023	mg/Kg wet	0.0113		101		40-160				†
2-Chlorotoluene	0.0110	0.0011	mg/Kg wet	0.0113		97.2		70-130				
4-Chlorotoluene	0.0117	0.0011	mg/Kg wet	0.0113		104		70-130				
1,2-Dibromo-3-chloropropane (DBCP)	0.0120	0.0045	mg/Kg wet	0.0113		106		70-130				
1,2-Dibromoethane (EDB)	0.0130	0.00057	mg/Kg wet	0.0113		115		70-130				
Dibromomethane	0.0134	0.0011	mg/Kg wet	0.0113		118		70-130				
1,2-Dichlorobenzene	0.0118	0.0011	mg/Kg wet	0.0113		104		70-130				
1,3-Dichlorobenzene	0.0120	0.0011	mg/Kg wet	0.0113		106		70-130				
1,4-Dichlorobenzene	0.0122	0.0011	mg/Kg wet	0.0113		108		70-130				
Dichlorodifluoromethane (Freon 12)	0.0120	0.0023	mg/Kg wet	0.0113		106		40-160			V-20	†
1,1-Dichloroethane	0.0132	0.0011	mg/Kg wet	0.0113		117		70-130				
1,2-Dichloroethane	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130				
1,1-Dichloroethylene	0.0112	0.0011	mg/Kg wet	0.0113		98.4		70-130				
cis-1,2-Dichloroethylene	0.0120	0.0011	mg/Kg wet	0.0113		106		70-130				
trans-1,2-Dichloroethylene	0.0122	0.0011	mg/Kg wet	0.0113		107		70-130				
1,2-Dichloropropane	0.0131	0.0011	mg/Kg wet	0.0113		115		70-130				
1,3-Dichloropropane	0.0130	0.00057	mg/Kg wet	0.0113		114		70-130				
2,2-Dichloropropane	0.00966	0.0011	mg/Kg wet	0.0113		85.2		70-130				
1,1-Dichloropropene	0.0132	0.0023	mg/Kg wet	0.0113		116		70-130				
cis-1,3-Dichloropropene	0.0120	0.00057	mg/Kg wet	0.0113		106		70-130				
trans-1,3-Dichloropropene	0.0133	0.00057	mg/Kg wet	0.0113		118		70-130				
Diethyl Ether	0.0117	0.0023	mg/Kg wet	0.0113		103		70-130				
Diisopropyl Ether (DIPE)	0.0114	0.00057	mg/Kg wet	0.0113		101		70-130				
1,4-Dioxane	0.0883	0.057	mg/Kg wet	0.113		77.9		40-160			V-05, V-16	†
Ethylbenzene	0.0138	0.0011	mg/Kg wet	0.0113		122		70-130				
Hexachlorobutadiene	0.0142	0.0011	mg/Kg wet	0.0113		125		70-130				
2-Hexanone (MBK)	0.167	0.011	mg/Kg wet	0.113		147		40-160			L-14	†
Isopropylbenzene (Cumene)	0.0119	0.0011	mg/Kg wet	0.0113		105		70-130				
p-Isopropyltoluene (p-Cymene)	0.0134	0.0011	mg/Kg wet	0.0113		118		70-130				
Methyl tert-Butyl Ether (MTBE)	0.0133	0.0011	mg/Kg wet	0.0113		117		70-130				
Methylene Chloride	0.0111	0.0057	mg/Kg wet	0.0113		97.9		70-130				
4-Methyl-2-pentanone (MIBK)	0.117	0.011	mg/Kg wet	0.113		103		40-160				†
Naphthalene	0.0141	0.0023	mg/Kg wet	0.0113		124		70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B104045 - SW-846 5035												
LCS (B104045-BS1)				Prepared: 09/03/14 Analyzed: 09/04/14								
n-Propylbenzene	0.0122	0.0011	mg/Kg wet	0.0113		108		70-130				
Styrene	0.0126	0.0011	mg/Kg wet	0.0113		112		70-130				
1,1,1,2-Tetrachloroethane	0.0133	0.0011	mg/Kg wet	0.0113		117		70-130				
1,1,2,2-Tetrachloroethane	0.0125	0.00057	mg/Kg wet	0.0113		110		70-130				
Tetrachloroethylene	0.0136	0.0011	mg/Kg wet	0.0113		120		70-130				
Tetrahydrofuran	0.0126	0.0045	mg/Kg wet	0.0113		111		70-130			V-16	
Toluene	0.0136	0.0011	mg/Kg wet	0.0113		120		70-130				
1,2,3-Trichlorobenzene	0.0136	0.0045	mg/Kg wet	0.0113		120		70-130				
1,2,4-Trichlorobenzene	0.0137	0.0011	mg/Kg wet	0.0113		121		70-130				
1,1,1-Trichloroethane	0.0129	0.0011	mg/Kg wet	0.0113		114		70-130				
1,1,2-Trichloroethane	0.0129	0.0011	mg/Kg wet	0.0113		114		70-130				
Trichloroethylene	0.0137	0.0011	mg/Kg wet	0.0113		121		70-130				
Trichlorofluoromethane (Freon 11)	0.0116	0.0023	mg/Kg wet	0.0113		102		70-130				
1,2,3-Trichloropropane	0.0129	0.0023	mg/Kg wet	0.0113		114		70-130				
1,2,4-Trimethylbenzene	0.0139	0.0011	mg/Kg wet	0.0113		122		70-130				
1,3,5-Trimethylbenzene	0.0123	0.0011	mg/Kg wet	0.0113		108		70-130				
Vinyl Chloride	0.00843	0.0023	mg/Kg wet	0.0113		74.4		70-130				
m+p Xylene	0.0266	0.0023	mg/Kg wet	0.0227		118		70-130				
o-Xylene	0.0132	0.0011	mg/Kg wet	0.0113		117		70-130				
Surrogate: 1,2-Dichloroethane-d4	*0.0265*		mg/Kg wet	0.0283		93.6		70-130				
Surrogate: Toluene-d8	*0.0271*		mg/Kg wet	0.0283		95.8		70-130				
Surrogate: 4-Bromofluorobenzene	*0.0260*		mg/Kg wet	0.0283		91.8		70-130				
LCS Dup (B104045-BSD1)				Prepared: 09/03/14 Analyzed: 09/04/14								
Acetone	0.196	0.057	mg/Kg wet	0.113		**173**	*	40-160	9.85	20	L-02	†
tert-Amyl Methyl Ether (TAME)	0.0114	0.00057	mg/Kg wet	0.0113		101		70-130	2.25	20		
Benzene	0.0136	0.0011	mg/Kg wet	0.0113		120		70-130	1.41	20		
Bromobenzene	0.0119	0.0011	mg/Kg wet	0.0113		105		70-130	3.38	20		
Bromochloromethane	0.0134	0.0011	mg/Kg wet	0.0113		119		70-130	1.34	20	V-20	
Bromodichloromethane	0.0126	0.0011	mg/Kg wet	0.0113		111		70-130	4.32	20		
Bromoform	0.0160	0.0011	mg/Kg wet	0.0113		**141**	*	70-130	4.70	20	L-02, V-20	
Bromomethane	0.00730	0.0023	mg/Kg wet	0.0113		64.4		40-160	5.92	20	L-14	†
2-Butanone (MEK)	0.144	0.023	mg/Kg wet	0.113		127		40-160	9.56	20		†
n-Butylbenzene	0.0125	0.0011	mg/Kg wet	0.0113		111		70-130	4.33	20		
sec-Butylbenzene	0.0122	0.0011	mg/Kg wet	0.0113		108		70-130	3.74	20		
tert-Butylbenzene	0.0122	0.0011	mg/Kg wet	0.0113		108		70-130	4.89	20		
tert-Butyl Ethyl Ether (TBEE)	0.0118	0.00057	mg/Kg wet	0.0113		104		70-130	7.13	20		
Carbon Disulfide	0.0123	0.011	mg/Kg wet	0.0113		109		70-130	1.39	20		
Carbon Tetrachloride	0.0135	0.0011	mg/Kg wet	0.0113		119		70-130	1.50	20		
Chlorobenzene	0.0116	0.0011	mg/Kg wet	0.0113		102		70-130	7.08	20		
Chlorodibromomethane	0.0122	0.00057	mg/Kg wet	0.0113		108		70-130	4.79	20		
Chloroethane	0.0121	0.0023	mg/Kg wet	0.0113		107		70-130	1.39	20		
Chloroform	0.0117	0.0023	mg/Kg wet	0.0113		103		70-130	2.77	20		
Chloromethane	0.0114	0.0023	mg/Kg wet	0.0113		101		40-160	0.00	20		†
2-Chlorotoluene	0.0106	0.0011	mg/Kg wet	0.0113		93.5		70-130	3.88	20		
4-Chlorotoluene	0.0116	0.0011	mg/Kg wet	0.0113		102		70-130	1.26	20		
1,2-Dibromo-3-chloropropane (DBCP)	0.0114	0.0045	mg/Kg wet	0.0113		101		70-130	4.83	20		
1,2-Dibromoethane (EDB)	0.0121	0.00057	mg/Kg wet	0.0113		107		70-130	7.20	20		
Dibromomethane	0.0125	0.0011	mg/Kg wet	0.0113		110		70-130	6.73	20		
1,2-Dichlorobenzene	0.0117	0.0011	mg/Kg wet	0.0113		103		70-130	1.06	20		
1,3-Dichlorobenzene	0.0114	0.0011	mg/Kg wet	0.0113		101		70-130	4.36	20		
1,4-Dichlorobenzene	0.0121	0.0011	mg/Kg wet	0.0113		106		70-130	1.31	20		

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B104045 - SW-846 5035											
LCS Dup (B104045-BSD1)				Prepared: 09/03/14 Analyzed: 09/04/14							
Dichlorodifluoromethane (Freon 12)	0.0120	0.0023	mg/Kg wet	0.0113		106	40-160	0.283	20	V-20	†
1,1-Dichloroethane	0.0128	0.0011	mg/Kg wet	0.0113		113	70-130	3.49	20		
1,2-Dichloroethane	0.0120	0.0011	mg/Kg wet	0.0113		106	70-130	6.04	20		
1,1-Dichloroethylene	0.0106	0.0011	mg/Kg wet	0.0113		93.5	70-130	5.11	20		
cis-1,2-Dichloroethylene	0.0117	0.0011	mg/Kg wet	0.0113		103	70-130	2.01	20		
trans-1,2-Dichloroethylene	0.0124	0.0011	mg/Kg wet	0.0113		110	70-130	2.12	20		
1,2-Dichloropropane	0.0121	0.0011	mg/Kg wet	0.0113		107	70-130	7.75	20		
1,3-Dichloropropane	0.0122	0.00057	mg/Kg wet	0.0113		107	70-130	6.32	20		
2,2-Dichloropropane	0.00952	0.0011	mg/Kg wet	0.0113		84.0	70-130	1.42	20		
1,1-Dichloropropene	0.0126	0.0023	mg/Kg wet	0.0113		111	70-130	4.84	20		
cis-1,3-Dichloropropene	0.0111	0.00057	mg/Kg wet	0.0113		98.1	70-130	7.46	20		
trans-1,3-Dichloropropene	0.0124	0.00057	mg/Kg wet	0.0113		109	70-130	7.31	20		
Diethyl Ether	0.0114	0.0023	mg/Kg wet	0.0113		100	70-130	3.05	20		
Diisopropyl Ether (DIPE)	0.0110	0.00057	mg/Kg wet	0.0113		96.9	70-130	4.14	20		
1,4-Dioxane	0.0838	0.057	mg/Kg wet	0.113		74.0	40-160	5.21	20	V-05, V-16	†
Ethylbenzene	0.0135	0.0011	mg/Kg wet	0.0113		119	70-130	2.91	20		
Hexachlorobutadiene	0.0130	0.0011	mg/Kg wet	0.0113		115	70-130	8.50	20		
2-Hexanone (MBK)	0.148	0.011	mg/Kg wet	0.113		131	40-160	11.9	20	L-14	†
Isopropylbenzene (Cumene)	0.0118	0.0011	mg/Kg wet	0.0113		104	70-130	1.24	20		
p-Isopropyltoluene (p-Cymene)	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130	3.80	20		
Methyl tert-Butyl Ether (MTBE)	0.0128	0.0011	mg/Kg wet	0.0113		113	70-130	3.56	20		
Methylene Chloride	0.0109	0.0057	mg/Kg wet	0.0113		96.2	70-130	1.75	20		
4-Methyl-2-pentanone (MIBK)	0.103	0.011	mg/Kg wet	0.113		91.1	40-160	12.4	20		†
Naphthalene	0.0127	0.0023	mg/Kg wet	0.0113		112	70-130	10.2	20		
n-Propylbenzene	0.0120	0.0011	mg/Kg wet	0.0113		106	70-130	2.06	20		
Styrene	0.0119	0.0011	mg/Kg wet	0.0113		105	70-130	6.00	20		
1,1,1,2-Tetrachloroethane	0.0130	0.0011	mg/Kg wet	0.0113		115	70-130	2.50	20		
1,1,2,2-Tetrachloroethane	0.0117	0.00057	mg/Kg wet	0.0113		103	70-130	6.57	20		
Tetrachloroethylene	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130	5.73	20		
Tetrahydrofuran	0.0116	0.0045	mg/Kg wet	0.0113		102	70-130	7.98	20	V-16	
Toluene	0.0130	0.0011	mg/Kg wet	0.0113		115	70-130	4.85	20		
1,2,3-Trichlorobenzene	0.0121	0.0045	mg/Kg wet	0.0113		107	70-130	11.8	20		
1,2,4-Trichlorobenzene	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130	6.48	20		
1,1,1-Trichloroethane	0.0128	0.0011	mg/Kg wet	0.0113		113	70-130	0.880	20		
1,1,2-Trichloroethane	0.0119	0.0011	mg/Kg wet	0.0113		105	70-130	7.85	20		
Trichloroethylene	0.0128	0.0011	mg/Kg wet	0.0113		113	70-130	6.91	20		
Trichlorofluoromethane (Freon 11)	0.0113	0.0023	mg/Kg wet	0.0113		100	70-130	2.27	20		
1,2,3-Trichloropropane	0.0120	0.0023	mg/Kg wet	0.0113		106	70-130	7.28	20		
1,2,4-Trimethylbenzene	0.0135	0.0011	mg/Kg wet	0.0113		120	70-130	2.40	20		
1,3,5-Trimethylbenzene	0.0118	0.0011	mg/Kg wet	0.0113		104	70-130	3.66	20		
Vinyl Chloride	0.00838	0.0023	mg/Kg wet	0.0113		73.9	70-130	0.674	20		
m+p Xylene	0.0257	0.0023	mg/Kg wet	0.0227		113	70-130	3.68	20		
o-Xylene	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130	2.43	20		
Surrogate: 1,2-Dichloroethane-d4	*0.0269*		mg/Kg wet	0.0283		95.0	70-130				
Surrogate: Toluene-d8	*0.0268*		mg/Kg wet	0.0283		94.4	70-130				
Surrogate: 4-Bromofluorobenzene	*0.0266*		mg/Kg wet	0.0283		94.0	70-130				

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103893 - SW-846 3540C										
Blank (B103893-BLK1)				Prepared: 08/29/14 Analyzed: 09/03/14						
Aroclor-1016	ND	0.10	mg/Kg							
Aroclor-1016 [2C]	ND	0.10	mg/Kg							
Aroclor-1221	ND	0.10	mg/Kg							
Aroclor-1221 [2C]	ND	0.10	mg/Kg							
Aroclor-1232	ND	0.10	mg/Kg							
Aroclor-1232 [2C]	ND	0.10	mg/Kg							
Aroclor-1242	ND	0.10	mg/Kg							
Aroclor-1242 [2C]	ND	0.10	mg/Kg							
Aroclor-1248	ND	0.10	mg/Kg							
Aroclor-1248 [2C]	ND	0.10	mg/Kg							
Aroclor-1254	ND	0.10	mg/Kg							
Aroclor-1254 [2C]	ND	0.10	mg/Kg							
Aroclor-1260	ND	0.10	mg/Kg							
Aroclor-1260 [2C]	ND	0.10	mg/Kg							
Aroclor-1262	ND	0.10	mg/Kg							
Aroclor-1262 [2C]	ND	0.10	mg/Kg							
Aroclor-1268	ND	0.10	mg/Kg							
Aroclor-1268 [2C]	ND	0.10	mg/Kg							
Surrogate: Decachlorobiphenyl	*1.01*		mg/Kg	1.00		101	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.02*		mg/Kg	1.00		102	30-150			
Surrogate: Tetrachloro-m-xylene	*0.957*		mg/Kg	1.00		95.7	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.976*		mg/Kg	1.00		97.6	30-150			
LCS (B103893-BS1)				Prepared: 08/29/14 Analyzed: 09/03/14						
Aroclor-1016	0.24	0.10	mg/Kg	0.250		96.6	40-140			
Aroclor-1016 [2C]	0.24	0.10	mg/Kg	0.250		96.1	40-140			
Aroclor-1260	0.24	0.10	mg/Kg	0.250		95.6	40-140			
Aroclor-1260 [2C]	0.24	0.10	mg/Kg	0.250		96.7	40-140			
Surrogate: Decachlorobiphenyl	*0.981*		mg/Kg	1.00		98.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.993*		mg/Kg	1.00		99.3	30-150			
Surrogate: Tetrachloro-m-xylene	*0.942*		mg/Kg	1.00		94.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.962*		mg/Kg	1.00		96.2	30-150			
LCS Dup (B103893-BSD1)				Prepared: 08/29/14 Analyzed: 09/03/14						
Aroclor-1016	0.25	0.10	mg/Kg	0.250		99.1	40-140	2.51	30	
Aroclor-1016 [2C]	0.25	0.10	mg/Kg	0.250		98.5	40-140	2.44	30	
Aroclor-1260	0.25	0.10	mg/Kg	0.250		98.5	40-140	3.04	30	
Aroclor-1260 [2C]	0.25	0.10	mg/Kg	0.250		101	40-140	4.50	30	
Surrogate: Decachlorobiphenyl	*0.974*		mg/Kg	1.00		97.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.991*		mg/Kg	1.00		99.1	30-150			
Surrogate: Tetrachloro-m-xylene	*0.925*		mg/Kg	1.00		92.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.943*		mg/Kg	1.00		94.3	30-150			

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B103893 - SW-846 3540C											
Matrix Spike (B103893-MS1)	**Source: 14H1273-23**			Prepared: 08/29/14 Analyzed: 09/03/14							
Aroclor-1016	0.25	0.099	mg/Kg	0.246	0.0	103		40-140			
Aroclor-1016 [2C]	0.22	0.099	mg/Kg	0.246	0.0	89.6		40-140			
Aroclor-1260	1.4	0.099	mg/Kg	0.246	1.0	**141**	*	40-140			MS-21
Aroclor-1260 [2C]	1.4	0.099	mg/Kg	0.246	1.5	**-50.9**	*	40-140			MS-21
Surrogate: Decachlorobiphenyl	*0.666*		mg/Kg	0.985		67.6		30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.653*		mg/Kg	0.985		66.2		30-150			
Surrogate: Tetrachloro-m-xylene	*0.747*		mg/Kg	0.985		75.9		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.680*		mg/Kg	0.985		69.0		30-150			
Matrix Spike Dup (B103893-MSD1)	**Source: 14H1273-23**			Prepared: 08/29/14 Analyzed: 09/03/14							
Aroclor-1016	0.26	0.099	mg/Kg	0.246	0.0	106		40-140	2.69	50	
Aroclor-1016 [2C]	0.24	0.099	mg/Kg	0.246	0.0	96.5		40-140	7.45	50	
Aroclor-1260	1.5	0.099	mg/Kg	0.246	1.0	**201**	*	40-140	10.4	50	MS-21
Aroclor-1260 [2C]	1.5	0.099	mg/Kg	0.246	1.5	**5.48**	*	40-140	9.62	50	MS-21
Surrogate: Decachlorobiphenyl	*0.716*		mg/Kg	0.985		72.7		30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.697*		mg/Kg	0.985		70.7		30-150			
Surrogate: Tetrachloro-m-xylene	*0.836*		mg/Kg	0.985		84.9		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.741*		mg/Kg	0.985		75.2		30-150			
Batch B104025 - SW-846 3540C											
Blank (B104025-BLK1)				Prepared: 09/02/14 Analyzed: 09/03/14							
Aroclor-1016	ND	0.020	mg/Kg wet								
Aroclor-1016 [2C]	ND	0.020	mg/Kg wet								
Aroclor-1221	ND	0.020	mg/Kg wet								
Aroclor-1221 [2C]	ND	0.020	mg/Kg wet								
Aroclor-1232	ND	0.020	mg/Kg wet								
Aroclor-1232 [2C]	ND	0.020	mg/Kg wet								
Aroclor-1242	ND	0.020	mg/Kg wet								
Aroclor-1242 [2C]	ND	0.020	mg/Kg wet								
Aroclor-1248	ND	0.020	mg/Kg wet								
Aroclor-1248 [2C]	ND	0.020	mg/Kg wet								
Aroclor-1254	ND	0.020	mg/Kg wet								
Aroclor-1254 [2C]	ND	0.020	mg/Kg wet								
Aroclor-1260	ND	0.020	mg/Kg wet								
Aroclor-1260 [2C]	ND	0.020	mg/Kg wet								
Aroclor-1262	ND	0.020	mg/Kg wet								
Aroclor-1262 [2C]	ND	0.020	mg/Kg wet								
Aroclor-1268	ND	0.020	mg/Kg wet								
Aroclor-1268 [2C]	ND	0.020	mg/Kg wet								
Surrogate: Decachlorobiphenyl	*0.160*		mg/Kg wet	0.200		79.8		30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.158*		mg/Kg wet	0.200		79.0		30-150			
Surrogate: Tetrachloro-m-xylene	*0.173*		mg/Kg wet	0.200		86.7		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.180*		mg/Kg wet	0.200		90.1		30-150			

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B104025 - SW-846 3540C										
LCS (B104025-BS1)				Prepared: 09/02/14 Analyzed: 09/03/14						
Aroclor-1016	0.19	0.10	mg/Kg wet	0.200		94.8	40-140			
Aroclor-1016 [2C]	0.20	0.10	mg/Kg wet	0.200		101	40-140			
Aroclor-1260	0.19	0.10	mg/Kg wet	0.200		94.4	40-140			
Aroclor-1260 [2C]	0.20	0.10	mg/Kg wet	0.200		98.9	40-140			
Surrogate: Decachlorobiphenyl	*0.170*		mg/Kg wet	0.200		85.2	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.169*		mg/Kg wet	0.200		84.4	30-150			
Surrogate: Tetrachloro-m-xylene	*0.194*		mg/Kg wet	0.200		96.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.199*		mg/Kg wet	0.200		99.7	30-150			
LCS Dup (B104025-BSD1)				Prepared: 09/02/14 Analyzed: 09/03/14						
Aroclor-1016	0.20	0.10	mg/Kg wet	0.200		99.2	40-140	4.46	30	
Aroclor-1016 [2C]	0.21	0.10	mg/Kg wet	0.200		107	40-140	5.43	30	
Aroclor-1260	0.20	0.10	mg/Kg wet	0.200		97.6	40-140	3.38	30	
Aroclor-1260 [2C]	0.20	0.10	mg/Kg wet	0.200		102	40-140	2.99	30	
Surrogate: Decachlorobiphenyl	*0.170*		mg/Kg wet	0.200		85.0	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.173*		mg/Kg wet	0.200		86.5	30-150			
Surrogate: Tetrachloro-m-xylene	*0.200*		mg/Kg wet	0.200		99.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.206*		mg/Kg wet	0.200		103	30-150			
Matrix Spike (B104025-MS1)		**Source: 14H1273-01**		Prepared: 09/02/14 Analyzed: 09/03/14						
Aroclor-1016	0.22	0.10	mg/Kg dry	0.209	0.0	106	40-140			
Aroclor-1016 [2C]	0.22	0.10	mg/Kg dry	0.209	0.0	103	40-140			
Aroclor-1260	0.17	0.10	mg/Kg dry	0.209	0.0	79.8	40-140			
Aroclor-1260 [2C]	0.18	0.10	mg/Kg dry	0.209	0.0	87.2	40-140			
Surrogate: Decachlorobiphenyl	*0.156*		mg/Kg dry	0.209		74.6	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.164*		mg/Kg dry	0.209		78.4	30-150			
Surrogate: Tetrachloro-m-xylene	*0.180*		mg/Kg dry	0.209		86.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.194*		mg/Kg dry	0.209		92.9	30-150			
Matrix Spike Dup (B104025-MSD1)		**Source: 14H1273-01**		Prepared: 09/02/14 Analyzed: 09/03/14						
Aroclor-1016	0.19	0.11	mg/Kg dry	0.213	0.0	88.0	40-140	16.2	50	
Aroclor-1016 [2C]	0.17	0.11	mg/Kg dry	0.213	0.0	78.3	40-140	25.3	50	
Aroclor-1260	0.14	0.11	mg/Kg dry	0.213	0.0	64.4	40-140	19.5	50	
Aroclor-1260 [2C]	0.15	0.11	mg/Kg dry	0.213	0.0	69.4	40-140	20.9	50	
Surrogate: Decachlorobiphenyl	*0.126*		mg/Kg dry	0.213		59.0	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.132*		mg/Kg dry	0.213		61.9	30-150			
Surrogate: Tetrachloro-m-xylene	*0.145*		mg/Kg dry	0.213		68.3	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.154*		mg/Kg dry	0.213		72.5	30-150			
Batch B104190 - SW-846 3540C										
Blank (B104190-BLK1)				Prepared: 09/04/14 Analyzed: 09/05/14						
Aroclor-1016	ND	0.10	mg/Kg							
Aroclor-1016 [2C]	ND	0.10	mg/Kg							
Aroclor-1221	ND	0.10	mg/Kg							
Aroclor-1221 [2C]	ND	0.10	mg/Kg							
Aroclor-1232	ND	0.10	mg/Kg							
Aroclor-1232 [2C]	ND	0.10	mg/Kg							
Aroclor-1242	ND	0.10	mg/Kg							
Aroclor-1242 [2C]	ND	0.10	mg/Kg							
Aroclor-1248	ND	0.10	mg/Kg							
Aroclor-1248 [2C]	ND	0.10	mg/Kg							
Aroclor-1254	ND	0.10	mg/Kg							

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B104190 - SW-846 3540C										
Blank (B104190-BLK1)				Prepared: 09/04/14 Analyzed: 09/05/14						
Aroclor-1254 [2C]	ND	0.10	mg/Kg							
Aroclor-1260	ND	0.10	mg/Kg							
Aroclor-1260 [2C]	ND	0.10	mg/Kg							
Aroclor-1262	ND	0.10	mg/Kg							
Aroclor-1262 [2C]	ND	0.10	mg/Kg							
Aroclor-1268	ND	0.10	mg/Kg							
Aroclor-1268 [2C]	ND	0.10	mg/Kg							
Surrogate: Decachlorobiphenyl	*0.832*		mg/Kg	1.00		83.2	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.784*		mg/Kg	1.00		78.4	30-150			
Surrogate: Tetrachloro-m-xylene	*0.814*		mg/Kg	1.00		81.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.761*		mg/Kg	1.00		76.1	30-150			
LCS (B104190-BS1)				Prepared: 09/04/14 Analyzed: 09/05/14						
Aroclor-1016	0.25	0.10	mg/Kg	0.250		99.2	40-140			
Aroclor-1016 [2C]	0.23	0.10	mg/Kg	0.250		91.0	40-140			
Aroclor-1260	0.24	0.10	mg/Kg	0.250		95.0	40-140			
Aroclor-1260 [2C]	0.22	0.10	mg/Kg	0.250		89.5	40-140			
Surrogate: Decachlorobiphenyl	*0.924*		mg/Kg	1.00		92.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.868*		mg/Kg	1.00		86.8	30-150			
Surrogate: Tetrachloro-m-xylene	*0.905*		mg/Kg	1.00		90.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.843*		mg/Kg	1.00		84.3	30-150			
LCS Dup (B104190-BSD1)				Prepared: 09/04/14 Analyzed: 09/05/14						
Aroclor-1016	0.25	0.10	mg/Kg	0.250		101	40-140	1.42	30	
Aroclor-1016 [2C]	0.23	0.10	mg/Kg	0.250		90.7	40-140	0.377	30	
Aroclor-1260	0.24	0.10	mg/Kg	0.250		94.9	40-140	0.0885	30	
Aroclor-1260 [2C]	0.22	0.10	mg/Kg	0.250		87.6	40-140	2.21	30	
Surrogate: Decachlorobiphenyl	*0.885*		mg/Kg	1.00		88.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.828*		mg/Kg	1.00		82.8	30-150			
Surrogate: Tetrachloro-m-xylene	*0.897*		mg/Kg	1.00		89.7	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.837*		mg/Kg	1.00		83.7	30-150			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103904 - SW-846 3546										
Blank (B103904-BLK1)				Prepared: 08/29/14 Analyzed: 09/02/14						
C9-C18 Aliphatics	ND	10	mg/Kg wet							
C19-C36 Aliphatics	ND	10	mg/Kg wet							
Unadjusted C11-C22 Aromatics	ND	10	mg/Kg wet							
C11-C22 Aromatics	ND	10	mg/Kg wet							
Acenaphthene	ND	0.10	mg/Kg wet							
Acenaphthylene	ND	0.10	mg/Kg wet							
Anthracene	ND	0.10	mg/Kg wet							
Benzo(a)anthracene	ND	0.10	mg/Kg wet							
Benzo(a)pyrene	ND	0.10	mg/Kg wet							
Benzo(b)fluoranthene	ND	0.10	mg/Kg wet							
Benzo(g,h,i)perylene	ND	0.10	mg/Kg wet							
Benzo(k)fluoranthene	ND	0.10	mg/Kg wet							
Chrysene	ND	0.10	mg/Kg wet							
Dibenz(a,h)anthracene	ND	0.10	mg/Kg wet							
Fluoranthene	ND	0.10	mg/Kg wet							
Fluorene	ND	0.10	mg/Kg wet							
Indeno(1,2,3-cd)pyrene	ND	0.10	mg/Kg wet							
2-Methylnaphthalene	ND	0.10	mg/Kg wet							
Naphthalene	ND	0.10	mg/Kg wet							
Phenanthrene	ND	0.10	mg/Kg wet							
Pyrene	ND	0.10	mg/Kg wet							
n-Decane	ND	0.10	mg/Kg wet							
n-Docosane	ND	0.10	mg/Kg wet							
n-Dodecane	ND	0.10	mg/Kg wet							
n-Eicosane	ND	0.10	mg/Kg wet							
n-Hexacosane	ND	0.10	mg/Kg wet							
n-Hexadecane	ND	0.10	mg/Kg wet							
n-Hexatriacontane	ND	0.10	mg/Kg wet							
n-Nonadecane	ND	0.10	mg/Kg wet							
n-Nonane	ND	0.10	mg/Kg wet							
n-Octacosane	ND	0.10	mg/Kg wet							
n-Octadecane	ND	0.10	mg/Kg wet							
n-Tetracosane	ND	0.10	mg/Kg wet							
n-Tetradecane	ND	0.10	mg/Kg wet							
n-Triacontane	ND	0.10	mg/Kg wet							
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet							
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet							
Surrogate: Chlorooctadecane (COD)	*3.66*		mg/Kg wet	5.00		73.1	40-140			
Surrogate: o-Terphenyl (OTP)	*4.90*		mg/Kg wet	5.05		97.0	40-140			
Surrogate: 2-Bromonaphthalene	*4.99*		mg/Kg wet	5.00		99.7	40-140			
Surrogate: 2-Fluorobiphenyl	*5.56*		mg/Kg wet	5.00		111	40-140			
LCS (B103904-BS1)				Prepared: 08/29/14 Analyzed: 09/02/14						
Acenaphthene	5.11	0.10	mg/Kg wet	5.00		102	40-140			
Acenaphthylene	4.95	0.10	mg/Kg wet	5.00		99.0	40-140			
Anthracene	5.65	0.10	mg/Kg wet	5.00		113	40-140			
Benzo(a)anthracene	5.13	0.10	mg/Kg wet	5.00		103	40-140			
Benzo(a)pyrene	5.07	0.10	mg/Kg wet	5.00		101	40-140			
Benzo(b)fluoranthene	5.01	0.10	mg/Kg wet	5.00		100	40-140			
Benzo(g,h,i)perylene	5.18	0.10	mg/Kg wet	5.00		104	40-140			
Benzo(k)fluoranthene	4.95	0.10	mg/Kg wet	5.00		98.9	40-140			
Chrysene	5.18	0.10	mg/Kg wet	5.00		104	40-140			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103904 - SW-846 3546										
LCS (B103904-BS1)				Prepared: 08/29/14 Analyzed: 09/02/14						
Dibenz(a,h)anthracene	5.00	0.10	mg/Kg wet	5.00		100	40-140			
Fluoranthene	5.19	0.10	mg/Kg wet	5.00		104	40-140			
Fluorene	5.29	0.10	mg/Kg wet	5.00		106	40-140			
Indeno(1,2,3-cd)pyrene	4.15	0.10	mg/Kg wet	5.00		83.0	40-140			
2-Methylnaphthalene	4.92	0.10	mg/Kg wet	5.00		98.4	40-140			
Naphthalene	4.53	0.10	mg/Kg wet	5.00		90.7	40-140			
Phenanthrene	5.25	0.10	mg/Kg wet	5.00		105	40-140			
Pyrene	5.19	0.10	mg/Kg wet	5.00		104	40-140			
n-Decane	2.76	0.10	mg/Kg wet	5.00		55.2	40-140			
n-Docosane	4.14	0.10	mg/Kg wet	5.00		82.9	40-140			
n-Dodecane	3.66	0.10	mg/Kg wet	5.00		73.1	40-140			
n-Eicosane	4.10	0.10	mg/Kg wet	5.00		82.1	40-140			
n-Hexacosane	4.00	0.10	mg/Kg wet	5.00		80.0	40-140			
n-Hexadecane	4.25	0.10	mg/Kg wet	5.00		84.9	40-140			
n-Hexatriacontane	4.25	0.10	mg/Kg wet	5.00		85.1	40-140			
n-Nonadecane	4.19	0.10	mg/Kg wet	5.00		83.7	40-140			
n-Nonane	1.91	0.10	mg/Kg wet	5.00		38.2	30-140			
n-Octacosane	3.96	0.10	mg/Kg wet	5.00		79.2	40-140			
n-Octadecane	4.24	0.10	mg/Kg wet	5.00		84.8	40-140			
n-Tetracosane	4.02	0.10	mg/Kg wet	5.00		80.3	40-140			
n-Tetradecane	4.05	0.10	mg/Kg wet	5.00		80.9	40-140			
n-Triacontane	4.05	0.10	mg/Kg wet	5.00		80.9	40-140			
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
Surrogate: Chlorooctadecane (COD)	*3.78*		mg/Kg wet	5.00		75.6	40-140			
Surrogate: o-Terphenyl (OTP)	*5.13*		mg/Kg wet	5.05		102	40-140			
Surrogate: 2-Bromonaphthalene	*5.16*		mg/Kg wet	5.00		103	40-140			
Surrogate: 2-Fluorobiphenyl	*5.86*		mg/Kg wet	5.00		117	40-140			
LCS Dup (B103904-BSD1)				Prepared: 08/29/14 Analyzed: 09/02/14						
Acenaphthene	5.32	0.10	mg/Kg wet	5.00		106	40-140	3.96	25	
Acenaphthylene	5.11	0.10	mg/Kg wet	5.00		102	40-140	3.24	25	
Anthracene	6.23	0.10	mg/Kg wet	5.00		125	40-140	9.65	25	
Benzo(a)anthracene	5.67	0.10	mg/Kg wet	5.00		113	40-140	9.95	25	
Benzo(a)pyrene	5.59	0.10	mg/Kg wet	5.00		112	40-140	9.81	25	
Benzo(b)fluoranthene	5.54	0.10	mg/Kg wet	5.00		111	40-140	10.1	25	
Benzo(g,h,i)perylene	5.71	0.10	mg/Kg wet	5.00		114	40-140	9.76	25	
Benzo(k)fluoranthene	5.44	0.10	mg/Kg wet	5.00		109	40-140	9.58	25	
Chrysene	5.70	0.10	mg/Kg wet	5.00		114	40-140	9.55	25	
Dibenz(a,h)anthracene	5.50	0.10	mg/Kg wet	5.00		110	40-140	9.50	25	
Fluoranthene	5.75	0.10	mg/Kg wet	5.00		115	40-140	10.2	25	
Fluorene	5.65	0.10	mg/Kg wet	5.00		113	40-140	6.70	25	
Indeno(1,2,3-cd)pyrene	4.58	0.10	mg/Kg wet	5.00		91.6	40-140	9.84	25	
2-Methylnaphthalene	4.96	0.10	mg/Kg wet	5.00		99.3	40-140	0.906	25	
Naphthalene	4.56	0.10	mg/Kg wet	5.00		91.2	40-140	0.598	25	
Phenanthrene	5.75	0.10	mg/Kg wet	5.00		115	40-140	9.01	25	
Pyrene	5.75	0.10	mg/Kg wet	5.00		115	40-140	10.1	25	
n-Decane	2.85	0.10	mg/Kg wet	5.00		57.0	40-140	3.33	25	
n-Docosane	4.62	0.10	mg/Kg wet	5.00		92.5	40-140	11.0	25	
n-Dodecane	3.81	0.10	mg/Kg wet	5.00		76.3	40-140	4.26	25	
n-Eicosane	4.60	0.10	mg/Kg wet	5.00		92.0	40-140	11.4	25	
n-Hexacosane	4.46	0.10	mg/Kg wet	5.00		89.2	40-140	10.9	25	

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103904 - SW-846 3546										
LCS Dup (B103904-BSD1)				Prepared: 08/29/14 Analyzed: 09/02/14						
n-Hexadecane	4.70	0.10	mg/Kg wet	5.00		94.0	40-140	10.1	25	
n-Hexatriacontane	4.72	0.10	mg/Kg wet	5.00		94.4	40-140	10.4	25	
n-Nonadecane	4.68	0.10	mg/Kg wet	5.00		93.7	40-140	11.2	25	
n-Nonane	1.99	0.10	mg/Kg wet	5.00		39.8	30-140	4.28	25	
n-Octacosane	4.42	0.10	mg/Kg wet	5.00		88.4	40-140	11.0	25	
n-Octadecane	4.74	0.10	mg/Kg wet	5.00		94.8	40-140	11.1	25	
n-Tetracosane	4.48	0.10	mg/Kg wet	5.00		89.6	40-140	11.0	25	
n-Tetradecane	4.34	0.10	mg/Kg wet	5.00		86.9	40-140	7.07	25	
n-Triacontane	4.53	0.10	mg/Kg wet	5.00		90.6	40-140	11.3	25	
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
Surrogate: Chlorooctadecane (COD)	*4.07*		mg/Kg wet	5.00		81.4	40-140			
Surrogate: o-Terphenyl (OTP)	*5.43*		mg/Kg wet	5.05		108	40-140			
Surrogate: 2-Bromonaphthalene	*5.33*		mg/Kg wet	5.00		107	40-140			
Surrogate: 2-Fluorobiphenyl	*6.07*		mg/Kg wet	5.00		121	40-140			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - VPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103863 - MA VPH										
Blank (B103863-BLK1)				Prepared: 08/29/14 Analyzed: 08/30/14						
Unadjusted C5-C8 Aliphatics	ND	10	mg/Kg wet							
C5-C8 Aliphatics	ND	10	mg/Kg wet							
Unadjusted C9-C12 Aliphatics	ND	10	mg/Kg wet							
C9-C12 Aliphatics	ND	10	mg/Kg wet							
C9-C10 Aromatics	ND	10	mg/Kg wet							
Benzene	ND	0.050	mg/Kg wet							
Butylcyclohexane	ND	0.050	mg/Kg wet							
Decane	ND	0.050	mg/Kg wet							
Ethylbenzene	ND	0.050	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.050	mg/Kg wet							
2-Methylpentane	ND	0.050	mg/Kg wet							
Naphthalene	ND	0.50	mg/Kg wet							
Nonane	ND	0.050	mg/Kg wet							
Pentane	ND	0.050	mg/Kg wet							
Toluene	ND	0.050	mg/Kg wet							
1,2,4-Trimethylbenzene	ND	0.050	mg/Kg wet							
2,2,4-Trimethylpentane	ND	0.050	mg/Kg wet							
m+p Xylene	ND	0.10	mg/Kg wet							
o-Xylene	ND	0.050	mg/Kg wet							
Surrogate: 2,5-Dibromotoluene (FID)	*3.41*		mg/Kg wet	3.33		102	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*3.27*		mg/Kg wet	3.33		98.0	70-130			
LCS (B103863-BS1)				Prepared & Analyzed: 08/29/14						
Benzene	0.0974	0.0010	mg/Kg wet	0.100		97.4	70-130			
Butylcyclohexane	0.0873	0.0010	mg/Kg wet	0.100		87.3	70-130			
Decane	0.0999	0.0010	mg/Kg wet	0.100		99.9	70-130			
Ethylbenzene	0.102	0.0010	mg/Kg wet	0.100		102	70-130			
Methyl tert-Butyl Ether (MTBE)	0.0961	0.0010	mg/Kg wet	0.100		96.1	70-130			
2-Methylpentane	0.109	0.0010	mg/Kg wet	0.100		109	70-130			
Naphthalene	0.120	0.010	mg/Kg wet	0.100		120	70-130			
Nonane	0.0976	0.0010	mg/Kg wet	0.100		97.6	30-130			
Pentane	0.110	0.0010	mg/Kg wet	0.100		110	70-130			
Toluene	0.0994	0.0010	mg/Kg wet	0.100		99.4	70-130			
1,2,4-Trimethylbenzene	0.105	0.0010	mg/Kg wet	0.100		105	70-130			
2,2,4-Trimethylpentane	0.118	0.0010	mg/Kg wet	0.100		118	70-130			
m+p Xylene	0.206	0.0020	mg/Kg wet	0.200		103	70-130			
o-Xylene	0.100	0.0010	mg/Kg wet	0.100		100	70-130			
Surrogate: 2,5-Dibromotoluene (FID)	*0.0342*		mg/Kg wet	0.0400		85.4	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*0.0402*		mg/Kg wet	0.0400		100	70-130			
LCS Dup (B103863-BSD1)				Prepared & Analyzed: 08/29/14						
Benzene	0.101	0.0010	mg/Kg wet	0.100		101	70-130	3.59	25	
Butylcyclohexane	0.0940	0.0010	mg/Kg wet	0.100		94.0	70-130	7.29	25	
Decane	0.107	0.0010	mg/Kg wet	0.100		107	70-130	6.42	25	
Ethylbenzene	0.106	0.0010	mg/Kg wet	0.100		106	70-130	3.98	25	
Methyl tert-Butyl Ether (MTBE)	0.0992	0.0010	mg/Kg wet	0.100		99.2	70-130	3.20	25	
2-Methylpentane	0.114	0.0010	mg/Kg wet	0.100		114	70-130	4.54	25	
Naphthalene	0.129	0.010	mg/Kg wet	0.100		129	70-130	7.54	25	
Nonane	0.104	0.0010	mg/Kg wet	0.100		104	30-130	6.43	25	
Pentane	0.117	0.0010	mg/Kg wet	0.100		117	70-130	6.09	25	
Toluene	0.103	0.0010	mg/Kg wet	0.100		103	70-130	3.43	25	
1,2,4-Trimethylbenzene	0.109	0.0010	mg/Kg wet	0.100		109	70-130	3.85	25	

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - VPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103863 - MA VPH										
LCS Dup (B103863-BSD1)				Prepared & Analyzed: 08/29/14						
2,2,4-Trimethylpentane	0.123	0.0010	mg/Kg wet	0.100		123	70-130	3.54	25	
m+p Xylene	0.213	0.0020	mg/Kg wet	0.200		107	70-130	3.68	25	
o-Xylene	0.104	0.0010	mg/Kg wet	0.100		104	70-130	3.20	25	
Surrogate: 2,5-Dibromotoluene (FID)	*0.0355*		mg/Kg wet	0.0400		88.7	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*0.0446*		mg/Kg wet	0.0400		112	70-130			
Batch B103945 - MA VPH										
Blank (B103945-BLK1)				Prepared & Analyzed: 09/02/14						
Unadjusted C5-C8 Aliphatics	ND	10	mg/Kg wet							
C5-C8 Aliphatics	ND	10	mg/Kg wet							
Unadjusted C9-C12 Aliphatics	ND	10	mg/Kg wet							
C9-C12 Aliphatics	ND	10	mg/Kg wet							
C9-C10 Aromatics	ND	10	mg/Kg wet							
Benzene	ND	0.050	mg/Kg wet							
Butylcyclohexane	ND	0.050	mg/Kg wet							
Decane	ND	0.050	mg/Kg wet							
Ethylbenzene	ND	0.050	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.050	mg/Kg wet							
2-Methylpentane	ND	0.050	mg/Kg wet							
Naphthalene	ND	0.50	mg/Kg wet							
Nonane	ND	0.050	mg/Kg wet							
Pentane	ND	0.050	mg/Kg wet							
Toluene	ND	0.050	mg/Kg wet							
1,2,4-Trimethylbenzene	ND	0.050	mg/Kg wet							
2,2,4-Trimethylpentane	ND	0.050	mg/Kg wet							
m+p Xylene	ND	0.10	mg/Kg wet							
o-Xylene	ND	0.050	mg/Kg wet							
Surrogate: 2,5-Dibromotoluene (FID)	*0.0415*		mg/Kg wet	0.0400		104	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*0.0403*		mg/Kg wet	0.0400		101	70-130			
LCS (B103945-BS1)				Prepared & Analyzed: 09/02/14						
Benzene	0.0981	0.0010	mg/Kg wet	0.100		98.1	70-130			
Butylcyclohexane	0.0883	0.0010	mg/Kg wet	0.100		88.3	70-130			
Decane	0.103	0.0010	mg/Kg wet	0.100		103	70-130			
Ethylbenzene	0.0895	0.0010	mg/Kg wet	0.100		89.5	70-130			
Methyl tert-Butyl Ether (MTBE)	0.101	0.0010	mg/Kg wet	0.100		101	70-130			
2-Methylpentane	0.101	0.0010	mg/Kg wet	0.100		101	70-130			
Naphthalene	0.0853	0.010	mg/Kg wet	0.100		85.3	70-130			
Nonane	0.0979	0.0010	mg/Kg wet	0.100		97.9	30-130			
Pentane	0.100	0.0010	mg/Kg wet	0.100		100	70-130			
Toluene	0.0970	0.0010	mg/Kg wet	0.100		97.0	70-130			
1,2,4-Trimethylbenzene	0.0820	0.0010	mg/Kg wet	0.100		82.0	70-130			
2,2,4-Trimethylpentane	0.109	0.0010	mg/Kg wet	0.100		109	70-130			
m+p Xylene	0.182	0.0020	mg/Kg wet	0.200		90.9	70-130			
o-Xylene	0.0892	0.0010	mg/Kg wet	0.100		89.2	70-130			
Surrogate: 2,5-Dibromotoluene (FID)	*0.0372*		mg/Kg wet	0.0400		92.9	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*0.0337*		mg/Kg wet	0.0400		84.4	70-130			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - VPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103945 - MA VPH										
LCS Dup (B103945-BSD1)				Prepared & Analyzed: 09/02/14						
Benzene	0.0937	0.0010	mg/Kg wet	0.100		93.7	70-130	4.62	25	
Butylcyclohexane	0.0883	0.0010	mg/Kg wet	0.100		88.3	70-130	0.0544	25	
Decane	0.103	0.0010	mg/Kg wet	0.100		103	70-130	0.0981	25	
Ethylbenzene	0.0860	0.0010	mg/Kg wet	0.100		86.0	70-130	3.97	25	
Methyl tert-Butyl Ether (MTBE)	0.0973	0.0010	mg/Kg wet	0.100		97.3	70-130	4.19	25	
2-Methylpentane	0.0935	0.0010	mg/Kg wet	0.100		93.5	70-130	7.48	25	
Naphthalene	0.0843	0.010	mg/Kg wet	0.100		84.3	70-130	1.20	25	
Nonane	0.0978	0.0010	mg/Kg wet	0.100		97.8	30-130	0.0695	25	
Pentane	0.0948	0.0010	mg/Kg wet	0.100		94.8	70-130	5.82	25	
Toluene	0.0934	0.0010	mg/Kg wet	0.100		93.4	70-130	3.80	25	
1,2,4-Trimethylbenzene	0.0796	0.0010	mg/Kg wet	0.100		79.6	70-130	2.93	25	
2,2,4-Trimethylpentane	0.105	0.0010	mg/Kg wet	0.100		105	70-130	4.01	25	
m+p Xylene	0.175	0.0020	mg/Kg wet	0.200		87.7	70-130	3.56	25	
o-Xylene	0.0862	0.0010	mg/Kg wet	0.100		86.2	70-130	3.45	25	
Surrogate: 2,5-Dibromotoluene (FID)	*0.0330*		mg/Kg wet	0.0400		82.5	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*0.0322*		mg/Kg wet	0.0400		80.5	70-130			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103810 - SW-846 3050B										
Blank (B103810-BLK1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Arsenic	ND	2.5	mg/Kg wet							
Barium	ND	2.5	mg/Kg wet							
Cadmium	ND	0.25	mg/Kg wet							
Chromium	ND	0.50	mg/Kg wet							
Lead	ND	0.75	mg/Kg wet							
Selenium	ND	2.5	mg/Kg wet							
Silver	ND	0.50	mg/Kg wet							
LCS (B103810-BS1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Arsenic	123	5.0	mg/Kg wet	122		101	77.8-122.1			
Barium	165	5.0	mg/Kg wet	167		98.9	82-117.4			
Cadmium	86.1	0.50	mg/Kg wet	88.0		97.8	81.9-118.2			
Chromium	101	1.0	mg/Kg wet	102		99.4	78.7-120.6			
Lead	88.9	1.5	mg/Kg wet	94.5		94.0	82.4-117.8			
Selenium	157	5.0	mg/Kg wet	157		99.8	77.1-122.3			
Silver	31.5	1.0	mg/Kg wet	34.2		92.1	74.3-125.4			
LCS Dup (B103810-BSD1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Arsenic	121	5.0	mg/Kg wet	122		98.9	77.8-122.1	1.97	30	
Barium	160	5.0	mg/Kg wet	167		96.1	82-117.4	2.85	30	
Cadmium	83.8	0.50	mg/Kg wet	88.0		95.3	81.9-118.2	2.65	30	
Chromium	98.6	1.0	mg/Kg wet	102		96.7	78.7-120.6	2.74	30	
Lead	89.0	1.5	mg/Kg wet	94.5		94.2	82.4-117.8	0.168	30	
Selenium	156	5.0	mg/Kg wet	157		99.3	77.1-122.3	0.569	30	
Silver	31.1	1.0	mg/Kg wet	34.2		91.0	74.3-125.4	1.20	30	
MRL Check (B103810-MRL1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Lead	0.736	0.72	mg/Kg wet	0.715		103	80-120			
Batch B103812 - SW-846 7471										
Blank (B103812-BLK1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Mercury	ND	0.025	mg/Kg wet							
LCS (B103812-BS1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Mercury	5.83	0.36	mg/Kg wet	5.76		101	71.2-128.6			
LCS Dup (B103812-BSD1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Mercury	5.71	0.37	mg/Kg wet	5.76		99.1	71.2-128.6	2.10	30	
Batch B103821 - SW-846 7471										
Blank (B103821-BLK1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Mercury	ND	0.025	mg/Kg wet							

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103821 - SW-846 7471										
LCS (B103821-BS1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Mercury	6.65	0.38	mg/Kg wet	5.76		115	71.2-128.6			
LCS Dup (B103821-BSD1)				Prepared: 08/28/14 Analyzed: 08/29/14						
Mercury	5.87	0.37	mg/Kg wet	5.76		102	71.2-128.6	12.5	30	
Batch B103933 - SW-846 3050B										
Blank (B103933-BLK1)				Prepared: 08/30/14 Analyzed: 09/02/14						
Arsenic	ND	2.5	mg/Kg wet							
Barium	ND	2.5	mg/Kg wet							
Cadmium	ND	0.25	mg/Kg wet							
Chromium	ND	0.50	mg/Kg wet							
Lead	ND	0.75	mg/Kg wet							
Selenium	ND	5.0	mg/Kg wet							
Silver	ND	0.50	mg/Kg wet							
LCS (B103933-BS1)				Prepared: 08/30/14 Analyzed: 09/02/14						
Arsenic	112	5.0	mg/Kg wet	122		91.9	77.8-122.1			
Barium	153	5.0	mg/Kg wet	167		91.6	82-117.4			
Cadmium	81.8	0.50	mg/Kg wet	88.0		93.0	81.9-118.2			
Chromium	92.5	1.0	mg/Kg wet	102		90.7	78.7-120.6			
Lead	85.0	1.5	mg/Kg wet	94.5		89.9	82.4-117.8			
Selenium	141	10	mg/Kg wet	157		90.1	77.1-122.3			
Silver	30.0	1.0	mg/Kg wet	34.2		87.7	74.3-125.4			
LCS Dup (B103933-BSD1)				Prepared: 08/30/14 Analyzed: 09/02/14						
Arsenic	114	5.0	mg/Kg wet	122		93.5	77.8-122.1	1.67	30	
Barium	154	5.0	mg/Kg wet	167		92.2	82-117.4	0.587	30	
Cadmium	82.7	0.50	mg/Kg wet	88.0		94.0	81.9-118.2	1.15	30	
Chromium	94.0	1.0	mg/Kg wet	102		92.2	78.7-120.6	1.61	30	
Lead	89.6	1.5	mg/Kg wet	94.5		94.8	82.4-117.8	5.26	30	
Selenium	144	10	mg/Kg wet	157		92.0	77.1-122.3	2.11	30	
Silver	30.4	1.0	mg/Kg wet	34.2		89.0	74.3-125.4	1.45	30	
MRL Check (B103933-MRL1)				Prepared: 08/30/14 Analyzed: 09/03/14						
Lead	0.770	0.70	mg/Kg wet	0.696		111	80-120			
Batch B103934 - SW-846 7471										
Blank (B103934-BLK1)				Prepared: 08/30/14 Analyzed: 09/02/14						
Mercury	ND	0.025	mg/Kg wet							

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B103934 - SW-846 7471										
LCS (B103934-BS1)				Prepared: 08/30/14 Analyzed: 09/02/14						
Mercury	6.45	0.36	mg/Kg wet	5.76		112	71.2-128.6			
LCS Dup (B103934-BSD1)				Prepared: 08/30/14 Analyzed: 09/02/14						
Mercury	5.53	0.36	mg/Kg wet	5.76		96.1	71.2-128.6	15.3	30	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B104020 - % Solids										
Duplicate (B104020-DUP5)	**Source: 14H1273-14**		Prepared: 09/02/14 Analyzed: 09/03/14							
% Solids	85.6		% Wt		81.3			5.15	20	

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-11 (0-6")

Lab Sample ID: 14H1273-05 Date(s) Analyzed: 09/03/2014 09/03/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1248	1	0.00	0.00	0.00	0.10	
	2	0.00	0.00	0.00	0.13	23.2
Aroclor-1254	1	0.00	0.00	0.00	0.22	
	2	0.00	0.00	0.00	0.27	19.5

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-19 (0-6")

Lab Sample ID: 14H1273-13 Date(s) Analyzed: 09/04/2014 09/04/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	68	
	2	0.00	0.00	0.00	72	5.6

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-23 (0-6")

Lab Sample ID: 14H1273-17

Date(s) Analyzed: 09/04/2014 09/04/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	8.3	
	2	0.00	0.00	0.00	8.4	1.2

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS-1

Lab Sample ID: 14H1273-23

Date(s) Analyzed: 09/03/2014 09/03/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	3.1	
	2	0.00	0.00	0.00	2.8	10.8
Aroclor-1260	1	0.00	0.00	0.00	1.0	
	2	0.00	0.00	0.00	1.5	39.0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS-2

Lab Sample ID: 14H1273-24

Date(s) Analyzed: 09/04/2014 09/04/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.20	
	2	0.00	0.00	0.00	0.22	8.0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS-7

Lab Sample ID: 14H1273-25

Date(s) Analyzed: 09/04/2014 09/04/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.11	
	2	0.00	0.00	0.00	0.11	3.6
Aroclor-1260	1	0.00	0.00	0.00	0.19	
	2	0.00	0.00	0.00	0.21	7.9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS-9

Lab Sample ID: 14H1273-27

Date(s) Analyzed: 09/03/2014 09/03/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1260	1	0.00	0.00	0.00	0.96	
	2	0.00	0.00	0.00	0.91	5.4

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS-10

Lab Sample ID: 14H1273-28RE1 Date(s) Analyzed: 09/05/2014 09/05/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.14	
	2	0.00	0.00	0.00	0.13	8.1
Aroclor-1260	1	0.00	0.00	0.00	0.27	
	2	0.00	0.00	0.00	0.26	4.9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS-11

Lab Sample ID: 14H1273-29

Date(s) Analyzed: 09/03/2014 09/03/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.25	
	2	0.00	0.00	0.00	0.20	22.6
Aroclor-1260	1	0.00	0.00	0.00	0.44	
	2	0.00	0.00	0.00	0.44	0.9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS-12

Lab Sample ID: 14H1273-30

Date(s) Analyzed: 09/03/2014 09/03/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1260	1	0.00	0.00	0.00	0.96	
	2	0.00	0.00	0.00	0.82	16.2

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS-17

Lab Sample ID: 14H1273-31

Date(s) Analyzed: 09/04/2014 09/04/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	1.2	
	2	0.00	0.00	0.00	0.96	19.7
Aroclor-1260	1	0.00	0.00	0.00	0.32	
	2	0.00	0.00	0.00	0.29	9.2

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS-18

Lab Sample ID: 14H1273-32

Date(s) Analyzed: 09/03/2014 09/03/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1260	1	0.00	0.00	0.00	0.53	
	2	0.00	0.00	0.00	0.54	1.1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B103893-BS1 Date(s) Analyzed: 09/03/2014 09/03/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.24	
	2	0.00	0.00	0.00	0.24	1
Aroclor-1260	1	0.00	0.00	0.00	0.24	
	2	0.00	0.00	0.00	0.24	0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B103893-BSD1 Date(s) Analyzed: 09/03/2014 09/03/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.25	
	2	0.00	0.00	0.00	0.25	1
Aroclor-1260	1	0.00	0.00	0.00	0.25	
	2	0.00	0.00	0.00	0.25	2

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

Matrix Spike

Lab Sample ID: B103893-MS1 Date(s) Analyzed: 09/03/2014 09/03/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.25	
	2	0.00	0.00	0.00	0.22	14
Aroclor-1260	1	0.00	0.00	0.00	1.4	
	2	0.00	0.00	0.00	1.4	3

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

Matrix Spike Dup

Lab Sample ID: B103893-MSD1 Date(s) Analyzed: 09/03/2014 09/03/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.26	
	2	0.00	0.00	0.00	0.24	8
Aroclor-1260	1	0.00	0.00	0.00	1.5	
	2	0.00	0.00	0.00	1.5	1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B104025-BS1 Date(s) Analyzed: 09/03/2014 09/03/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.19	
	2	0.00	0.00	0.00	0.20	5
Aroclor-1260	1	0.00	0.00	0.00	0.19	
	2	0.00	0.00	0.00	0.20	6

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B104025-BSD1 Date(s) Analyzed: 09/03/2014 09/03/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.20	
	2	0.00	0.00	0.00	0.21	6
Aroclor-1260	1	0.00	0.00	0.00	0.20	
	2	0.00	0.00	0.00	0.20	3

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

Matrix Spike

Lab Sample ID: B104025-MS1 Date(s) Analyzed: 09/03/2014 09/03/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.22	
	2	0.00	0.00	0.00	0.22	0
Aroclor-1260	1	0.00	0.00	0.00	0.17	
	2	0.00	0.00	0.00	0.18	7

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

Matrix Spike Dup

Lab Sample ID: B104025-MSD1 Date(s) Analyzed: 09/03/2014 09/03/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.19	
	2	0.00	0.00	0.00	0.17	10
Aroclor-1260	1	0.00	0.00	0.00	0.14	
	2	0.00	0.00	0.00	0.15	9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B104190-BS1 Date(s) Analyzed: 09/05/2014 09/05/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.25	
	2	0.00	0.00	0.00	0.23	8
Aroclor-1260	1	0.00	0.00	0.00	0.24	
	2	0.00	0.00	0.00	0.22	8

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B104190-BSD1 Date(s) Analyzed: 09/05/2014 09/05/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.25	
	2	0.00	0.00	0.00	0.23	9
Aroclor-1260	1	0.00	0.00	0.00	0.24	
	2	0.00	0.00	0.00	0.22	7

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
L-02	Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.
L-04	Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
L-14	Compound classified by MA CAM as difficult with acceptable recoveries of 40-160%. Recovery does not meet 70-130% criteria but does meet difficult compound criteria.
MS-21	Matrix spike and/or spike duplicate recovery bias high due to contribution of other Aroclors present in the source sample.
O-01	Soil/methanol ratio does not meet method specifications. Excess amount of soil. Sample was completely covered with methanol, but with less than the method-specified amount.
O-03	Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
O-32	A five times dilution was performed as part of the standard analytical procedure.
P-04	Due to continuing calibration non-conformance on the confirmatory detector, the lower of two results was reported.
RL-05	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
RL-06	Elevated reporting limit due to high concentration of non-target compounds. MA CAM reporting limit not met.
RL-07	Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
S-01	The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
S-15	Surrogate recovery outside of control limits due to suspected sample matrix interference. Chromatogram(s) is attached.
V-05	Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
V-16	Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
V-20	Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
V-24	Continuing calibration verification was outside of control limits on the confirmation column, but within control limits on the primary column. All sample results are reported from the column within control criteria.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
MADEP-EPH-04-1.1 in Soil	
C9-C18 Aliphatics	CT,NC,WA,ME,ME,NH-P
C19-C36 Aliphatics	CT,NC,WA,ME,ME,NH-P
Unadjusted C11-C22 Aromatics	CT,NC,WA,ME,ME,NH-P
C11-C22 Aromatics	CT,NC,WA,ME,ME,NH-P
Acenaphthene	CT,NC,WA,ME,ME,NH-P
Acenaphthylene	CT,NC,WA,ME,ME,NH-P
Anthracene	CT,NC,WA,ME,ME,NH-P
Benzo(a)anthracene	CT,NC,WA,ME,ME,NH-P
Benzo(a)pyrene	CT,NC,WA,ME,ME,NH-P
Benzo(b)fluoranthene	CT,NC,WA,ME,ME,NH-P
Benzo(g,h,i)perylene	CT,NC,WA,ME,ME,NH-P
Benzo(k)fluoranthene	CT,NC,WA,ME,ME,NH-P
Chrysene	CT,NC,WA,ME,ME,NH-P
Dibenz(a,h)anthracene	CT,NC,WA,ME,ME,NH-P
Fluoranthene	CT,NC,WA,ME,ME,NH-P
Fluorene	CT,NC,WA,ME,ME
Indeno(1,2,3-cd)pyrene	CT,NC,WA,ME,ME,NH-P
2-Methylnaphthalene	CT,NC,WA,ME,ME
Naphthalene	CT,NC,WA,ME,ME,NH-P
Phenanthrene	CT,NC,WA,ME,ME,NH-P
Pyrene	CT,NC,WA,ME,ME,NH-P
MADEP-VPH-04-1.1 in Soil	
Unadjusted C5-C8 Aliphatics	CT,NC,WA,ME,NH-P
C5-C8 Aliphatics	CT,NC,WA,ME,NH-P
Unadjusted C9-C12 Aliphatics	CT,NC,WA,ME,NH-P
C9-C12 Aliphatics	CT,NC,WA,ME,NH-P
C9-C10 Aromatics	CT,NC,WA,ME,NH-P
Benzene	CT,NC,WA,ME,NH-P
Ethylbenzene	CT,NC,WA,ME,NH-P
Methyl tert-Butyl Ether (MTBE)	CT,NC,WA,ME,NH-P
Naphthalene	CT,NC,WA,ME,NH-P
Toluene	CT,NC,WA,ME,NH-P
m+p Xylene	CT,NC,WA,ME,NH-P
o-Xylene	CT,NC,WA,ME,NH-P
SW-846 6010C in Soil	
Arsenic	CT,NH,NY,ME,NC,VA,NJ
Barium	CT,NH,NY,ME,NC,VA,NJ
Cadmium	CT,NH,NY,ME,NC,VA,NJ
Chromium	CT,NH,NY,ME,NC,VA,NJ
Lead	CT,NH,NY,AIHA,ME,NC,VA,NJ
Selenium	CT,NH,NY,ME,NC,VA,NJ
Silver	CT,NH,NY,ME,NC,VA,NJ
SW-846 7471B in Soil	
Mercury	CT,NH,NY,NC,ME,VA,NJ
SW-846 8082A in Product/Solid	

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Product/Solid	
Aroclor-1016	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA,NJ
SW-846 8082A in Soil	
Aroclor-1016	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA,NJ
SW-846 8260C in Soil	
Acetone	CT,NH,NY,ME
Acetone	CT,NH,NY,ME
Benzene	CT,NH,NY,ME
Benzene	CT,NH,NY,ME
Bromobenzene	NH,NY,ME
Bromobenzene	NH,NY,ME
Bromochloromethane	NH,NY,ME
Bromochloromethane	NH,NY,ME
Bromodichloromethane	CT,NH,NY,ME
Bromodichloromethane	CT,NH,NY,ME
Bromoform	CT,NH,NY,ME
Bromoform	CT,NH,NY,ME
Bromomethane	CT,NH,NY,ME
Bromomethane	CT,NH,NY,ME
2-Butanone (MEK)	CT,NH,NY,ME
2-Butanone (MEK)	CT,NH,NY,ME

con-test® ANALYTICAL LABORATORY
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CERTIFICATIONS

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Analyte	Certifications
SW-846 8260C in Soil	
n-Butylbenzene	CT,NH,NY,ME
n-Butylbenzene	CT,NH,NY,ME
sec-Butylbenzene	CT,NH,NY,ME
sec-Butylbenzene	CT,NH,NY,ME
tert-Butylbenzene	CT,NH,NY,ME
tert-Butylbenzene	CT,NH,NY,ME
Carbon Disulfide	CT,NH,NY,ME
Carbon Disulfide	CT,NH,NY,ME
Carbon Tetrachloride	CT,NH,NY,ME
Carbon Tetrachloride	CT,NH,NY,ME
Chlorobenzene	CT,NH,NY,ME
Chlorobenzene	CT,NH,NY,ME
Chlorodibromomethane	CT,NH,NY,ME
Chlorodibromomethane	CT,NH,NY,ME
Chloroethane	CT,NH,NY,ME
Chloroethane	CT,NH,NY,ME
Chloroform	CT,NH,NY,ME
Chloroform	CT,NH,NY,ME
Chloromethane	CT,NH,NY,ME
Chloromethane	CT,NH,NY,ME
2-Chlorotoluene	CT,NH,NY,ME
2-Chlorotoluene	CT,NH,NY,ME
4-Chlorotoluene	CT,NH,NY,ME
4-Chlorotoluene	CT,NH,NY,ME
Dibromomethane	NH,NY,ME
Dibromomethane	NH,NY,ME
1,2-Dichlorobenzene	CT,NH,NY,ME
1,2-Dichlorobenzene	CT,NH,NY,ME
1,3-Dichlorobenzene	CT,NH,NY,ME
1,3-Dichlorobenzene	CT,NH,NY,ME
1,4-Dichlorobenzene	CT,NH,NY,ME
1,4-Dichlorobenzene	CT,NH,NY,ME
Dichlorodifluoromethane (Freon 12)	NY,ME
Dichlorodifluoromethane (Freon 12)	NY,ME
1,1-Dichloroethane	CT,NH,NY,ME
1,1-Dichloroethane	CT,NH,NY,ME
1,2-Dichloroethane	CT,NH,NY,ME
1,2-Dichloroethane	CT,NH,NY,ME
1,1-Dichloroethylene	CT,NH,NY,ME
1,1-Dichloroethylene	CT,NH,NY,ME
cis-1,2-Dichloroethylene	CT,NH,NY,ME
cis-1,2-Dichloroethylene	CT,NH,NY,ME
trans-1,2-Dichloroethylene	CT,NH,NY,ME
trans-1,2-Dichloroethylene	CT,NH,NY,ME
1,2-Dichloropropane	CT,NH,NY,ME
1,2-Dichloropropane	CT,NH,NY,ME
1,3-Dichloropropane	NH,NY,ME

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CERTIFICATIONS

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Analyte	Certifications
SW-846 8260C in Soil	
1,3-Dichloropropane	NH,NY,ME
2,2-Dichloropropane	NH,NY,ME
2,2-Dichloropropane	NH,NY,ME
1,1-Dichloropropene	NH,NY,ME
1,1-Dichloropropene	NH,NY,ME
cis-1,3-Dichloropropene	CT,NH,NY,ME
cis-1,3-Dichloropropene	CT,NH,NY,ME
trans-1,3-Dichloropropene	CT,NH,NY,ME
trans-1,3-Dichloropropene	CT,NH,NY,ME
Ethylbenzene	CT,NH,NY,ME
Ethylbenzene	CT,NH,NY,ME
Hexachlorobutadiene	NH,NY,ME
Hexachlorobutadiene	NH,NY,ME
2-Hexanone (MBK)	CT,NH,NY,ME
2-Hexanone (MBK)	CT,NH,NY,ME
Isopropylbenzene (Cumene)	CT,NH,NY,ME
Isopropylbenzene (Cumene)	CT,NH,NY,ME
p-Isopropyltoluene (p-Cymene)	NH,NY
p-Isopropyltoluene (p-Cymene)	NH,NY
Methyl tert-Butyl Ether (MTBE)	NY
Methyl tert-Butyl Ether (MTBE)	NY
Methylene Chloride	CT,NH,NY,ME
Methylene Chloride	CT,NH,NY,ME
4-Methyl-2-pentanone (MIBK)	CT,NH,NY
4-Methyl-2-pentanone (MIBK)	CT,NH,NY
Naphthalene	NH,NY,ME
Naphthalene	NH,NY,ME
n-Propylbenzene	NH,NY
n-Propylbenzene	NH,NY
Styrene	CT,NH,NY,ME
Styrene	CT,NH,NY,ME
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME
Tetrachloroethylene	CT,NH,NY,ME
Tetrachloroethylene	CT,NH,NY,ME
Toluene	CT,NH,NY,ME
Toluene	CT,NH,NY,ME
1,2,3-Trichlorobenzene	ME
1,2,4-Trichlorobenzene	NH,NY,ME
1,2,4-Trichlorobenzene	NH,NY,ME
1,1,1-Trichloroethane	CT,NH,NY,ME
1,1,1-Trichloroethane	CT,NH,NY,ME
1,1,2-Trichloroethane	CT,NH,NY,ME
1,1,2-Trichloroethane	CT,NH,NY,ME
Trichloroethylene	CT,NH,NY,ME

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260C in Soil	
Trichloroethylene	CT,NH,NY,ME
Trichlorofluoromethane (Freon 11)	CT,NH,NY,ME
Trichlorofluoromethane (Freon 11)	CT,NH,NY,ME
1,2,3-Trichloropropane	NH,NY,ME
1,2,3-Trichloropropane	NH,NY,ME
1,2,4-Trimethylbenzene	CT,NH,NY,ME
1,2,4-Trimethylbenzene	CT,NH,NY,ME
1,3,5-Trimethylbenzene	CT,NH,NY,ME
1,3,5-Trimethylbenzene	CT,NH,NY,ME
Vinyl Chloride	CT,NH,NY,ME
Vinyl Chloride	CT,NH,NY,ME
m+p Xylene	CT,NH,NY,ME
m+p Xylene	CT,NH,NY,ME
o-Xylene	CT,NH,NY,ME
o-Xylene	CT,NH,NY,ME

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2015
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2015
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2015
RI	Rhode Island Department of Health	LAO00112	12/30/2014
NC	North Carolina Div. of Water Quality	652	12/31/2014
NJ	New Jersey DEP	MA007 NELAP	06/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2015
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2015
WA	State of Washington Department of Ecology	C2065	02/23/2015
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2014
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2014

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www.contestlabs.com

CHAIN OF CUSTODY RECORD

14H1273
Rev 04.05.12

39 Spruce Street
East longmeadow, MA 01028

Page ____ of ____

Company Name: WESTON & SAMPSON
Address: 5 CENTENNIAL DRIVE
PEABODY, MA
Attention: TODD BRIDGEO
Project Location: CHARLESTOWN
Sampled By: DTK (781-710-4391)

Telephone: 1800 SAMPSON
Project # 2140398
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email: BRIDGEOT@WSEINC.COM
Format: ○ PDF ○ EXCEL ○ GIS ○ OTHER ____ ○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes ____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	PCB w SOXHLET	EPH w/TARGET VOC VPH 8260 NETWORK	8RCRA METALS
								1	6	1
								A	AV	A
01	SB-1 (0-6")	8/25	1400		X	S		X		
02	SB-1 (6"-2')		1405					X		
03	SB-1 (2-4') *		1410							
04	SB-1 (4-6')		1415						X	X
05	SB-11 (0-6")		1300					X		
06	SB-11 (6"-2')		1305					X		
07	SB-11 (2-4') *		1310							
08	SB-11 (4-6')		1315						X	X
09	SB-12 (0-6")		1200					X		
10	SB-12 (6"-2')		1205					X		

ANALYSIS REQUESTED

# of Containers
** Preservation
***Container Code

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfat
X = Na hydroxide
T = Na thiosulfate
O = Other ____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other ____

Comments:
* HOLD

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time:
[signature]	8/27 12:00
Received by: (signature) [signature] 8/27/14	Date/Time: 1272
Relinquished by: (signature) [signature] 8/27/14	Date/Time: 906
Received by: (signature) Rebecca Quist 3.6° 8/27/14	Date/Time: 1605

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5 DAY

RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other:

Is your project MCP or RCP ?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # ____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

†† TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

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Table of Contents

con-test® ANALYTICAL LABORATORY
Phone: 413-525-2332
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Email: info@contestlabs.com
www.contestlabs.com
39 Spruce Street
East Longmeadow, MA 01028

CHAIN OF CUSTODY RECORD

14H1273
Rev 04.05.12

Page ____ of ____

Company Name: WESTON & SAMPSON Telephone: 1800 SAMPSON
Address: 5 CENTENNIAL DRIVE Project # 2140398
PEABODY MA Client PO#
Attention: TODD BRIDGETO
Project Location: CHARLESTOWN
Sampled By: PTK 781-718-4391

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email: BRIDGETO@WSP-INC.com
Format: ○ PDF ○ EXCEL ○ GIS ○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	1	2	☒	1	2	# of Containers	** Preservation	***Container Code
								PCBs 1/Sox Ext	EPH w/ TMAers	VOCs (8260)	VPH (w TMAers)	8 RCRA Metals			
11	SB-12 (2-4')	8/25	12:10		X	S			X	X	X	X			
12	SB-12 (4-6') *		12:15												
13	SB-19 (0-6")		10:00					X							
14	SB-19 (6"-2')		10:05					X							
15	SB-19 (2-4')		10:10						X	X	X	X			
16	SB-19 (4-6') *		10:15												
17	SB-23 (0-6")		11:00					X							
18	SB-23 (6"-2')		11:05					X							
19	SB-23 (2-4')		11:10						X	X	X	X			
20	SB-23 (4-6') *	↓	11:15		↓	↓									

Comments: * Hold

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

ANALYSIS REQUESTED

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
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N = Nitric Acid
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T = Na thiosulfate
O = Other

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other

Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5 DAY
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other:

Is your project MCP or RCP?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

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Table of Contents

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CHAIN OF CUSTODY RECORD

14H1273
Rev. 04.05.12

Page ____ of ____

Company Name: WESTON & SAMPSON
Address: 5 CENTENNIAL DRIVE PEABODY, MA
Attention: TODD BRIDGES
Project Location: CHARLESTOWN
Sampled By: PTK (781-710 4391)

Telephone: 1800 SAMPSON
Project #: 2140398
Client PO#:

DATA DELIVERY (check all that apply)
○ FAX ○ EMAIL ○ WEBSITE
Fax #:
Email:
Format: ○ PDF ○ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes ____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Cont. Code	# of Containers	** Preservation	*** Container Code	ANALYSIS REQUESTED: PCBs w/ SOXTRACT
21	SB-3 0-6"	8/25	1600		X	S		1	A		X
22	SB-3 (6"-2')	↓	1605								
23	CS-1	8/26	10:30								
24	CS-2		11:00								
25	CS-7		11:20								
26	CS-8		12:15								
27	CS-9		12:30								
28	CS-10		13:00								
29	CS-11		13:30								
30	CS-12		14:15								
Comment 31	CS-17		14:45								
32	CS-18	↓	15:15	↓	↓	↓					

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other ____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other ____

Relinquished by: (signature)	Date/Time:
Patrick Drummey	8/27/14 1200
Received by: (signature)	Date/Time:
	8/27/14 1215
Relinquished by: (signature)	Date/Time:
	8/27/14 1405
Received by: (signature)	Date/Time:
Rebecca Faust	8/27/14 1605

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5 day
RUSH ‡
☐ ‡24-Hr ☐ ‡48-Hr
☐ ‡72-Hr ☐ ‡4-Day
‡ Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other:

Is your project MCP or RCP ?
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○ RCP Form Required
○ MA State DW Form Required PWSID # ____

NELAC & AIHA-LAP, LLC Accredited
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East Longmeadow, MA. 01028
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F: 413-525-6405
www.contestlabs.com

con-test® ANALYTICAL LABORATORY

Sample Receipt Checklist

CLIENT NAME: Weston & Sampson RECEIVED BY: RLF DATE: 8/27/14

1) Was the chain(s) of custody relinquished and signed? (Yes) No No CoC Included
2) Does the chain agree with the samples? (Yes) No
If not, explain:
3) Are all the samples in good condition? (Yes) No
If not, explain:
4) How were the samples received:
On Ice [1] Direct from Sampling [ ] Ambient [ ] In Cooler(s) [1]
Were the samples received in Temperature Compliance of (2-6°C)? (Yes) No N/A
Temperature °C by Temp blank _____ Temperature °C by Temp gun 3.6°C
5) Are there Dissolved samples for the lab to filter? Yes (No)
Who was notified _____ Date _____ Time _____
6) Are there any RUSH or SHORT HOLDING TIME samples? Yes (No)
Who was notified _____ Date _____ Time _____
7) Location where samples are stored: 19

Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature:

8) Do all samples have the proper Acid pH: Yes No (N/A) _____
9) Do all samples have the proper Base pH: Yes No (N/A) _____
10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No (N/A)

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	27
500 mL Amber		4 oz amber/clear jar	10
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below	20	Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol 10
Bisulfate 10 # DI Water _____
Thiosulfate _____ Unpreserved

Time and Date Frozen:

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)

Any False statement will be brought to the attention of Client

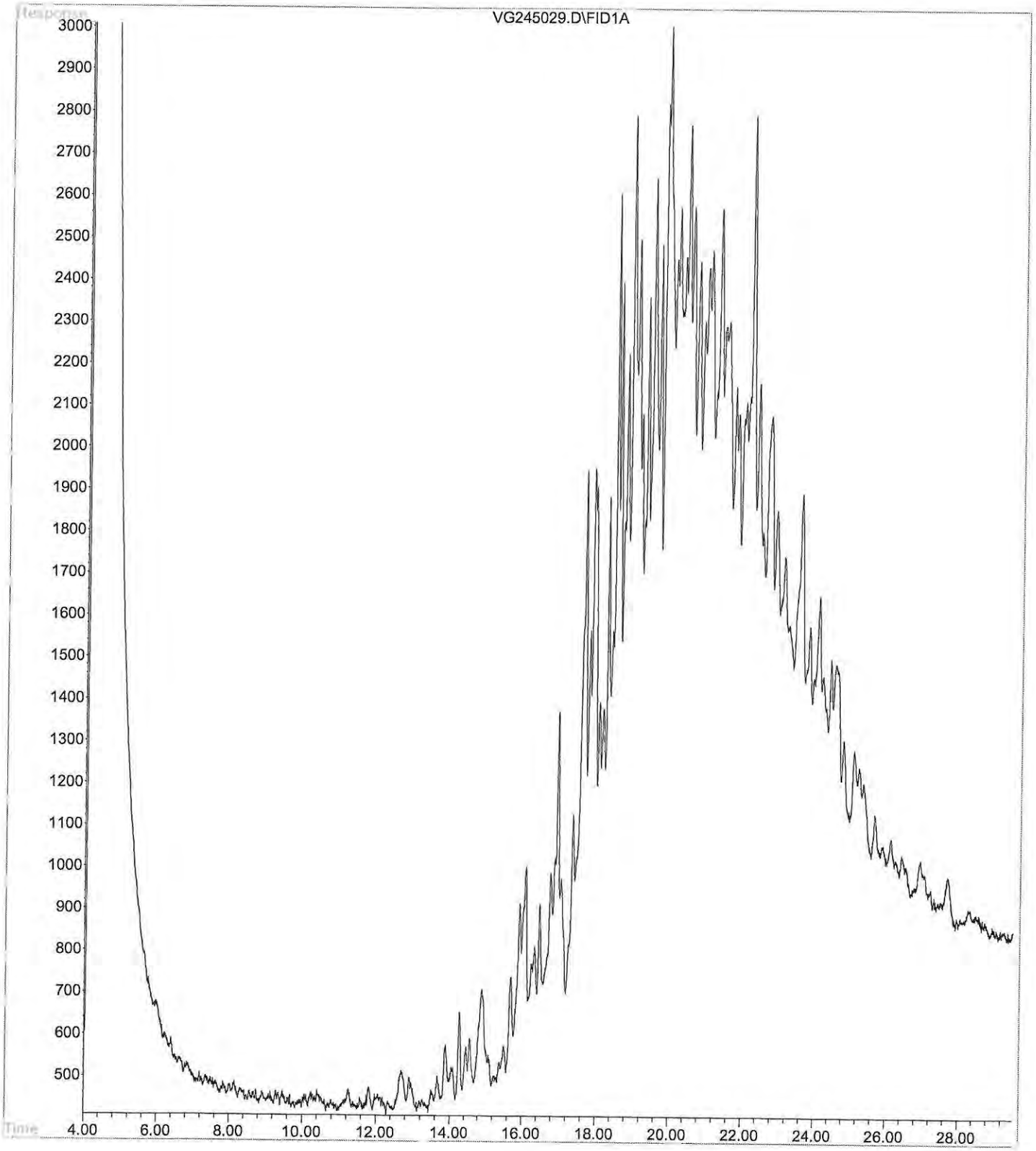
Question	Answer (True/False) T/F/NA	Comment
1) The cooler's custody seal, if present, is intact.	T	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	T	
18) There is sufficient volume for all requsted analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	NA	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	T	
21) Samples do not require splitting or compositing.	T	

Who notified of False statements? Date/Time:

Doc #277 Rev. 4 August 2013 Log-In Technician Initials: Date/Time:

RLF 8/07/14 1605

```
File       : D:\HPCHEM\2\DATA\090214\VG245029.D
Operator   : ORGANICS
Acquired   :  2 Sep 2014  11:29 pm using AcqMethod VS210814.M
Instrument :   VPH GC 2
Sample Name: 14H1273-04 @ 500X MEOH
Misc Info  : 500
Vial Number: 29
```



MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 14H1273
Project Location: Charlestown	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

14H1273-01 thru 14H1273-32

Matrices: Product/Solid Soil

CAM Protocol (check all that below)

8260 VOC CAM II A (X)	7470/7471 Hg CAM IIIB (X)	MassDEP VPH CAM IV A (X)	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A (X)	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )
6010 Metals CAM III A (X)	6020 Metals CAM III D ( )	8082 PCB CAM V A (X)	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☑ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]
	A response to questions G, H and I below is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]
	<u>Data User Note:</u> Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.		
H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☐ Yes	☑ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 09/05/14

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

September 12, 2014

Joe Spencer
Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960

Project Location: Charlestown, MA
Client Job Number:
Project Number: BLDG 105
Laboratory Work Order Number: 14I0247

Enclosed are results of analyses for samples received by the laboratory on September 5, 2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960
ATTN: Joe Spencer

REPORT DATE: 9/12/2014

PURCHASE ORDER NUMBER:

PROJECT NUMBER: BLDG 105

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 14I0247

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Charlestown, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
SB-20 (4-6)	14I0247-01	Soil		SM 2540G SW-846 8082A	

con-test® ANALYTICAL LABORATORY
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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SW-846 8082A

Qualifications:

O-32

A five times dilution was performed as part of the standard analytical procedure.

Analyte & Samples(s) Qualified:

14I0247-01[SB-20 (4-6)]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Daren J. Damboragian
Laboratory Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14I0247

Date Received: 9/5/2014

Field Sample #: SB-20 (4-6) | Sampled: 8/21/2014 14:15

Sample ID: 14I0247-01

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.13	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:11	KAL
Aroclor-1221 [1]	ND	0.13	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:11	KAL
Aroclor-1232 [1]	ND	0.13	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:11	KAL
Aroclor-1242 [1]	ND	0.13	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:11	KAL
Aroclor-1248 [1]	ND	0.13	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:11	KAL
Aroclor-1254 [1]	ND	0.13	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:11	KAL
Aroclor-1260 [1]	ND	0.13	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:11	KAL
Aroclor-1262 [1]	ND	0.13	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:11	KAL
Aroclor-1268 [1]	ND	0.13	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:11	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	47.2	30-150		9/11/14 17:11
Decachlorobiphenyl [2]	51.0	30-150		9/11/14 17:11
Tetrachloro-m-xylene [1]	43.4	30-150		9/11/14 17:11
Tetrachloro-m-xylene [2]	53.3	30-150		9/11/14 17:11

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14I0247

Date Received: 9/5/2014

Field Sample #: SB-20 (4-6) | Sampled: 8/21/2014 14:15

Sample ID: 14I0247-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	77.2		% Wt	1		SM 2540G	9/9/14	9/10/14 7:56	MRL

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Sample Extraction Data

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
14I0247-01 [SB-20 (4-6)]	B104455	09/09/14

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14I0247-01 [SB-20 (4-6)]	B104403	10.3	10.0	09/08/14

con-test® ANALYTICAL LABORATORY

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B104403 - SW-846 3540C										
Blank (B104403-BLK1)				Prepared: 09/08/14 Analyzed: 09/09/14						
Aroclor-1016	ND	0.020	mg/Kg wet							
Aroclor-1016 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1221	ND	0.020	mg/Kg wet							
Aroclor-1221 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1232	ND	0.020	mg/Kg wet							
Aroclor-1232 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1242	ND	0.020	mg/Kg wet							
Aroclor-1242 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1248	ND	0.020	mg/Kg wet							
Aroclor-1248 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1254	ND	0.020	mg/Kg wet							
Aroclor-1254 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1260	ND	0.020	mg/Kg wet							
Aroclor-1260 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1262	ND	0.020	mg/Kg wet							
Aroclor-1262 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1268	ND	0.020	mg/Kg wet							
Aroclor-1268 [2C]	ND	0.020	mg/Kg wet							
Surrogate: Decachlorobiphenyl	*0.185*		mg/Kg wet	0.200		92.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.187*		mg/Kg wet	0.200		93.5	30-150			
Surrogate: Tetrachloro-m-xylene	*0.185*		mg/Kg wet	0.200		92.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.182*		mg/Kg wet	0.200		91.0	30-150			
LCS (B104403-BS1)				Prepared: 09/08/14 Analyzed: 09/09/14						
Aroclor-1016	0.19	0.10	mg/Kg wet	0.200		92.7	40-140			
Aroclor-1016 [2C]	0.18	0.10	mg/Kg wet	0.200		90.1	40-140			
Aroclor-1260	0.18	0.10	mg/Kg wet	0.200		89.9	40-140			
Aroclor-1260 [2C]	0.18	0.10	mg/Kg wet	0.200		89.6	40-140			
Surrogate: Decachlorobiphenyl	*0.179*		mg/Kg wet	0.200		89.6	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.178*		mg/Kg wet	0.200		88.9	30-150			
Surrogate: Tetrachloro-m-xylene	*0.173*		mg/Kg wet	0.200		86.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.173*		mg/Kg wet	0.200		86.4	30-150			
LCS Dup (B104403-BSD1)				Prepared: 09/08/14 Analyzed: 09/09/14						
Aroclor-1016	0.17	0.10	mg/Kg wet	0.200		87.3	40-140	6.00	30	
Aroclor-1016 [2C]	0.17	0.10	mg/Kg wet	0.200		84.2	40-140	6.71	30	
Aroclor-1260	0.17	0.10	mg/Kg wet	0.200		83.8	40-140	7.01	30	
Aroclor-1260 [2C]	0.17	0.10	mg/Kg wet	0.200		83.5	40-140	7.05	30	
Surrogate: Decachlorobiphenyl	*0.159*		mg/Kg wet	0.200		79.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.160*		mg/Kg wet	0.200		80.0	30-150			
Surrogate: Tetrachloro-m-xylene	*0.160*		mg/Kg wet	0.200		79.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.160*		mg/Kg wet	0.200		79.9	30-150			

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B104403-BS1 Date(s) Analyzed: 09/09/2014 09/09/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.19	
	2	0.00	0.00	0.00	0.18	3
Aroclor-1260	1	0.00	0.00	0.00	0.18	
	2	0.00	0.00	0.00	0.18	0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B104403-BSD1 Date(s) Analyzed: 09/09/2014 09/09/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.17	
	2	0.00	0.00	0.00	0.17	3
Aroclor-1260	1	0.00	0.00	0.00	0.17	
	2	0.00	0.00	0.00	0.17	1

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
O-32	A five times dilution was performed as part of the standard analytical procedure.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Soil	
Aroclor-1016	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA,NJ

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2015
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2015
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2015
RI	Rhode Island Department of Health	LAO00112	12/30/2014
NC	North Carolina Div. of Water Quality	652	12/31/2014
NJ	New Jersey DEP	MA007 NELAP	06/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2015
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2015
WA	State of Washington Department of Ecology	C2065	02/23/2015
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2014
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2014

con-test ANALYTICAL LABORATORY
Phone: 413-525-2332
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Email: info@contestlabs.com
www.contestlabs.com
39 Spruce Street
East Longmeadow, MA 01028

CHAIN OF CUSTODY RECORD

14H1122 (MW)
Rev. 04.05.12
14L0297

Company Name: Mason & Sampson
Address: 5 Centennial Dr Peabody, MA
Attention: Joe Spencer
Project Location: Charlestown, MA
Sampled By: JRC / PK

Telephone: 1800 Sampsun
Project #: Bldg 105
Client PO#:

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ☒ WEBSITE
Fax #:
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS ○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (Laboratory Use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	PCBs in Soil/Sed	TPH in Soil	VPH (MA DEP, 5260)	# of Containers	** Preservation	*** Container Code
											1	3/4	
											—	—	
											A	A	V
11	SB-17 (2-4)	1110	8/21		X	S	U						
12	SB-17 (4-6)	1115											
13	SB-18 (0-0.5)	1140						X					
14	SB-18 (2-4)	1150						X					
15	SB-18 (4-6)	1155							X	X			
16	SB-18 (0.5-2)	1145						X					
17	SB-20 (0-0.5)	1400						X					
18	SB-20 (0.5-2)	1405						X					
19	SB-20 (2-4)	1410			V	V	V						
20 (MW)	SB-20 (4-6)	1415	V						X	X			

-01 AR

ANALYSIS REQUESTED

Dissolved Metals
○ Field Filtered
○ Lab to Filter

*** Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V=vial
S=summa can
T=tedlar bag
O=Other

** Preservation
I = iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other_____

* Matrix Code:
GW = groundwater
WW = wastewater
DW = drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

Comments:
PLEASE HOLD SAMPLES THAT ARE NOT MARKED FOR ANALYSIS [I.E., SB-18 (2-4)] Archive per attached email MEC 9/8/14

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time:
	8/22 1700
Received by: (signature)	Date/Time:
	8/25/14 12:30 pm
Relinquished by: (signature)	Date/Time:
	8/25/14 8:00 pm
Received by: (signature)	Date/Time:
Cassiopeia 4.4°	8.25.14 2000

Turnaround ††
☐ 7-Day
☐ 10-Day
☐ 20 Other 5 Day
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts: S-1
Connecticut:
Other:

Is your project MCP or RCP?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

†† TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

con-test® ANALYTICAL LABORATORY
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Fax: 413-525-6405
Email: info@contestlabs.com
www.contestlabs.com
39 Spruce Street
East longmeadow, MA 01028

CHAIN OF CUSTODY RECORD

14H1122

Rev 04.05.12

Page 1 of 8

Company Name: Weston & Sampson
Address: 5 Centennial Drive, Peabody, MA 01960
Attention: Joe Spencer
Project Location: Charlestown, MA
Sampled By: JES | DK
Telephone: 600 Sampson
Project #: BUDG 105
Client PO#:

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ☒ WEBSITE
Fax #: spencerj@wsuinc.com
Email: bridgeot@wsuinc.com
Format: ☒ PDF ☒ EXCEL ○ GIS ○ OTHER _____
○ "Enhanced Data Package"

Con-Test Lab ID (Lab use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	PUB in Soil/Water	EPH in PAHs, Rule 8	VPH No Targets, 8260
01	SB-14 (0-0.5)	8/21	0945		Y	S	L	X		
02	SB-14 (0.5-2)		0955					X		
03	SB-14 (2-4)		1000							
04	SB-14 (4-6)		1010							
05	SB-16 (0-0.5)		1020					X		
06	SB-16 (0.5-2)		1025					X		
07	SB-16 (2-4)		1030							
08	SB-16 (4-6)		1035							
09	SB-17 (0-0.5)		1100					X		
10	SB-17 (0.5-2)		1105					X		

# of Containers	1	1	2 1/2
** Preservation	—	—	DB
***Container Code	A	A	V

ANALYSIS REQUESTED

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V=vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other_____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL= sludge
O = other_____

Comments:
PLEASE HOLD SAMPLES THAT ARE NOT MARKED FOR ANALYSIS [I.E. SB-14 (4-6)]

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time: 8/25/14 1700	
Received by: (signature)	Date/Time: 8/25/14 12/30	
Relinquished by: (signature)	Date/Time: 8/20/14 8:00pm	
Received by: (signature)	Date/Time: 4.4° 8.25.14 2000	

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5 Day RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts: S-1
Connecticut:
Other:

Is your project MCP or RCP?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

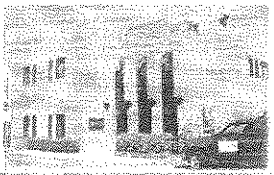
†† TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

39 Spruce St.
East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
www.contestlabs.com

con-test ANALYTICAL LABORATORY

Sample Receipt Checklist



CLIENT NAME: Weston & Sampson RECEIVED BY: CC DATE: 8.25.14

1) Was the chain(s) of custody relinquished and signed? (Yes) No No CoC Included
2) Does the chain agree with the samples? (Yes) No
If not, explain:
3) Are all the samples in good condition? (Yes) No
If not, explain:
4) How were the samples received:
On Ice 19 Direct from Sampling ☐ Ambient ☐ In Cooler(s) X
Were the samples received in Temperature Compliance of (2-6°C)? (Yes) No N/A
Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.4°
5) Are there Dissolved samples for the lab to filter? Yes (No)
Who was notified _____ Date _____ Time _____
6) Are there any RUSH or SHORT HOLDING TIME samples? Yes (No)
Who was notified _____ Date _____ Time _____
7) Location where samples are stored: 19

Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature: _____

8) Do all samples have the proper Acid pH: Yes No (N/A) _____
9) Do all samples have the proper Base pH: Yes No (N/A) _____
10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No (N/A)

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	22A
500 mL Amber		4 oz amber/clear jar	
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below	8	Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol 4
Bisulfate 4 # DI Water _____
Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)

Any False statement will be brought to the attention of Client

Question	Answer (True/False) T/F/NA	Comment
1) The cooler's custody seal, if present, is intact.	NA	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	T	
18) There is sufficient volume for all requsted analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	T	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	NA	
21) Samples do not require splitting or compositing.	T	

Who notified of False statements? Date/Time:

Doc #277 Rev. 4 August 2013 Log-In Technician Initials: MC Date/Time: 8.25.14 2000

Meghan Kelley

From: Bhunia, Prasanta [bhuniap@wseinc.com]
Sent: Friday, September 05, 2014 1:03 PM
To: Meghan Kelley
Cc: Bridgeo, Todd
Subject: RE: Charlestown Navy Yard Building 105 Lab Report

Please analyze SB-5 (2'-4').

Prasanta K. Bhunia, Ph.D., LSP
VICE PRESIDENT
Weston&Sampson®
5 Centennial Dr.
Peabody, MA 01960
www.westonandsampson.com
Office: (978) 532-1900
Direct Dial: (978) 573-4006
Direct Fax: (978) 573-4006

-----Original Message-----
From: Meghan Kelley [mailto:mkelley@contestlabs.com]
Sent: Friday, September 05, 2014 12:42 PM
To: Bhunia, Prasanta
Cc: Bridgeo, Todd
Subject: RE: Charlestown Navy Yard Building 105 Lab Report

We have four depths for SB-5, see attached COC. Samples on (2-4) & (4-6) were held, should be analyze those?

-----Original Message-----
From: Bhunia, Prasanta [mailto:bhuniap@wseinc.com]
Sent: Friday, September 05, 2014 12:18 PM
To: Meghan Kelley
Cc: Bridgeo, Todd
Subject: RE: Charlestown Navy Yard Building 105 Lab Report

Hi Meghan,

Okay, but please send the data ASAP.

Now, I would like you run the following samples for PCBs using soxhlet extraction. I understand these samples are on hold. Also, please check the holding time (i.e., I don't want samples to be collected after the holding times).

- SB-4 (2'-4')
- SB-5 - we analyzed 2 samples from this location. Do you have any deeper sample?
- SB-9 (4'-6'
- SB-10 (2'-4')
- SB-13 (4'-6')
- SB-20 (4'-6')

Thank you.

Prasanta

Prasanta K. Bhunia, Ph.D., LSP
VICE PRESIDENT
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5 Centennial Dr.
Peabody, MA 01960
www.westonandsampson.com
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Direct Dial: (978) 573-4006
Direct Fax: (978) 573-4006

-----Original Message-----
From: Meghan Kelley [mailto:mkelley@contestlabs.com]
Sent: Friday, September 05, 2014 11:31 AM
To: Bhunia, Prasanta
Subject: RE: Charlestown Navy Yard Building 105 Lab Report

Hi Prasanta,

One of the samples required a PCB re-extract due to low surrogate. The sample will rerun shortly and the final report should be completed for end of day pending any additional QC issues.

-Meghan

-----Original Message-----
From: Bhunia, Prasanta [mailto:bhuniap@wseinc.com]
Sent: Friday, September 05, 2014 11:24 AM
To: 'Meghan Kelley - Contest
Subject: Charlestown Navy Yard Building 105 Lab Report

Hi Meghan,

I am missing some data for the Charlestown Navy Yard Building 105 project.
Please look for Work Order # 14H1273.

Let me know.

Prasanta

Prasanta K. Bhunia, Ph.D., LSP
VICE PRESIDENT
Weston&Sampson(r)

5 Centennial Dr.
Peabody, MA 01960
www.westonandsampson.com<http://www.westonandsampson.com/>
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MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 14I0247
Project Location: Charlestown, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

14I0247-01

Matrices: Soil

CAM Protocol (check all that below)

8260 VOC CAM II A ( )	7470/7471 Hg CAM IIIB ( )	MassDEP VPH CAM IV A ( )	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A ( )	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )
6010 Metals CAM III A ( )	6020 Metals CAM III D ( )	8082 PCB CAM V A (X)	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☐ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]
	A response to questions G, H and I below is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☑ Yes	☐ No[1]
	***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**		
H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☑ Yes	☐ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☑ Yes	☐ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 09/12/14

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

September 12, 2014

Joe Spencer
Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960

Project Location: Charlestown, MA
Client Job Number:
Project Number: BLDG 105
Laboratory Work Order Number: 14I0249

Enclosed are results of analyses for samples received by the laboratory on September 5, 2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960
ATTN: Joe Spencer

REPORT DATE: 9/12/2014

PURCHASE ORDER NUMBER:

PROJECT NUMBER: BLDG 105

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 14I0249

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Charlestown, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
SB-4 (2-4)	14I0249-01	Soil		SM 2540G	
				SW-846 8082A	
SB-9 (4-6)	14I0249-02	Soil		SM 2540G	
				SW-846 8082A	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SW-846 8082A

Qualifications:

O-32

A five times dilution was performed as part of the standard analytical procedure.

Analyte & Samples(s) Qualified:

14I0249-01[SB-4 (2-4)], 14I0249-02[SB-9 (4-6)]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Daren J. Damboragian
Laboratory Manager

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14I0249

Date Received: 9/5/2014

Field Sample #: SB-4 (2-4) | Sampled: 8/22/2014 11:30

Sample ID: 14I0249-01

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:29	KAL
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:29	KAL
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:29	KAL
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:29	KAL
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:29	KAL
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:29	KAL
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:29	KAL
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:29	KAL
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:29	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	78.6	30-150		9/11/14 17:29
Decachlorobiphenyl [2]	83.5	30-150		9/11/14 17:29
Tetrachloro-m-xylene [1]	67.7	30-150		9/11/14 17:29
Tetrachloro-m-xylene [2]	82.4	30-150		9/11/14 17:29

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14I0249

Date Received: 9/5/2014

Field Sample #: SB-4 (2-4) | Sampled: 8/22/2014 11:30

Sample ID: 14I0249-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	86.4		% Wt	1		SM 2540G	9/10/14	9/11/14 7:44	MRL

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14I0249

Date Received: 9/5/2014

Field Sample #: SB-9 (4-6) | Sampled: 8/22/2014 11:55

Sample ID: 14I0249-02

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:47	KAL
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:47	KAL
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:47	KAL
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:47	KAL
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:47	KAL
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:47	KAL
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:47	KAL
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:47	KAL
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 17:47	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	75.7	30-150		9/11/14 17:47
Decachlorobiphenyl [2]	83.2	30-150		9/11/14 17:47
Tetrachloro-m-xylene [1]	68.1	30-150		9/11/14 17:47
Tetrachloro-m-xylene [2]	84.3	30-150		9/11/14 17:47

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14I0249

Date Received: 9/5/2014

Field Sample #: SB-9 (4-6) | Sampled: 8/22/2014 11:55

Sample ID: 14I0249-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	86.0		% Wt	1		SM 2540G	9/10/14	9/11/14 7:44	MRL

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Sample Extraction Data

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
14I0249-01 [SB-4 (2-4)]	B104561	09/10/14
14I0249-02 [SB-9 (4-6)]	B104561	09/10/14

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14I0249-01 [SB-4 (2-4)]	B104403	10.4	10.0	09/08/14
14I0249-02 [SB-9 (4-6)]	B104403	10.3	10.0	09/08/14

con-test® ANALYTICAL LABORATORY

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B104403 - SW-846 3540C										
Blank (B104403-BLK1)				Prepared: 09/08/14 Analyzed: 09/09/14						
Aroclor-1016	ND	0.020	mg/Kg wet							
Aroclor-1016 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1221	ND	0.020	mg/Kg wet							
Aroclor-1221 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1232	ND	0.020	mg/Kg wet							
Aroclor-1232 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1242	ND	0.020	mg/Kg wet							
Aroclor-1242 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1248	ND	0.020	mg/Kg wet							
Aroclor-1248 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1254	ND	0.020	mg/Kg wet							
Aroclor-1254 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1260	ND	0.020	mg/Kg wet							
Aroclor-1260 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1262	ND	0.020	mg/Kg wet							
Aroclor-1262 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1268	ND	0.020	mg/Kg wet							
Aroclor-1268 [2C]	ND	0.020	mg/Kg wet							
Surrogate: Decachlorobiphenyl	*0.185*		mg/Kg wet	0.200		92.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.187*		mg/Kg wet	0.200		93.5	30-150			
Surrogate: Tetrachloro-m-xylene	*0.185*		mg/Kg wet	0.200		92.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.182*		mg/Kg wet	0.200		91.0	30-150			
LCS (B104403-BS1)				Prepared: 09/08/14 Analyzed: 09/09/14						
Aroclor-1016	0.19	0.10	mg/Kg wet	0.200		92.7	40-140			
Aroclor-1016 [2C]	0.18	0.10	mg/Kg wet	0.200		90.1	40-140			
Aroclor-1260	0.18	0.10	mg/Kg wet	0.200		89.9	40-140			
Aroclor-1260 [2C]	0.18	0.10	mg/Kg wet	0.200		89.6	40-140			
Surrogate: Decachlorobiphenyl	*0.179*		mg/Kg wet	0.200		89.6	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.178*		mg/Kg wet	0.200		88.9	30-150			
Surrogate: Tetrachloro-m-xylene	*0.173*		mg/Kg wet	0.200		86.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.173*		mg/Kg wet	0.200		86.4	30-150			
LCS Dup (B104403-BSD1)				Prepared: 09/08/14 Analyzed: 09/09/14						
Aroclor-1016	0.17	0.10	mg/Kg wet	0.200		87.3	40-140	6.00	30	
Aroclor-1016 [2C]	0.17	0.10	mg/Kg wet	0.200		84.2	40-140	6.71	30	
Aroclor-1260	0.17	0.10	mg/Kg wet	0.200		83.8	40-140	7.01	30	
Aroclor-1260 [2C]	0.17	0.10	mg/Kg wet	0.200		83.5	40-140	7.05	30	
Surrogate: Decachlorobiphenyl	*0.159*		mg/Kg wet	0.200		79.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.160*		mg/Kg wet	0.200		80.0	30-150			
Surrogate: Tetrachloro-m-xylene	*0.160*		mg/Kg wet	0.200		79.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.160*		mg/Kg wet	0.200		79.9	30-150			

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B104403-BS1 Date(s) Analyzed: 09/09/2014 09/09/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.19	
	2	0.00	0.00	0.00	0.18	3
Aroclor-1260	1	0.00	0.00	0.00	0.18	
	2	0.00	0.00	0.00	0.18	0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B104403-BSD1 Date(s) Analyzed: 09/09/2014 09/09/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.17	
	2	0.00	0.00	0.00	0.17	3
Aroclor-1260	1	0.00	0.00	0.00	0.17	
	2	0.00	0.00	0.00	0.17	1

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
O-32	A five times dilution was performed as part of the standard analytical procedure.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Soil	
Aroclor-1016	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA,NJ

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2015
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2015
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2015
RI	Rhode Island Department of Health	LAO00112	12/30/2014
NC	North Carolina Div. of Water Quality	652	12/31/2014
NJ	New Jersey DEP	MA007 NELAP	06/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2015
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2015
WA	State of Washington Department of Ecology	C2065	02/23/2015
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2014
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2014

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www.contestlabs.com

CHAIN OF CUSTODY RECORD

~~14H1123~~ MK 9/8/14
Rev 04.05.12
14I0249

39 Spruce Street
East longmeadow, MA 01028

Company Name: WESTON & SAMPSON
Address: 5 Centennial Dr
PEABODY, MA
Attention: JOE SPENCER
Project Location: CHARLESTOWN, MA
Sampled By: JRS/PK

Telephone: 800 SAMPSON
Project #: BLDG 105
Client PO#:

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ☒ WEBSITE
Fax #:
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	PUB IN SUPPLIET	EPH IN PAHS, RCRA 8	VPH NO TARGETS, 8260
11	SB-7 (2-4)	8/22	1110		✓	S	U			
12	SB-7 (4-6)	↓	1115		↓	↓	↓			
13	SB-4 (0-0.5)	↓	1120		↓	↓	↓	X		
14	SB-4 (0.5-2)	↓	1125		↓	↓	↓	X		
-01 ⊛ 15	SB-4 (2-4)	↓	1130		↓	↓	↓	~~X~~	X	X
16	SB-4 (4-6)	↓	1135		↓	↓	↓			
17	SB-9 (0-0.5)	↓	1140		↓	↓	↓	X		
18	SB-9 (0.5-2)	↓	1145		↓	↓	↓	X		
19	SB-9 (2-4)	↓	1150		↓	↓	↓			
-02 ⊛ 20 MK	SB-9 (4-6)	↓	1155		↓	↓	↓	~~X~~	X	X

ANALYSIS REQUESTED

# of Containers	1	1	2/2
** Preservation	—	—	M/B
***Container Code	A	A	V

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V=vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other

Comments:
PLEASE HOLD SAMPLES THAT ARE NOT MARKED FOR ANALYSIS
[I.E, SB-9 (2-4)]

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)		Date/Time: 8/22 1700
Received by: (signature)	8/25/14	Date/Time: 12:30pm
Relinquished by: (signature)	8/25/14	Date/Time: 8:00pm
Received by: (signature) Cassie Cuts	4.4° 8.25.14	Date/Time: 2000

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5-day
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts: S-1
Connecticut:
Other:

Is your project MCP or RCP?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

†† TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

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Email: info@contestlabs.com
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CHAIN OF CUSTODY RECORD

14H1123
Rev 04.05.12

39 Spruce Street
East longmeadow, MA 01028

Company Name: Weston & Sampson
Address: 5 Centennial Dr
Peabody, MA
Attention: Joe Spencer
Project Location: Charlestown, MA
Sampled By: JRS / PK

Telephone: 800 Sampson
Project # BLDG 105
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ☒ WEBSITE
Fax #
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection: Beginning Date/Time	Collection: Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	PCB w SOXHLET	EPH w PAHs, RIDA8	VPH w NOTARGETS, 8260
01	SB - 21 (0-0.5)	8/21	1255		X	S	U	X		
02	SB - 21 (0.5-2)	↓	1300		↓	↓	↓	X		
03	SB - 21 (2-4)	↓	1310		↓	↓	↓			
04	SB - 21 (4-6)	↓	1315		↓	↓	↓	~~X~~	X	X
05	SB - 22 (0-0.5)	↓	1430		↓	↓	↓	X		
06	SB - 22 (0.5-2)	↓	1435		↓	↓	↓	X		
07	SB - 22 (2-4)	↓	1440		↓	↓	↓			
08	SB - 22 (4-6)	↓	1445		↓	↓	↓	~~X~~	X	X
09	SB - 7 (0-0.5)	8/22	1100		↓	↓	↓	X		
10	SB - 7 (0.5-2)	8/22	1105		↓	↓	↓	X		

ANALYSIS REQUESTED

# of Containers	1	1	2/2
** Preservation	—	—	N/B
***Container Code	A	A	V

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V=vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other

Comments:
Please hold samples that are not marked for analysis [i.e., SB-22 (2-4)]

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time:
[signature]	8/25 1700
Received by: (signature) [signature] 8/25/14	Date/Time: 12:30 pm
Relinquished by: (signature) [signature] 8/25/14	Date/Time: 8:00 pm
Received by: (signature) Cassie Cath 4.4° 8.25.14	Date/Time: 2000

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5 day
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts: S-1
Connecticut:
Other:

Is your project MCP or RCP?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID #

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†† TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

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East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
www.contestlabs.com

con-test ANALYTICAL LABORATORY

Sample Receipt Checklist

CLIENT NAME: Weston & Sampson RECEIVED BY: CC DATE: 8.25.14

1) Was the chain(s) of custody relinquished and signed? (Yes) No No CoC Included

2) Does the chain agree with the samples? (Yes) No
If not, explain:

3) Are all the samples in good condition? (Yes) No
If not, explain:

4) How were the samples received:
On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒

Were the samples received in Temperature Compliance of (2-6°C)? (Yes) No N/A

Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.4°

5) Are there Dissolved samples for the lab to filter? Yes (No)
Who was notified _____ Date _____ Time _____

6) Are there any RUSH or SHORT HOLDING TIME samples? Yes (No)
Who was notified _____ Date _____ Time _____

7) Location where samples are stored: 19

Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature: _____

8) Do all samples have the proper Acid pH: Yes No (N/A) _____

9) Do all samples have the proper Base pH: Yes No (N/A) _____

10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No (N/A)

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	12A
500 mL Amber		4 oz amber/clear jar	13A
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below	16	Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol 8
Bisulfate 8 # DI Water _____
Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)
Any False statement will be brought to the attention of Client

Question	Answer (True/False) T/F/NA	Comment
1) The cooler's custody seal, if present, is intact.	NA	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	T	
18) There is sufficient volume for all requsted analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	T	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	NA	
21) Samples do not require splitting or compositing.	T	

Who notified of False statements? Date/Time:
Log-In Technician Initials: AC Date/Time: 8.25.14 2000

Meghan Kelley

From: Bhunia, Prasanta [bhuniap@wseinc.com]
Sent: Friday, September 05, 2014 1:03 PM
To: Meghan Kelley
Cc: Bridgeo, Todd
Subject: RE: Charlestown Navy Yard Building 105 Lab Report

Please analyze SB-5 (2'-4').

Prasanta K. Bhunia, Ph.D., LSP
VICE PRESIDENT
Weston&Sampson®
5 Centennial Dr.
Peabody, MA 01960
www.westonandsampson.com
Office: (978) 532-1900
Direct Dial: (978) 573-4006
Direct Fax: (978) 573-4006

-----Original Message-----
From: Meghan Kelley [mailto:mkelley@contestlabs.com]
Sent: Friday, September 05, 2014 12:42 PM
To: Bhunia, Prasanta
Cc: Bridgeo, Todd
Subject: RE: Charlestown Navy Yard Building 105 Lab Report

We have four depths for SB-5, see attached COC. Samples on (2-4) & (4-6) were held, should be analyze those?

-----Original Message-----
From: Bhunia, Prasanta [mailto:bhuniap@wseinc.com]
Sent: Friday, September 05, 2014 12:18 PM
To: Meghan Kelley
Cc: Bridgeo, Todd
Subject: RE: Charlestown Navy Yard Building 105 Lab Report

Hi Meghan,

Okay, but please send the data ASAP.

Now, I would like you run the following samples for PCBs using soxhlet extraction. I understand these samples are on hold. Also, please check the holding time (i.e., I don't want samples to be collected after the holding times).

- SB-4 (2'-4')
- SB-5 - we analyzed 2 samples from this location. Do you have any deeper sample?
- SB-9 (4'-6'
- SB-10 (2'-4')
- SB-13 (4'-6')
- SB-20 (4'-6')

Thank you.

Prasanta

Prasanta K. Bhunia, Ph.D., LSP
VICE PRESIDENT
Weston&SampsonR
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Peabody, MA 01960
www.westonandsampson.com
Office: (978) 532-1900
Direct Dial: (978) 573-4006
Direct Fax: (978) 573-4006

-----Original Message-----
From: Meghan Kelley [mailto:mkelley@contestlabs.com]
Sent: Friday, September 05, 2014 11:31 AM
To: Bhunia, Prasanta
Subject: RE: Charlestown Navy Yard Building 105 Lab Report

Hi Prasanta,

One of the samples required a PCB re-extract due to low surrogate. The sample will rerun shortly and the final report should be completed for end of day pending any additional QC issues.

-Meghan

-----Original Message-----
From: Bhunia, Prasanta [mailto:bhuniap@wseinc.com]
Sent: Friday, September 05, 2014 11:24 AM
To: 'Meghan Kelley - Contest
Subject: Charlestown Navy Yard Building 105 Lab Report

Hi Meghan,

I am missing some data for the Charlestown Navy Yard Building 105 project.
Please look for Work Order # 14H1273.

Let me know.

Prasanta

Prasanta K. Bhunia, Ph.D., LSP
VICE PRESIDENT
Weston&Sampson(r)

5 Centennial Dr.
Peabody, MA 01960
www.westonandsampson.com<http://www.westonandsampson.com/>
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MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 14I0249
Project Location: Charlestown, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

14I0249-01 thru 14I0249-02

Matrices: Soil

CAM Protocol (check all that below)

8260 VOC CAM II A ( )	7470/7471 Hg CAM IIIB ( )	MassDEP VPH CAM IV A ( )	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A ( )	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )
6010 Metals CAM III A ( )	6020 Metals CAM III D ( )	8082 PCB CAM V A (X)	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☐ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]
	A response to questions G, H and I below is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☑ Yes	☐ No[1]
	<u>Data User Note:</u> Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.		
H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☑ Yes	☐ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☑ Yes	☐ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 09/12/14

con-test® ANALYTICAL LABORATORY
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September 12, 2014

Joe Spencer
Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960

Project Location: Charlestown, MA
Client Job Number:
Project Number: BLDG 105
Laboratory Work Order Number: 14I0250

Enclosed are results of analyses for samples received by the laboratory on September 5, 2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960
ATTN: Joe Spencer

REPORT DATE: 9/12/2014

PURCHASE ORDER NUMBER:

PROJECT NUMBER: BLDG 105

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 14I0250

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Charlestown, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
SB-13 (4-6)	14I0250-01	Soil		SM 2540G	
				SW-846 8082A	
SB-5 (2-4)	14I0250-02	Soil		SM 2540G	
				SW-846 8082A	
SB-10 (2-4)	14I0250-03	Soil		SM 2540G	
				SW-846 8082A	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SW-846 8082A

Qualifications:

O-32

A five times dilution was performed as part of the standard analytical procedure.

Analyte & Samples(s) Qualified:

14I0250-01[SB-13 (4-6)], 14I0250-03[SB-10 (2-4)]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Daren J. Damboragian
Laboratory Manager

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 14I0250

Date Received: 9/5/2014

Field Sample #: SB-13 (4-6) | Sampled: 8/22/2014 13:25

Sample ID: 14I0250-01

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 18:05	KAL
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 18:05	KAL
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 18:05	KAL
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 18:05	KAL
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 18:05	KAL
Aroclor-1254 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 18:05	KAL
Aroclor-1260 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 18:05	KAL
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 18:05	KAL
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 18:05	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	70.1	30-150		9/11/14 18:05
Decachlorobiphenyl [2]	77.1	30-150		9/11/14 18:05
Tetrachloro-m-xylene [1]	63.2	30-150		9/11/14 18:05
Tetrachloro-m-xylene [2]	79.4	30-150		9/11/14 18:05

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14I0250

Date Received: 9/5/2014

Field Sample #: SB-13 (4-6) | Sampled: 8/22/2014 13:25

Sample ID: 14I0250-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	84.5		% Wt	1		SM 2540G	9/8/14	9/9/14 8:02	MRL

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14I0250

Date Received: 9/5/2014

Field Sample #: SB-5 (2-4) | Sampled: 8/22/2014 09:40

Sample ID: 14I0250-02

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.21	mg/Kg dry	10		SW-846 8082A	9/8/14	9/11/14 20:54	KAL
Aroclor-1221 [1]	ND	0.21	mg/Kg dry	10		SW-846 8082A	9/8/14	9/11/14 20:54	KAL
Aroclor-1232 [1]	ND	0.21	mg/Kg dry	10		SW-846 8082A	9/8/14	9/11/14 20:54	KAL
Aroclor-1242 [1]	ND	0.21	mg/Kg dry	10		SW-846 8082A	9/8/14	9/11/14 20:54	KAL
Aroclor-1248 [1]	ND	0.21	mg/Kg dry	10		SW-846 8082A	9/8/14	9/11/14 20:54	KAL
Aroclor-1254 [2]	1.3	0.21	mg/Kg dry	10		SW-846 8082A	9/8/14	9/11/14 20:54	KAL
Aroclor-1260 [1]	ND	0.21	mg/Kg dry	10		SW-846 8082A	9/8/14	9/11/14 20:54	KAL
Aroclor-1262 [1]	ND	0.21	mg/Kg dry	10		SW-846 8082A	9/8/14	9/11/14 20:54	KAL
Aroclor-1268 [1]	ND	0.21	mg/Kg dry	10		SW-846 8082A	9/8/14	9/11/14 20:54	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	71.0	30-150		9/11/14 20:54
Decachlorobiphenyl [2]	78.8	30-150		9/11/14 20:54
Tetrachloro-m-xylene [1]	75.4	30-150		9/11/14 20:54
Tetrachloro-m-xylene [2]	89.9	30-150		9/11/14 20:54

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14I0250

Date Received: 9/5/2014

Field Sample #: SB-5 (2-4) | Sampled: 8/22/2014 09:40

Sample ID: 14I0250-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	91.0		% Wt	1		SM 2540G	9/8/14	9/9/14 8:02	MRL

con-test® ANALYTICAL LABORATORY
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Project Location: Charlestown, MA | Sample Description: | Work Order: 14I0250

Date Received: 9/5/2014

Field Sample #: SB-10 (2-4) | Sampled: 8/22/2014 08:30

Sample ID: 14I0250-03

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 18:31	KAL
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 18:31	KAL
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 18:31	KAL
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 18:31	KAL
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 18:31	KAL
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 18:31	KAL
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 18:31	KAL
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 18:31	KAL
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	5		SW-846 8082A	9/8/14	9/11/14 18:31	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	96.2	30-150		9/11/14 18:31
Decachlorobiphenyl [2]	103	30-150		9/11/14 18:31
Tetrachloro-m-xylene [1]	78.0	30-150		9/11/14 18:31
Tetrachloro-m-xylene [2]	103	30-150		9/11/14 18:31

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Project Location: Charlestown, MA | Sample Description: | Work Order: 14I0250

Date Received: 9/5/2014

Field Sample #: SB-10 (2-4) | Sampled: 8/22/2014 08:30

Sample ID: 14I0250-03

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	86.4		% Wt	1		SM 2540G	9/8/14	9/9/14 8:02	MRL

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Sample Extraction Data

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
14I0250-01 [SB-13 (4-6)]	B104415	09/08/14
14I0250-02 [SB-5 (2-4)]	B104415	09/08/14
14I0250-03 [SB-10 (2-4)]	B104415	09/08/14

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14I0250-01 [SB-13 (4-6)]	B104403	10.2	10.0	09/08/14
14I0250-02 [SB-5 (2-4)]	B104403	10.3	10.0	09/08/14
14I0250-03 [SB-10 (2-4)]	B104403	10.2	10.0	09/08/14

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B104403 - SW-846 3540C										
Blank (B104403-BLK1)				Prepared: 09/08/14 Analyzed: 09/09/14						
Aroclor-1016	ND	0.020	mg/Kg wet							
Aroclor-1016 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1221	ND	0.020	mg/Kg wet							
Aroclor-1221 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1232	ND	0.020	mg/Kg wet							
Aroclor-1232 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1242	ND	0.020	mg/Kg wet							
Aroclor-1242 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1248	ND	0.020	mg/Kg wet							
Aroclor-1248 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1254	ND	0.020	mg/Kg wet							
Aroclor-1254 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1260	ND	0.020	mg/Kg wet							
Aroclor-1260 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1262	ND	0.020	mg/Kg wet							
Aroclor-1262 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1268	ND	0.020	mg/Kg wet							
Aroclor-1268 [2C]	ND	0.020	mg/Kg wet							
Surrogate: Decachlorobiphenyl	*0.185*		mg/Kg wet	0.200		92.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.187*		mg/Kg wet	0.200		93.5	30-150			
Surrogate: Tetrachloro-m-xylene	*0.185*		mg/Kg wet	0.200		92.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.182*		mg/Kg wet	0.200		91.0	30-150			
LCS (B104403-BS1)				Prepared: 09/08/14 Analyzed: 09/09/14						
Aroclor-1016	0.19	0.10	mg/Kg wet	0.200		92.7	40-140			
Aroclor-1016 [2C]	0.18	0.10	mg/Kg wet	0.200		90.1	40-140			
Aroclor-1260	0.18	0.10	mg/Kg wet	0.200		89.9	40-140			
Aroclor-1260 [2C]	0.18	0.10	mg/Kg wet	0.200		89.6	40-140			
Surrogate: Decachlorobiphenyl	*0.179*		mg/Kg wet	0.200		89.6	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.178*		mg/Kg wet	0.200		88.9	30-150			
Surrogate: Tetrachloro-m-xylene	*0.173*		mg/Kg wet	0.200		86.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.173*		mg/Kg wet	0.200		86.4	30-150			
LCS Dup (B104403-BSD1)				Prepared: 09/08/14 Analyzed: 09/09/14						
Aroclor-1016	0.17	0.10	mg/Kg wet	0.200		87.3	40-140	6.00	30	
Aroclor-1016 [2C]	0.17	0.10	mg/Kg wet	0.200		84.2	40-140	6.71	30	
Aroclor-1260	0.17	0.10	mg/Kg wet	0.200		83.8	40-140	7.01	30	
Aroclor-1260 [2C]	0.17	0.10	mg/Kg wet	0.200		83.5	40-140	7.05	30	
Surrogate: Decachlorobiphenyl	*0.159*		mg/Kg wet	0.200		79.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.160*		mg/Kg wet	0.200		80.0	30-150			
Surrogate: Tetrachloro-m-xylene	*0.160*		mg/Kg wet	0.200		79.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.160*		mg/Kg wet	0.200		79.9	30-150			

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

SB-5 (2-4)

Lab Sample ID: 14I0250-02 Date(s) Analyzed: 09/11/2014 09/11/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	1.3	
	2	0.00	0.00	0.00	1.3	2.3

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B104403-BS1 Date(s) Analyzed: 09/09/2014 09/09/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.19	
	2	0.00	0.00	0.00	0.18	3
Aroclor-1260	1	0.00	0.00	0.00	0.18	
	2	0.00	0.00	0.00	0.18	0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B104403-BSD1 Date(s) Analyzed: 09/09/2014 09/09/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.17	
	2	0.00	0.00	0.00	0.17	3
Aroclor-1260	1	0.00	0.00	0.00	0.17	
	2	0.00	0.00	0.00	0.17	1

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
O-32	A five times dilution was performed as part of the standard analytical procedure.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Soil	
Aroclor-1016	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA,NJ

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2015
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2015
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2015
RI	Rhode Island Department of Health	LAO00112	12/30/2014
NC	North Carolina Div. of Water Quality	652	12/31/2014
NJ	New Jersey DEP	MA007 NELAP	06/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2015
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2015
WA	State of Washington Department of Ecology	C2065	02/23/2015
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2014
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2014

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www.contestlabs.com

CHAIN OF CUSTODY RECORD

~~14H1125~~ MP

Rev 04.05.12

14J0250

39 Spruce Street
East longmeadow, MA 01028

Company Name: WESTON & SAMPSON
Address: 5 Centennial Dr
PEABODY, MA
Attention: JOE SPENCER
Project Location: CHARLESTOWN, MA
Sampled By: JRC / PK

Telephone: 800 SAMPSON
Project # BLDG 105
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ☒ WEBSITE
Fax #
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	PCB w/ SOXHLET	EPH w/ PAHs, RCRA 8	VPH NO TARGETS, 8260
01	SB-13 (0-0.5)	8/22	1300		X	S	U	X		
02	SB-13 (0.5-2)		1310					X		
03	SB-13 (2-4)		1320							
(X) 04-01	SB-13 (4-6)		1325					X	X	X
05	SB-15 (0-0.5)		1215					X		
06	SB-15 (0.5-2)		1220					X		
07	SB-15 (2-4)		1225							
08	SB-15 (4-6)		1230							
09	SB-5 (0-0.5)		0930					X		
10 MP	SB-5 (0.5-2)		0935					X		

ANALYSIS REQUESTED

# of Containers	1	1	2/2
** Preservation	—	—	MB
***Container Code	A	A	V

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other

Comments:
PLEASE HOLD SAMPLES THAT ARE NOT MARKED FOR ANALYSIS [LE, SB-15 (2-4)]

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time: 8/25 1700
Received by: (signature) [signature] 8/25/14	Date/Time: 12:30 pm
Relinquished by: (signature) [signature] 8/25/14	Date/Time: 8:00 pm
Received by: (signature) Cassie Cuth 4.4° 8-25-14	Date/Time: 2000

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5-day

RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts: S-1
Connecticut:
Other:

Is your project MCP or RCP?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

†† TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

con-test ANALYTICAL LABORATORY
Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com
www.contestlabs.com
39 Spruce Street
East longmeadow, MA 01028

CHAIN OF CUSTODY RECORD

1411125 (MP)

Rev. 04.05.12

1410250

Company Name: WESTON & SAMPSON
Address: 5 Centennial Dr
PEABODY, MA
Attention: Joe Spencer
Project Location: CHARLESTOWN, MA
Sampled By: JES / PK

Telephone: 800 SAMPSON
Project #: BUDG 105
Client PO#:

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ☒ WEBSITE
Fax #:
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Base Code	# of Containers	** Preservation	***Container Code	PCBs w/ congener	EPH w/ PAHs, PURA 6	VPH w/ MTBE/BTEX, 82600
11	SB-5 (2-4)	8/22	0940		X	S	U	1	I	A			
12	SB-5 (4-6)		0945										
13	SB-6 (0-0.5)		0900								X		
14	SB-6 (0.5-2)		0905								X		
15	SB-6 (2-4)		0910										
16	SB-6 (4-6)		0915										
17	SB-10 (0-0.5)		0820								X		
18	SB-10 (0.5-2)		0825								X		
19	SB-10 (2-4)		0830		V	V	V	1	I	A		X	X
20 (MP)	SB-10 (4-6)		0835										

ANALYSIS REQUESTED

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V=vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other_____

*Matrix Code:
GW = groundwater
WW = wastewater
DW = drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

02 ☒ 03 ☒

Comments:
PLEASE HOLD SAMPLES THAT ARE NOT MARKED FOR ANALYSIS (I.E., SB-6 (2-4))

NO PCB

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

	Date/Time:
Relinquished by: (signature)	8/25/14 1700
Received by: (signature)	8/25/14 12:45 pm
Relinquished by: (signature)	8/25/14 8:00 pm
Received by: (signature)	4.4° 8.25.14 2000

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5-day
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts: S-1
Connecticut:
Other:

Is your project MCP or RCP?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

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WBE/DBE Certified

†† TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

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39 Spruce St.
East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
www.contestlabs.com

con-test ANALYTICAL LABORATORY

Sample Receipt Checklist

CLIENT NAME: Weston & Sampson RECEIVED BY: CC DATE: 8.25.14

1) Was the chain(s) of custody relinquished and signed? (Yes) No No CoC Included

2) Does the chain agree with the samples? (Yes) No
If not, explain:

3) Are all the samples in good condition? (Yes) No
If not, explain:

4) How were the samples received:
On Ice 19 Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒

Were the samples received in Temperature Compliance of (2-6°C)? (Yes) No N/A

Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.4°

5) Are there Dissolved samples for the lab to filter? Yes (No)
Who was notified _____ Date _____ Time _____

6) Are there any RUSH or SHORT HOLDING TIME samples? Yes (No)
Who was notified _____ Date _____ Time _____

7) Location where samples are stored: 19

Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature: _____

8) Do all samples have the proper Acid pH: Yes No (N/A) _____

9) Do all samples have the proper Base pH: Yes No (N/A) _____

10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No (N/A)

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	2A
500 mL Amber		4 oz amber/clear jar	20A
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below	8	Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol 4
Bisulfate 4 # DI Water _____
Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)
Any False statement will be brought to the attention of Client

Question	Answer (True/False) T/F/NA	Comment
1) The cooler's custody seal, if present, is intact.	NA	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	T	
18) There is sufficient volume for all requsted analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	T	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	NA	
21) Samples do not require splitting or compositing.	T	

Doc #277 Rev. 4 August 2013

Who notified of False statements?
Log-In Technician Initials: CC

Date/Time:
Date/Time: 8.25.14 2000

Meghan Kelley

From: Bhunia, Prasanta [bhuniap@wseinc.com]
Sent: Friday, September 05, 2014 1:03 PM
To: Meghan Kelley
Cc: Bridgeo, Todd
Subject: RE: Charlestown Navy Yard Building 105 Lab Report

Please analyze SB-5 (2'-4').

Prasanta K. Bhunia, Ph.D., LSP
VICE PRESIDENT
Weston&Sampson®
5 Centennial Dr.
Peabody, MA 01960
www.westonandsampson.com
Office: (978) 532-1900
Direct Dial: (978) 573-4006
Direct Fax: (978) 573-4006

-----Original Message-----
From: Meghan Kelley [mailto:mkelley@contestlabs.com]
Sent: Friday, September 05, 2014 12:42 PM
To: Bhunia, Prasanta
Cc: Bridgeo, Todd
Subject: RE: Charlestown Navy Yard Building 105 Lab Report

We have four depths for SB-5, see attached COC. Samples on (2-4) & (4-6) were held, should be analyze those?

-----Original Message-----
From: Bhunia, Prasanta [mailto:bhuniap@wseinc.com]
Sent: Friday, September 05, 2014 12:18 PM
To: Meghan Kelley
Cc: Bridgeo, Todd
Subject: RE: Charlestown Navy Yard Building 105 Lab Report

Hi Meghan,

Okay, but please send the data ASAP.

Now, I would like you run the following samples for PCBs using soxhlet extraction. I understand these samples are on hold. Also, please check the holding time (i.e., I don't want samples to be collected after the holding times).

- SB-4 (2'-4')
- SB-5 - we analyzed 2 samples from this location. Do you have any deeper sample?
- SB-9 (4'-6'
- SB-10 (2'-4')
- SB-13 (4'-6')
- SB-20 (4'-6')

Thank you.

Prasanta

Prasanta K. Bhunia, Ph.D., LSP
VICE PRESIDENT
Weston&SampsonR
5 Centennial Dr.
Peabody, MA 01960
www.westonandsampson.com
Office: (978) 532-1900
Direct Dial: (978) 573-4006
Direct Fax: (978) 573-4006

-----Original Message-----
From: Meghan Kelley [mailto:mkelley@contestlabs.com]
Sent: Friday, September 05, 2014 11:31 AM
To: Bhunia, Prasanta
Subject: RE: Charlestown Navy Yard Building 105 Lab Report

Hi Prasanta,

One of the samples required a PCB re-extract due to low surrogate. The sample will rerun shortly and the final report should be completed for end of day pending any additional QC issues.

-Meghan

-----Original Message-----
From: Bhunia, Prasanta [mailto:bhuniap@wseinc.com]
Sent: Friday, September 05, 2014 11:24 AM
To: 'Meghan Kelley - Contest
Subject: Charlestown Navy Yard Building 105 Lab Report

Hi Meghan,

I am missing some data for the Charlestown Navy Yard Building 105 project.
Please look for Work Order # 14H1273.

Let me know.

Prasanta

Prasanta K. Bhunia, Ph.D., LSP
VICE PRESIDENT
Weston&Sampson(r)

5 Centennial Dr.
Peabody, MA 01960
www.westonandsampson.com<http://www.westonandsampson.com/>
Office: (978) 532-1900
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Direct Fax: (978) 573-4006

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MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 14I0250
Project Location: Charlestown, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

14I0250-01 thru 14I0250-03

Matrices: Soil

CAM Protocol (check all that below)

8260 VOC CAM II A ( )	7470/7471 Hg CAM IIIB ( )	MassDEP VPH CAM IV A ( )	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A ( )	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )
6010 Metals CAM III A ( )	6020 Metals CAM III D ( )	8082 PCB CAM V A (X)	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☐ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]
	A response to questions G, H and I below is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☑ Yes	☐ No[1]
	***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**		
H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☑ Yes	☐ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☑ Yes	☐ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 09/12/14

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

September 15, 2014

Todd Bridgeo
Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960

Project Location: Charlestown
Client Job Number:
Project Number: 2140398
Laboratory Work Order Number: 14I0286

Enclosed are results of analyses for samples received by the laboratory on September 8, 2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960
ATTN: Todd Bridgeo

REPORT DATE: 9/15/2014

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 2140398

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 14I0286

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Charlestown

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
SB-1 (4-6')	14I0286-01	Soil		SM 2540G SW-846 8082A	

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SW-846 8082A

Qualifications:

O-32

A five times dilution was performed as part of the standard analytical procedure.

Analyte & Samples(s) Qualified:

14I0286-01[SB-1 (4-6')]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Tod E. Kopyscinski
Laboratory Director

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown | Sample Description: | Work Order: 14I0286

Date Received: 9/8/2014

Field Sample #: SB-1 (4-6') | Sampled: 8/25/2014 14:15

Sample ID: 14I0286-01

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/9/14	9/11/14 16:20	MJC
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/9/14	9/11/14 16:20	MJC
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/9/14	9/11/14 16:20	MJC
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/9/14	9/11/14 16:20	MJC
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/9/14	9/11/14 16:20	MJC
Aroclor-1254 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/9/14	9/11/14 16:20	MJC
Aroclor-1260 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/9/14	9/11/14 16:20	MJC
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/9/14	9/11/14 16:20	MJC
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	5		SW-846 8082A	9/9/14	9/11/14 16:20	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	112	30-150		9/11/14 16:20
Decachlorobiphenyl [2]	117	30-150		9/11/14 16:20
Tetrachloro-m-xylene [1]	108	30-150		9/11/14 16:20
Tetrachloro-m-xylene [2]	116	30-150		9/11/14 16:20

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown | Sample Description: | Work Order: 14I0286

Date Received: 9/8/2014

Field Sample #: SB-1 (4-6') | Sampled: 8/25/2014 14:15

Sample ID: 14I0286-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	77.2		% Wt	1		SM 2540G	9/8/14	9/9/14 9:36	MRL

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Sample Extraction Data

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
14I0286-01 [SB-1 (4-6')]	B104372	09/08/14

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14I0286-01 [SB-1 (4-6')]	B104515	10.4	10.0	09/09/14

con-test® ANALYTICAL LABORATORY

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B104515 - SW-846 3540C										
Blank (B104515-BLK1)				Prepared: 09/09/14 Analyzed: 09/11/14						
Aroclor-1016	ND	0.020	mg/Kg wet							
Aroclor-1016 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1221	ND	0.020	mg/Kg wet							
Aroclor-1221 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1232	ND	0.020	mg/Kg wet							
Aroclor-1232 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1242	ND	0.020	mg/Kg wet							
Aroclor-1242 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1248	ND	0.020	mg/Kg wet							
Aroclor-1248 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1254	ND	0.020	mg/Kg wet							
Aroclor-1254 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1260	ND	0.020	mg/Kg wet							
Aroclor-1260 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1262	ND	0.020	mg/Kg wet							
Aroclor-1262 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1268	ND	0.020	mg/Kg wet							
Aroclor-1268 [2C]	ND	0.020	mg/Kg wet							
Surrogate: Decachlorobiphenyl	*0.219*		mg/Kg wet	0.200		109	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.217*		mg/Kg wet	0.200		109	30-150			
Surrogate: Tetrachloro-m-xylene	*0.202*		mg/Kg wet	0.200		101	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.208*		mg/Kg wet	0.200		104	30-150			
LCS (B104515-BS1)				Prepared: 09/09/14 Analyzed: 09/11/14						
Aroclor-1016	0.23	0.10	mg/Kg wet	0.200		115	40-140			
Aroclor-1016 [2C]	0.25	0.10	mg/Kg wet	0.200		123	40-140			
Aroclor-1260	0.24	0.10	mg/Kg wet	0.200		120	40-140			
Aroclor-1260 [2C]	0.25	0.10	mg/Kg wet	0.200		125	40-140			
Surrogate: Decachlorobiphenyl	*0.235*		mg/Kg wet	0.200		117	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.240*		mg/Kg wet	0.200		120	30-150			
Surrogate: Tetrachloro-m-xylene	*0.212*		mg/Kg wet	0.200		106	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.229*		mg/Kg wet	0.200		115	30-150			
LCS Dup (B104515-BSD1)				Prepared: 09/09/14 Analyzed: 09/11/14						
Aroclor-1016	0.25	0.10	mg/Kg wet	0.200		125	40-140	8.32	30	
Aroclor-1016 [2C]	0.26	0.10	mg/Kg wet	0.200		130	40-140	5.28	30	
Aroclor-1260	0.25	0.10	mg/Kg wet	0.200		125	40-140	3.75	30	
Aroclor-1260 [2C]	0.26	0.10	mg/Kg wet	0.200		128	40-140	2.84	30	
Surrogate: Decachlorobiphenyl	*0.234*		mg/Kg wet	0.200		117	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.239*		mg/Kg wet	0.200		119	30-150			
Surrogate: Tetrachloro-m-xylene	*0.217*		mg/Kg wet	0.200		109	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.234*		mg/Kg wet	0.200		117	30-150			

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B104515-BS1 Date(s) Analyzed: 09/11/2014 09/11/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.23	
	2	0.00	0.00	0.00	0.25	8
Aroclor-1260	1	0.00	0.00	0.00	0.24	
	2	0.00	0.00	0.00	0.25	4

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B104515-BSD1 Date(s) Analyzed: 09/11/2014 09/11/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.25	
	2	0.00	0.00	0.00	0.26	4
Aroclor-1260	1	0.00	0.00	0.00	0.25	
	2	0.00	0.00	0.00	0.26	4

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
O-32	A five times dilution was performed as part of the standard analytical procedure.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Soil	
Aroclor-1016	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA,NJ

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2015
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2015
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2015
RI	Rhode Island Department of Health	LAO00112	12/30/2014
NC	North Carolina Div. of Water Quality	652	12/31/2014
NJ	New Jersey DEP	MA007 NELAP	06/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2015
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2015
WA	State of Washington Department of Ecology	C2065	02/23/2015
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2014
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2014

con-test ANALYTICAL LABORATORY
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East Longmeadow, MA 01028

CHAIN OF CUSTODY RECORD

~~14H275~~ MK
Rev. 04.05.12
14102816

Page ____ of ____

Company Name: WESTON & SAMPSON
Address: 5 CENTENNIAL DRIVE PEABODY, MA
Attention: TODD BRIDGEO
Project Location: CHARLESTOWN
Sampled By: DTK (781-710-4391)

Telephone: 1800 SAMPSON
Project #: 3140398
Client PO#:

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #:
Email: DUCOT@WSPINC.COM
Format: ○ PDF ○ EXCEL ○ GIS ○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Sonic Code	PCB in SOXHLET	EPH w/TRIGUT SIGE WITHOUT VPH	SRCRA METALS
01	SB-1 (0-6")	8/25	1400		X	S		X		
02	SB-1 (6"-2')		1405					X		
03	SB-1 (2-4') +		1410							
04	SB-1 (4-6')		1415						X	X
05	SB-11 (0-6")		1300					X		
06	SB-11 (6"-2')		1305					X		
07	SB-11 (2-4') +		1310							
08	SB-11 (4-6')		1315						X	X
09	SB-12 (0-6")		1200					X		
10	SB-12 (6"-2')	↓	1205		↓			X		

01 (3)

ANALYSIS REQUESTED

# of Containers	1	6	1
** Preservation	B	AV	A
*** Container Code			

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V=vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other _____

*Matrix Code:
GW = groundwater
WW = wastewater
DW = drinking water
A = air
S = soil/solid
SL = sludge
O = other _____

Comments:
* HOLD (4) Reactivate per attached email MEK 9/18/14

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low, C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Turnaround ††
∞ ☐ 7-Day
☐ 10-Day
☒ Other 5 Day
RUSH *
☐ *24-Hr ☐ *48-Hr
☐ *72-Hr ☐ *4-Day
* Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other:

Is your project MCP or RCP?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
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†† TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

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CHAIN OF CUSTODY RECORD

14H1273
Rev 04.05.12

39 Spruce Street
East longmeadow, MA 01028

Page ____ of ____

Company Name: WESTON & SAMPSON
Address: 5 CENTENNIAL DRIVE
PEABODY MA
Attention: TODD BRIDGEO
Project Location: CHARLESTOWN
Sampled By: PTK 781-710-4391

Telephone: 1800 SAMPSON
Project # 2140398
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email: BRIDGEOT@WSE.INC.COM
Format: ○ PDF ○ EXCEL ○ GIS ○ OTHER ○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes ____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection: Beginning Date/Time	Collection: Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	PCBs w/ SOXHLET	EPH w/ TARGETS	VOCs (8260)	VPH (NO TARGETS)	6 RCRA METALS
								1	2	3	1	2
								A	A	V	V	A
11	SB-12 (2-4')	8/25	12:10		X	S			X	X	X	X
12	SB-12 (4-6)*		12:15									
13	SB-19 (0-6")		10:00					X				
14	SB-19 (6"-2')		10:05					X				
15	SB-19 (2-4')		10:10						X	X	X	X
16	SB-19 (4-6')*		10:15									
17	SB-23 (0-6")		11:00					X				
18	SB-23 (6"-2')		11:05					X				
19	SB-23 (2-4')		11:10						X	X	X	X
20	SB-23 (4-6')*		11:15									

ANALYSIS REQUESTED

# of Containers
** Preservation
***Container Code

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other

Comments: * HOLD

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time:
[signature]	8/27 1200
Received by: (signature) [signature] 8/27/14	Date/Time: 1200
Relinquished by: (signature) [signature] 8/27/14	Date/Time: 400
Received by: (signature) Rebecca Thurst 3.6°C 8/27/14	Date/Time: 1600

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5 Day
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other:

Is your project MCP or RCP?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID #

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WBE/DBE Certified

†† TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

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CHAIN OF CUSTODY RECORD

14H1273

Rev 04.05.12

39 Spruce Street
East longmeadow, MA 01028

Page____of____

Company Name: WESTON & SAMPSON
Telephone: 1800 SAMPSON
Address: 5 CENTENNIAL Drive PEABODY MA
Project #: 2140398
Client PO#
Attention: TODD BRIDGEO
Project Location: CHARLESTOWN
Sampled By: PTK (781-710 4391)

DATA DELIVERY (check all that apply) ○ FAX ○ EMAIL ○ WEBSITE
Fax #
Email
Format: ○ PDF ○ EXCEL ○ GIS ○ OTHER____ ○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes) ○ yes ____ proposal date

# of Containers: 1
** Preservation: A
***Container Code

ANALYSIS REQUESTED: PCBS w/ SOXHLET

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	PCBS w/ SOXHLET
21	SB-3 0-6"	8/25	1600		X	S		X
22	SB-3 (6"-2')	↓	1605		↓	↓		↓
23	CS-1	8/26	10:30					
24	CS-2		11:00					
25	CS-7		11:20					
26	CS-8		12:15					
27	CS-9		12:30					
28	CS-10		13:00					
29	CS-11		13:30					
30	CS-12		14:15					
31	CS-17		14:45					
32	CS-18	↓	15:15		↓	↓		↓

Comments:

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Dissolved Metals: ○ Field Filtered ○ Lab to Filter

***Cont. Code: A=amber glass, G=glass, P=plastic, ST=sterile, V= vial, S=summa can, T=tedlar bag, O=Other

**Preservation: I = Iced, H = HCL, M = Methanol, N = Nitric Acid, S = Sulfuric Acid, B = Sodium bisulfate, X = Na hydroxide, T = Na thiosulfate, O = Other____

*Matrix Code: GW= groundwater, WW= wastewater, DW= drinking water, A = air, S = soil/solid, SL = sludge, O = other____

Relinquished by: (signature)	Date/Time:
[signature]	8/27 1200
Received by: (signature) [signature]	Date/Time: 8/27/14 1245
Relinquished by: (signature) [signature] 8/27/14	Date/Time: 405
Received by: (signature) [signature] 8/27/14	Date/Time: 11005

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5day
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other:

Is your project MCP or RCP ?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID #____

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F: 413-525-6405
www.contestlabs.com

con-test ANALYTICAL LABORATORY

Sample Receipt Checklist

CLIENT NAME: Weston & Sampson RECEIVED BY: RLF DATE: 8/21/14

1) Was the chain(s) of custody relinquished and signed? (Yes) No No CoC Included

2) Does the chain agree with the samples? (Yes) No

If not, explain:

3) Are all the samples in good condition? (Yes) No

If not, explain:

4) How were the samples received:

On Ice ☑ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☑

Were the samples received in Temperature Compliance of (2-6°C)? (Yes) No N/A

Temperature °C by Temp blank _____ Temperature °C by Temp gun 3.6°C

5) Are there Dissolved samples for the lab to filter? Yes (No)

Who was notified _____ Date _____ Time _____

6) Are there any RUSH or SHORT HOLDING TIME samples? Yes (No)

Who was notified _____ Date _____ Time _____

7) Location where samples are stored: 19

Permission to subcontract samples? Yes No

(Walk-in clients only) if not already approved

Client Signature:

8) Do all samples have the proper Acid pH: Yes No (N/A)

9) Do all samples have the proper Base pH: Yes No (N/A)

10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No (N/A)

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	37
500 mL Amber		4 oz amber/clear jar	10
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below	20	Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol 10

Bisulfate 10 # DI Water _____

Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)

Any False statement will be brought to the attention of Client

Question	Answer (True/False) T/F/NA	Comment
1) The cooler's custody seal, if present, is intact.	T	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	T	
18) There is sufficient volume for all requsted analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	NA	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	T	
21) Samples do not require splitting or compositing.	T	

Who notified of False statements? Date/Time:

Doc #277 Rev. 4 August 2013 Log-In Technician Initials: Date/Time:

RF 8/07/14 1605

Meghan Kelley

From: Bhunia, Prasanta [bhuniap@wseinc.com]
Sent: Monday, September 08, 2014 3:16 PM
To: Meghan Kelley
Cc: Bridgeo, Todd
Subject: RE: Charlestown Navy Yard Building 105 Lab Report

Hi Meghan,

Please analyze SB-1 (4'-6') for PCBs using soxhlet extraction.

Thank you.

Prasanta

Prasanta K. Bhunia, Ph.D., LSP
VICE PRESIDENT
Weston&Sampson®
5 Centennial Dr.
Peabody, MA 01960
www.westonandsampson.com
Office: (978) 532-1900
Direct Dial: (978) 573-4006
Direct Fax: (978) 573-4006

-----Original Message-----
From: Bhunia, Prasanta
Sent: Friday, September 05, 2014 4:58 PM
To: 'Meghan Kelley'
Cc: Bridgeo, Todd
Subject: RE: Charlestown Navy Yard Building 105 Lab Report

Yes, 5 day TAT.

Prasanta K. Bhunia, Ph.D., LSP
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Weston&Sampson®
5 Centennial Dr.
Peabody, MA 01960
www.westonandsampson.com
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Direct Dial: (978) 573-4006
Direct Fax: (978) 573-4006

-----Original Message-----

From: Meghan Kelley [mailto:mkelley@contestlabs.com]
Sent: Friday, September 05, 2014 4:14 PM
To: Bhunia, Prasanta
Cc: Bridgeo, Todd
Subject: RE: Charlestown Navy Yard Building 105 Lab Report

Will do Prasanta, 5 day TAT?

-----Original Message-----
From: Bhunia, Prasanta [mailto:bhuniap@wseinc.com]
Sent: Friday, September 05, 2014 1:03 PM
To: Meghan Kelley
Cc: Bridgeo, Todd
Subject: RE: Charlestown Navy Yard Building 105 Lab Report

Please analyze SB-5 (2'-4').

Prasanta K. Bhunia, Ph.D., LSP
VICE PRESIDENT
Weston&SampsonR
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Peabody, MA 01960
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Office: (978) 532-1900
Direct Dial: (978) 573-4006
Direct Fax: (978) 573-4006

-----Original Message-----
From: Meghan Kelley [mailto:mkelley@contestlabs.com]
Sent: Friday, September 05, 2014 12:42 PM
To: Bhunia, Prasanta
Cc: Bridgeo, Todd
Subject: RE: Charlestown Navy Yard Building 105 Lab Report

We have four depths for SB-5, see attached COC. Samples on (2-4) & (4-6) were held, should be analyze those?

-----Original Message-----
From: Bhunia, Prasanta [mailto:bhuniap@wseinc.com]
Sent: Friday, September 05, 2014 12:18 PM
To: Meghan Kelley
Cc: Bridgeo, Todd
Subject: RE: Charlestown Navy Yard Building 105 Lab Report

Hi Meghan,

Okay, but please send the data ASAP.

Now, I would like you run the following samples for PCBs using soxhlet extraction. I understand these samples are on hold. Also, please check the holding time (i.e., I don't want samples to be collected after the holding times).

- SB-4 (2'-4')
- SB-5 - we analyzed 2 samples from this location. Do you have any deeper sample?
- SB-9 (4'-6'
- SB-10 (2'-4')
- SB-13 (4'-6')
- SB-20 (4'-6')

Thank you.

Prasanta

Prasanta K. Bhunia, Ph.D., LSP
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Peabody, MA 01960
www.westonandsampson.com
Office: (978) 532-1900
Direct Dial: (978) 573-4006
Direct Fax: (978) 573-4006

-----Original Message-----
From: Meghan Kelley [mailto:mkelley@contestlabs.com]
Sent: Friday, September 05, 2014 11:31 AM
To: Bhunia, Prasanta
Subject: RE: Charlestown Navy Yard Building 105 Lab Report

Hi Prasanta,

One of the samples required a PCB re-extract due to low surrogate. The sample will rerun shortly and the final report should be completed for end of day pending any additional QC issues.

-Meghan

-----Original Message-----
From: Bhunia, Prasanta [mailto:bhuniap@wseinc.com]
Sent: Friday, September 05, 2014 11:24 AM
To: 'Meghan Kelley - Contest
Subject: Charlestown Navy Yard Building 105 Lab Report

Hi Meghan,

I am missing some data for the Charlestown Navy Yard Building 105 project.
Please look for Work Order # 14H1273.

Let me know.

Prasanta

Prasanta K. Bhunia, Ph.D., LSP
VICE PRESIDENT
Weston&Sampson(r)
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Peabody, MA 01960
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MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 14I0286
Project Location: Charlestown	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

14I0286-01

Matrices: Soil

CAM Protocol (check all that below)

8260 VOC CAM II A ( )	7470/7471 Hg CAM IIIB ( )	MassDEP VPH CAM IV A ( )	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A ( )	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )
6010 Metals CAM III A ( )	6020 Metals CAM III D ( )	8082 PCB CAM V A (X)	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☐ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]

A response to questions G, H and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☑ Yes	☐ No[1]

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☑ Yes	☐ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☑ Yes	☐ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Tod Kopyscinski Position: Laboratory Director

Printed Name: Tod E. Kopyscinski Date: 09/15/14

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

September 29, 2014

Todd Bridgeo
Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960

Project Location: 105 First Ave., Charlestown, MA
Client Job Number:
Project Number: [none]
Laboratory Work Order Number: 14I0946

Enclosed are results of analyses for samples received by the laboratory on September 19, 2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960
ATTN: Todd Bridgeo

REPORT DATE: 9/29/2014

PURCHASE ORDER NUMBER:

PROJECT NUMBER: [none]

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 14I0946

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 105 First Ave., Charlestown, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-101	14I0946-01	Ground Water		MADEP-VPH-04-1.1	
				SW-846 6010C	
				SW-846 7470A	
				SW-846 8260C	
MW-WS1	14I0946-02	Ground Water		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SW-846 6010C	
				SW-846 7470A	
				SW-846 8082A	
				SW-846 8260C	
MW-20	14I0946-03	Ground Water		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SW-846 6010C	
				SW-846 7470A	
				SW-846 8082A	
				SW-846 8260C	
MW-EX02	14I0946-04	Ground Water		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SW-846 6010C	
				SW-846 7470A	
				SW-846 8082A	
				SW-846 8260C	
MW-EX01	14I0946-05	Ground Water		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SW-846 6010C	
				SW-846 7470A	
				SW-846 8082A	
				SW-846 8260C	
MW-EX03	14I0946-06	Ground Water		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SW-846 6010C	
				SW-846 7470A	
				SW-846 8082A	
				SW-846 8260C	
MW-102A	14I0946-07	Ground Water		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SW-846 6010C	
				SW-846 7470A	
				SW-846 8082A	
				SW-846 8260C	
Trip Blank	14I0946-08	Trip Blank Water		SW-846 8260C	

con-test® ANALYTICAL LABORATORY

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

For method 6010, only RCRA 8 metals were requested and reported.

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MADEP-EPH-04-1.1

Qualifications:

L-04

Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

C9-C18 Aliphatics
14I0946-02[MW-WS1], 14I0946-03[MW-20], 14I0946-05[MW-EX01], 14I0946-05RE1[MW-EX01], 14I0946-06[MW-EX03], 14I0946-06RE1[MW-EX03], 14I0946-07[MW-102A], 14I0946-07RE1[MW-102A], B105730-BLK1, B105838-BLK1

n-Decane
B105730-BLK1, B105730-BS1, B105730-BSD1, B105838-BLK1, B105838-BS1, B105838-BSD1

n-Dodecane
B105838-BLK1, B105838-BS1, B105838-BSD1

n-Nonane
B105730-BLK1, B105730-BS1, B105730-BSD1, B105838-BLK1, B105838-BS1, B105838-BSD1

L-07A

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD outside of control limits. Reduced precision anticipated for any reported result for this compound.

Analyte & Samples(s) Qualified:

C9-C18 Aliphatics
14I0946-04[MW-EX02], B105499-BLK1

n-Decane
B105499-BLK1, B105499-BS1, B105499-BSD1

n-Nonane
B105499-BLK1, B105499-BS1, B105499-BSD1

R-05

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:

C9-C18 Aliphatics
14I0946-02[MW-WS1], 14I0946-03[MW-20], 14I0946-05[MW-EX01], 14I0946-05RE1[MW-EX01], 14I0946-06[MW-EX03], 14I0946-06RE1[MW-EX03], 14I0946-07[MW-102A], 14I0946-07RE1[MW-102A], B105730-BLK1, B105838-BLK1

n-Decane
B105730-BLK1, B105730-BS1, B105730-BSD1, B105838-BLK1, B105838-BS1, B105838-BSD1

n-Nonane
B105838-BLK1, B105838-BS1, B105838-BSD1

S-03

Surrogate recovery outside of control limits due to suspected sample matrix interference.

Analyte & Samples(s) Qualified:

o-Terphenyl (OTP)
14I0946-06RE1[MW-EX03]

S-19

Surrogate recovery is outside of control limits, matrix interference suspected. Reanalysis yielded similar surrogate non-conformance.

Analyte & Samples(s) Qualified:

Chlorooctadecane (COD)
14I0946-05[MW-EX01], 14I0946-05RE1[MW-EX01], 14I0946-06[MW-EX03], 14I0946-06RE1[MW-EX03], 14I0946-07[MW-102A], 14I0946-07RE1[MW-102A]

o-Terphenyl (OTP)
14I0946-05[MW-EX01], 14I0946-05RE1[MW-EX01], 14I0946-07[MW-102A], 14I0946-07RE1[MW-102A]

MADEP-VPH-04-1.1

Qualifications:

con-test® ANALYTICAL LABORATORY
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RL-14

Elevated reporting limit due to foaming sample matrix. MA CAM reporting limit not met.

Analyte & Samples(s) Qualified:

C5-C8 Aliphatics
14I0946-05[MW-EX01]

C9-C10 Aromatics
14I0946-05[MW-EX01]

C9-C12 Aliphatics
14I0946-05[MW-EX01]

Naphthalene
14I0946-05[MW-EX01]

Unadjusted C5-C8 Aliphatics
14I0946-05[MW-EX01]

Unadjusted C9-C12 Aliphatics
14I0946-05[MW-EX01]

SW-846 6010C

Qualifications:

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

Selenium
B105452-BS1

MS-14

Matrix spike recovery is outside of control limits. Data validation is not affected since sample result is "not detected" and recovery bias is on the high side for this compound.

Analyte & Samples(s) Qualified:

Selenium
14I0946-01[MW-101], B105452-MS1

SW-846 8082A

Qualifications:

S-12

Surrogate recovery is outside of control limits on confirmatory column, but within control limits on primary column. Data validation is not affected.

Analyte & Samples(s) Qualified:

Tetrachloro-m-xylene
14I0946-04[MW-EX02]

SW-846 8260C

Qualifications:

L-02

Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.

Analyte & Samples(s) Qualified:

Bromoform
B105853-BS1, B105853-BSD1

L-04

Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

Bromomethane
14I0946-01[MW-101], 14I0946-02[MW-WS1], 14I0946-03[MW-20], 14I0946-04[MW-EX02], 14I0946-05[MW-EX01], 14I0946-06[MW-EX03], 14I0946-07[MW-102A], 14I0946-08[Trip Blank], B105853-BLK1, B105853-BS1, B105853-BSD1

Vinyl Chloride
14I0946-01[MW-101], 14I0946-02[MW-WS1], 14I0946-03[MW-20], 14I0946-04[MW-EX02], 14I0946-05[MW-EX01], 14I0946-06[MW-EX03], 14I0946-07[MW-102A], 14I0946-08[Trip Blank], B105853-BLK1, B105853-BS1, B105853-BSD1

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L-06

Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the high side.

Analyte & Samples(s) Qualified:

Acetone

14I0946-05[MW-EX01], 14I0946-06[MW-EX03], B105853-BS1, B105853-BSD1

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

2-Butanone (MEK)

B105853-BS1

L-14

Compound classified by MA CAM as difficult with acceptable recoveries of 40-160%. Recovery does not meet 70-130% criteria but does meet difficult compound criteria.

Analyte & Samples(s) Qualified:

2-Butanone (MEK)

B105853-BSD1

2-Hexanone (MBK)

B105853-BS1

Chloromethane

B105853-BS1, B105853-BSD1

Dichlorodifluoromethane (Freon 1

B105853-BS1, B105853-BSD1

RL-07

Elevated reporting limit based on lowest point in calibration.
MA CAM reporting limit not met.

Analyte & Samples(s) Qualified:

1,2-Dibromo-3-chloropropane (DB

14I0946-01[MW-101], 14I0946-02[MW-WS1], 14I0946-03[MW-20], 14I0946-06[MW-EX03], 14I0946-07[MW-102A], 14I0946-08[Trip Blank]

1,2-Dichloroethane

14I0946-01[MW-101], 14I0946-02[MW-WS1], 14I0946-03[MW-20], 14I0946-06[MW-EX03], 14I0946-07[MW-102A], 14I0946-08[Trip Blank]

Bromomethane

14I0946-01[MW-101], 14I0946-02[MW-WS1], 14I0946-03[MW-20], 14I0946-06[MW-EX03], 14I0946-07[MW-102A], 14I0946-08[Trip Blank]

Carbon Disulfide

14I0946-01[MW-101], 14I0946-02[MW-WS1], 14I0946-03[MW-20], 14I0946-06[MW-EX03], 14I0946-07[MW-102A], 14I0946-08[Trip Blank]

Chloromethane

14I0946-01[MW-101], 14I0946-02[MW-WS1], 14I0946-03[MW-20], 14I0946-06[MW-EX03], 14I0946-07[MW-102A], 14I0946-08[Trip Blank]

Methylene Chloride

14I0946-01[MW-101], 14I0946-02[MW-WS1], 14I0946-03[MW-20], 14I0946-06[MW-EX03], 14I0946-07[MW-102A], 14I0946-08[Trip Blank]

RL-09

Elevated reporting limit due to high concentration of an interfering analyte(s). MA CAM reporting limit not met.

Analyte & Samples(s) Qualified:

14I0946-04[MW-EX02]

RL-14

Elevated reporting limit due to foaming sample matrix. MA CAM reporting limit not met.

Analyte & Samples(s) Qualified:

14I0946-05[MW-EX01]

V-05

Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

Bromomethane

14I0946-01[MW-101], 14I0946-02[MW-WS1], 14I0946-03[MW-20], 14I0946-04[MW-EX02], 14I0946-05[MW-EX01], 14I0946-06[MW-EX03], 14I0946-07[MW-102A], 14I0946-08[Trip Blank], B105853-BLK1, B105853-BS1, B105853-BSD1

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V-16

Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.

Analyte & Samples(s) Qualified:

1,4-Dioxane

14I0946-01[MW-101], 14I0946-02[MW-WS1], 14I0946-03[MW-20], 14I0946-04[MW-EX02], 14I0946-05[MW-EX01], 14I0946-06[MW-EX03], 14I0946-07[MW-102A], 14I0946-08[Trip Blank], B105853-BLK1, B105853-BS1, B105853-BSD1

Tetrahydrofuran

14I0946-01[MW-101], 14I0946-02[MW-WS1], 14I0946-03[MW-20], 14I0946-04[MW-EX02], 14I0946-05[MW-EX01], 14I0946-06[MW-EX03], 14I0946-07[MW-102A], 14I0946-08[Trip Blank], B105853-BLK1, B105853-BS1, B105853-BSD1

V-20

Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

Bromochloromethane

B105853-BS1, B105853-BSD1

MADEP-EPH-04-1.1

SPE cartridge contamination with non-petroleum compounds, if present, is verified by GC/MS in each method blank per extraction batch and excluded from C11-C22 aromatic range fraction in all samples in the batch. No significant modifications were made to the method.

MADEP-VPH-04-1.1

No significant modifications were made to the method. All VPH samples were received preserved properly at pH <2 in the proper containers as specified on the chain-of-custody form unless specified in this narrative.

SW-846 8260C

Laboratory control sample recoveries for required MCP Data Enhancement 8260 compounds were all within limits specified by the method except for “difficult analytes” where recovery control limits of 40-160% are used and/or unless otherwise listed in this narrative. Difficult analytes: MIBK, MEK, acetone, 1,4-dioxane, chloromethane, dichlorodifluoromethane, 2-hexanone, and bromomethane.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Daren J. Damboragian
Laboratory Manager

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-101 Sampled: 9/19/2014 09:00

Sample ID: 14I0946-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	20	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Bromodichloromethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Bromomethane	ND	5.0	µg/L	1	L-04, RL-07, V-05	SW-846 8260C	9/26/14	9/27/14 6:29	EEH
2-Butanone (MEK)	ND	50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Carbon Disulfide	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Carbon Tetrachloride	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Chloromethane	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 6:29	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,2-Dichloroethane	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
cis-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
trans-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-101 Sampled: 9/19/2014 09:00

Sample ID: 14I0946-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Methylene Chloride	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 6:29	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Naphthalene	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Tetrahydrofuran	ND	2.0	µg/L	1	V-16	SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,2,3-Trichlorobenzene	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
Vinyl Chloride	ND	2.0	µg/L	1	L-04	SW-846 8260C	9/26/14	9/27/14 6:29	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:29	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	98.0	70-130		9/27/14 6:29
Toluene-d8	98.2	70-130		9/27/14 6:29
4-Bromofluorobenzene	92.9	70-130		9/27/14 6:29

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-101 Sampled: 9/19/2014 09:00

Sample ID: 14I0946-01

Sample Matrix: Ground Water

Petroleum Hydrocarbons Analyses - VPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/23/14 23:35	EEH
C5-C8 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/23/14 23:35	EEH
Unadjusted C9-C12 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/23/14 23:35	EEH
C9-C12 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/23/14 23:35	EEH
C9-C10 Aromatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/23/14 23:35	EEH
Benzene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/23/14 23:35	EEH
Ethylbenzene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/23/14 23:35	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/23/14 23:35	EEH
Naphthalene	ND	5.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/23/14 23:35	EEH
Toluene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/23/14 23:35	EEH
m+p Xylene	ND	2.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/23/14 23:35	EEH
o-Xylene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/23/14 23:35	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,5-Dibromotoluene (FID)	103	70-130		9/23/14 23:35
2,5-Dibromotoluene (PID)	96.6	70-130		9/23/14 23:35

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-101 Sampled: 9/19/2014 09:00

Sample ID: 14I0946-01

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	0.010	mg/L	1		SW-846 6010C	9/22/14	9/24/14 0:35	OP
Barium	ND	0.050	mg/L	1		SW-846 6010C	9/22/14	9/23/14 16:26	OP
Cadmium	ND	0.0040	mg/L	1		SW-846 6010C	9/22/14	9/23/14 16:26	OP
Chromium	ND	0.010	mg/L	1		SW-846 6010C	9/22/14	9/23/14 16:26	OP
Lead	ND	0.010	mg/L	1		SW-846 6010C	9/22/14	9/23/14 16:26	OP
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	9/23/14	9/24/14 12:03	SCB
Selenium	ND	0.050	mg/L	1	MS-14	SW-846 6010C	9/22/14	9/24/14 0:35	OP
Silver	ND	0.0050	mg/L	1		SW-846 6010C	9/22/14	9/24/14 0:35	OP

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-WS1 Sampled: 9/19/2014 11:20

Sample ID: 14I0946-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	20	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Bromodichloromethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Bromomethane	ND	5.0	µg/L	1	L-04, RL-07, V-05	SW-846 8260C	9/26/14	9/27/14 6:56	EEH
2-Butanone (MEK)	ND	50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Carbon Disulfide	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Carbon Tetrachloride	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Chloromethane	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 6:56	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,2-Dichloroethane	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
cis-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
trans-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-WS1 Sampled: 9/19/2014 11:20

Sample ID: 14I0946-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Methylene Chloride	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 6:56	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Naphthalene	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Tetrahydrofuran	ND	2.0	µg/L	1	V-16	SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,2,3-Trichlorobenzene	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
Vinyl Chloride	ND	2.0	µg/L	1	L-04	SW-846 8260C	9/26/14	9/27/14 6:56	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:56	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	105	70-130		9/27/14 6:56
Toluene-d8	97.1	70-130		9/27/14 6:56
4-Bromofluorobenzene	93.8	70-130		9/27/14 6:56

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-WS1 Sampled: 9/19/2014 11:20

Sample ID: 14I0946-02

Sample Matrix: Ground Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/24/14 23:20	MJC
Aroclor-1221 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/24/14 23:20	MJC
Aroclor-1232 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/24/14 23:20	MJC
Aroclor-1242 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/24/14 23:20	MJC
Aroclor-1248 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/24/14 23:20	MJC
Aroclor-1254 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/24/14 23:20	MJC
Aroclor-1260 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/24/14 23:20	MJC
Aroclor-1262 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/24/14 23:20	MJC
Aroclor-1268 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/24/14 23:20	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	61.7	30-150		9/24/14 23:20
Decachlorobiphenyl [2]	67.6	30-150		9/24/14 23:20
Tetrachloro-m-xylene [1]	76.8	30-150		9/24/14 23:20
Tetrachloro-m-xylene [2]	87.9	30-150		9/24/14 23:20

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-WS1 Sampled: 9/19/2014 11:20

Sample ID: 14I0946-02

Sample Matrix: Ground Water

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	210	100	µg/L	1	L-04, R-05	MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS
C19-C36 Aliphatics	ND	100	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS
Unadjusted C11-C22 Aromatics	250	100	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS
C11-C22 Aromatics	250	100	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS
Acenaphthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS
Acenaphthylene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS
Anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS
Benzo(a)anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS
Benzo(a)pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS
Benzo(b)fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS
Benzo(g,h,i)perylene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS
Benzo(k)fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS
Chrysene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS
Dibenz(a,h)anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS
Fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS
Fluorene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS
Indeno(1,2,3-cd)pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS
2-Methylnaphthalene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS
Naphthalene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS
Phenanthrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS
Pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:32	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	43.9	40-140		9/26/14 8:32
o-Terphenyl (OTP)	53.7	40-140		9/26/14 8:32
2-Bromonaphthalene	90.7	40-140		9/26/14 8:32
2-Fluorobiphenyl	102	40-140		9/26/14 8:32

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-WS1 Sampled: 9/19/2014 11:20

Sample ID: 14I0946-02

Sample Matrix: Ground Water

Petroleum Hydrocarbons Analyses - VPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:11	EEH
C5-C8 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:11	EEH
Unadjusted C9-C12 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:11	EEH
C9-C12 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:11	EEH
C9-C10 Aromatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:11	EEH
Benzene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:11	EEH
Ethylbenzene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:11	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:11	EEH
Naphthalene	ND	5.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:11	EEH
Toluene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:11	EEH
m+p Xylene	ND	2.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:11	EEH
o-Xylene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:11	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
2,5-Dibromotoluene (FID)	102	70-130		9/24/14	0:11
2,5-Dibromotoluene (PID)	101	70-130		9/24/14	0:11

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-WS1 Sampled: 9/19/2014 11:20

Sample ID: 14I0946-02

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	0.010	mg/L	1		SW-846 6010C	9/22/14	9/24/14 0:56	OP
Barium	0.058	0.050	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:08	OP
Cadmium	ND	0.0040	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:08	OP
Chromium	ND	0.010	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:08	OP
Lead	ND	0.010	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:08	OP
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	9/23/14	9/24/14 12:05	SCB
Selenium	ND	0.050	mg/L	1		SW-846 6010C	9/22/14	9/24/14 0:56	OP
Silver	ND	0.0050	mg/L	1		SW-846 6010C	9/22/14	9/24/14 0:56	OP

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-20 Sampled: 9/19/2014 08:00

Sample ID: 14I0946-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	20	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Bromodichloromethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Bromomethane	ND	5.0	µg/L	1	L-04, RL-07, V-05	SW-846 8260C	9/26/14	9/27/14 7:23	EEH
2-Butanone (MEK)	ND	50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Carbon Disulfide	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Carbon Tetrachloride	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Chloromethane	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 7:23	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,2-Dichloroethane	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
cis-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
trans-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-20 Sampled: 9/19/2014 08:00

Sample ID: 14I0946-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Methylene Chloride	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 7:23	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Naphthalene	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Tetrahydrofuran	ND	2.0	µg/L	1	V-16	SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,2,3-Trichlorobenzene	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
Vinyl Chloride	ND	2.0	µg/L	1	L-04	SW-846 8260C	9/26/14	9/27/14 7:23	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 7:23	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	102	70-130		9/27/14 7:23
Toluene-d8	96.2	70-130		9/27/14 7:23
4-Bromofluorobenzene	93.5	70-130		9/27/14 7:23

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-20 Sampled: 9/19/2014 08:00

Sample ID: 14I0946-03

Sample Matrix: Ground Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/24/14 23:33	MJC
Aroclor-1221 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/24/14 23:33	MJC
Aroclor-1232 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/24/14 23:33	MJC
Aroclor-1242 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/24/14 23:33	MJC
Aroclor-1248 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/24/14 23:33	MJC
Aroclor-1254 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/24/14 23:33	MJC
Aroclor-1260 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/24/14 23:33	MJC
Aroclor-1262 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/24/14 23:33	MJC
Aroclor-1268 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/24/14 23:33	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	64.0	30-150		9/24/14 23:33
Decachlorobiphenyl [2]	71.2	30-150		9/24/14 23:33
Tetrachloro-m-xylene [1]	77.6	30-150		9/24/14 23:33
Tetrachloro-m-xylene [2]	89.1	30-150		9/24/14 23:33

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-20 Sampled: 9/19/2014 08:00

Sample ID: 14I0946-03

Sample Matrix: Ground Water

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	200	100	µg/L	1	L-04, R-05	MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS
C19-C36 Aliphatics	ND	100	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS
Unadjusted C11-C22 Aromatics	300	100	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS
C11-C22 Aromatics	300	100	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS
Acenaphthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS
Acenaphthylene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS
Anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS
Benzo(a)anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS
Benzo(a)pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS
Benzo(b)fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS
Benzo(g,h,i)perylene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS
Benzo(k)fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS
Chrysene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS
Dibenz(a,h)anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS
Fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS
Fluorene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS
Indeno(1,2,3-cd)pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS
2-Methylnaphthalene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS
Naphthalene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS
Phenanthrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS
Pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 8:53	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	44.1	40-140		9/26/14 8:53
o-Terphenyl (OTP)	56.4	40-140		9/26/14 8:53
2-Bromonaphthalene	96.4	40-140		9/26/14 8:53
2-Fluorobiphenyl	106	40-140		9/26/14 8:53

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-20 Sampled: 9/19/2014 08:00

Sample ID: 14I0946-03

Sample Matrix: Ground Water

Petroleum Hydrocarbons Analyses - VPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:47	EEH
C5-C8 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:47	EEH
Unadjusted C9-C12 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:47	EEH
C9-C12 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:47	EEH
C9-C10 Aromatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:47	EEH
Benzene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:47	EEH
Ethylbenzene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:47	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:47	EEH
Naphthalene	ND	5.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:47	EEH
Toluene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:47	EEH
m+p Xylene	ND	2.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:47	EEH
o-Xylene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 0:47	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,5-Dibromotoluene (FID)	97.9	70-130		9/24/14 0:47
2,5-Dibromotoluene (PID)	99.5	70-130		9/24/14 0:47

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-20 Sampled: 9/19/2014 08:00

Sample ID: 14I0946-03

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	0.010	mg/L	1		SW-846 6010C	9/22/14	9/24/14 1:00	OP
Barium	0.058	0.050	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:12	OP
Cadmium	ND	0.0040	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:12	OP
Chromium	ND	0.010	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:12	OP
Lead	ND	0.010	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:12	OP
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	9/23/14	9/24/14 12:06	SCB
Selenium	ND	0.050	mg/L	1		SW-846 6010C	9/22/14	9/24/14 1:00	OP
Silver	ND	0.0050	mg/L	1		SW-846 6010C	9/22/14	9/24/14 1:00	OP

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-EX02 Sampled: 9/16/2014 12:00

Sample ID: 14I0946-04

Sample Matrix: Ground Water

Sample Flags: RL-09

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	40	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
tert-Amyl Methyl Ether (TAME)	ND	1.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Benzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Bromobenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Bromochloromethane	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Bromodichloromethane	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Bromoform	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Bromomethane	ND	10	µg/L	2	L-04, V-05	SW-846 8260C	9/26/14	9/27/14 7:49	EEH
2-Butanone (MEK)	ND	100	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
n-Butylbenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
sec-Butylbenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
tert-Butylbenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	1.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Carbon Disulfide	ND	10	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Carbon Tetrachloride	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Chlorobenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Chlorodibromomethane	ND	1.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Chloroethane	ND	4.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Chloroform	ND	4.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Chloromethane	ND	10	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
2-Chlorotoluene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
4-Chlorotoluene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	10	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,2-Dibromoethane (EDB)	ND	1.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Dibromomethane	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,2-Dichlorobenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,3-Dichlorobenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,4-Dichlorobenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Dichlorodifluoromethane (Freon 12)	ND	4.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,1-Dichloroethane	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,2-Dichloroethane	ND	10	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,1-Dichloroethylene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
cis-1,2-Dichloroethylene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
trans-1,2-Dichloroethylene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,2-Dichloropropane	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,3-Dichloropropane	ND	1.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
2,2-Dichloropropane	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,1-Dichloropropene	ND	1.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
cis-1,3-Dichloropropene	ND	0.80	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
trans-1,3-Dichloropropene	ND	0.80	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Diethyl Ether	ND	4.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Diisopropyl Ether (DIPE)	ND	1.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,4-Dioxane	ND	100	µg/L	2	V-16	SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Ethylbenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-EX02 Sampled: 9/16/2014 12:00

Sample ID: 14I0946-04

Sample Matrix: Ground Water

Sample Flags: RL-09

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	1.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
2-Hexanone (MBK)	ND	20	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Isopropylbenzene (Cumene)	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
p-Isopropyltoluene (p-Cymene)	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Methyl tert-Butyl Ether (MTBE)	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Methylene Chloride	ND	10	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
4-Methyl-2-pentanone (MIBK)	ND	20	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Naphthalene	ND	4.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
n-Propylbenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Styrene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,1,1,2-Tetrachloroethane	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,1,2,2-Tetrachloroethane	ND	1.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Tetrachloroethylene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Tetrahydrofuran	ND	4.0	µg/L	2	V-16	SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Toluene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,2,3-Trichlorobenzene	ND	4.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,2,4-Trichlorobenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,1,1-Trichloroethane	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,1,2-Trichloroethane	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Trichloroethylene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Trichlorofluoromethane (Freon 11)	ND	4.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,2,3-Trichloropropane	ND	4.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,2,4-Trimethylbenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
1,3,5-Trimethylbenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
Vinyl Chloride	ND	4.0	µg/L	2	L-04	SW-846 8260C	9/26/14	9/27/14 7:49	EEH
m+p Xylene	ND	4.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH
o-Xylene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 7:49	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	103	70-130		9/27/14 7:49
Toluene-d8	96.2	70-130		9/27/14 7:49
4-Bromofluorobenzene	93.3	70-130		9/27/14 7:49

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-EX02 Sampled: 9/16/2014 12:00

Sample ID: 14I0946-04

Sample Matrix: Ground Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [2]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:20	MJC
Aroclor-1221 [2]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:20	MJC
Aroclor-1232 [2]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:20	MJC
Aroclor-1242 [2]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:20	MJC
Aroclor-1248 [2]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:20	MJC
Aroclor-1254 [2]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:20	MJC
Aroclor-1260 [2]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:20	MJC
Aroclor-1262 [2]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:20	MJC
Aroclor-1268 [2]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:20	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	87.1	30-150		9/25/14 15:20
Decachlorobiphenyl [2]	98.1	30-150		9/25/14 15:20
Tetrachloro-m-xylene [1]	**549** *	30-150	S-12	9/25/14 15:20
Tetrachloro-m-xylene [2]	90.4	30-150		9/25/14 15:20

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-EX02 Sampled: 9/16/2014 12:00

Sample ID: 14I0946-04

Sample Matrix: Ground Water

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	ND	100	µg/L	1	L-07A	MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS
C19-C36 Aliphatics	ND	100	µg/L	1		MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS
Unadjusted C11-C22 Aromatics	160	100	µg/L	1		MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS
C11-C22 Aromatics	160	100	µg/L	1		MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS
Acenaphthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS
Acenaphthylene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS
Anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS
Benzo(a)anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS
Benzo(a)pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS
Benzo(b)fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS
Benzo(g,h,i)perylene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS
Benzo(k)fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS
Chrysene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS
Dibenz(a,h)anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS
Fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS
Fluorene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS
Indeno(1,2,3-cd)pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS
2-Methylnaphthalene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS
Naphthalene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS
Phenanthrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS
Pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/23/14	9/24/14 18:03	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	63.3	40-140		9/24/14 18:03
o-Terphenyl (OTP)	77.6	40-140		9/24/14 18:03
2-Bromonaphthalene	80.1	40-140		9/24/14 18:03
2-Fluorobiphenyl	92.0	40-140		9/24/14 18:03

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-EX02 Sampled: 9/16/2014 12:00

Sample ID: 14I0946-04

Sample Matrix: Ground Water

Petroleum Hydrocarbons Analyses - VPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 1:23	EEH
C5-C8 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 1:23	EEH
Unadjusted C9-C12 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 1:23	EEH
C9-C12 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 1:23	EEH
C9-C10 Aromatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 1:23	EEH
Benzene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 1:23	EEH
Ethylbenzene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 1:23	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 1:23	EEH
Naphthalene	ND	5.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 1:23	EEH
Toluene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 1:23	EEH
m+p Xylene	ND	2.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 1:23	EEH
o-Xylene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 1:23	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
2,5-Dibromotoluene (FID)	90.6	70-130		9/24/14	1:23
2,5-Dibromotoluene (PID)	86.7	70-130		9/24/14	1:23

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-EX02 Sampled: 9/16/2014 12:00

Sample ID: 14I0946-04

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	0.023	0.010	mg/L	1		SW-846 6010C	9/22/14	9/24/14 1:04	OP
Barium	0.073	0.050	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:17	OP
Cadmium	ND	0.0040	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:17	OP
Chromium	ND	0.010	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:17	OP
Lead	ND	0.010	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:17	OP
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	9/23/14	9/24/14 12:08	SCB
Selenium	ND	0.050	mg/L	1		SW-846 6010C	9/22/14	9/24/14 1:04	OP
Silver	ND	0.0050	mg/L	1		SW-846 6010C	9/22/14	9/24/14 1:04	OP

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-EX01 Sampled: 9/19/2014 14:30

Sample ID: 14I0946-05

Sample Matrix: Ground Water

Sample Flags: RL-14

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	55	40	µg/L	2	L-06	SW-846 8260C	9/26/14	9/27/14 8:16	EEH
tert-Amyl Methyl Ether (TAME)	ND	1.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Benzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Bromobenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Bromochloromethane	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Bromodichloromethane	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Bromoform	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Bromomethane	ND	10	µg/L	2	L-04, V-05	SW-846 8260C	9/26/14	9/27/14 8:16	EEH
2-Butanone (MEK)	ND	100	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
n-Butylbenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
sec-Butylbenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
tert-Butylbenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	1.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Carbon Disulfide	ND	10	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Carbon Tetrachloride	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Chlorobenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Chlorodibromomethane	ND	1.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Chloroethane	ND	4.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Chloroform	ND	4.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Chloromethane	ND	10	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
2-Chlorotoluene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
4-Chlorotoluene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	10	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,2-Dibromoethane (EDB)	ND	1.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Dibromomethane	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,2-Dichlorobenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,3-Dichlorobenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,4-Dichlorobenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Dichlorodifluoromethane (Freon 12)	ND	4.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,1-Dichloroethane	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,2-Dichloroethane	ND	10	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,1-Dichloroethylene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
cis-1,2-Dichloroethylene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
trans-1,2-Dichloroethylene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,2-Dichloropropane	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,3-Dichloropropane	ND	1.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
2,2-Dichloropropane	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,1-Dichloropropene	ND	1.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
cis-1,3-Dichloropropene	ND	0.80	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
trans-1,3-Dichloropropene	ND	0.80	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Diethyl Ether	ND	4.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Diisopropyl Ether (DIPE)	ND	1.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,4-Dioxane	ND	100	µg/L	2	V-16	SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Ethylbenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-EX01 Sampled: 9/19/2014 14:30

Sample ID: 14I0946-05

Sample Matrix: Ground Water

Sample Flags: RL-14

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	1.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
2-Hexanone (MBK)	ND	20	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Isopropylbenzene (Cumene)	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
p-Isopropyltoluene (p-Cymene)	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Methyl tert-Butyl Ether (MTBE)	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Methylene Chloride	ND	10	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
4-Methyl-2-pentanone (MIBK)	ND	20	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Naphthalene	ND	4.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
n-Propylbenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Styrene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,1,1,2-Tetrachloroethane	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,1,2,2-Tetrachloroethane	ND	1.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Tetrachloroethylene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Tetrahydrofuran	ND	4.0	µg/L	2	V-16	SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Toluene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,2,3-Trichlorobenzene	ND	4.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,2,4-Trichlorobenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,1,1-Trichloroethane	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,1,2-Trichloroethane	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Trichloroethylene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Trichlorofluoromethane (Freon 11)	ND	4.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,2,3-Trichloropropane	ND	4.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,2,4-Trimethylbenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
1,3,5-Trimethylbenzene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
Vinyl Chloride	ND	4.0	µg/L	2	L-04	SW-846 8260C	9/26/14	9/27/14 8:16	EEH
m+p Xylene	ND	4.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH
o-Xylene	ND	2.0	µg/L	2		SW-846 8260C	9/26/14	9/27/14 8:16	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	101	70-130		9/27/14 8:16
Toluene-d8	96.2	70-130		9/27/14 8:16
4-Bromofluorobenzene	91.7	70-130		9/27/14 8:16

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-EX01 Sampled: 9/19/2014 14:30

Sample ID: 14I0946-05

Sample Matrix: Ground Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:33	MJC
Aroclor-1221 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:33	MJC
Aroclor-1232 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:33	MJC
Aroclor-1242 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:33	MJC
Aroclor-1248 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:33	MJC
Aroclor-1254 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:33	MJC
Aroclor-1260 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:33	MJC
Aroclor-1262 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:33	MJC
Aroclor-1268 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:33	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	53.0	30-150		9/25/14 15:33
Decachlorobiphenyl [2]	57.7	30-150		9/25/14 15:33
Tetrachloro-m-xylene [1]	81.4	30-150		9/25/14 15:33
Tetrachloro-m-xylene [2]	89.6	30-150		9/25/14 15:33

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-EX01 Sampled: 9/19/2014 14:30

Sample ID: 14I0946-05

Sample Matrix: Ground Water

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	ND	100	µg/L	1	L-04, R-05	MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
C9-C18 Aliphatics	110	100	µg/L	1	L-04, R-05	MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS
C19-C36 Aliphatics	ND	100	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
C19-C36 Aliphatics	ND	100	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS
Unadjusted C11-C22 Aromatics	ND	100	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
Unadjusted C11-C22 Aromatics	ND	100	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS
C11-C22 Aromatics	ND	100	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
C11-C22 Aromatics	ND	100	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS
Acenaphthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS
Acenaphthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
Acenaphthylene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
Acenaphthylene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS
Anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS
Anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
Benzo(a)anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS
Benzo(a)anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
Benzo(a)pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
Benzo(a)pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS
Benzo(b)fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
Benzo(b)fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS
Benzo(g,h,i)perylene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
Benzo(g,h,i)perylene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS
Benzo(k)fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
Benzo(k)fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS
Chrysene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
Chrysene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS
Dibenz(a,h)anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
Dibenz(a,h)anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS
Fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
Fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS
Fluorene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS
Fluorene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
Indeno(1,2,3-cd)pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
Indeno(1,2,3-cd)pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS
2-Methylnaphthalene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS
2-Methylnaphthalene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
Naphthalene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
Naphthalene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS
Phenanthrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
Phenanthrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS
Pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/26/14 23:59	SCS
Pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:13	SCS

Surrogates	% Recovery		Recovery Limits	Flag/Qual		
Chlorooctadecane (COD)	**26.8**	*	40-140	S-19		9/26/14 23:59

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-EX01 Sampled: 9/19/2014 14:30

Sample ID: 14I0946-05

Sample Matrix: Ground Water

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Surrogates	**% Recovery**		**Recovery Limits**			**Flag/Qual**				
Chlorooctadecane (COD)	**23.0**	*	40-140			S-19			9/26/14 9:13	
o-Terphenyl (OTP)	**34.1**	*	40-140			S-19			9/26/14 23:59	
o-Terphenyl (OTP)	**32.2**	*	40-140			S-19			9/26/14 9:13	
2-Bromonaphthalene	88.0		40-140						9/26/14 9:13	
2-Bromonaphthalene	83.0		40-140						9/26/14 23:59	
2-Fluorobiphenyl	97.1		40-140						9/26/14 9:13	
2-Fluorobiphenyl	91.2		40-140						9/26/14 23:59	

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-EX01 Sampled: 9/19/2014 14:30

Sample ID: 14I0946-05

Sample Matrix: Ground Water

Petroleum Hydrocarbons Analyses - VPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	200	µg/L	2	RL-14	MADEP-VPH-04-1.1	9/23/14	9/24/14 1:59	EEH
C5-C8 Aliphatics	ND	200	µg/L	2	RL-14	MADEP-VPH-04-1.1	9/23/14	9/24/14 1:59	EEH
Unadjusted C9-C12 Aliphatics	ND	200	µg/L	2	RL-14	MADEP-VPH-04-1.1	9/23/14	9/24/14 1:59	EEH
C9-C12 Aliphatics	ND	200	µg/L	2	RL-14	MADEP-VPH-04-1.1	9/23/14	9/24/14 1:59	EEH
C9-C10 Aromatics	ND	200	µg/L	2	RL-14	MADEP-VPH-04-1.1	9/23/14	9/24/14 1:59	EEH
Benzene	ND	2.0	µg/L	2		MADEP-VPH-04-1.1	9/23/14	9/24/14 1:59	EEH
Ethylbenzene	ND	2.0	µg/L	2		MADEP-VPH-04-1.1	9/23/14	9/24/14 1:59	EEH
Methyl tert-Butyl Ether (MTBE)	ND	2.0	µg/L	2		MADEP-VPH-04-1.1	9/23/14	9/24/14 1:59	EEH
Naphthalene	ND	10	µg/L	2	RL-14	MADEP-VPH-04-1.1	9/23/14	9/24/14 1:59	EEH
Toluene	ND	2.0	µg/L	2		MADEP-VPH-04-1.1	9/23/14	9/24/14 1:59	EEH
m+p Xylene	ND	4.0	µg/L	2		MADEP-VPH-04-1.1	9/23/14	9/24/14 1:59	EEH
o-Xylene	ND	2.0	µg/L	2		MADEP-VPH-04-1.1	9/23/14	9/24/14 1:59	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,5-Dibromotoluene (FID)	97.2	70-130		9/24/14 1:59
2,5-Dibromotoluene (PID)	92.6	70-130		9/24/14 1:59

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-EX01 Sampled: 9/19/2014 14:30

Sample ID: 14I0946-05

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	0.015	0.010	mg/L	1		SW-846 6010C	9/22/14	9/24/14 1:10	OP
Barium	0.25	0.050	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:22	OP
Cadmium	ND	0.0040	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:22	OP
Chromium	ND	0.010	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:22	OP
Lead	ND	0.010	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:22	OP
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	9/23/14	9/24/14 12:09	SCB
Selenium	ND	0.050	mg/L	1		SW-846 6010C	9/22/14	9/24/14 1:10	OP
Silver	ND	0.0050	mg/L	1		SW-846 6010C	9/22/14	9/24/14 1:10	OP

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-EX03 Sampled: 9/19/2014 14:00

Sample ID: 14I0946-06

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	23	20	µg/L	1	L-06	SW-846 8260C	9/26/14	9/27/14 8:43	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Bromodichloromethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Bromomethane	ND	5.0	µg/L	1	L-04, RL-07, V-05	SW-846 8260C	9/26/14	9/27/14 8:43	EEH
2-Butanone (MEK)	ND	50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Carbon Disulfide	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Carbon Tetrachloride	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Chloromethane	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 8:43	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,2-Dichloroethane	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
cis-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
trans-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-EX03 Sampled: 9/19/2014 14:00

Sample ID: 14I0946-06

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Methylene Chloride	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 8:43	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Naphthalene	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Tetrahydrofuran	ND	2.0	µg/L	1	V-16	SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,2,3-Trichlorobenzene	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
Vinyl Chloride	ND	2.0	µg/L	1	L-04	SW-846 8260C	9/26/14	9/27/14 8:43	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 8:43	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	103	70-130		9/27/14 8:43
Toluene-d8	95.6	70-130		9/27/14 8:43
4-Bromofluorobenzene	93.8	70-130		9/27/14 8:43

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-EX03 Sampled: 9/19/2014 14:00

Sample ID: 14I0946-06

Sample Matrix: Ground Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:45	MJC
Aroclor-1221 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:45	MJC
Aroclor-1232 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:45	MJC
Aroclor-1242 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:45	MJC
Aroclor-1248 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:45	MJC
Aroclor-1254 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:45	MJC
Aroclor-1260 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:45	MJC
Aroclor-1262 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:45	MJC
Aroclor-1268 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 15:45	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	73.6	30-150		9/25/14 15:45
Decachlorobiphenyl [2]	81.9	30-150		9/25/14 15:45
Tetrachloro-m-xylene [1]	74.8	30-150		9/25/14 15:45
Tetrachloro-m-xylene [2]	84.4	30-150		9/25/14 15:45

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-EX03 Sampled: 9/19/2014 14:00

Sample ID: 14I0946-06

Sample Matrix: Ground Water

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	140	100	µg/L	1	L-04, R-05	MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS
C9-C18 Aliphatics	110	100	µg/L	1	L-04, R-05	MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
C19-C36 Aliphatics	ND	100	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
C19-C36 Aliphatics	ND	100	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS
Unadjusted C11-C22 Aromatics	150	100	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
Unadjusted C11-C22 Aromatics	270	100	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS
C11-C22 Aromatics	270	100	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS
C11-C22 Aromatics	150	100	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
Acenaphthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS
Acenaphthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
Acenaphthylene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS
Acenaphthylene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
Anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS
Anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
Benzo(a)anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS
Benzo(a)anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
Benzo(a)pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
Benzo(a)pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS
Benzo(b)fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
Benzo(b)fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS
Benzo(g,h,i)perylene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
Benzo(g,h,i)perylene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS
Benzo(k)fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
Benzo(k)fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS
Chrysene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
Chrysene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS
Dibenz(a,h)anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
Dibenz(a,h)anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS
Fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
Fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS
Fluorene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
Fluorene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS
Indeno(1,2,3-cd)pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
Indeno(1,2,3-cd)pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS
2-Methylnaphthalene	3.6	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS
2-Methylnaphthalene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
Naphthalene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
Naphthalene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS
Phenanthrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
Phenanthrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS
Pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:20	SCS
Pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:33	SCS

Surrogates	% Recovery		Recovery Limits	Flag/Qual		
Chlorooctadecane (COD)	**24.2**	*	40-140	S-19	9/27/14	0:20

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-EX03 Sampled: 9/19/2014 14:00

Sample ID: 14I0946-06

Sample Matrix: Ground Water

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL		Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Surrogates	**% Recovery**		**Recovery Limits**			**Flag/Qual**				
Chlorooctadecane (COD)	**34.1**	*	40-140			S-19			9/26/14 9:33	
o-Terphenyl (OTP)	**31.4**	*	40-140			S-03			9/27/14 0:20	
o-Terphenyl (OTP)	43.4		40-140						9/26/14 9:33	
2-Bromonaphthalene	76.4		40-140						9/26/14 9:33	
2-Bromonaphthalene	97.4		40-140						9/27/14 0:20	
2-Fluorobiphenyl	88.1		40-140						9/26/14 9:33	
2-Fluorobiphenyl	110		40-140						9/27/14 0:20	

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-EX03 Sampled: 9/19/2014 14:00

Sample ID: 14I0946-06

Sample Matrix: Ground Water

Petroleum Hydrocarbons Analyses - VPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 7:58	EEH
C5-C8 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 7:58	EEH
Unadjusted C9-C12 Aliphatics	140	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 7:58	EEH
C9-C12 Aliphatics	140	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 7:58	EEH
C9-C10 Aromatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 7:58	EEH
Benzene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 7:58	EEH
Ethylbenzene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 7:58	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 7:58	EEH
Naphthalene	ND	5.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 7:58	EEH
Toluene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 7:58	EEH
m+p Xylene	ND	2.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 7:58	EEH
o-Xylene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 7:58	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,5-Dibromotoluene (FID)	113	70-130		9/24/14 7:58
2,5-Dibromotoluene (PID)	103	70-130		9/24/14 7:58

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-EX03 Sampled: 9/19/2014 14:00

Sample ID: 14I0946-06

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	0.010	mg/L	1		SW-846 6010C	9/22/14	9/24/14 1:14	OP
Barium	ND	0.050	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:28	OP
Cadmium	ND	0.0040	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:28	OP
Chromium	ND	0.010	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:28	OP
Lead	ND	0.010	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:28	OP
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	9/23/14	9/24/14 12:11	SCB
Selenium	ND	0.050	mg/L	1		SW-846 6010C	9/22/14	9/24/14 1:14	OP
Silver	ND	0.0050	mg/L	1		SW-846 6010C	9/22/14	9/24/14 1:14	OP

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-102A Sampled: 9/19/2014 16:00

Sample ID: 14I0946-07

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	20	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Bromodichloromethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Bromomethane	ND	5.0	µg/L	1	L-04, RL-07, V-05	SW-846 8260C	9/26/14	9/27/14 9:09	EEH
2-Butanone (MEK)	ND	50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Carbon Disulfide	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Carbon Tetrachloride	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Chloromethane	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 9:09	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,2-Dichloroethane	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
cis-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
trans-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-102A Sampled: 9/19/2014 16:00

Sample ID: 14I0946-07

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Methylene Chloride	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 9:09	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Naphthalene	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Tetrahydrofuran	ND	2.0	µg/L	1	V-16	SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,2,3-Trichlorobenzene	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
Vinyl Chloride	ND	2.0	µg/L	1	L-04	SW-846 8260C	9/26/14	9/27/14 9:09	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 9:09	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	100	70-130		9/27/14 9:09
Toluene-d8	99.6	70-130		9/27/14 9:09
4-Bromofluorobenzene	92.1	70-130		9/27/14 9:09

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-102A Sampled: 9/19/2014 16:00

Sample ID: 14I0946-07

Sample Matrix: Ground Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 0:23	MJC
Aroclor-1221 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 0:23	MJC
Aroclor-1232 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 0:23	MJC
Aroclor-1242 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 0:23	MJC
Aroclor-1248 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 0:23	MJC
Aroclor-1254 [2]	0.26	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 0:23	MJC
Aroclor-1260 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 0:23	MJC
Aroclor-1262 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 0:23	MJC
Aroclor-1268 [1]	ND	0.20	µg/L	1		SW-846 8082A	9/22/14	9/25/14 0:23	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	69.2	30-150		9/25/14 0:23
Decachlorobiphenyl [2]	74.9	30-150		9/25/14 0:23
Tetrachloro-m-xylene [1]	82.2	30-150		9/25/14 0:23
Tetrachloro-m-xylene [2]	89.4	30-150		9/25/14 0:23

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-102A Sampled: 9/19/2014 16:00

Sample ID: 14I0946-07

Sample Matrix: Ground Water

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	ND	100	µg/L	1	R-05, L-04	MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
C9-C18 Aliphatics	ND	100	µg/L	1	L-04, R-05	MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS
C19-C36 Aliphatics	ND	100	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
C19-C36 Aliphatics	ND	100	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS
Unadjusted C11-C22 Aromatics	ND	100	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
Unadjusted C11-C22 Aromatics	ND	100	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS
C11-C22 Aromatics	ND	100	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
C11-C22 Aromatics	ND	100	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS
Acenaphthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
Acenaphthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS
Acenaphthylene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS
Acenaphthylene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
Anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS
Anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
Benzo(a)anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS
Benzo(a)anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
Benzo(a)pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
Benzo(a)pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS
Benzo(b)fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS
Benzo(b)fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
Benzo(g,h,i)perylene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS
Benzo(g,h,i)perylene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
Benzo(k)fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS
Benzo(k)fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
Chrysene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
Chrysene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS
Dibenz(a,h)anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
Dibenz(a,h)anthracene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS
Fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
Fluoranthene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS
Fluorene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
Fluorene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS
Indeno(1,2,3-cd)pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS
Indeno(1,2,3-cd)pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
2-Methylnaphthalene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS
2-Methylnaphthalene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
Naphthalene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
Naphthalene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS
Phenanthrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
Phenanthrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS
Pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/26/14	9/27/14 0:40	SCS
Pyrene	ND	2.0	µg/L	1		MADEP-EPH-04-1.1	9/25/14	9/26/14 9:52	SCS

Surrogates	% Recovery		Recovery Limits	Flag/Qual		
Chlorooctadecane (COD)	**18.0**	*	40-140	S-19	9/27/14	0:40

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-102A Sampled: 9/19/2014 16:00

Sample ID: 14I0946-07

Sample Matrix: Ground Water

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Surrogates	**% Recovery**		**Recovery Limits**		**Flag/Qual**				
Chlorooctadecane (COD)	**27.2**	*	40-140		S-19			9/26/14 9:52	
o-Terphenyl (OTP)	**22.4**	*	40-140		S-19			9/27/14 0:40	
o-Terphenyl (OTP)	**35.2**	*	40-140		S-19			9/26/14 9:52	
2-Bromonaphthalene	96.0		40-140					9/27/14 0:40	
2-Bromonaphthalene	93.2		40-140					9/26/14 9:52	
2-Fluorobiphenyl	104		40-140					9/27/14 0:40	
2-Fluorobiphenyl	104		40-140					9/26/14 9:52	

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-102A Sampled: 9/19/2014 16:00

Sample ID: 14I0946-07

Sample Matrix: Ground Water

Petroleum Hydrocarbons Analyses - VPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 3:10	EEH
C5-C8 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 3:10	EEH
Unadjusted C9-C12 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 3:10	EEH
C9-C12 Aliphatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 3:10	EEH
C9-C10 Aromatics	ND	100	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 3:10	EEH
Benzene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 3:10	EEH
Ethylbenzene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 3:10	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 3:10	EEH
Naphthalene	ND	5.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 3:10	EEH
Toluene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 3:10	EEH
m+p Xylene	ND	2.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 3:10	EEH
o-Xylene	ND	1.0	µg/L	1		MADEP-VPH-04-1.1	9/23/14	9/24/14 3:10	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
2,5-Dibromotoluene (FID)	112	70-130		9/24/14	3:10
2,5-Dibromotoluene (PID)	104	70-130		9/24/14	3:10

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: MW-102A Sampled: 9/19/2014 16:00

Sample ID: 14I0946-07

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	0.021	0.010	mg/L	1		SW-846 6010C	9/22/14	9/24/14 1:20	OP
Barium	ND	0.050	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:33	OP
Cadmium	ND	0.0040	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:33	OP
Chromium	ND	0.010	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:33	OP
Lead	ND	0.010	mg/L	1		SW-846 6010C	9/22/14	9/23/14 17:33	OP
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	9/23/14	9/24/14 12:12	SCB
Selenium	ND	0.050	mg/L	1		SW-846 6010C	9/22/14	9/24/14 1:20	OP
Silver	ND	0.0050	mg/L	1		SW-846 6010C	9/22/14	9/24/14 1:20	OP

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: Trip Blank Sampled: 9/19/2014 00:00

Sample ID: 14I0946-08

Sample Matrix: Trip Blank Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	20	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Bromodichloromethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Bromomethane	ND	5.0	µg/L	1	L-04, RL-07, V-05	SW-846 8260C	9/26/14	9/27/14 6:03	EEH
2-Butanone (MEK)	ND	50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Carbon Disulfide	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Carbon Tetrachloride	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Chloromethane	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 6:03	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,2-Dichloroethane	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
cis-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
trans-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 105 First Ave., Charlestown, MA Sample Description: Work Order: 14I0946

Date Received: 9/19/2014

Field Sample #: Trip Blank Sampled: 9/19/2014 00:00

Sample ID: 14I0946-08

Sample Matrix: Trip Blank Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Methylene Chloride	ND	5.0	µg/L	1	RL-07	SW-846 8260C	9/26/14	9/27/14 6:03	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Naphthalene	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Tetrahydrofuran	ND	2.0	µg/L	1	V-16	SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,2,3-Trichlorobenzene	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
Vinyl Chloride	ND	2.0	µg/L	1	L-04	SW-846 8260C	9/26/14	9/27/14 6:03	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	9/26/14	9/27/14 6:03	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	106	70-130		9/27/14 6:03
Toluene-d8	96.7	70-130		9/27/14 6:03
4-Bromofluorobenzene	93.6	70-130		9/27/14 6:03

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Sample Extraction Data

Prep Method: SW-846 3510C-MADEP-EPH-04-1.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
14I0946-04 [MW-EX02]	B105499	1000	2.00	09/23/14

Prep Method: SW-846 3510C-MADEP-EPH-04-1.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
14I0946-02 [MW-WS1]	B105730	1000	2.00	09/25/14
14I0946-03 [MW-20]	B105730	1000	2.00	09/25/14
14I0946-05 [MW-EX01]	B105730	1000	2.00	09/25/14
14I0946-06 [MW-EX03]	B105730	1000	2.00	09/25/14
14I0946-07 [MW-102A]	B105730	1000	2.00	09/25/14

Prep Method: SW-846 3510C-MADEP-EPH-04-1.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
14I0946-05RE1 [MW-EX01]	B105838	700	1.40	09/26/14
14I0946-06RE1 [MW-EX03]	B105838	1000	2.00	09/26/14
14I0946-07RE1 [MW-102A]	B105838	1000	2.00	09/26/14

Prep Method: MA VPH-MADEP-VPH-04-1.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
14I0946-01 [MW-101]	B105508	5	5.00	09/23/14
14I0946-02 [MW-WS1]	B105508	5	5.00	09/23/14
14I0946-03 [MW-20]	B105508	5	5.00	09/23/14
14I0946-04 [MW-EX02]	B105508	5	5.00	09/23/14
14I0946-05 [MW-EX01]	B105508	2.5	5.00	09/23/14
14I0946-06 [MW-EX03]	B105508	5	5.00	09/23/14
14I0946-07 [MW-102A]	B105508	5	5.00	09/23/14

Prep Method: SW-846 3005A Dissolved-SW-846 6010C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
14I0946-01 [MW-101]	B105452	50.0	50.0	09/22/14
14I0946-02 [MW-WS1]	B105452	50.0	50.0	09/22/14
14I0946-03 [MW-20]	B105452	50.0	50.0	09/22/14
14I0946-04 [MW-EX02]	B105452	50.0	50.0	09/22/14
14I0946-05 [MW-EX01]	B105452	50.0	50.0	09/22/14
14I0946-06 [MW-EX03]	B105452	50.0	50.0	09/22/14
14I0946-07 [MW-102A]	B105452	50.0	50.0	09/22/14

Prep Method: SW-846 7470A Prep-SW-846 7470A

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
14I0946-01 [MW-101]	B105546	6.00	6.00	09/23/14
14I0946-02 [MW-WS1]	B105546	6.00	6.00	09/23/14
14I0946-03 [MW-20]	B105546	6.00	6.00	09/23/14
14I0946-04 [MW-EX02]	B105546	6.00	6.00	09/23/14
14I0946-05 [MW-EX01]	B105546	6.00	6.00	09/23/14
14I0946-06 [MW-EX03]	B105546	6.00	6.00	09/23/14

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Sample Extraction Data

Prep Method: SW-846 7470A Prep-SW-846 7470A

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
14I0946-07 [MW-102A]	B105546	6.00	6.00	09/23/14

Prep Method: SW-846 3510C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
14I0946-02 [MW-WS1]	B105403	1000	10.0	09/22/14
14I0946-03 [MW-20]	B105403	1000	10.0	09/22/14
14I0946-04 [MW-EX02]	B105403	1000	10.0	09/22/14
14I0946-05 [MW-EX01]	B105403	1000	10.0	09/22/14
14I0946-06 [MW-EX03]	B105403	1000	10.0	09/22/14
14I0946-07 [MW-102A]	B105403	1000	10.0	09/22/14

Prep Method: SW-846 5030B-SW-846 8260C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
14I0946-01 [MW-101]	B105853	5	5.00	09/26/14
14I0946-02 [MW-WS1]	B105853	5	5.00	09/26/14
14I0946-03 [MW-20]	B105853	5	5.00	09/26/14
14I0946-04 [MW-EX02]	B105853	2.5	5.00	09/26/14
14I0946-05 [MW-EX01]	B105853	2.5	5.00	09/26/14
14I0946-06 [MW-EX03]	B105853	5	5.00	09/26/14
14I0946-07 [MW-102A]	B105853	5	5.00	09/26/14
14I0946-08 [Trip Blank]	B105853	5	5.00	09/26/14

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B105853 - SW-846 5030B										
Blank (B105853-BLK1)				Prepared: 09/26/14 Analyzed: 09/27/14						
Acetone	ND	20	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	1.0	µg/L							
Bromobenzene	ND	1.0	µg/L							
Bromochloromethane	ND	1.0	µg/L							
Bromodichloromethane	ND	1.0	µg/L							
Bromoform	ND	1.0	µg/L							
Bromomethane	ND	5.0	µg/L							L-04, V-05
2-Butanone (MEK)	ND	50	µg/L							
n-Butylbenzene	ND	1.0	µg/L							
sec-Butylbenzene	ND	1.0	µg/L							
tert-Butylbenzene	ND	1.0	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	1.0	µg/L							
Chlorobenzene	ND	1.0	µg/L							
Chlorodibromomethane	ND	0.50	µg/L							
Chloroethane	ND	2.0	µg/L							
Chloroform	ND	2.0	µg/L							
Chloromethane	ND	5.0	µg/L							
2-Chlorotoluene	ND	1.0	µg/L							
4-Chlorotoluene	ND	1.0	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	1.0	µg/L							
1,2-Dichlorobenzene	ND	1.0	µg/L							
1,3-Dichlorobenzene	ND	1.0	µg/L							
1,4-Dichlorobenzene	ND	1.0	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L							
1,1-Dichloroethane	ND	1.0	µg/L							
1,2-Dichloroethane	ND	5.0	µg/L							
1,1-Dichloroethylene	ND	1.0	µg/L							
cis-1,2-Dichloroethylene	ND	1.0	µg/L							
trans-1,2-Dichloroethylene	ND	1.0	µg/L							
1,2-Dichloropropane	ND	1.0	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	1.0	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.40	µg/L							
trans-1,3-Dichloropropene	ND	0.40	µg/L							
Diethyl Ether	ND	2.0	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
1,4-Dioxane	ND	50	µg/L							V-16
Ethylbenzene	ND	1.0	µg/L							
Hexachlorobutadiene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	10	µg/L							
Isopropylbenzene (Cumene)	ND	1.0	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L							
Methylene Chloride	ND	5.0	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L							
Naphthalene	ND	2.0	µg/L							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B105853 - SW-846 5030B												
Blank (B105853-BLK1)				Prepared: 09/26/14 Analyzed: 09/27/14								
n-Propylbenzene	ND	1.0	µg/L									
Styrene	ND	1.0	µg/L									
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L									
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L									
Tetrachloroethylene	ND	1.0	µg/L									
Tetrahydrofuran	ND	2.0	µg/L								V-16	
Toluene	ND	1.0	µg/L									
1,2,3-Trichlorobenzene	ND	2.0	µg/L									
1,2,4-Trichlorobenzene	ND	1.0	µg/L									
1,1,1-Trichloroethane	ND	1.0	µg/L									
1,1,2-Trichloroethane	ND	1.0	µg/L									
Trichloroethylene	ND	1.0	µg/L									
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L									
1,2,3-Trichloropropane	ND	2.0	µg/L									
1,2,4-Trimethylbenzene	ND	1.0	µg/L									
1,3,5-Trimethylbenzene	ND	1.0	µg/L									
Vinyl Chloride	ND	2.0	µg/L								L-04	
m+p Xylene	ND	2.0	µg/L									
o-Xylene	ND	1.0	µg/L									
Surrogate: 1,2-Dichloroethane-d4	*26.0*		µg/L	25.0		104		70-130				
Surrogate: Toluene-d8	*24.0*		µg/L	25.0		96.0		70-130				
Surrogate: 4-Bromofluorobenzene	*24.2*		µg/L	25.0		96.6		70-130				
LCS (B105853-BS1)				Prepared: 09/26/14 Analyzed: 09/27/14								
Acetone	249	20	µg/L	100		**249**	*	40-160			L-06	†
tert-Amyl Methyl Ether (TAME)	11.8	0.50	µg/L	10.0		118		70-130				
Benzene	11.7	1.0	µg/L	10.0		117		70-130				
Bromobenzene	10.8	1.0	µg/L	10.0		108		70-130				
Bromochloromethane	13.0	1.0	µg/L	10.0		130		70-130			V-20	
Bromodichloromethane	11.6	1.0	µg/L	10.0		116		70-130				
Bromoform	14.0	1.0	µg/L	10.0		**140**	*	70-130			L-02	
Bromomethane	3.45	5.0	µg/L	10.0		**34.5**	*	40-160			L-04, V-05	†
2-Butanone (MEK)	171	50	µg/L	100		**171**	*	40-160			L-07	†
n-Butylbenzene	12.1	1.0	µg/L	10.0		121		70-130				
sec-Butylbenzene	11.4	1.0	µg/L	10.0		114		70-130				
tert-Butylbenzene	11.5	1.0	µg/L	10.0		115		70-130				
tert-Butyl Ethyl Ether (TBEE)	13.0	0.50	µg/L	10.0		130		70-130				
Carbon Disulfide	11.7	5.0	µg/L	10.0		117		70-130				
Carbon Tetrachloride	12.7	1.0	µg/L	10.0		127		70-130				
Chlorobenzene	10.1	1.0	µg/L	10.0		101		70-130				
Chlorodibromomethane	11.0	0.50	µg/L	10.0		110		70-130				
Chloroethane	10.1	2.0	µg/L	10.0		101		70-130				
Chloroform	11.3	2.0	µg/L	10.0		113		70-130				
Chloromethane	6.04	5.0	µg/L	10.0		60.4		40-160			L-14	†
2-Chlorotoluene	9.27	1.0	µg/L	10.0		92.7		70-130				
4-Chlorotoluene	10.0	1.0	µg/L	10.0		100		70-130				
1,2-Dibromo-3-chloropropane (DBCP)	11.6	5.0	µg/L	10.0		116		70-130				
1,2-Dibromoethane (EDB)	11.4	0.50	µg/L	10.0		114		70-130				
Dibromomethane	11.6	1.0	µg/L	10.0		116		70-130				
1,2-Dichlorobenzene	10.9	1.0	µg/L	10.0		109		70-130				
1,3-Dichlorobenzene	10.6	1.0	µg/L	10.0		106		70-130				
1,4-Dichlorobenzene	10.9	1.0	µg/L	10.0		109		70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B105853 - SW-846 5030B												
LCS (B105853-BS1)				Prepared: 09/26/14 Analyzed: 09/27/14								
Dichlorodifluoromethane (Freon 12)	5.59	2.0	µg/L	10.0		55.9		40-160			L-14	†
1,1-Dichloroethane	12.2	1.0	µg/L	10.0		122		70-130				
1,2-Dichloroethane	11.3	5.0	µg/L	10.0		113		70-130				
1,1-Dichloroethylene	10.1	1.0	µg/L	10.0		101		70-130				
cis-1,2-Dichloroethylene	11.8	1.0	µg/L	10.0		118		70-130				
trans-1,2-Dichloroethylene	12.0	1.0	µg/L	10.0		120		70-130				
1,2-Dichloropropane	11.7	1.0	µg/L	10.0		117		70-130				
1,3-Dichloropropane	11.8	0.50	µg/L	10.0		118		70-130				
2,2-Dichloropropane	9.91	1.0	µg/L	10.0		99.1		70-130				
1,1-Dichloropropene	11.7	0.50	µg/L	10.0		117		70-130				
cis-1,3-Dichloropropene	11.1	0.40	µg/L	10.0		111		70-130				
trans-1,3-Dichloropropene	12.0	0.40	µg/L	10.0		120		70-130				
Diethyl Ether	11.5	2.0	µg/L	10.0		115		70-130				
Diisopropyl Ether (DIPE)	11.9	0.50	µg/L	10.0		119		70-130				
1,4-Dioxane	109	50	µg/L	100		109		40-160			V-16	†
Ethylbenzene	10.8	1.0	µg/L	10.0		108		70-130				
Hexachlorobutadiene	12.6	0.50	µg/L	10.0		126		70-130				
2-Hexanone (MBK)	159	10	µg/L	100		159		40-160			L-14	†
Isopropylbenzene (Cumene)	10.1	1.0	µg/L	10.0		101		70-130				
p-Isopropyltoluene (p-Cymene)	12.0	1.0	µg/L	10.0		120		70-130				
Methyl tert-Butyl Ether (MTBE)	12.3	1.0	µg/L	10.0		123		70-130				
Methylene Chloride	12.4	5.0	µg/L	10.0		124		70-130				
4-Methyl-2-pentanone (MIBK)	119	10	µg/L	100		119		40-160				†
Naphthalene	10.6	2.0	µg/L	10.0		106		70-130				
n-Propylbenzene	10.4	1.0	µg/L	10.0		104		70-130				
Styrene	10.7	1.0	µg/L	10.0		107		70-130				
1,1,1,2-Tetrachloroethane	11.3	1.0	µg/L	10.0		113		70-130				
1,1,2,2-Tetrachloroethane	10.2	0.50	µg/L	10.0		102		70-130				
Tetrachloroethylene	11.0	1.0	µg/L	10.0		110		70-130				
Tetrahydrofuran	12.7	2.0	µg/L	10.0		127		70-130			V-16	
Toluene	10.8	1.0	µg/L	10.0		108		70-130				
1,2,3-Trichlorobenzene	10.5	2.0	µg/L	10.0		105		70-130				
1,2,4-Trichlorobenzene	11.8	1.0	µg/L	10.0		118		70-130				
1,1,1-Trichloroethane	12.0	1.0	µg/L	10.0		120		70-130				
1,1,2-Trichloroethane	11.1	1.0	µg/L	10.0		111		70-130				
Trichloroethylene	12.2	1.0	µg/L	10.0		122		70-130				
Trichlorofluoromethane (Freon 11)	9.60	2.0	µg/L	10.0		96.0		70-130				
1,2,3-Trichloropropane	11.4	2.0	µg/L	10.0		114		70-130				
1,2,4-Trimethylbenzene	12.2	1.0	µg/L	10.0		122		70-130				
1,3,5-Trimethylbenzene	10.3	1.0	µg/L	10.0		103		70-130				
Vinyl Chloride	6.07	2.0	µg/L	10.0		**60.7**	*	70-130			L-04	
m+p Xylene	20.8	2.0	µg/L	20.0		104		70-130				
o-Xylene	10.3	1.0	µg/L	10.0		103		70-130				
Surrogate: 1,2-Dichloroethane-d4	*27.0*		µg/L	25.0		108		70-130				
Surrogate: Toluene-d8	*24.0*		µg/L	25.0		95.9		70-130				
Surrogate: 4-Bromofluorobenzene	*23.5*		µg/L	25.0		93.9		70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B105853 - SW-846 5030B												
LCS Dup (B105853-BSD1)				Prepared: 09/26/14 Analyzed: 09/27/14								
Acetone	217	20	µg/L	100		**217**	*	40-160	13.8	20	L-06	†
tert-Amyl Methyl Ether (TAME)	10.6	0.50	µg/L	10.0		106		70-130	10.9	20		
Benzene	11.3	1.0	µg/L	10.0		113		70-130	3.66	20		
Bromobenzene	10.7	1.0	µg/L	10.0		107		70-130	1.30	20		
Bromochloromethane	12.8	1.0	µg/L	10.0		128		70-130	2.01	20	V-20	
Bromodichloromethane	11.5	1.0	µg/L	10.0		115		70-130	0.869	20		
Bromoform	13.1	1.0	µg/L	10.0		**131**	*	70-130	5.98	20	L-02	
Bromomethane	3.76	5.0	µg/L	10.0		**37.6**	*	40-160	8.60	20	L-04, V-05	†
2-Butanone (MEK)	152	50	µg/L	100		152		40-160	11.9	20	L-14	†
n-Butylbenzene	11.6	1.0	µg/L	10.0		116		70-130	4.22	20		
sec-Butylbenzene	11.0	1.0	µg/L	10.0		110		70-130	3.58	20		
tert-Butylbenzene	11.1	1.0	µg/L	10.0		111		70-130	3.19	20		
tert-Butyl Ethyl Ether (TBEE)	12.0	0.50	µg/L	10.0		120		70-130	8.40	20		
Carbon Disulfide	10.6	5.0	µg/L	10.0		106		70-130	9.43	20		
Carbon Tetrachloride	11.9	1.0	µg/L	10.0		119		70-130	6.60	20		
Chlorobenzene	9.96	1.0	µg/L	10.0		99.6		70-130	1.79	20		
Chlorodibromomethane	10.8	0.50	µg/L	10.0		108		70-130	1.74	20		
Chloroethane	9.42	2.0	µg/L	10.0		94.2		70-130	6.57	20		
Chloroform	10.9	2.0	µg/L	10.0		109		70-130	3.71	20		
Chloromethane	6.76	5.0	µg/L	10.0		67.6		40-160	11.2	20	L-14	†
2-Chlorotoluene	8.97	1.0	µg/L	10.0		89.7		70-130	3.29	20		
4-Chlorotoluene	10.0	1.0	µg/L	10.0		100		70-130	0.00	20		
1,2-Dibromo-3-chloropropane (DBCP)	10.5	5.0	µg/L	10.0		105		70-130	10.1	20		
1,2-Dibromoethane (EDB)	10.6	0.50	µg/L	10.0		106		70-130	6.55	20		
Dibromomethane	11.4	1.0	µg/L	10.0		114		70-130	1.92	20		
1,2-Dichlorobenzene	10.4	1.0	µg/L	10.0		104		70-130	4.04	20		
1,3-Dichlorobenzene	10.6	1.0	µg/L	10.0		106		70-130	0.189	20		
1,4-Dichlorobenzene	10.8	1.0	µg/L	10.0		108		70-130	0.461	20		
Dichlorodifluoromethane (Freon 12)	5.44	2.0	µg/L	10.0		54.4		40-160	2.72	20	L-14	†
1,1-Dichloroethane	12.2	1.0	µg/L	10.0		122		70-130	0.656	20		
1,2-Dichloroethane	11.4	5.0	µg/L	10.0		114		70-130	0.795	20		
1,1-Dichloroethylene	9.51	1.0	µg/L	10.0		95.1		70-130	5.92	20		
cis-1,2-Dichloroethylene	11.2	1.0	µg/L	10.0		112		70-130	4.60	20		
trans-1,2-Dichloroethylene	11.5	1.0	µg/L	10.0		115		70-130	3.83	20		
1,2-Dichloropropane	11.4	1.0	µg/L	10.0		114		70-130	1.99	20		
1,3-Dichloropropane	11.4	0.50	µg/L	10.0		114		70-130	3.97	20		
2,2-Dichloropropane	9.60	1.0	µg/L	10.0		96.0		70-130	3.18	20		
1,1-Dichloropropene	11.6	0.50	µg/L	10.0		116		70-130	0.858	20		
cis-1,3-Dichloropropene	10.2	0.40	µg/L	10.0		102		70-130	8.32	20		
trans-1,3-Dichloropropene	11.4	0.40	µg/L	10.0		114		70-130	5.05	20		
Diethyl Ether	11.1	2.0	µg/L	10.0		111		70-130	3.28	20		
Diisopropyl Ether (DIPE)	11.5	0.50	µg/L	10.0		115		70-130	3.41	20		
1,4-Dioxane	108	50	µg/L	100		108		40-160	1.03	20	V-16	†
Ethylbenzene	10.4	1.0	µg/L	10.0		104		70-130	3.88	20		
Hexachlorobutadiene	12.4	0.50	µg/L	10.0		124		70-130	2.40	20		
2-Hexanone (MBK)	153	10	µg/L	100		153		40-160	3.65	20		†
Isopropylbenzene (Cumene)	9.76	1.0	µg/L	10.0		97.6		70-130	3.62	20		
p-Isopropyltoluene (p-Cymene)	11.6	1.0	µg/L	10.0		116		70-130	2.63	20		
Methyl tert-Butyl Ether (MTBE)	11.7	1.0	µg/L	10.0		117		70-130	5.01	20		
Methylene Chloride	11.1	5.0	µg/L	10.0		111		70-130	11.6	20		
4-Methyl-2-pentanone (MIBK)	109	10	µg/L	100		109		40-160	8.55	20		†
Naphthalene	9.76	2.0	µg/L	10.0		97.6		70-130	8.35	20		

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B105853 - SW-846 5030B											
LCS Dup (B105853-BSD1)				Prepared: 09/26/14 Analyzed: 09/27/14							
n-Propylbenzene	10.3	1.0	µg/L	10.0		103		70-130	1.06	20	
Styrene	10.5	1.0	µg/L	10.0		105		70-130	1.97	20	
1,1,1,2-Tetrachloroethane	11.0	1.0	µg/L	10.0		110		70-130	2.52	20	
1,1,2,2-Tetrachloroethane	9.65	0.50	µg/L	10.0		96.5		70-130	5.84	20	
Tetrachloroethylene	10.7	1.0	µg/L	10.0		107		70-130	2.30	20	
Tetrahydrofuran	12.0	2.0	µg/L	10.0		120		70-130	5.34	20	V-16
Toluene	10.5	1.0	µg/L	10.0		105		70-130	3.18	20	
1,2,3-Trichlorobenzene	9.98	2.0	µg/L	10.0		99.8		70-130	4.98	20	
1,2,4-Trichlorobenzene	11.5	1.0	µg/L	10.0		115		70-130	2.48	20	
1,1,1-Trichloroethane	11.7	1.0	µg/L	10.0		117		70-130	3.04	20	
1,1,2-Trichloroethane	10.8	1.0	µg/L	10.0		108		70-130	3.38	20	
Trichloroethylene	12.3	1.0	µg/L	10.0		123		70-130	0.408	20	
Trichlorofluoromethane (Freon 11)	9.20	2.0	µg/L	10.0		92.0		70-130	4.26	20	
1,2,3-Trichloropropane	10.5	2.0	µg/L	10.0		105		70-130	8.22	20	
1,2,4-Trimethylbenzene	11.6	1.0	µg/L	10.0		116		70-130	4.79	20	
1,3,5-Trimethylbenzene	10.1	1.0	µg/L	10.0		101		70-130	2.07	20	
Vinyl Chloride	5.54	2.0	µg/L	10.0		**55.4**	*	70-130	9.13	20	L-04
m+p Xylene	20.3	2.0	µg/L	20.0		102		70-130	2.38	20	
o-Xylene	10.1	1.0	µg/L	10.0		101		70-130	2.25	20	
Surrogate: 1,2-Dichloroethane-d4	*26.0*		µg/L	25.0		104		70-130			
Surrogate: Toluene-d8	*24.0*		µg/L	25.0		96.0		70-130			
Surrogate: 4-Bromofluorobenzene	*23.1*		µg/L	25.0		92.3		70-130			

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QUALITY CONTROL

Polychlorinated Biphenyls By GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B105403 - SW-846 3510C										
Blank (B105403-BLK1)				Prepared: 09/22/14 Analyzed: 09/23/14						
Aroclor-1016	ND	0.20	µg/L							
Aroclor-1016 [2C]	ND	0.20	µg/L							
Aroclor-1221	ND	0.20	µg/L							
Aroclor-1221 [2C]	ND	0.20	µg/L							
Aroclor-1232	ND	0.20	µg/L							
Aroclor-1232 [2C]	ND	0.20	µg/L							
Aroclor-1242	ND	0.20	µg/L							
Aroclor-1242 [2C]	ND	0.20	µg/L							
Aroclor-1248	ND	0.20	µg/L							
Aroclor-1248 [2C]	ND	0.20	µg/L							
Aroclor-1254	ND	0.20	µg/L							
Aroclor-1254 [2C]	ND	0.20	µg/L							
Aroclor-1260	ND	0.20	µg/L							
Aroclor-1260 [2C]	ND	0.20	µg/L							
Aroclor-1262	ND	0.20	µg/L							
Aroclor-1262 [2C]	ND	0.20	µg/L							
Aroclor-1268	ND	0.20	µg/L							
Aroclor-1268 [2C]	ND	0.20	µg/L							
Surrogate: Decachlorobiphenyl	*1.10*		µg/L	2.00		54.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.10*		µg/L	2.00		55.0	30-150			
Surrogate: Tetrachloro-m-xylene	*0.982*		µg/L	2.00		49.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.11*		µg/L	2.00		55.3	30-150			
LCS (B105403-BS1)				Prepared: 09/22/14 Analyzed: 09/23/14						
Aroclor-1016	0.39	0.20	µg/L	0.500		78.5	40-140			
Aroclor-1016 [2C]	0.44	0.20	µg/L	0.500		87.9	40-140			
Aroclor-1260	0.42	0.20	µg/L	0.500		84.9	40-140			
Aroclor-1260 [2C]	0.43	0.20	µg/L	0.500		85.0	40-140			
Surrogate: Decachlorobiphenyl	*1.69*		µg/L	2.00		84.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.49*		µg/L	2.00		74.7	30-150			
Surrogate: Tetrachloro-m-xylene	*1.46*		µg/L	2.00		72.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.63*		µg/L	2.00		81.6	30-150			
LCS Dup (B105403-BSD1)				Prepared: 09/22/14 Analyzed: 09/23/14						
Aroclor-1016	0.40	0.20	µg/L	0.500		79.9	40-140	1.82	20	
Aroclor-1016 [2C]	0.47	0.20	µg/L	0.500		94.9	40-140	7.64	20	
Aroclor-1260	0.45	0.20	µg/L	0.500		90.4	40-140	6.36	20	
Aroclor-1260 [2C]	0.45	0.20	µg/L	0.500		89.1	40-140	4.64	20	
Surrogate: Decachlorobiphenyl	*1.70*		µg/L	2.00		85.2	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.55*		µg/L	2.00		77.3	30-150			
Surrogate: Tetrachloro-m-xylene	*1.51*		µg/L	2.00		75.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.67*		µg/L	2.00		83.5	30-150			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B105499 - SW-846 3510C										
Blank (B105499-BLK1)				Prepared: 09/23/14 Analyzed: 09/24/14						
C9-C18 Aliphatics	ND	100	µg/L							L-07A
C19-C36 Aliphatics	ND	100	µg/L							
Unadjusted C11-C22 Aromatics	ND	100	µg/L							
C11-C22 Aromatics	ND	100	µg/L							
Acenaphthene	ND	2.0	µg/L							
Acenaphthylene	ND	2.0	µg/L							
Anthracene	ND	2.0	µg/L							
Benzo(a)anthracene	ND	2.0	µg/L							
Benzo(a)pyrene	ND	2.0	µg/L							
Benzo(b)fluoranthene	ND	2.0	µg/L							
Benzo(g,h,i)perylene	ND	2.0	µg/L							
Benzo(k)fluoranthene	ND	2.0	µg/L							
Chrysene	ND	2.0	µg/L							
Dibenz(a,h)anthracene	ND	2.0	µg/L							
Fluoranthene	ND	2.0	µg/L							
Fluorene	ND	2.0	µg/L							
Indeno(1,2,3-cd)pyrene	ND	2.0	µg/L							
2-Methylnaphthalene	ND	2.0	µg/L							
Naphthalene	ND	2.0	µg/L							
Phenanthrene	ND	2.0	µg/L							
Pyrene	ND	2.0	µg/L							
n-Decane	ND	2.0	µg/L							L-07A
n-Docosane	ND	2.0	µg/L							
n-Dodecane	ND	2.0	µg/L							
n-Eicosane	ND	2.0	µg/L							
n-Hexacosane	ND	2.0	µg/L							
n-Hexadecane	ND	2.0	µg/L							
n-Hexatriacontane	ND	2.0	µg/L							
n-Nonadecane	ND	2.0	µg/L							
n-Nonane	ND	2.0	µg/L							L-07A
n-Octacosane	ND	2.0	µg/L							
n-Octadecane	ND	2.0	µg/L							
n-Tetracosane	ND	2.0	µg/L							
n-Tetradecane	ND	2.0	µg/L							
n-Triacontane	ND	2.0	µg/L							
Naphthalene-aliphatic fraction	ND	2.0	µg/L							
2-Methylnaphthalene-aliphatic fraction	ND	2.0	µg/L							
Surrogate: Chlorooctadecane (COD)	*65.9*		µg/L	100		65.9	40-140			
Surrogate: o-Terphenyl (OTP)	*82.5*		µg/L	101		81.6	40-140			
Surrogate: 2-Bromonaphthalene	*86.8*		µg/L	100		86.8	40-140			
Surrogate: 2-Fluorobiphenyl	*94.2*		µg/L	100		94.2	40-140			
LCS (B105499-BS1)				Prepared: 09/23/14 Analyzed: 09/24/14						
Acenaphthene	84.3	2.0	µg/L	100		84.3	40-140			
Acenaphthylene	80.7	2.0	µg/L	100		80.7	40-140			
Anthracene	96.8	2.0	µg/L	100		96.8	40-140			
Benzo(a)anthracene	88.1	2.0	µg/L	100		88.1	40-140			
Benzo(a)pyrene	85.7	2.0	µg/L	100		85.7	40-140			
Benzo(b)fluoranthene	85.2	2.0	µg/L	100		85.2	40-140			
Benzo(g,h,i)perylene	86.4	2.0	µg/L	100		86.4	40-140			
Benzo(k)fluoranthene	84.1	2.0	µg/L	100		84.1	40-140			
Chrysene	88.8	2.0	µg/L	100		88.8	40-140			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD		RPD Limit	Notes
Batch B105499 - SW-846 3510C												
LCS (B105499-BS1)				Prepared: 09/23/14 Analyzed: 09/24/14								
Dibenz(a,h)anthracene	83.6	2.0	µg/L	100		83.6		40-140				
Fluoranthene	89.7	2.0	µg/L	100		89.7		40-140				
Fluorene	88.8	2.0	µg/L	100		88.8		40-140				
Indeno(1,2,3-cd)pyrene	69.4	2.0	µg/L	100		69.4		40-140				
2-Methylnaphthalene	76.3	2.0	µg/L	100		76.3		40-140				
Naphthalene	67.5	2.0	µg/L	100		67.5		40-140				
Phenanthrene	90.3	2.0	µg/L	100		90.3		40-140				
Pyrene	89.6	2.0	µg/L	100		89.6		40-140				
n-Decane	44.8	2.0	µg/L	100		44.8		40-140				L-07A
n-Docosane	82.6	2.0	µg/L	100		82.6		40-140				
n-Dodecane	66.4	2.0	µg/L	100		66.4		40-140				
n-Eicosane	82.3	2.0	µg/L	100		82.3		40-140				
n-Hexacosane	78.1	2.0	µg/L	100		78.1		40-140				
n-Hexadecane	85.5	2.0	µg/L	100		85.5		40-140				
n-Hexatriacontane	82.5	2.0	µg/L	100		82.5		40-140				
n-Nonadecane	84.4	2.0	µg/L	100		84.4		40-140				
n-Nonane	32.2	2.0	µg/L	100		32.2		30-140				L-07A
n-Octacosane	76.8	2.0	µg/L	100		76.8		40-140				
n-Octadecane	85.9	2.0	µg/L	100		85.9		40-140				
n-Tetracosane	79.0	2.0	µg/L	100		79.0		40-140				
n-Tetradecane	79.0	2.0	µg/L	100		79.0		40-140				
n-Triacontane	78.5	2.0	µg/L	100		78.5		40-140				
Naphthalene-aliphatic fraction	ND	2.0	µg/L	100				0-5				
2-Methylnaphthalene-aliphatic fraction	ND	2.0	µg/L	100				0-5				
Surrogate: Chlorooctadecane (COD)	*68.8*		µg/L	100		68.8		40-140				
Surrogate: o-Terphenyl (OTP)	*84.0*		µg/L	101		83.2		40-140				
Surrogate: 2-Bromonaphthalene	*87.6*		µg/L	100		87.6		40-140				
Surrogate: 2-Fluorobiphenyl	*97.4*		µg/L	100		97.4		40-140				
LCS Dup (B105499-BSD1)				Prepared: 09/23/14 Analyzed: 09/24/14								
Acenaphthene	72.2	2.0	µg/L	100		72.2		40-140	15.5		25	
Acenaphthylene	68.4	2.0	µg/L	100		68.4		40-140	16.5		25	
Anthracene	85.9	2.0	µg/L	100		85.9		40-140	11.9		25	
Benzo(a)anthracene	78.5	2.0	µg/L	100		78.5		40-140	11.6		25	
Benzo(a)pyrene	76.3	2.0	µg/L	100		76.3		40-140	11.6		25	
Benzo(b)fluoranthene	75.7	2.0	µg/L	100		75.7		40-140	11.8		25	
Benzo(g,h,i)perylene	76.8	2.0	µg/L	100		76.8		40-140	11.6		25	
Benzo(k)fluoranthene	75.2	2.0	µg/L	100		75.2		40-140	11.2		25	
Chrysene	79.1	2.0	µg/L	100		79.1		40-140	11.6		25	
Dibenz(a,h)anthracene	74.5	2.0	µg/L	100		74.5		40-140	11.5		25	
Fluoranthene	79.9	2.0	µg/L	100		79.9		40-140	11.6		25	
Fluorene	77.3	2.0	µg/L	100		77.3		40-140	13.9		25	
Indeno(1,2,3-cd)pyrene	61.8	2.0	µg/L	100		61.8		40-140	11.6		25	
2-Methylnaphthalene	62.8	2.0	µg/L	100		62.8		40-140	19.4		25	
Naphthalene	54.4	2.0	µg/L	100		54.4		40-140	21.6		25	
Phenanthrene	79.7	2.0	µg/L	100		79.7		40-140	12.5		25	
Pyrene	79.8	2.0	µg/L	100		79.8		40-140	11.5		25	
n-Decane	33.9	2.0	µg/L	100		**33.9**	*	40-140	**27.8**	*	25	L-07A
n-Docosane	74.6	2.0	µg/L	100		74.6		40-140	10.2		25	
n-Dodecane	55.1	2.0	µg/L	100		55.1		40-140	18.7		25	
n-Eicosane	74.0	2.0	µg/L	100		74.0		40-140	10.6		25	
n-Hexacosane	70.1	2.0	µg/L	100		70.1		40-140	10.8		25	

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD		RPD Limit	Notes
Batch B105499 - SW-846 3510C												
LCS Dup (B105499-BSD1)				Prepared: 09/23/14 Analyzed: 09/24/14								
n-Hexadecane	76.1	2.0	µg/L	100		76.1		40-140	11.6		25	
n-Hexatriacontane	74.2	2.0	µg/L	100		74.2		40-140	10.6		25	
n-Nonadecane	75.8	2.0	µg/L	100		75.8		40-140	10.8		25	
n-Nonane	22.9	2.0	µg/L	100		**22.9**	*	30-140	**33.5**	*	25	L-07A
n-Octacosane	69.1	2.0	µg/L	100		69.1		40-140	10.7		25	
n-Octadecane	76.8	2.0	µg/L	100		76.8		40-140	11.1		25	
n-Tetracosane	71.2	2.0	µg/L	100		71.2		40-140	10.5		25	
n-Tetradecane	68.6	2.0	µg/L	100		68.6		40-140	14.0		25	
n-Triacontane	70.6	2.0	µg/L	100		70.6		40-140	10.7		25	
Naphthalene-aliphatic fraction	ND	2.0	µg/L	100				0-5				
2-Methylnaphthalene-aliphatic fraction	ND	2.0	µg/L	100				0-5				
Surrogate: Chlorooctadecane (COD)	*63.1*		µg/L	100		63.1		40-140				
Surrogate: o-Terphenyl (OTP)	*72.5*		µg/L	101		71.8		40-140				
Surrogate: 2-Bromonaphthalene	*84.4*		µg/L	100		84.4		40-140				
Surrogate: 2-Fluorobiphenyl	*93.3*		µg/L	100		93.3		40-140				
Batch B105730 - SW-846 3510C												
Blank (B105730-BLK1)				Prepared & Analyzed: 09/25/14								
C9-C18 Aliphatics	ND	100	µg/L									L-04, R-05
C19-C36 Aliphatics	ND	100	µg/L									
Unadjusted C11-C22 Aromatics	ND	100	µg/L									
C11-C22 Aromatics	ND	100	µg/L									
Acenaphthene	ND	2.0	µg/L									
Acenaphthylene	ND	2.0	µg/L									
Anthracene	ND	2.0	µg/L									
Benzo(a)anthracene	ND	2.0	µg/L									
Benzo(a)pyrene	ND	2.0	µg/L									
Benzo(b)fluoranthene	ND	2.0	µg/L									
Benzo(g,h,i)perylene	ND	2.0	µg/L									
Benzo(k)fluoranthene	ND	2.0	µg/L									
Chrysene	ND	2.0	µg/L									
Dibenz(a,h)anthracene	ND	2.0	µg/L									
Fluoranthene	ND	2.0	µg/L									
Fluorene	ND	2.0	µg/L									
Indeno(1,2,3-cd)pyrene	ND	2.0	µg/L									
2-Methylnaphthalene	ND	2.0	µg/L									
Naphthalene	ND	2.0	µg/L									
Phenanthrene	ND	2.0	µg/L									
Pyrene	ND	2.0	µg/L									
n-Decane	ND	2.0	µg/L									L-04, R-05
n-Docosane	ND	2.0	µg/L									
n-Dodecane	ND	2.0	µg/L									
n-Eicosane	ND	2.0	µg/L									
n-Hexacosane	ND	2.0	µg/L									
n-Hexadecane	ND	2.0	µg/L									
n-Hexatriacontane	ND	2.0	µg/L									
n-Nonadecane	ND	2.0	µg/L									
n-Nonane	ND	2.0	µg/L									L-04
n-Octacosane	ND	2.0	µg/L									
n-Octadecane	ND	2.0	µg/L									
n-Tetracosane	ND	2.0	µg/L									
n-Tetradecane	ND	2.0	µg/L									

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B105730 - SW-846 3510C											
Blank (B105730-BLK1)				Prepared & Analyzed: 09/25/14							
n-Triacontane	ND	2.0	µg/L								
Naphthalene-aliphatic fraction	ND	2.0	µg/L								
2-Methylnaphthalene-aliphatic fraction	ND	2.0	µg/L								
Surrogate: Chlorooctadecane (COD)	*66.3*		µg/L	100		66.3		40-140			
Surrogate: o-Terphenyl (OTP)	*85.8*		µg/L	100		85.8		40-140			
Surrogate: 2-Bromonaphthalene	*88.1*		µg/L	100		88.1		40-140			
Surrogate: 2-Fluorobiphenyl	*96.7*		µg/L	100		96.7		40-140			
LCS (B105730-BS1)				Prepared & Analyzed: 09/25/14							
Acenaphthene	86.0	2.0	µg/L	100		86.0		40-140			
Acenaphthylene	81.8	2.0	µg/L	100		81.8		40-140			
Anthracene	102	2.0	µg/L	100		102		40-140			
Benzo(a)anthracene	93.0	2.0	µg/L	100		93.0		40-140			
Benzo(a)pyrene	90.6	2.0	µg/L	100		90.6		40-140			
Benzo(b)fluoranthene	90.0	2.0	µg/L	100		90.0		40-140			
Benzo(g,h,i)perylene	91.1	2.0	µg/L	100		91.1		40-140			
Benzo(k)fluoranthene	88.8	2.0	µg/L	100		88.8		40-140			
Chrysene	93.7	2.0	µg/L	100		93.7		40-140			
Dibenz(a,h)anthracene	88.3	2.0	µg/L	100		88.3		40-140			
Fluoranthene	94.4	2.0	µg/L	100		94.4		40-140			
Fluorene	91.3	2.0	µg/L	100		91.3		40-140			
Indeno(1,2,3-cd)pyrene	73.4	2.0	µg/L	100		73.4		40-140			
2-Methylnaphthalene	76.7	2.0	µg/L	100		76.7		40-140			
Naphthalene	67.3	2.0	µg/L	100		67.3		40-140			
Phenanthrene	93.9	2.0	µg/L	100		93.9		40-140			
Pyrene	94.3	2.0	µg/L	100		94.3		40-140			
n-Decane	39.4	2.0	µg/L	100		**39.4**	*	40-140			L-04, R-05
n-Docosane	84.0	2.0	µg/L	100		84.0		40-140			
n-Dodecane	62.1	2.0	µg/L	100		62.1		40-140			
n-Eicosane	83.7	2.0	µg/L	100		83.7		40-140			
n-Hexacosane	79.3	2.0	µg/L	100		79.3		40-140			
n-Hexadecane	84.9	2.0	µg/L	100		84.9		40-140			
n-Hexatriacontane	85.6	2.0	µg/L	100		85.6		40-140			
n-Nonadecane	85.6	2.0	µg/L	100		85.6		40-140			
n-Nonane	27.3	2.0	µg/L	100		**27.3**	*	30-140			L-04
n-Octacosane	78.1	2.0	µg/L	100		78.1		40-140			
n-Octadecane	86.3	2.0	µg/L	100		86.3		40-140			
n-Tetracosane	80.4	2.0	µg/L	100		80.4		40-140			
n-Tetradecane	76.8	2.0	µg/L	100		76.8		40-140			
n-Triacontane	79.9	2.0	µg/L	100		79.9		40-140			
Naphthalene-aliphatic fraction	ND	2.0	µg/L	100				0-5			
2-Methylnaphthalene-aliphatic fraction	ND	2.0	µg/L	100				0-5			
Surrogate: Chlorooctadecane (COD)	*69.9*		µg/L	100		69.9		40-140			
Surrogate: o-Terphenyl (OTP)	*91.9*		µg/L	100		91.9		40-140			
Surrogate: 2-Bromonaphthalene	*95.8*		µg/L	100		95.8		40-140			
Surrogate: 2-Fluorobiphenyl	*105*		µg/L	100		105		40-140			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD		RPD Limit	Notes
Batch B105730 - SW-846 3510C												
LCS Dup (B105730-BSD1)				Prepared & Analyzed: 09/25/14								
Acenaphthene	75.0	2.0	µg/L	100		75.0		40-140	13.6		25	
Acenaphthylene	70.9	2.0	µg/L	100		70.9		40-140	14.3		25	
Anthracene	97.4	2.0	µg/L	100		97.4		40-140	4.92		25	
Benzo(a)anthracene	91.0	2.0	µg/L	100		91.0		40-140	2.14		25	
Benzo(a)pyrene	88.8	2.0	µg/L	100		88.8		40-140	1.97		25	
Benzo(b)fluoranthene	87.9	2.0	µg/L	100		87.9		40-140	2.33		25	
Benzo(g,h,i)perylene	89.0	2.0	µg/L	100		89.0		40-140	2.28		25	
Benzo(k)fluoranthene	87.2	2.0	µg/L	100		87.2		40-140	1.83		25	
Chrysene	91.8	2.0	µg/L	100		91.8		40-140	2.10		25	
Dibenz(a,h)anthracene	86.4	2.0	µg/L	100		86.4		40-140	2.21		25	
Fluoranthene	91.6	2.0	µg/L	100		91.6		40-140	2.98		25	
Fluorene	82.6	2.0	µg/L	100		82.6		40-140	9.96		25	
Indeno(1,2,3-cd)pyrene	71.8	2.0	µg/L	100		71.8		40-140	2.21		25	
2-Methylnaphthalene	64.5	2.0	µg/L	100		64.5		40-140	17.2		25	
Naphthalene	56.5	2.0	µg/L	100		56.5		40-140	17.4		25	
Phenanthrene	89.2	2.0	µg/L	100		89.2		40-140	5.17		25	
Pyrene	91.6	2.0	µg/L	100		91.6		40-140	2.91		25	
n-Decane	32.2	2.0	µg/L	100		**32.2**	*	40-140	20.2		25	L-04, R-05
n-Docosane	82.3	2.0	µg/L	100		82.3		40-140	2.04		25	
n-Dodecane	52.9	2.0	µg/L	100		52.9		40-140	16.1		25	
n-Eicosane	81.2	2.0	µg/L	100		81.2		40-140	3.00		25	
n-Hexacosane	77.7	2.0	µg/L	100		77.7		40-140	1.98		25	
n-Hexadecane	80.0	2.0	µg/L	100		80.0		40-140	5.96		25	
n-Hexatriacontane	84.2	2.0	µg/L	100		84.2		40-140	1.60		25	
n-Nonadecane	83.0	2.0	µg/L	100		83.0		40-140	3.10		25	
n-Nonane	21.1	2.0	µg/L	100		**21.1**	*	30-140	**25.9**	*	25	L-04
n-Octacosane	76.9	2.0	µg/L	100		76.9		40-140	1.48		25	
n-Octadecane	83.6	2.0	µg/L	100		83.6		40-140	3.16		25	
n-Tetracosane	79.0	2.0	µg/L	100		79.0		40-140	1.77		25	
n-Tetradecane	67.4	2.0	µg/L	100		67.4		40-140	13.0		25	
n-Triacontane	78.7	2.0	µg/L	100		78.7		40-140	1.44		25	
Naphthalene-aliphatic fraction	ND	2.0	µg/L	100				0-5				
2-Methylnaphthalene-aliphatic fraction	ND	2.0	µg/L	100				0-5				
Surrogate: Chlorooctadecane (COD)	*66.3*		µg/L	100		66.3		40-140				
Surrogate: o-Terphenyl (OTP)	*86.3*		µg/L	100		86.3		40-140				
Surrogate: 2-Bromonaphthalene	*88.3*		µg/L	100		88.3		40-140				
Surrogate: 2-Fluorobiphenyl	*96.4*		µg/L	100		96.4		40-140				
Batch B105838 - SW-846 3510C												
Blank (B105838-BLK1)				Prepared & Analyzed: 09/26/14								
C9-C18 Aliphatics	ND	100	µg/L									L-04, R-05
C19-C36 Aliphatics	ND	100	µg/L									
Unadjusted C11-C22 Aromatics	ND	100	µg/L									
C11-C22 Aromatics	ND	100	µg/L									
Acenaphthene	ND	2.0	µg/L									
Acenaphthylene	ND	2.0	µg/L									
Anthracene	ND	2.0	µg/L									
Benzo(a)anthracene	ND	2.0	µg/L									
Benzo(a)pyrene	ND	2.0	µg/L									
Benzo(b)fluoranthene	ND	2.0	µg/L									
Benzo(g,h,i)perylene	ND	2.0	µg/L									
Benzo(k)fluoranthene	ND	2.0	µg/L									

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B105838 - SW-846 3510C											
Blank (B105838-BLK1)				Prepared & Analyzed: 09/26/14							
Chrysene	ND	2.0	µg/L								
Dibenz(a,h)anthracene	ND	2.0	µg/L								
Fluoranthene	ND	2.0	µg/L								
Fluorene	ND	2.0	µg/L								
Indeno(1,2,3-cd)pyrene	ND	2.0	µg/L								
2-Methylnaphthalene	ND	2.0	µg/L								
Naphthalene	ND	2.0	µg/L								
Phenanthrene	ND	2.0	µg/L								
Pyrene	ND	2.0	µg/L								
n-Decane	ND	2.0	µg/L								L-04, R-05
n-Docosane	ND	2.0	µg/L								
n-Dodecane	ND	2.0	µg/L								L-04
n-Eicosane	ND	2.0	µg/L								
n-Hexacosane	ND	2.0	µg/L								
n-Hexadecane	ND	2.0	µg/L								
n-Hexatriacontane	ND	2.0	µg/L								
n-Nonadecane	ND	2.0	µg/L								
n-Nonane	ND	2.0	µg/L								L-04, R-05
n-Octacosane	ND	2.0	µg/L								
n-Octadecane	ND	2.0	µg/L								
n-Tetracosane	ND	2.0	µg/L								
n-Tetradecane	ND	2.0	µg/L								
n-Triacontane	ND	2.0	µg/L								
Naphthalene-aliphatic fraction	ND	2.0	µg/L								
2-Methylnaphthalene-aliphatic fraction	ND	2.0	µg/L								
Surrogate: Chlorooctadecane (COD)	*67.2*		µg/L	100		67.2		40-140			
Surrogate: o-Terphenyl (OTP)	*81.8*		µg/L	100		81.8		40-140			
Surrogate: 2-Bromonaphthalene	*105*		µg/L	100		105		40-140			
Surrogate: 2-Fluorobiphenyl	*114*		µg/L	100		114		40-140			
LCS (B105838-BS1)				Prepared & Analyzed: 09/26/14							
Acenaphthene	65.6	2.0	µg/L	100		65.6		40-140			
Acenaphthylene	61.4	2.0	µg/L	100		61.4		40-140			
Anthracene	86.3	2.0	µg/L	100		86.3		40-140			
Benzo(a)anthracene	81.2	2.0	µg/L	100		81.2		40-140			
Benzo(a)pyrene	79.1	2.0	µg/L	100		79.1		40-140			
Benzo(b)fluoranthene	78.5	2.0	µg/L	100		78.5		40-140			
Benzo(g,h,i)perylene	79.3	2.0	µg/L	100		79.3		40-140			
Benzo(k)fluoranthene	77.8	2.0	µg/L	100		77.8		40-140			
Chrysene	82.0	2.0	µg/L	100		82.0		40-140			
Dibenz(a,h)anthracene	77.3	2.0	µg/L	100		77.3		40-140			
Fluoranthene	81.7	2.0	µg/L	100		81.7		40-140			
Fluorene	73.4	2.0	µg/L	100		73.4		40-140			
Indeno(1,2,3-cd)pyrene	64.2	2.0	µg/L	100		64.2		40-140			
2-Methylnaphthalene	49.8	2.0	µg/L	100		49.8		40-140			
Naphthalene	40.2	2.0	µg/L	100		40.2		40-140			
Phenanthrene	78.6	2.0	µg/L	100		78.6		40-140			
Pyrene	81.8	2.0	µg/L	100		81.8		40-140			
n-Decane	11.7	2.0	µg/L	100		**11.7**	*	40-140			L-04, R-05
n-Docosane	77.4	2.0	µg/L	100		77.4		40-140			
n-Dodecane	32.4	2.0	µg/L	100		**32.4**	*	40-140			L-04
n-Eicosane	76.1	2.0	µg/L	100		76.1		40-140			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD		RPD Limit	Notes
Batch B105838 - SW-846 3510C												
LCS (B105838-BS1)				Prepared & Analyzed: 09/26/14								
n-Hexacosane	72.9	2.0	µg/L	100		72.9		40-140				
n-Hexadecane	72.7	2.0	µg/L	100		72.7		40-140				
n-Hexatriacontane	77.4	2.0	µg/L	100		77.4		40-140				
n-Nonadecane	77.5	2.0	µg/L	100		77.5		40-140				
n-Nonane	7.09	2.0	µg/L	100		**7.09**	*	30-140				L-04, R-05
n-Octacosane	71.8	2.0	µg/L	100		71.8		40-140				
n-Octadecane	77.8	2.0	µg/L	100		77.8		40-140				
n-Tetracosane	74.1	2.0	µg/L	100		74.1		40-140				
n-Tetradecane	59.9	2.0	µg/L	100		59.9		40-140				
n-Triacontane	73.3	2.0	µg/L	100		73.3		40-140				
Naphthalene-aliphatic fraction	ND	2.0	µg/L	100				0-5				
2-Methylnaphthalene-aliphatic fraction	ND	2.0	µg/L	100				0-5				
Surrogate: Chlorooctadecane (COD)	*65.8*		µg/L	100		65.8		40-140				
Surrogate: o-Terphenyl (OTP)	*79.6*		µg/L	100		79.6		40-140				
Surrogate: 2-Bromonaphthalene	*93.3*		µg/L	100		93.3		40-140				
Surrogate: 2-Fluorobiphenyl	*104*		µg/L	100		104		40-140				
LCS Dup (B105838-BSD1)				Prepared & Analyzed: 09/26/14								
Acenaphthene	68.4	2.0	µg/L	100		68.4		40-140	4.22		25	
Acenaphthylene	64.2	2.0	µg/L	100		64.2		40-140	4.49		25	
Anthracene	89.4	2.0	µg/L	100		89.4		40-140	3.49		25	
Benzo(a)anthracene	84.7	2.0	µg/L	100		84.7		40-140	4.21		25	
Benzo(a)pyrene	82.4	2.0	µg/L	100		82.4		40-140	4.16		25	
Benzo(b)fluoranthene	82.2	2.0	µg/L	100		82.2		40-140	4.51		25	
Benzo(g,h,i)perylene	82.8	2.0	µg/L	100		82.8		40-140	4.26		25	
Benzo(k)fluoranthene	81.0	2.0	µg/L	100		81.0		40-140	3.98		25	
Chrysene	85.6	2.0	µg/L	100		85.6		40-140	4.25		25	
Dibenz(a,h)anthracene	80.8	2.0	µg/L	100		80.8		40-140	4.39		25	
Fluoranthene	85.0	2.0	µg/L	100		85.0		40-140	3.93		25	
Fluorene	76.5	2.0	µg/L	100		76.5		40-140	4.25		25	
Indeno(1,2,3-cd)pyrene	67.1	2.0	µg/L	100		67.1		40-140	4.35		25	
2-Methylnaphthalene	51.2	2.0	µg/L	100		51.2		40-140	2.75		25	
Naphthalene	41.9	2.0	µg/L	100		41.9		40-140	4.00		25	
Phenanthrene	81.8	2.0	µg/L	100		81.8		40-140	4.05		25	
Pyrene	85.1	2.0	µg/L	100		85.1		40-140	4.03		25	
n-Decane	9.06	2.0	µg/L	100		**9.06**	*	40-140	**25.1**	*	25	L-04, R-05
n-Docosane	78.4	2.0	µg/L	100		78.4		40-140	1.24		25	
n-Dodecane	28.9	2.0	µg/L	100		**28.9**	*	40-140	11.2		25	L-04
n-Eicosane	77.1	2.0	µg/L	100		77.1		40-140	1.22		25	
n-Hexacosane	74.2	2.0	µg/L	100		74.2		40-140	1.73		25	
n-Hexadecane	71.9	2.0	µg/L	100		71.9		40-140	1.13		25	
n-Hexatriacontane	78.7	2.0	µg/L	100		78.7		40-140	1.67		25	
n-Nonadecane	78.5	2.0	µg/L	100		78.5		40-140	1.27		25	
n-Nonane	5.35	2.0	µg/L	100		**5.35**	*	30-140	**27.9**	*	25	L-04, R-05
n-Octacosane	72.9	2.0	µg/L	100		72.9		40-140	1.46		25	
n-Octadecane	78.3	2.0	µg/L	100		78.3		40-140	0.638		25	
n-Tetracosane	75.3	2.0	µg/L	100		75.3		40-140	1.59		25	
n-Tetradecane	58.3	2.0	µg/L	100		58.3		40-140	2.69		25	
n-Triacontane	74.5	2.0	µg/L	100		74.5		40-140	1.63		25	
Naphthalene-aliphatic fraction	ND	2.0	µg/L	100				0-5				
2-Methylnaphthalene-aliphatic fraction	ND	2.0	µg/L	100				0-5				
Surrogate: Chlorooctadecane (COD)	*63.9*		µg/L	100		63.9		40-140				

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B105838 - SW-846 3510C										
LCS Dup (B105838-BSD1)				Prepared & Analyzed: 09/26/14						
Surrogate: o-Terphenyl (OTP)	*81.0*		µg/L	100		81.0	40-140			
Surrogate: 2-Bromonaphthalene	*95.7*		µg/L	100		95.7	40-140			
Surrogate: 2-Fluorobiphenyl	*106*		µg/L	100		106	40-140			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - VPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B105508 - MA VPH										
Blank (B105508-BLK1)				Prepared & Analyzed: 09/23/14						
Unadjusted C5-C8 Aliphatics	ND	100	µg/L							
C5-C8 Aliphatics	ND	100	µg/L							
Unadjusted C9-C12 Aliphatics	ND	100	µg/L							
C9-C12 Aliphatics	ND	100	µg/L							
C9-C10 Aromatics	ND	100	µg/L							
Benzene	ND	1.0	µg/L							
Butylcyclohexane	ND	1.0	µg/L							
Decane	ND	1.0	µg/L							
Ethylbenzene	ND	1.0	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L							
2-Methylpentane	ND	1.0	µg/L							
Naphthalene	ND	5.0	µg/L							
Nonane	ND	1.0	µg/L							
Pentane	ND	1.0	µg/L							
Toluene	ND	1.0	µg/L							
1,2,4-Trimethylbenzene	ND	1.0	µg/L							
2,2,4-Trimethylpentane	ND	1.0	µg/L							
m+p Xylene	ND	2.0	µg/L							
o-Xylene	ND	1.0	µg/L							
Surrogate: 2,5-Dibromotoluene (FID)	*40.2*		µg/L	40.0		101	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*36.5*		µg/L	40.0		91.3	70-130			
LCS (B105508-BS1)				Prepared & Analyzed: 09/23/14						
Benzene	94.7	1.0	µg/L	100		94.7	70-130			
Butylcyclohexane	88.1	1.0	µg/L	100		88.1	70-130			
Decane	101	1.0	µg/L	100		101	70-130			
Ethylbenzene	83.1	1.0	µg/L	100		83.1	70-130			
Methyl tert-Butyl Ether (MTBE)	96.0	1.0	µg/L	100		96.0	70-130			
2-Methylpentane	104	1.0	µg/L	100		104	70-130			
Naphthalene	79.2	5.0	µg/L	100		79.2	70-130			
Nonane	97.8	1.0	µg/L	100		97.8	30-130			
Pentane	112	1.0	µg/L	100		112	70-130			
Toluene	88.8	1.0	µg/L	100		88.8	70-130			
1,2,4-Trimethylbenzene	75.2	1.0	µg/L	100		75.2	70-130			
2,2,4-Trimethylpentane	110	1.0	µg/L	100		110	70-130			
m+p Xylene	169	2.0	µg/L	200		84.7	70-130			
o-Xylene	82.7	1.0	µg/L	100		82.7	70-130			
Surrogate: 2,5-Dibromotoluene (FID)	*32.7*		µg/L	40.0		81.6	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*28.5*		µg/L	40.0		71.3	70-130			
LCS Dup (B105508-BSD1)				Prepared & Analyzed: 09/23/14						
Benzene	87.1	1.0	µg/L	100		87.1	70-130	8.32	25	
Butylcyclohexane	87.6	1.0	µg/L	100		87.6	70-130	0.587	25	
Decane	99.1	1.0	µg/L	100		99.1	70-130	2.36	25	
Ethylbenzene	79.6	1.0	µg/L	100		79.6	70-130	4.37	25	
Methyl tert-Butyl Ether (MTBE)	89.5	1.0	µg/L	100		89.5	70-130	6.99	25	
2-Methylpentane	93.6	1.0	µg/L	100		93.6	70-130	10.6	25	
Naphthalene	91.5	5.0	µg/L	100		91.5	70-130	14.4	25	
Nonane	97.5	1.0	µg/L	100		97.5	30-130	0.304	25	
Pentane	103	1.0	µg/L	100		103	70-130	7.97	25	
Toluene	86.6	1.0	µg/L	100		86.6	70-130	2.52	25	
1,2,4-Trimethylbenzene	73.6	1.0	µg/L	100		73.6	70-130	2.08	25	

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - VPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B105508 - MA VPH										
LCS Dup (B105508-BSD1)				Prepared & Analyzed: 09/23/14						
2,2,4-Trimethylpentane	105	1.0	µg/L	100		105	70-130	4.80	25	
m+p Xylene	162	2.0	µg/L	200		81.2	70-130	4.25	25	
o-Xylene	79.2	1.0	µg/L	100		79.2	70-130	4.29	25	
Surrogate: 2,5-Dibromotoluene (FID)	*41.0*		µg/L	40.0		103	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*36.5*		µg/L	40.0		91.2	70-130			

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QUALITY CONTROL

Metals Analyses (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B105452 - SW-846 3005A Dissolved											
Blank (B105452-BLK1)				Prepared: 09/22/14 Analyzed: 09/23/14							
Arsenic	ND	0.010	mg/L								
Barium	ND	0.050	mg/L								
Cadmium	ND	0.0040	mg/L								
Chromium	ND	0.010	mg/L								
Lead	ND	0.010	mg/L								
Selenium	ND	0.050	mg/L								
Silver	ND	0.0050	mg/L								
LCS (B105452-BS1)				Prepared: 09/22/14 Analyzed: 09/24/14							
Arsenic	0.580	0.010	mg/L	0.500		116		80-120			
Barium	0.589	0.050	mg/L	0.500		118		80-120			
Cadmium	0.600	0.0040	mg/L	0.500		120		80-120			
Chromium	0.590	0.010	mg/L	0.500		118		80-120			
Lead	0.580	0.010	mg/L	0.500		116		80-120			
Selenium	0.605	0.050	mg/L	0.500		**121**	*	80-120			L-07
Silver	0.535	0.0050	mg/L	0.500		107		80-120			
LCS Dup (B105452-BSD1)				Prepared: 09/22/14 Analyzed: 09/24/14							
Arsenic	0.570	0.010	mg/L	0.500		114		80-120	1.65	20	
Barium	0.585	0.050	mg/L	0.500		117		80-120	0.744	20	
Cadmium	0.595	0.0040	mg/L	0.500		119		80-120	0.949	20	
Chromium	0.585	0.010	mg/L	0.500		117		80-120	0.826	20	
Lead	0.581	0.010	mg/L	0.500		116		80-120	0.213	20	
Selenium	0.595	0.050	mg/L	0.500		119		80-120	1.75	20	
Silver	0.532	0.0050	mg/L	0.500		106		80-120	0.549	20	
Duplicate (B105452-DUP1)	**Source: 14I0946-01**			Prepared: 09/22/14 Analyzed: 09/24/14							
Arsenic	ND	0.010	mg/L		ND				NC	20	
Barium	ND	0.050	mg/L		ND				NC	20	
Cadmium	ND	0.0040	mg/L		ND				NC	20	
Chromium	ND	0.010	mg/L		ND				NC	20	
Lead	ND	0.010	mg/L		ND				NC	20	
Selenium	ND	0.050	mg/L		ND				NC	20	
Silver	ND	0.0050	mg/L		ND				NC	20	
Matrix Spike (B105452-MS1)	**Source: 14I0946-01**			Prepared: 09/22/14 Analyzed: 09/24/14							
Arsenic	0.609	0.010	mg/L	0.500	ND	122		75-125			
Barium	0.577	0.050	mg/L	0.500	0.0165	112		75-125			
Cadmium	0.599	0.0040	mg/L	0.500	ND	120		75-125			
Chromium	0.571	0.010	mg/L	0.500	ND	114		75-125			
Lead	0.545	0.010	mg/L	0.500	ND	109		75-125			
Selenium	0.643	0.050	mg/L	0.500	ND	**129**	*	75-125			MS-14
Silver	0.455	0.0050	mg/L	0.500	ND	91.1		75-125			

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QUALITY CONTROL

Metals Analyses (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B105546 - SW-846 7470A Prep										
Blank (B105546-BLK1)				Prepared: 09/23/14 Analyzed: 09/24/14						
Mercury	ND	0.00010	mg/L							
LCS (B105546-BS1)				Prepared: 09/23/14 Analyzed: 09/24/14						
Mercury	0.00183	0.00010	mg/L	0.00200		91.4	80-120			
LCS Dup (B105546-BSD1)				Prepared: 09/23/14 Analyzed: 09/24/14						
Mercury	0.00180	0.00010	mg/L	0.00200		89.9	80-120	1.67	20	

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

MW-102A

Lab Sample ID: 14I0946-07 Date(s) Analyzed: 09/25/2014 09/25/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.25	
	2	0.00	0.00	0.00	0.26	5.5

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B105403-BS1 Date(s) Analyzed: 09/23/2014 09/23/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.39	
	2	0.00	0.00	0.00	0.44	11
Aroclor-1260	1	0.00	0.00	0.00	0.42	
	2	0.00	0.00	0.00	0.43	1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B105403-BSD1 Date(s) Analyzed: 09/23/2014 09/23/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.40	
	2	0.00	0.00	0.00	0.47	16
Aroclor-1260	1	0.00	0.00	0.00	0.45	
	2	0.00	0.00	0.00	0.45	0

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
L-02	Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.
L-04	Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
L-06	Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the high side.
L-07	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
L-07A	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD outside of control limits. Reduced precision anticipated for any reported result for this compound.
L-14	Compound classified by MA CAM as difficult with acceptable recoveries of 40-160%. Recovery does not meet 70-130% criteria but does meet difficult compound criteria.
MS-14	Matrix spike recovery is outside of control limits. Data validation is not affected since sample result is "not detected" and recovery bias is on the high side for this compound.
R-05	Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
RL-07	Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
RL-09	Elevated reporting limit due to high concentration of an interfering analyte(s). MA CAM reporting limit not met.
RL-14	Elevated reporting limit due to foaming sample matrix. MA CAM reporting limit not met.
S-03	Surrogate recovery outside of control limits due to suspected sample matrix interference.
S-12	Surrogate recovery is outside of control limits on confirmatory column, but within control limits on primary column. Data validation is not affected.
S-19	Surrogate recovery is outside of control limits, matrix interference suspected. Reanalysis yielded similar surrogate non-conformance.
V-05	Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
V-16	Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
V-20	Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
MADEP-EPH-04-1.1 in Water	
C9-C18 Aliphatics	CT,NC,WA,ME,NH-P
C19-C36 Aliphatics	CT,NC,WA,ME,NH-P
Unadjusted C11-C22 Aromatics	CT,NC,WA,ME,NH-P
C11-C22 Aromatics	CT,NC,WA,ME,NH-P
Acenaphthene	CT,NC,WA,ME,NH-P
Acenaphthylene	CT,NC,WA,ME,NH-P
Anthracene	CT,NC,WA,ME,NH-P
Benzo(a)anthracene	CT,NC,WA,ME,NH-P
Benzo(a)pyrene	CT,NC,WA,ME,NH-P
Benzo(b)fluoranthene	CT,NC,WA,ME,NH-P
Benzo(g,h,i)perylene	CT,NC,WA,ME,NH-P
Benzo(k)fluoranthene	CT,NC,WA,ME,NH-P
Chrysene	CT,NC,WA,ME,NH-P
Dibenz(a,h)anthracene	CT,NC,WA,ME,NH-P
Fluoranthene	CT,NC,WA,ME,NH-P
Fluorene	CT,NC,WA,ME
Indeno(1,2,3-cd)pyrene	CT,NC,WA,ME,NH-P
2-Methylnaphthalene	CT,NC,WA,ME
Naphthalene	CT,NC,WA,ME,NH-P
Phenanthrene	CT,NC,WA,ME,NH-P
Pyrene	CT,NC,WA,ME,NH-P
MADEP-VPH-04-1.1 in Water	
Unadjusted C5-C8 Aliphatics	CT,NC,WA,ME,NH-P
C5-C8 Aliphatics	CT,NC,WA,ME,NH-P
Unadjusted C9-C12 Aliphatics	CT,NC,WA,ME,NH-P
C9-C12 Aliphatics	CT,NC,WA,ME,NH-P
C9-C10 Aromatics	CT,NC,WA,ME,NH-P
Benzene	CT,NC,WA,ME,NH-P
Ethylbenzene	CT,NC,WA,ME,NH-P
Methyl tert-Butyl Ether (MTBE)	CT,NC,WA,ME,NH-P
Naphthalene	CT,NC,WA,ME,NH-P
Toluene	CT,NC,WA,ME,NH-P
m+p Xylene	CT,NC,WA,ME,NH-P
o-Xylene	CT,NC,WA,ME,NH-P
SW-846 6010C in Water	
Arsenic	CT,NH,NY,ME,NC,VA,NJ
Barium	MA,NY,CT,NH,NC,ME,VA,NJ
Cadmium	CT,NH,NY,ME,NC,VA,NJ
Chromium	CT,NH,NY,ME,NC,VA,NJ
Lead	CT,NH,NY,NC,ME,VA,NJ
Selenium	CT,NH,NY,ME,NC,VA,NJ
Silver	CT,NH,NY,ME,NC,VA,NJ
SW-846 7470A in Water	
Mercury	CT,NH,NY,NC,ME,VA,NJ
SW-846 8082A in Water	

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Water	
Aroclor-1016	CT,NH,NY,NC,ME,VA,NJ
Aroclor-1016 [2C]	CT,NH,NY,NC,ME,VA,NJ
Aroclor-1221	CT,NH,NY,NC,ME,VA,NJ
Aroclor-1221 [2C]	CT,NH,NY,NC,ME,VA,NJ
Aroclor-1232	CT,NH,NY,NC,ME,VA,NJ
Aroclor-1232 [2C]	CT,NH,NY,NC,ME,VA,NJ
Aroclor-1242	CT,NH,NY,NC,ME,VA,NJ
Aroclor-1242 [2C]	CT,NH,NY,NC,ME,VA,NJ
Aroclor-1248	CT,NH,NY,NC,ME,VA,NJ
Aroclor-1248 [2C]	CT,NH,NY,NC,ME,VA,NJ
Aroclor-1254	CT,NH,NY,NC,ME,VA,NJ
Aroclor-1254 [2C]	CT,NH,NY,NC,ME,VA,NJ
Aroclor-1260	CT,NH,NY,NC,ME,VA,NJ
Aroclor-1260 [2C]	CT,NH,NY,NC,ME,VA,NJ
Aroclor-1262	NC
Aroclor-1262 [2C]	NC
Aroclor-1268	NC
Aroclor-1268 [2C]	NC
SW-846 8260C in Water	
Acetone	CT,NH,NY,ME
tert-Amyl Methyl Ether (TAME)	NH,NY,ME
Benzene	CT,NH,NY,ME
Bromobenzene	ME
Bromochloromethane	NH,NY,ME
Bromodichloromethane	CT,NH,NY,ME
Bromoform	CT,NH,NY,ME
Bromomethane	CT,NH,NY,ME
2-Butanone (MEK)	CT,NH,NY,ME
n-Butylbenzene	NY,ME
sec-Butylbenzene	NY,ME
tert-Butylbenzene	NY,ME
tert-Butyl Ethyl Ether (TBEE)	NH,NY,ME
Carbon Disulfide	CT,NH,NY,ME
Carbon Tetrachloride	CT,NH,NY,ME
Chlorobenzene	CT,NH,NY,ME
Chlorodibromomethane	CT,NH,NY,ME
Chloroethane	CT,NH,NY,ME
Chloroform	CT,NH,NY,ME
Chloromethane	CT,NH,NY,ME
2-Chlorotoluene	NY,ME
4-Chlorotoluene	NY,ME
Dibromomethane	NH,NY,ME
1,2-Dichlorobenzene	CT,NY,ME
1,3-Dichlorobenzene	CT,NH,NY,ME
1,4-Dichlorobenzene	CT,NH,NY,ME
Dichlorodifluoromethane (Freon 12)	NH,NY,ME

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260C in Water	
1,1-Dichloroethane	CT,NH,NY,ME
1,2-Dichloroethane	CT,NH,NY,ME
1,1-Dichloroethylene	CT,NH,NY,ME
cis-1,2-Dichloroethylene	NY,ME
trans-1,2-Dichloroethylene	CT,NH,NY,ME
1,2-Dichloropropane	CT,NH,NY,ME
1,3-Dichloropropane	NY,ME
2,2-Dichloropropane	NH,NY,ME
1,1-Dichloropropene	NH,NY,ME
cis-1,3-Dichloropropene	CT,NH,NY,ME
trans-1,3-Dichloropropene	CT,NH,NY,ME
Diisopropyl Ether (DIPE)	NH,NY,ME
Ethylbenzene	CT,NH,NY,ME
Hexachlorobutadiene	CT,NH,NY,ME
2-Hexanone (MBK)	CT,NH,NY,ME
Isopropylbenzene (Cumene)	NY,ME
p-Isopropyltoluene (p-Cymene)	CT,NH,NY,ME
Methyl tert-Butyl Ether (MTBE)	CT,NH,NY,ME
Methylene Chloride	CT,NH,NY,ME
4-Methyl-2-pentanone (MIBK)	CT,NH,NY,ME
Naphthalene	NH,NY,ME
n-Propylbenzene	CT,NH,NY,ME
Styrene	CT,NH,NY,ME
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME
Tetrachloroethylene	CT,NH,NY,ME
Toluene	CT,NH,NY,ME
1,2,3-Trichlorobenzene	NH,NY,ME
1,2,4-Trichlorobenzene	CT,NH,NY,ME
1,1,1-Trichloroethane	CT,NH,NY,ME
1,1,2-Trichloroethane	CT,NH,NY,ME
Trichloroethylene	CT,NH,NY,ME
Trichlorofluoromethane (Freon 11)	CT,NH,NY,ME
1,2,3-Trichloropropane	NH,NY,ME
1,2,4-Trimethylbenzene	NY,ME
1,3,5-Trimethylbenzene	NY,ME
Vinyl Chloride	CT,NH,NY,ME
m+p Xylene	CT,NH,NY,ME
o-Xylene	CT,NH,NY,ME

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The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2015
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2015
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2015
RI	Rhode Island Department of Health	LAO00112	12/30/2014
NC	North Carolina Div. of Water Quality	652	12/31/2014
NJ	New Jersey DEP	MA007 NELAP	06/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2015
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2015
WA	State of Washington Department of Ecology	C2065	02/23/2015
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2014
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2015

Table of Contents

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39 Spruce Street
East Longmeadow, MA 01028

CHAIN OF CUSTODY RECORD

14I0946

Rev. 04.05.12

Page ____ of ____

Company Name: Weston and Sampson
Address: 5 Centennial Drive, Peabody, MA
Attention: Todd Bradford
Project Location: 105 First Ave Chelsea
Sampled By: PTK 781-710-4391
Telephone:
Project #
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email:
Format: ○ PDF ○ EXCEL ○ GIS ○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Cont. Code	EPH w/ PAHs	VPH	8260	PCBs	8 RCRA
01	MW-101	9/9	9:00		X	HW			X	X		X
02	MW-WS1	"	11:20		X			X	X	X	X	X
03	MW-20	"	8:00		X			X	X	X	X	X
04	MW-EX02	9/10	12:00		X			X	X	X	X	X
05	MW-EX01	9/9	2:30		X			X	X	X	X	X
06	MW-EX03	9/9	2:00		X			X	X	X	X	X
07	MW-102A	9/9	4:00		X			X	X	X	X	X
08	Trip Blank									X		

# of Containers: 9/10 | 2 | 2 | 2 | 1
** Preservation:
***Container Code: A | V | V | V | P

ANALYSIS REQUESTED

Dissolved Metals: ☒ Field Filtered ○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V=vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other

Comments: Run TB for VOCs only. GW-2/3 per Todd B. Rev 9/22/14

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time:
Peyton Kenan	9/9/14 4:35
Received by: (signature)	Date/Time:
[illegible]	9/9/14 16:35
Relinquished by: (signature)	Date/Time:
[illegible]	9/9/14 1941
Received by: (signature)	Date/Time:
[illegible]	9/10/14 9:45

Turnaround ‡
☐ 7-Day
☐ 10-Day
☐ Other 5 DAY
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts: GW-2/3
Connecticut:
Other:

Is your project MCP or RCP ?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

‡ TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

Page 83 of 86 1410946_2 Contest_Final 09 29 14 1731 09/29/14 17:31:34

39 Spruce St.
East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
www.contestlabs.com

con-test ANALYTICAL LABORATORY

Sample Receipt Checklist

CLIENT NAME: Weston + Sampson RECEIVED BY: MJ DATE: 9/14/14

1) Was the chain(s) of custody relinquished and signed? (Yes) No No CoC Included
2) Does the chain agree with the samples? (Yes) No
If not, explain:
3) Are all the samples in good condition? (Yes) No
If not, explain:
4) How were the samples received:
On Ice [X] Direct from Sampling [ ] Ambient [ ] In Cooler(s) [X]
Were the samples received in Temperature Compliance of (2-6°C)? (Yes) No N/A
Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.3°C
5) Are there Dissolved samples for the lab to filter? Yes (No)
Who was notified _____ Date _____ Time _____
6) Are there any RUSH or SHORT HOLDING TIME samples? Yes (No)
Who was notified _____ Date _____ Time _____
7) Location where samples are stored: 19
Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature: _____
8) Do all samples have the proper Acid pH: (Yes) No N/A MJ MW-EX01 pH>2
9) Do all samples have the proper Base pH: Yes No (N/A)
10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No (N/A)

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber	24	8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic	7	Non-ConTest Container	
40 mL Vial - type listed below	34	Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl 34 # Methanol _____
Bisulfate _____ # DI Water _____
Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)

Any False statement will be brought to the attention of Client

Question	Answer (True/False) T/F/NA	Comment
1) The cooler's custody seal, if present, is intact.	T	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	T	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.		
17) No headspace sample bottles are completely filled.	F	MW-EX01
18) There is sufficient volume for all requsted analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	T	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	T	
21) Samples do not require splitting or compositing.	T	

Who notified of False statements? Date/Time:

Doc #277 Rev. 4 August 2013 Log-In Technician Initials: Date/Time:

MS 9/19/14 19:45

MADEP MCP Analytical Method Report Certification Form

Laboratory Name:	Con-Test Analytical Laboratory	Project #:	14I0946
Project Location:	105 First Ave., Charlestown, MA	RTN:	

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

14I0946-01 thru 14I0946-08

Matrices: Water

CAM Protocol (check all that below)

8260 VOC CAM II A (X)	7470/7471 Hg CAM IIIB (X)	MassDEP VPH CAM IV A (X)	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A (X)	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )
6010 Metals CAM III A (X)	6020 Metals CAM III D ( )	8082 PCB CAM V A (X)	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☑ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]

A response to questions G, H and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☐ Yes	☑ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 09/29/14

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

December 30, 2014

Todd Bridgeo
Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960

Project Location: Charlestown
Client Job Number:
Project Number: [none]
Laboratory Work Order Number: 14L0961

Enclosed are results of analyses for samples received by the laboratory on December 22, 2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960
ATTN: Todd Bridgeo

REPORT DATE: 12/30/2014

PURCHASE ORDER NUMBER:

PROJECT NUMBER: [none]

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 14L0961

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Charlestown

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
RH Wall 1	14L0961-01	Product/Solid		SW-846 8082A	
RH Wall 2	14L0961-02	Product/Solid		SW-846 8082A	
RH Wall 3	14L0961-03	Product/Solid		SW-846 8082A	
RH Wall 4	14L0961-04	Product/Solid		SW-846 8082A	
RH Wall 5	14L0961-05	Product/Solid		SW-846 8082A	
BS Wall 1	14L0961-06	Product/Solid		SW-846 8082A	
BS Wall 2	14L0961-07	Product/Solid		SW-846 8082A	
BS Wall 3	14L0961-08	Product/Solid		SW-846 8082A	
BS Wall 4	14L0961-09	Product/Solid		SW-846 8082A	
BS Wall 5	14L0961-10	Product/Solid		SW-846 8082A	
CS 101 (0.5-2in)	14L0961-11	Product/Solid		SW-846 8082A	
CS 101 (0-0.5in)	14L0961-12	Product/Solid		SW-846 8082A	
CS 102 (0-0.5in)	14L0961-13	Product/Solid		SW-846 8082A	
CS 102 (0.5-2in)	14L0961-14	Product/Solid		SW-846 8082A	
CS 103 (0-0.5in)	14L0961-15	Product/Solid		SW-846 8082A	
CS 103 (0.5-2in)	14L0961-16	Product/Solid		SW-846 8082A	
CS 104 (0-0.5in)	14L0961-17	Product/Solid		SW-846 8082A	
CS 104 (0.5-2in)	14L0961-18	Product/Solid		SW-846 8082A	
CS 105 (0-0.5in)	14L0961-19	Product/Solid		SW-846 8082A	
CS 105 (0.5-2in)	14L0961-20	Product/Solid		SW-846 8082A	

con-test® ANALYTICAL LABORATORY

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SW-846 8082A

Qualifications:

MS-21

Matrix spike and/or spike duplicate recovery bias high due to contribution of other Aroclors present in the source sample.

Analyte & Samples(s) Qualified:

Aroclor-1016 [2C]
B112305-MS1, B112305-MSD1

Aroclor-1260
B112305-MS1, B112305-MSD1

Aroclor-1260 [2C]
B112305-MS1, B112305-MSD1

O-03

Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.

Analyte & Samples(s) Qualified:

Aroclor-1254
14L0961-06[BS Wall 1], 14L0961-07[BS Wall 2], 14L0961-08[BS Wall 3], 14L0961-09[BS Wall 4], 14L0961-10[BS Wall 5]

Aroclor-1254 [2C]
14L0961-06[BS Wall 1], 14L0961-07[BS Wall 2], 14L0961-08[BS Wall 3], 14L0961-09[BS Wall 4], 14L0961-10[BS Wall 5]

O-04

Sample fingerprint does not match standard exactly. Sample was quantitated against the closest matching standard.

Analyte & Samples(s) Qualified:

Aroclor-1260
14L0961-03[RH Wall 3]

Aroclor-1260 [2C]
14L0961-03[RH Wall 3]

S-01

The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

Analyte & Samples(s) Qualified:

Decachlorobiphenyl
14L0961-19[CS 105 (0-0.5in)]

Decachlorobiphenyl [2C]
14L0961-19[CS 105 (0-0.5in)]

Tetrachloro-m-xylene
14L0961-19[CS 105 (0-0.5in)]

Tetrachloro-m-xylene [2C]
14L0961-19[CS 105 (0-0.5in)]

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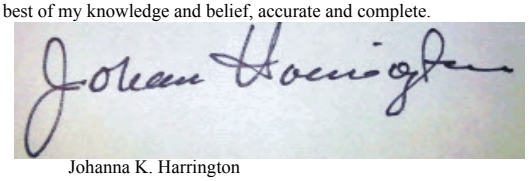
The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Johanna K. Harrington
Manager, Laboratory Reporting

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown | Sample Description: | Work Order: 14L0961

Date Received: 12/22/2014

Field Sample #: RH Wall 1 | Sampled: 12/18/2014 09:55

Sample ID: 14L0961-01

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:22	MJC
Aroclor-1221 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:22	MJC
Aroclor-1232 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:22	MJC
Aroclor-1242 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:22	MJC
Aroclor-1248 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:22	MJC
Aroclor-1254 [2]	0.22	0.091	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:22	MJC
Aroclor-1260 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:22	MJC
Aroclor-1262 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:22	MJC
Aroclor-1268 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:22	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	86.9	30-150		12/26/14 17:22
Decachlorobiphenyl [2]	91.7	30-150		12/26/14 17:22
Tetrachloro-m-xylene [1]	81.3	30-150		12/26/14 17:22
Tetrachloro-m-xylene [2]	85.7	30-150		12/26/14 17:22

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Project Location: Charlestown | Sample Description: | Work Order: 14L0961

Date Received: 12/22/2014

Field Sample #: RH Wall 2 | Sampled: 12/18/2014 10:00

Sample ID: 14L0961-02

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:34	MJC
Aroclor-1221 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:34	MJC
Aroclor-1232 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:34	MJC
Aroclor-1242 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:34	MJC
Aroclor-1248 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:34	MJC
Aroclor-1254 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:34	MJC
Aroclor-1260 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:34	MJC
Aroclor-1262 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:34	MJC
Aroclor-1268 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:34	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	88.1	30-150		12/26/14 17:34
Decachlorobiphenyl [2]	93.4	30-150		12/26/14 17:34
Tetrachloro-m-xylene [1]	82.8	30-150		12/26/14 17:34
Tetrachloro-m-xylene [2]	87.6	30-150		12/26/14 17:34

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Project Location: Charlestown | Sample Description: | Work Order: 14L0961

Date Received: 12/22/2014

Field Sample #: RH Wall 3 | Sampled: 12/18/2014 10:10

Sample ID: 14L0961-03

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:47	MJC
Aroclor-1221 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:47	MJC
Aroclor-1232 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:47	MJC
Aroclor-1242 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:47	MJC
Aroclor-1248 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:47	MJC
Aroclor-1254 [1]	0.19	0.095	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:47	MJC
Aroclor-1260 [2]	0.25	0.095	mg/Kg	1	O-04	SW-846 8082A	12/22/14	12/26/14 17:47	MJC
Aroclor-1262 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:47	MJC
Aroclor-1268 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:47	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	78.9	30-150		12/26/14 17:47
Decachlorobiphenyl [2]	86.3	30-150		12/26/14 17:47
Tetrachloro-m-xylene [1]	87.3	30-150		12/26/14 17:47
Tetrachloro-m-xylene [2]	93.5	30-150		12/26/14 17:47

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Project Location: Charlestown | Sample Description: | Work Order: 14L0961

Date Received: 12/22/2014

Field Sample #: RH Wall 4 | Sampled: 12/18/2014 10:15

Sample ID: 14L0961-04

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:59	MJC
Aroclor-1221 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:59	MJC
Aroclor-1232 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:59	MJC
Aroclor-1242 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:59	MJC
Aroclor-1248 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:59	MJC
Aroclor-1254 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:59	MJC
Aroclor-1260 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:59	MJC
Aroclor-1262 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:59	MJC
Aroclor-1268 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 17:59	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	83.3	30-150		12/26/14 17:59
Decachlorobiphenyl [2]	88.7	30-150		12/26/14 17:59
Tetrachloro-m-xylene [1]	83.4	30-150		12/26/14 17:59
Tetrachloro-m-xylene [2]	87.9	30-150		12/26/14 17:59

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown | Sample Description: | Work Order: 14L0961

Date Received: 12/22/2014

Field Sample #: RH Wall 5 | Sampled: 12/18/2014 09:45

Sample ID: 14L0961-05

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:11	MJC
Aroclor-1221 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:11	MJC
Aroclor-1232 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:11	MJC
Aroclor-1242 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:11	MJC
Aroclor-1248 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:11	MJC
Aroclor-1254 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:11	MJC
Aroclor-1260 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:11	MJC
Aroclor-1262 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:11	MJC
Aroclor-1268 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:11	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	88.2	30-150		12/26/14 18:11
Decachlorobiphenyl [2]	91.7	30-150		12/26/14 18:11
Tetrachloro-m-xylene [1]	81.8	30-150		12/26/14 18:11
Tetrachloro-m-xylene [2]	86.8	30-150		12/26/14 18:11

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Project Location: Charlestown | Sample Description: | Work Order: 14L0961

Date Received: 12/22/2014

Field Sample #: BS Wall 1 | Sampled: 12/18/2014 11:45

Sample ID: 14L0961-06

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:24	MJC
Aroclor-1221 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:24	MJC
Aroclor-1232 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:24	MJC
Aroclor-1242 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:24	MJC
Aroclor-1248 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:24	MJC
Aroclor-1254 [2]	0.37	0.096	mg/Kg	1	O-03	SW-846 8082A	12/22/14	12/26/14 18:24	MJC
Aroclor-1260 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:24	MJC
Aroclor-1262 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:24	MJC
Aroclor-1268 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:24	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	87.1	30-150		12/26/14 18:24
Decachlorobiphenyl [2]	91.9	30-150		12/26/14 18:24
Tetrachloro-m-xylene [1]	84.6	30-150		12/26/14 18:24
Tetrachloro-m-xylene [2]	90.3	30-150		12/26/14 18:24

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Project Location: Charlestown | Sample Description: | Work Order: 14L0961

Date Received: 12/22/2014

Field Sample #: BS Wall 2 | Sampled: 12/18/2014 11:50

Sample ID: 14L0961-07

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:36	MJC
Aroclor-1221 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:36	MJC
Aroclor-1232 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:36	MJC
Aroclor-1242 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:36	MJC
Aroclor-1248 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:36	MJC
Aroclor-1254 [2]	0.21	0.099	mg/Kg	1	O-03	SW-846 8082A	12/22/14	12/26/14 18:36	MJC
Aroclor-1260 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:36	MJC
Aroclor-1262 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:36	MJC
Aroclor-1268 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:36	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	87.8	30-150		12/26/14 18:36
Decachlorobiphenyl [2]	92.5	30-150		12/26/14 18:36
Tetrachloro-m-xylene [1]	85.2	30-150		12/26/14 18:36
Tetrachloro-m-xylene [2]	90.4	30-150		12/26/14 18:36

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Project Location: Charlestown | Sample Description: | Work Order: 14L0961

Date Received: 12/22/2014

Field Sample #: BS Wall 3 | Sampled: 12/18/2014 11:00

Sample ID: 14L0961-08

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:48	MJC
Aroclor-1221 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:48	MJC
Aroclor-1232 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:48	MJC
Aroclor-1242 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:48	MJC
Aroclor-1248 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:48	MJC
Aroclor-1254 [2]	0.12	0.098	mg/Kg	1	O-03	SW-846 8082A	12/22/14	12/26/14 18:48	MJC
Aroclor-1260 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:48	MJC
Aroclor-1262 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:48	MJC
Aroclor-1268 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 18:48	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	83.5	30-150		12/26/14 18:48
Decachlorobiphenyl [2]	88.1	30-150		12/26/14 18:48
Tetrachloro-m-xylene [1]	79.1	30-150		12/26/14 18:48
Tetrachloro-m-xylene [2]	83.6	30-150		12/26/14 18:48

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Project Location: Charlestown | Sample Description: | Work Order: 14L0961

Date Received: 12/22/2014

Field Sample #: BS Wall 4 | Sampled: 12/18/2014 11:30

Sample ID: 14L0961-09

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:01	MJC
Aroclor-1221 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:01	MJC
Aroclor-1232 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:01	MJC
Aroclor-1242 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:01	MJC
Aroclor-1248 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:01	MJC
Aroclor-1254 [2]	0.39	0.098	mg/Kg	1	O-03	SW-846 8082A	12/22/14	12/26/14 19:01	MJC
Aroclor-1260 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:01	MJC
Aroclor-1262 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:01	MJC
Aroclor-1268 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:01	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	86.5	30-150		12/26/14 19:01
Decachlorobiphenyl [2]	91.2	30-150		12/26/14 19:01
Tetrachloro-m-xylene [1]	84.6	30-150		12/26/14 19:01
Tetrachloro-m-xylene [2]	89.5	30-150		12/26/14 19:01

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Project Location: Charlestown | Sample Description: | Work Order: 14L0961

Date Received: 12/22/2014

Field Sample #: BS Wall 5 | Sampled: 12/18/2014 11:25

Sample ID: 14L0961-10

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:43	MJC
Aroclor-1221 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:43	MJC
Aroclor-1232 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:43	MJC
Aroclor-1242 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:43	MJC
Aroclor-1248 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:43	MJC
Aroclor-1254 [2]	0.32	0.099	mg/Kg	1	O-03	SW-846 8082A	12/22/14	12/26/14 19:43	MJC
Aroclor-1260 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:43	MJC
Aroclor-1262 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:43	MJC
Aroclor-1268 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:43	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	84.1	30-150		12/26/14 19:43
Decachlorobiphenyl [2]	87.4	30-150		12/26/14 19:43
Tetrachloro-m-xylene [1]	83.4	30-150		12/26/14 19:43
Tetrachloro-m-xylene [2]	88.6	30-150		12/26/14 19:43

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Project Location: Charlestown | Sample Description: | Work Order: 14L0961

Date Received: 12/22/2014

Field Sample #: CS 101 (0.5-2in) | Sampled: 12/18/2014 10:35

Sample ID: 14L0961-11

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:55	MJC
Aroclor-1221 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:55	MJC
Aroclor-1232 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:55	MJC
Aroclor-1242 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:55	MJC
Aroclor-1248 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:55	MJC
Aroclor-1254 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:55	MJC
Aroclor-1260 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:55	MJC
Aroclor-1262 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:55	MJC
Aroclor-1268 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 19:55	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	92.5	30-150		12/26/14 19:55
Decachlorobiphenyl [2]	99.6	30-150		12/26/14 19:55
Tetrachloro-m-xylene [1]	84.6	30-150		12/26/14 19:55
Tetrachloro-m-xylene [2]	96.2	30-150		12/26/14 19:55

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Project Location: Charlestown | Sample Description: | Work Order: 14L0961

Date Received: 12/22/2014

Field Sample #: CS 101 (0-0.5in) | Sampled: 12/18/2014 10:30

Sample ID: 14L0961-12

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:07	MJC
Aroclor-1221 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:07	MJC
Aroclor-1232 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:07	MJC
Aroclor-1242 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:07	MJC
Aroclor-1248 [2]	0.19	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:07	MJC
Aroclor-1254 [2]	0.30	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:07	MJC
Aroclor-1260 [1]	0.38	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:07	MJC
Aroclor-1262 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:07	MJC
Aroclor-1268 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:07	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	78.9	30-150		12/26/14 20:07
Decachlorobiphenyl [2]	86.7	30-150		12/26/14 20:07
Tetrachloro-m-xylene [1]	82.6	30-150		12/26/14 20:07
Tetrachloro-m-xylene [2]	90.5	30-150		12/26/14 20:07

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Project Location: Charlestown | Sample Description: | Work Order: 14L0961

Date Received: 12/22/2014

Field Sample #: CS 102 (0-0.5in) | Sampled: 12/18/2014 11:10

Sample ID: 14L0961-13

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:20	MJC
Aroclor-1221 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:20	MJC
Aroclor-1232 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:20	MJC
Aroclor-1242 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:20	MJC
Aroclor-1248 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:20	MJC
Aroclor-1254 [2]	0.29	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:20	MJC
Aroclor-1260 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:20	MJC
Aroclor-1262 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:20	MJC
Aroclor-1268 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:20	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	73.2	30-150		12/26/14 20:20
Decachlorobiphenyl [2]	80.8	30-150		12/26/14 20:20
Tetrachloro-m-xylene [1]	67.6	30-150		12/26/14 20:20
Tetrachloro-m-xylene [2]	77.2	30-150		12/26/14 20:20

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Project Location: Charlestown | Sample Description: | Work Order: 14L0961

Date Received: 12/22/2014

Field Sample #: CS 102 (0.5-2in) | Sampled: 12/18/2014 11:15

Sample ID: 14L0961-14

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:32	MJC
Aroclor-1221 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:32	MJC
Aroclor-1232 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:32	MJC
Aroclor-1242 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:32	MJC
Aroclor-1248 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:32	MJC
Aroclor-1254 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:32	MJC
Aroclor-1260 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:32	MJC
Aroclor-1262 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:32	MJC
Aroclor-1268 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 20:32	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	89.9	30-150		12/26/14 20:32
Decachlorobiphenyl [2]	98.2	30-150		12/26/14 20:32
Tetrachloro-m-xylene [1]	85.0	30-150		12/26/14 20:32
Tetrachloro-m-xylene [2]	98.2	30-150		12/26/14 20:32

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Project Location: Charlestown | Sample Description: | Work Order: 14L0961

Date Received: 12/22/2014

Field Sample #: CS 103 (0-0.5in) | Sampled: 12/18/2014 13:10

Sample ID: 14L0961-15

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	12/22/14	12/27/14 11:28	MJC
Aroclor-1221 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	12/22/14	12/27/14 11:28	MJC
Aroclor-1232 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	12/22/14	12/27/14 11:28	MJC
Aroclor-1242 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	12/22/14	12/27/14 11:28	MJC
Aroclor-1248 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	12/22/14	12/27/14 11:28	MJC
Aroclor-1254 [1]	6.2	0.99	mg/Kg	10		SW-846 8082A	12/22/14	12/27/14 11:28	MJC
Aroclor-1260 [2]	2.2	0.99	mg/Kg	10		SW-846 8082A	12/22/14	12/27/14 11:28	MJC
Aroclor-1262 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	12/22/14	12/27/14 11:28	MJC
Aroclor-1268 [1]	ND	0.99	mg/Kg	10		SW-846 8082A	12/22/14	12/27/14 11:28	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	95.1	30-150		12/27/14 11:28
Decachlorobiphenyl [2]	90.8	30-150		12/27/14 11:28
Tetrachloro-m-xylene [1]	88.5	30-150		12/27/14 11:28
Tetrachloro-m-xylene [2]	88.9	30-150		12/27/14 11:28

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown | Sample Description: | Work Order: 14L0961

Date Received: 12/22/2014

Field Sample #: CS 103 (0.5-2in) | Sampled: 12/18/2014 13:15

Sample ID: 14L0961-16

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.49	mg/Kg	5		SW-846 8082A	12/22/14	12/27/14 11:40	MJC
Aroclor-1221 [1]	ND	0.49	mg/Kg	5		SW-846 8082A	12/22/14	12/27/14 11:40	MJC
Aroclor-1232 [1]	ND	0.49	mg/Kg	5		SW-846 8082A	12/22/14	12/27/14 11:40	MJC
Aroclor-1242 [1]	ND	0.49	mg/Kg	5		SW-846 8082A	12/22/14	12/27/14 11:40	MJC
Aroclor-1248 [1]	ND	0.49	mg/Kg	5		SW-846 8082A	12/22/14	12/27/14 11:40	MJC
Aroclor-1254 [1]	2.4	0.49	mg/Kg	5		SW-846 8082A	12/22/14	12/27/14 11:40	MJC
Aroclor-1260 [2]	0.64	0.49	mg/Kg	5		SW-846 8082A	12/22/14	12/27/14 11:40	MJC
Aroclor-1262 [1]	ND	0.49	mg/Kg	5		SW-846 8082A	12/22/14	12/27/14 11:40	MJC
Aroclor-1268 [1]	ND	0.49	mg/Kg	5		SW-846 8082A	12/22/14	12/27/14 11:40	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	95.4	30-150		12/27/14 11:40
Decachlorobiphenyl [2]	96.5	30-150		12/27/14 11:40
Tetrachloro-m-xylene [1]	102	30-150		12/27/14 11:40
Tetrachloro-m-xylene [2]	104	30-150		12/27/14 11:40

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Project Location: Charlestown | Sample Description: | Work Order: 14L0961

Date Received: 12/22/2014

Field Sample #: CS 104 (0-0.5in) | Sampled: 12/18/2014 13:00

Sample ID: 14L0961-17

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	12/22/14	12/27/14 11:52	MJC
Aroclor-1221 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	12/22/14	12/27/14 11:52	MJC
Aroclor-1232 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	12/22/14	12/27/14 11:52	MJC
Aroclor-1242 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	12/22/14	12/27/14 11:52	MJC
Aroclor-1248 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	12/22/14	12/27/14 11:52	MJC
Aroclor-1254 [2]	3.3	0.48	mg/Kg	5		SW-846 8082A	12/22/14	12/27/14 11:52	MJC
Aroclor-1260 [2]	0.81	0.48	mg/Kg	5		SW-846 8082A	12/22/14	12/27/14 11:52	MJC
Aroclor-1262 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	12/22/14	12/27/14 11:52	MJC
Aroclor-1268 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	12/22/14	12/27/14 11:52	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	84.5	30-150		12/27/14 11:52
Decachlorobiphenyl [2]	87.7	30-150		12/27/14 11:52
Tetrachloro-m-xylene [1]	71.6	30-150		12/27/14 11:52
Tetrachloro-m-xylene [2]	74.9	30-150		12/27/14 11:52

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Project Location: Charlestown | Sample Description: | Work Order: 14L0961

Date Received: 12/22/2014

Field Sample #: CS 104 (0.5-2in) | Sampled: 12/18/2014 13:05

Sample ID: 14L0961-18

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 21:21	MJC
Aroclor-1221 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 21:21	MJC
Aroclor-1232 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 21:21	MJC
Aroclor-1242 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 21:21	MJC
Aroclor-1248 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 21:21	MJC
Aroclor-1254 [2]	0.76	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 21:21	MJC
Aroclor-1260 [2]	0.17	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 21:21	MJC
Aroclor-1262 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 21:21	MJC
Aroclor-1268 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	12/22/14	12/26/14 21:21	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	83.0	30-150		12/26/14 21:21
Decachlorobiphenyl [2]	91.2	30-150		12/26/14 21:21
Tetrachloro-m-xylene [1]	78.3	30-150		12/26/14 21:21
Tetrachloro-m-xylene [2]	89.1	30-150		12/26/14 21:21

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Project Location: Charlestown | Sample Description: | Work Order: 14L0961

Date Received: 12/22/2014

Field Sample #: CS 105 (0-0.5in) | Sampled: 12/18/2014 12:30

Sample ID: 14L0961-19

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	9.7	mg/Kg	100		SW-846 8082A	12/22/14	12/27/14 12:05	MJC
Aroclor-1221 [1]	ND	9.7	mg/Kg	100		SW-846 8082A	12/22/14	12/27/14 12:05	MJC
Aroclor-1232 [1]	ND	9.7	mg/Kg	100		SW-846 8082A	12/22/14	12/27/14 12:05	MJC
Aroclor-1242 [1]	ND	9.7	mg/Kg	100		SW-846 8082A	12/22/14	12/27/14 12:05	MJC
Aroclor-1248 [1]	ND	9.7	mg/Kg	100		SW-846 8082A	12/22/14	12/27/14 12:05	MJC
Aroclor-1254 [2]	44	9.7	mg/Kg	100		SW-846 8082A	12/22/14	12/27/14 12:05	MJC
Aroclor-1260 [1]	ND	9.7	mg/Kg	100		SW-846 8082A	12/22/14	12/27/14 12:05	MJC
Aroclor-1262 [1]	ND	9.7	mg/Kg	100		SW-846 8082A	12/22/14	12/27/14 12:05	MJC
Aroclor-1268 [1]	ND	9.7	mg/Kg	100		SW-846 8082A	12/22/14	12/27/14 12:05	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	*	30-150	S-01	12/27/14 12:05
Decachlorobiphenyl [2]	*	30-150	S-01	12/27/14 12:05
Tetrachloro-m-xylene [1]	*	30-150	S-01	12/27/14 12:05
Tetrachloro-m-xylene [2]	*	30-150	S-01	12/27/14 12:05

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Project Location: Charlestown | Sample Description: | Work Order: 14L0961

Date Received: 12/22/2014

Field Sample #: CS 105 (0.5-2in) | Sampled: 12/18/2014 12:35

Sample ID: 14L0961-20

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/22/14	12/27/14 12:17	MJC
Aroclor-1221 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/22/14	12/27/14 12:17	MJC
Aroclor-1232 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/22/14	12/27/14 12:17	MJC
Aroclor-1242 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/22/14	12/27/14 12:17	MJC
Aroclor-1248 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/22/14	12/27/14 12:17	MJC
Aroclor-1254 [2]	12	1.9	mg/Kg	20		SW-846 8082A	12/22/14	12/27/14 12:17	MJC
Aroclor-1260 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/22/14	12/27/14 12:17	MJC
Aroclor-1262 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/22/14	12/27/14 12:17	MJC
Aroclor-1268 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/22/14	12/27/14 12:17	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	90.0	30-150		12/27/14 12:17
Decachlorobiphenyl [2]	82.8	30-150		12/27/14 12:17
Tetrachloro-m-xylene [1]	70.8	30-150		12/27/14 12:17
Tetrachloro-m-xylene [2]	70.7	30-150		12/27/14 12:17

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Sample Extraction Data

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14L0961-01 [RH Wall 1]	B112305	2.19	10.0	12/22/14
14L0961-02 [RH Wall 2]	B112305	2.04	10.0	12/22/14
14L0961-03 [RH Wall 3]	B112305	2.11	10.0	12/22/14
14L0961-04 [RH Wall 4]	B112305	2.04	10.0	12/22/14
14L0961-05 [RH Wall 5]	B112305	2.02	10.0	12/22/14
14L0961-06 [BS Wall 1]	B112305	2.09	10.0	12/22/14
14L0961-07 [BS Wall 2]	B112305	2.02	10.0	12/22/14
14L0961-08 [BS Wall 3]	B112305	2.05	10.0	12/22/14
14L0961-09 [BS Wall 4]	B112305	2.04	10.0	12/22/14
14L0961-10 [BS Wall 5]	B112305	2.02	10.0	12/22/14
14L0961-11 [CS 101 (0.5-2in)]	B112305	2.03	10.0	12/22/14
14L0961-12 [CS 101 (0-0.5in)]	B112305	2.05	10.0	12/22/14
14L0961-13 [CS 102 (0-0.5in)]	B112305	2.02	10.0	12/22/14
14L0961-14 [CS 102 (0.5-2in)]	B112305	2.01	10.0	12/22/14
14L0961-15 [CS 103 (0-0.5in)]	B112305	2.03	10.0	12/22/14
14L0961-16 [CS 103 (0.5-2in)]	B112305	2.04	10.0	12/22/14
14L0961-17 [CS 104 (0-0.5in)]	B112305	2.08	10.0	12/22/14
14L0961-18 [CS 104 (0.5-2in)]	B112305	2.02	10.0	12/22/14
14L0961-19 [CS 105 (0-0.5in)]	B112305	2.07	10.0	12/22/14
14L0961-20 [CS 105 (0.5-2in)]	B112305	2.06	10.0	12/22/14

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B112305 - SW-846 3540C										
Blank (B112305-BLK1)				Prepared: 12/22/14 Analyzed: 12/26/14						
Aroclor-1016	ND	0.10	mg/Kg							
Aroclor-1016 [2C]	ND	0.10	mg/Kg							
Aroclor-1221	ND	0.10	mg/Kg							
Aroclor-1221 [2C]	ND	0.10	mg/Kg							
Aroclor-1232	ND	0.10	mg/Kg							
Aroclor-1232 [2C]	ND	0.10	mg/Kg							
Aroclor-1242	ND	0.10	mg/Kg							
Aroclor-1242 [2C]	ND	0.10	mg/Kg							
Aroclor-1248	ND	0.10	mg/Kg							
Aroclor-1248 [2C]	ND	0.10	mg/Kg							
Aroclor-1254	ND	0.10	mg/Kg							
Aroclor-1254 [2C]	ND	0.10	mg/Kg							
Aroclor-1260	ND	0.10	mg/Kg							
Aroclor-1260 [2C]	ND	0.10	mg/Kg							
Aroclor-1262	ND	0.10	mg/Kg							
Aroclor-1262 [2C]	ND	0.10	mg/Kg							
Aroclor-1268	ND	0.10	mg/Kg							
Aroclor-1268 [2C]	ND	0.10	mg/Kg							
Surrogate: Decachlorobiphenyl	*0.897*		mg/Kg	1.00		89.7	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.951*		mg/Kg	1.00		95.1	30-150			
Surrogate: Tetrachloro-m-xylene	*0.859*		mg/Kg	1.00		85.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.910*		mg/Kg	1.00		91.0	30-150			
LCS (B112305-BS1)				Prepared: 12/22/14 Analyzed: 12/26/14						
Aroclor-1016	0.23	0.10	mg/Kg	0.250		91.4	40-140			
Aroclor-1016 [2C]	0.23	0.10	mg/Kg	0.250		93.2	40-140			
Aroclor-1260	0.26	0.10	mg/Kg	0.250		103	40-140			
Aroclor-1260 [2C]	0.25	0.10	mg/Kg	0.250		99.3	40-140			
Surrogate: Decachlorobiphenyl	*0.934*		mg/Kg	1.00		93.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.961*		mg/Kg	1.00		96.1	30-150			
Surrogate: Tetrachloro-m-xylene	*0.831*		mg/Kg	1.00		83.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.881*		mg/Kg	1.00		88.1	30-150			
LCS Dup (B112305-BSD1)				Prepared: 12/22/14 Analyzed: 12/26/14						
Aroclor-1016	0.24	0.10	mg/Kg	0.250		96.9	40-140	5.86	30	
Aroclor-1016 [2C]	0.26	0.10	mg/Kg	0.250		104	40-140	10.9	30	
Aroclor-1260	0.26	0.10	mg/Kg	0.250		105	40-140	1.91	30	
Aroclor-1260 [2C]	0.25	0.10	mg/Kg	0.250		100	40-140	1.04	30	
Surrogate: Decachlorobiphenyl	*0.908*		mg/Kg	1.00		90.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.950*		mg/Kg	1.00		95.0	30-150			
Surrogate: Tetrachloro-m-xylene	*0.830*		mg/Kg	1.00		83.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.879*		mg/Kg	1.00		87.9	30-150			

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B112305 - SW-846 3540C											
Matrix Spike (B112305-MS1)	**Source: 14L0961-16**			Prepared: 12/22/14 Analyzed: 12/26/14							
Aroclor-1016	0.34	0.098	mg/Kg	0.245	ND	138		40-140			
Aroclor-1016 [2C]	0.54	0.098	mg/Kg	0.245	ND	**220**	*	40-140			MS-21
Aroclor-1260	0.89	0.098	mg/Kg	0.245	0.53	**148**	*	40-140			MS-21
Aroclor-1260 [2C]	1.1	0.098	mg/Kg	0.245	0.64	**199**	*	40-140			MS-21
Surrogate: Decachlorobiphenyl	*0.880*		mg/Kg	0.980		89.7		30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.958*		mg/Kg	0.980		97.7		30-150			
Surrogate: Tetrachloro-m-xylene	*0.997*		mg/Kg	0.980		102		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.05*		mg/Kg	0.980		107		30-150			
Matrix Spike Dup (B112305-MSD1)	**Source: 14L0961-16**			Prepared: 12/22/14 Analyzed: 12/26/14							
Aroclor-1016	0.31	0.098	mg/Kg	0.245	ND	128		40-140	7.17	50	
Aroclor-1016 [2C]	0.54	0.098	mg/Kg	0.245	ND	**218**	*	40-140	0.515	50	MS-21
Aroclor-1260	0.88	0.098	mg/Kg	0.245	0.53	**142**	*	40-140	1.72	50	MS-21
Aroclor-1260 [2C]	1.1	0.098	mg/Kg	0.245	0.64	**190**	*	40-140	1.83	50	MS-21
Surrogate: Decachlorobiphenyl	*0.878*		mg/Kg	0.980		89.6		30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.941*		mg/Kg	0.980		96.0		30-150			
Surrogate: Tetrachloro-m-xylene	*0.960*		mg/Kg	0.980		97.9		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.01*		mg/Kg	0.980		103		30-150			

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

RH Wall 1

Lab Sample ID: 14L0961-01 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.19	
	2	0.00	0.00	0.00	0.22	14.1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

RH Wall 3

Lab Sample ID: 14L0961-03

Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.19	
	2	0.00	0.00	0.00	0.18	4.4
Aroclor-1260	1	0.00	0.00	0.00	0.20	
	2	0.00	0.00	0.00	0.25	21.2

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

BS Wall 1

Lab Sample ID: 14L0961-06

Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.26	
	2	0.00	0.00	0.00	0.37	33.8

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

BS Wall 2

Lab Sample ID: 14L0961-07 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.18	
	2	0.00	0.00	0.00	0.21	15.9

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

BS Wall 3

Lab Sample ID: 14L0961-08 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.10	
	2	0.00	0.00	0.00	0.12	17.2

con-test® ANALYTICAL LABORATORY
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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

BS Wall 4

Lab Sample ID: 14L0961-09 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.30	
	2	0.00	0.00	0.00	0.39	27.7

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

BS Wall 5

Lab Sample ID: 14L0961-10 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.22	
	2	0.00	0.00	0.00	0.32	35.3

con-test® ANALYTICAL LABORATORY
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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 101 (0-0.5in)

Lab Sample ID: 14L0961-12 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1248	1	0.00	0.00	0.00	0.17	
	2	0.00	0.00	0.00	0.19	8.2
Aroclor-1254	1	0.00	0.00	0.00	0.20	
	2	0.00	0.00	0.00	0.30	38.1
Aroclor-1260	1	0.00	0.00	0.00	0.38	
	2	0.00	0.00	0.00	0.34	9.8

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 102 (0-0.5in)

Lab Sample ID: 14L0961-13 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.23	
	2	0.00	0.00	0.00	0.29	23.5

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 103 (0-0.5in)

Lab Sample ID: 14L0961-15 Date(s) Analyzed: 12/27/2014 12/27/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	6.2	
	2	0.00	0.00	0.00	6.2	0.3
Aroclor-1260	1	0.00	0.00	0.00	2.0	
	2	0.00	0.00	0.00	2.2	7.1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 103 (0.5-2in)

Lab Sample ID: 14L0961-16 Date(s) Analyzed: 12/27/2014 12/27/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	2.4	
	2	0.00	0.00	0.00	2.3	2.6
Aroclor-1260	1	0.00	0.00	0.00	0.53	
	2	0.00	0.00	0.00	0.64	19.0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 104 (0-0.5in)

Lab Sample ID: 14L0961-17 Date(s) Analyzed: 12/27/2014 12/27/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	3.0	
	2	0.00	0.00	0.00	3.3	8.9
Aroclor-1260	1	0.00	0.00	0.00	0.67	
	2	0.00	0.00	0.00	0.81	19.5

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 104 (0.5-2in)

Lab Sample ID: 14L0961-18 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.69	
	2	0.00	0.00	0.00	0.76	9.4
Aroclor-1260	1	0.00	0.00	0.00	0.13	
	2	0.00	0.00	0.00	0.17	28.2

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 105 (0-0.5in)

Lab Sample ID: 14L0961-19 Date(s) Analyzed: 12/27/2014 12/27/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	41	
	2	0.00	0.00	0.00	44	7.1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 105 (0.5-2in)

Lab Sample ID: 14L0961-20

Date(s) Analyzed: 12/27/2014 12/27/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	11	
	2	0.00	0.00	0.00	12	6.0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B112305-BS1 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.23	
	2	0.00	0.00	0.00	0.23	1
Aroclor-1260	1	0.00	0.00	0.00	0.26	
	2	0.00	0.00	0.00	0.25	4

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B112305-BSD1 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.24	
	2	0.00	0.00	0.00	0.26	7
Aroclor-1260	1	0.00	0.00	0.00	0.26	
	2	0.00	0.00	0.00	0.25	5

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

Matrix Spike

Lab Sample ID: B112305-MS1 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.34	
	2	0.00	0.00	0.00	0.54	46
Aroclor-1260	1	0.00	0.00	0.00	0.89	
	2	0.00	0.00	0.00	1.1	21

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

Matrix Spike Dup

Lab Sample ID: B112305-MSD1 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.31	
	2	0.00	0.00	0.00	0.54	53
Aroclor-1260	1	0.00	0.00	0.00	0.88	
	2	0.00	0.00	0.00	1.1	23

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
MS-21	Matrix spike and/or spike duplicate recovery bias high due to contribution of other Aroclors present in the source sample.
O-03	Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
O-04	Sample fingerprint does not match standard exactly. Sample was quantitated against the closest matching standard.
S-01	The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Product/Solid	
Aroclor-1016	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA,NJ

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2015
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2015
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2015
RI	Rhode Island Department of Health	LAO00112	12/30/2014
NC	North Carolina Div. of Water Quality	652	12/31/2015
NJ	New Jersey DEP	MA007 NELAP	06/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2015
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2015
WA	State of Washington Department of Ecology	C2065	02/23/2015
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2015
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2015

CHAIN OF CUSTODY RECORD

con-test® ANALYTICAL LABORATORY
Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com
www.contestlabs.com
39 Spruce Street
East longmeadow, MA 01028

Rev 04.05.12

14L0961

Company Name: Weston & Sampson
Address: 5 Centennial Dr. Peabody Ma 01960
Attention: Todd Bridgeo
Project Location: Charles town
Sampled By: PTK

Telephone: (978) 532-1900
Project #
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email: BridgeoT@wseinc.com
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Cons Code	PCBs 5oxHLED	# of Containers	** Preservation	***Container Code
01	RH wall 1	12/18/14	0955		X	S		A			
02	RH wall 2	12/18	1000		X	S		A			
03	RH wall 3	12/18	1040		X	S		A			
04	RH wall 4	12/18	1015		X	S		A			
05	RH wall 5	12/18	0945		X	S		A			
06	BS wall 1	12/18	1145		X	S		A			
07	BS wall 2	12/18	1150		X	S		A			
08	BS wall 3	12/18	1100		X	S		A			
09	BS wall 4	12/18	1130		X	S		A			
10	BS wall 5	12/18	1125		X	S		A			

ANALYSIS REQUESTED

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:**
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

****Preservation**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other_____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

Comments

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:

H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time:
Stephen M Swann	12/18 1855
Received by: (signature)	Date/Time:
Tom Mac 12/22/14	1650
Relinquished by: (signature)	Date/Time:
Tom Mac 12/22/14	1900
Received by: (signature)	Date/Time:
Joseph Lowd 4.9 12/22/14	1900

Turnaround ††
☐ 7-Day
☐ 10-Day
☐ Other
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other:

Is your project MCP or RCP ?
○ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

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CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Rev 04.05.12

14L0961

Company Name: W&S
Address:
Attention:
Project Location: Charlestown
Sampled By: PTK
Telephone:
Project #
Client PO#

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS ○ OTHER
○ "Enhanced Data Package"

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	# of Containers	** Preservation	***Container Code	Dissolved Metals (Field Filtered / Lab to Filter)
11	CS101 0.5-2"	12/18	1035		X	S		1	I	A	
12	CS101 0-0.5"	12/18	1030		X	S		1	I	A	
13	CS102 0-0.5"	12/18	1110		X	S		1	I	A	
14	CS102 0.5-2"	12/18	1115		X	S		1	I	A	
15	CS103 0-0.5"	12/18	1310		X	S		1	I	A	
16	CS103 0.5-2"	12/18	1315		X	S		1	I	A	
17	CS104 0-0.5"	12/18	1300		X	S		1	I	A	
18	CS104 0.5-2"	12/18	1305		X	S		1	I	A	
19	CS105 0-0.5"	12/18	1230		X	S		1	I	A	
20	CS105 0.5-2"	12/18	1235		X	S		1	I	A	

ANALYSIS REQUESTED
PCB & SOXHLED

Comments:

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:**
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other_____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

Relinquished by: (signature)	Date/Time:
Sarah M. Simmons	12/19 1900
Received by: (signature)	Date/Time:
Tom Mac	12/22/14 1650
Relinquished by: (signature)	Date/Time:
Tom Mac	12/22/14 1900
Received by: (signature)	Date/Time:
Joseph Smith 4.9	12/22/14 1900

Turnaround ††
☐ 7-Day
☐ 10-Day
☐ Other
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other:

Is your project MCP or RCP ?
○ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

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WBE/DBE Certified

TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

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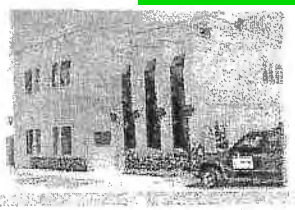

Sample Receipt Checklist

CLIENT NAME: Weston and Sampson RECEIVED BY: JDL DATE: 12/22/14

1) Was the chain(s) of custody relinquished and signed? (Yes) No No CoC Included
2) Does the chain agree with the samples? (Yes) No
If not, explain:
3) Are all the samples in good condition? (Yes) No
If not, explain:
4) How were the samples received:
On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒
Were the samples received in Temperature Compliance of (2-6°C)? (Yes) No N/A
Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.9
5) Are there Dissolved samples for the lab to filter? Yes (No)
Who was notified _____ Date _____ Time _____
6) Are there any RUSH or SHORT HOLDING TIME samples? Yes (No)
Who was notified _____ Date _____ Time _____
7) Location where samples are stored: 19
Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature: _____
8) Do all samples have the proper Acid pH: Yes No (N/A) _____
9) Do all samples have the proper Base pH: Yes No (N/A) _____
10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No (N/A)

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	60
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below		Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol _____
Bisulfate _____ # DI Water _____
Thiosulfate _____ Unpreserved

Time and Date Frozen:

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)
Any False statement will be brought to the attention of Client

Question	Answer (True/False) T/F/NA	Comment
1) The cooler's custody seal, if present, is intact.	NA	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	T	
18) There is sufficient volume for all requsted analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	NA	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	NA	
21) Samples do not require splitting or compositing.	T	

Who notified of False statements? Date/Time:

Log-In Technician Initials: JDL Date/Time: 12/22/14 1900

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

December 30, 2014

Todd Bridgeo
Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960

Project Location: Charlestown
Client Job Number:
Project Number: [none]
Laboratory Work Order Number: 14L0967

Enclosed are results of analyses for samples received by the laboratory on December 22, 2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960
ATTN: Todd Bridgeo

REPORT DATE: 12/30/2014

PURCHASE ORDER NUMBER:

PROJECT NUMBER: [none]

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 14L0967

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Charlestown

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
CS 106 (0-0.5in)	14L0967-01	Product/Solid		SW-846 8082A	
CS 106 (0.5-2in)	14L0967-02	Product/Solid		SW-846 8082A	
CS 107 (0-0.5in)	14L0967-03	Product/Solid		SW-846 8082A	
CS 107 (0.5-2in)	14L0967-04	Product/Solid		SW-846 8082A	
CS 108 (0-0.5in)	14L0967-05	Product/Solid		SW-846 8082A	
CS 108 (0.5-2in)	14L0967-06	Product/Solid		SW-846 8082A	
CS 109 (0-0.5in)	14L0967-07	Product/Solid		SW-846 8082A	
CS 109 (0.5-2in)	14L0967-08	Product/Solid		SW-846 8082A	
CS 110 (0-0.5in)	14L0967-09	Product/Solid		SW-846 8082A	
CS 110 (0.5-2in)	14L0967-10	Product/Solid		SW-846 8082A	
CS 111 (0-0.5in)	14L0967-11	Product/Solid		SW-846 8082A	
CS 111 (0.5-2in)	14L0967-12	Product/Solid		SW-846 8082A	
CS 112 (0-0.5in)	14L0967-13	Product/Solid		SW-846 8082A	
CS 112 (0.5-2in)	14L0967-14	Product/Solid		SW-846 8082A	
CS 113 (0-0.5in)	14L0967-15	Product/Solid		SW-846 8082A	
CS 113 (0.5-2in)	14L0967-16	Product/Solid		SW-846 8082A	
CS 114 (0-0.5in)	14L0967-17	Product/Solid		SW-846 8082A	
CS 114 (0.5-2in)	14L0967-18	Product/Solid		SW-846 8082A	
CS 115 (0-0.5in)	14L0967-19	Product/Solid		SW-846 8082A	
CS 115 (0.5-2in)	14L0967-20	Product/Solid		SW-846 8082A	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SW-846 8082A

Qualifications:

O-03

Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.

Analyte & Samples(s) Qualified:

Aroclor-1254
14L0967-02[CS 106 (0.5-2in)], 14L0967-05[CS 108 (0-0.5in)], 14L0967-06[CS 108 (0.5-2in)], 14L0967-08[CS 109 (0.5-2in)], 14L0967-12[CS 111 (0.5-2in)], 14L0967-14[CS 112 (0.5-2in)], 14L0967-15[CS 113 (0-0.5in)], 14L0967-20[CS 115 (0.5-2in)]

Aroclor-1254 [2C]
14L0967-02[CS 106 (0.5-2in)], 14L0967-05[CS 108 (0-0.5in)], 14L0967-06[CS 108 (0.5-2in)], 14L0967-08[CS 109 (0.5-2in)], 14L0967-12[CS 111 (0.5-2in)], 14L0967-14[CS 112 (0.5-2in)], 14L0967-15[CS 113 (0-0.5in)], 14L0967-20[CS 115 (0.5-2in)]

S-01

The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

Analyte & Samples(s) Qualified:

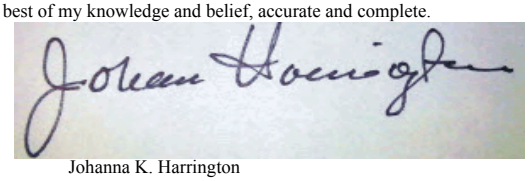
Decachlorobiphenyl
14L0967-02[CS 106 (0.5-2in)], 14L0967-05[CS 108 (0-0.5in)]

Decachlorobiphenyl [2C]
14L0967-02[CS 106 (0.5-2in)], 14L0967-05[CS 108 (0-0.5in)]

Tetrachloro-m-xylene
14L0967-02[CS 106 (0.5-2in)], 14L0967-05[CS 108 (0-0.5in)]

Tetrachloro-m-xylene [2C]
14L0967-02[CS 106 (0.5-2in)], 14L0967-05[CS 108 (0-0.5in)]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Johanna K. Harrington
Manager, Laboratory Reporting

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown | Sample Description: | Work Order: 14L0967

Date Received: 12/22/2014

Field Sample #: CS 106 (0-0.5in) | Sampled: 12/19/2014 16:50

Sample ID: 14L0967-01

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 10:59	MJC
Aroclor-1221 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 10:59	MJC
Aroclor-1232 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 10:59	MJC
Aroclor-1242 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 10:59	MJC
Aroclor-1248 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 10:59	MJC
Aroclor-1254 [1]	0.59	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 10:59	MJC
Aroclor-1260 [1]	0.13	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 10:59	MJC
Aroclor-1262 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 10:59	MJC
Aroclor-1268 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 10:59	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	98.9	30-150		12/24/14 10:59
Decachlorobiphenyl [2]	117	30-150		12/24/14 10:59
Tetrachloro-m-xylene [1]	108	30-150		12/24/14 10:59
Tetrachloro-m-xylene [2]	117	30-150		12/24/14 10:59

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Project Location: Charlestown | Sample Description: | Work Order: 14L0967

Date Received: 12/22/2014

Field Sample #: CS 106 (0.5-2in) | Sampled: 12/19/2014 16:55

Sample ID: 14L0967-02

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	12/23/14	12/24/14 16:29	MJC
Aroclor-1221 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	12/23/14	12/24/14 16:29	MJC
Aroclor-1232 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	12/23/14	12/24/14 16:29	MJC
Aroclor-1242 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	12/23/14	12/24/14 16:29	MJC
Aroclor-1248 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	12/23/14	12/24/14 16:29	MJC
Aroclor-1254 [1]	29	4.9	mg/Kg	50	O-03	SW-846 8082A	12/23/14	12/24/14 16:29	MJC
Aroclor-1260 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	12/23/14	12/24/14 16:29	MJC
Aroclor-1262 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	12/23/14	12/24/14 16:29	MJC
Aroclor-1268 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	12/23/14	12/24/14 16:29	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	*	30-150	S-01	12/24/14 16:29
Decachlorobiphenyl [2]	*	30-150	S-01	12/24/14 16:29
Tetrachloro-m-xylene [1]	*	30-150	S-01	12/24/14 16:29
Tetrachloro-m-xylene [2]	*	30-150	S-01	12/24/14 16:29

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Project Location: Charlestown | Sample Description: | Work Order: 14L0967

Date Received: 12/22/2014

Field Sample #: CS 107 (0-0.5in) | Sampled: 12/19/2014 13:30

Sample ID: 14L0967-03

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 11:24	MJC
Aroclor-1221 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 11:24	MJC
Aroclor-1232 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 11:24	MJC
Aroclor-1242 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 11:24	MJC
Aroclor-1248 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 11:24	MJC
Aroclor-1254 [2]	0.74	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 11:24	MJC
Aroclor-1260 [2]	0.15	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 11:24	MJC
Aroclor-1262 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 11:24	MJC
Aroclor-1268 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 11:24	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	84.5	30-150		12/24/14 11:24
Decachlorobiphenyl [2]	100	30-150		12/24/14 11:24
Tetrachloro-m-xylene [1]	85.6	30-150		12/24/14 11:24
Tetrachloro-m-xylene [2]	94.5	30-150		12/24/14 11:24

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown | Sample Description: | Work Order: 14L0967

Date Received: 12/22/2014

Field Sample #: CS 107 (0.5-2in) | Sampled: 12/19/2014 13:35

Sample ID: 14L0967-04

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.094	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 11:37	MJC
Aroclor-1221 [1]	ND	0.094	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 11:37	MJC
Aroclor-1232 [1]	ND	0.094	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 11:37	MJC
Aroclor-1242 [1]	ND	0.094	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 11:37	MJC
Aroclor-1248 [1]	ND	0.094	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 11:37	MJC
Aroclor-1254 [2]	0.16	0.094	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 11:37	MJC
Aroclor-1260 [1]	ND	0.094	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 11:37	MJC
Aroclor-1262 [1]	ND	0.094	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 11:37	MJC
Aroclor-1268 [1]	ND	0.094	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 11:37	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	84.0	30-150		12/24/14 11:37
Decachlorobiphenyl [2]	96.6	30-150		12/24/14 11:37
Tetrachloro-m-xylene [1]	74.5	30-150		12/24/14 11:37
Tetrachloro-m-xylene [2]	81.3	30-150		12/24/14 11:37

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown | Sample Description: | Work Order: 14L0967

Date Received: 12/22/2014

Field Sample #: CS 108 (0-0.5in) | Sampled: 12/19/2014 17:05

Sample ID: 14L0967-05

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	9.0	mg/Kg	100		SW-846 8082A	12/23/14	12/24/14 16:42	MJC
Aroclor-1221 [1]	ND	9.0	mg/Kg	100		SW-846 8082A	12/23/14	12/24/14 16:42	MJC
Aroclor-1232 [1]	ND	9.0	mg/Kg	100		SW-846 8082A	12/23/14	12/24/14 16:42	MJC
Aroclor-1242 [1]	ND	9.0	mg/Kg	100		SW-846 8082A	12/23/14	12/24/14 16:42	MJC
Aroclor-1248 [1]	ND	9.0	mg/Kg	100		SW-846 8082A	12/23/14	12/24/14 16:42	MJC
Aroclor-1254 [2]	52	9.0	mg/Kg	100	O-03	SW-846 8082A	12/23/14	12/24/14 16:42	MJC
Aroclor-1260 [1]	ND	9.0	mg/Kg	100		SW-846 8082A	12/23/14	12/24/14 16:42	MJC
Aroclor-1262 [1]	ND	9.0	mg/Kg	100		SW-846 8082A	12/23/14	12/24/14 16:42	MJC
Aroclor-1268 [1]	ND	9.0	mg/Kg	100		SW-846 8082A	12/23/14	12/24/14 16:42	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	*	30-150	S-01	12/24/14 16:42
Decachlorobiphenyl [2]	*	30-150	S-01	12/24/14 16:42
Tetrachloro-m-xylene [1]	*	30-150	S-01	12/24/14 16:42
Tetrachloro-m-xylene [2]	*	30-150	S-01	12/24/14 16:42

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Project Location: Charlestown | Sample Description: | Work Order: 14L0967

Date Received: 12/22/2014

Field Sample #: CS 108 (0.5-2in) | Sampled: 12/19/2014 17:10

Sample ID: 14L0967-06

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 16:54	MJC
Aroclor-1221 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 16:54	MJC
Aroclor-1232 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 16:54	MJC
Aroclor-1242 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 16:54	MJC
Aroclor-1248 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 16:54	MJC
Aroclor-1254 [2]	3.6	0.48	mg/Kg	5	O-03	SW-846 8082A	12/23/14	12/24/14 16:54	MJC
Aroclor-1260 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 16:54	MJC
Aroclor-1262 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 16:54	MJC
Aroclor-1268 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 16:54	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	115	30-150		12/24/14 16:54
Decachlorobiphenyl [2]	111	30-150		12/24/14 16:54
Tetrachloro-m-xylene [1]	122	30-150		12/24/14 16:54
Tetrachloro-m-xylene [2]	118	30-150		12/24/14 16:54

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown | Sample Description: | Work Order: 14L0967

Date Received: 12/22/2014

Field Sample #: CS 109 (0-0.5in) | Sampled: 12/19/2014 13:45

Sample ID: 14L0967-07

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	12/23/14	12/24/14 17:07	MJC
Aroclor-1221 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	12/23/14	12/24/14 17:07	MJC
Aroclor-1232 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	12/23/14	12/24/14 17:07	MJC
Aroclor-1242 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	12/23/14	12/24/14 17:07	MJC
Aroclor-1248 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	12/23/14	12/24/14 17:07	MJC
Aroclor-1254 [1]	7.1	0.96	mg/Kg	10		SW-846 8082A	12/23/14	12/24/14 17:07	MJC
Aroclor-1260 [1]	1.5	0.96	mg/Kg	10		SW-846 8082A	12/23/14	12/24/14 17:07	MJC
Aroclor-1262 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	12/23/14	12/24/14 17:07	MJC
Aroclor-1268 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	12/23/14	12/24/14 17:07	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	104	30-150		12/24/14 17:07
Decachlorobiphenyl [2]	98.8	30-150		12/24/14 17:07
Tetrachloro-m-xylene [1]	112	30-150		12/24/14 17:07
Tetrachloro-m-xylene [2]	103	30-150		12/24/14 17:07

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown | Sample Description: | Work Order: 14L0967

Date Received: 12/22/2014

Field Sample #: CS 109 (0.5-2in) | Sampled: 12/19/2014 13:50

Sample ID: 14L0967-08

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.47	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 17:20	MJC
Aroclor-1221 [1]	ND	0.47	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 17:20	MJC
Aroclor-1232 [1]	ND	0.47	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 17:20	MJC
Aroclor-1242 [1]	ND	0.47	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 17:20	MJC
Aroclor-1248 [1]	ND	0.47	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 17:20	MJC
Aroclor-1254 [1]	2.4	0.47	mg/Kg	5	O-03	SW-846 8082A	12/23/14	12/24/14 17:20	MJC
Aroclor-1260 [1]	ND	0.47	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 17:20	MJC
Aroclor-1262 [1]	ND	0.47	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 17:20	MJC
Aroclor-1268 [1]	ND	0.47	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 17:20	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	114	30-150		12/24/14 17:20
Decachlorobiphenyl [2]	113	30-150		12/24/14 17:20
Tetrachloro-m-xylene [1]	126	30-150		12/24/14 17:20
Tetrachloro-m-xylene [2]	122	30-150		12/24/14 17:20

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Project Location: Charlestown | Sample Description: | Work Order: 14L0967

Date Received: 12/22/2014

Field Sample #: CS 110 (0-0.5in) | Sampled: 12/18/2014 14:00

Sample ID: 14L0967-09

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.97	mg/Kg	10		SW-846 8082A	12/23/14	12/24/14 17:32	MJC
Aroclor-1221 [1]	ND	0.97	mg/Kg	10		SW-846 8082A	12/23/14	12/24/14 17:32	MJC
Aroclor-1232 [1]	ND	0.97	mg/Kg	10		SW-846 8082A	12/23/14	12/24/14 17:32	MJC
Aroclor-1242 [1]	ND	0.97	mg/Kg	10		SW-846 8082A	12/23/14	12/24/14 17:32	MJC
Aroclor-1248 [1]	ND	0.97	mg/Kg	10		SW-846 8082A	12/23/14	12/24/14 17:32	MJC
Aroclor-1254 [1]	5.6	0.97	mg/Kg	10		SW-846 8082A	12/23/14	12/24/14 17:32	MJC
Aroclor-1260 [1]	1.1	0.97	mg/Kg	10		SW-846 8082A	12/23/14	12/24/14 17:32	MJC
Aroclor-1262 [1]	ND	0.97	mg/Kg	10		SW-846 8082A	12/23/14	12/24/14 17:32	MJC
Aroclor-1268 [1]	ND	0.97	mg/Kg	10		SW-846 8082A	12/23/14	12/24/14 17:32	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	110	30-150		12/24/14 17:32
Decachlorobiphenyl [2]	102	30-150		12/24/14 17:32
Tetrachloro-m-xylene [1]	117	30-150		12/24/14 17:32
Tetrachloro-m-xylene [2]	107	30-150		12/24/14 17:32

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Project Location: Charlestown | Sample Description: | Work Order: 14L0967

Date Received: 12/22/2014

Field Sample #: CS 110 (0.5-2in) | Sampled: 12/18/2014 14:05

Sample ID: 14L0967-10

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:18	MJC
Aroclor-1221 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:18	MJC
Aroclor-1232 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:18	MJC
Aroclor-1242 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:18	MJC
Aroclor-1248 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:18	MJC
Aroclor-1254 [1]	0.66	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:18	MJC
Aroclor-1260 [1]	0.13	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:18	MJC
Aroclor-1262 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:18	MJC
Aroclor-1268 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:18	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	98.5	30-150		12/24/14 13:18
Decachlorobiphenyl [2]	114	30-150		12/24/14 13:18
Tetrachloro-m-xylene [1]	109	30-150		12/24/14 13:18
Tetrachloro-m-xylene [2]	119	30-150		12/24/14 13:18

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Project Location: Charlestown | Sample Description: | Work Order: 14L0967

Date Received: 12/22/2014

Field Sample #: CS 111 (0-0.5in) | Sampled: 12/18/2014 14:15

Sample ID: 14L0967-11

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.49	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 17:45	MJC
Aroclor-1221 [1]	ND	0.49	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 17:45	MJC
Aroclor-1232 [1]	ND	0.49	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 17:45	MJC
Aroclor-1242 [1]	ND	0.49	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 17:45	MJC
Aroclor-1248 [1]	ND	0.49	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 17:45	MJC
Aroclor-1254 [1]	4.1	0.49	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 17:45	MJC
Aroclor-1260 [1]	0.83	0.49	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 17:45	MJC
Aroclor-1262 [1]	ND	0.49	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 17:45	MJC
Aroclor-1268 [1]	ND	0.49	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 17:45	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	105	30-150		12/24/14 17:45
Decachlorobiphenyl [2]	106	30-150		12/24/14 17:45
Tetrachloro-m-xylene [1]	117	30-150		12/24/14 17:45
Tetrachloro-m-xylene [2]	112	30-150		12/24/14 17:45

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Project Location: Charlestown | Sample Description: | Work Order: 14L0967

Date Received: 12/22/2014

Field Sample #: CS 111 (0.5-2in) | Sampled: 12/18/2014 14:20

Sample ID: 14L0967-12

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:44	MJC
Aroclor-1221 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:44	MJC
Aroclor-1232 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:44	MJC
Aroclor-1242 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:44	MJC
Aroclor-1248 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:44	MJC
Aroclor-1254 [1]	0.33	0.097	mg/Kg	1	O-03	SW-846 8082A	12/23/14	12/24/14 13:44	MJC
Aroclor-1260 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:44	MJC
Aroclor-1262 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:44	MJC
Aroclor-1268 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:44	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	92.2	30-150		12/24/14 13:44
Decachlorobiphenyl [2]	110	30-150		12/24/14 13:44
Tetrachloro-m-xylene [1]	103	30-150		12/24/14 13:44
Tetrachloro-m-xylene [2]	112	30-150		12/24/14 13:44

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Project Location: Charlestown | Sample Description: | Work Order: 14L0967

Date Received: 12/22/2014

Field Sample #: CS 112 (0-0.5in) | Sampled: 12/18/2014 13:30

Sample ID: 14L0967-13

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:57	MJC
Aroclor-1221 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:57	MJC
Aroclor-1232 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:57	MJC
Aroclor-1242 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:57	MJC
Aroclor-1248 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:57	MJC
Aroclor-1254 [2]	1.1	0.096	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:57	MJC
Aroclor-1260 [2]	0.14	0.096	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:57	MJC
Aroclor-1262 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:57	MJC
Aroclor-1268 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 13:57	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	81.8	30-150		12/24/14 13:57
Decachlorobiphenyl [2]	98.9	30-150		12/24/14 13:57
Tetrachloro-m-xylene [1]	90.1	30-150		12/24/14 13:57
Tetrachloro-m-xylene [2]	98.1	30-150		12/24/14 13:57

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Project Location: Charlestown | Sample Description: | Work Order: 14L0967

Date Received: 12/22/2014

Field Sample #: CS 112 (0.5-2in) | Sampled: 12/18/2014 13:35

Sample ID: 14L0967-14

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:09	MJC
Aroclor-1221 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:09	MJC
Aroclor-1232 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:09	MJC
Aroclor-1242 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:09	MJC
Aroclor-1248 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:09	MJC
Aroclor-1254 [2]	0.43	0.098	mg/Kg	1	O-03	SW-846 8082A	12/23/14	12/24/14 14:09	MJC
Aroclor-1260 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:09	MJC
Aroclor-1262 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:09	MJC
Aroclor-1268 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:09	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	91.6	30-150		12/24/14 14:09
Decachlorobiphenyl [2]	113	30-150		12/24/14 14:09
Tetrachloro-m-xylene [1]	99.1	30-150		12/24/14 14:09
Tetrachloro-m-xylene [2]	112	30-150		12/24/14 14:09

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Project Location: Charlestown | Sample Description: | Work Order: 14L0967

Date Received: 12/22/2014

Field Sample #: CS 113 (0-0.5in) | Sampled: 12/19/2014 11:30

Sample ID: 14L0967-15

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:22	MJC
Aroclor-1221 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:22	MJC
Aroclor-1232 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:22	MJC
Aroclor-1242 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:22	MJC
Aroclor-1248 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:22	MJC
Aroclor-1254 [2]	0.29	0.10	mg/Kg	1	O-03	SW-846 8082A	12/23/14	12/24/14 14:22	MJC
Aroclor-1260 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:22	MJC
Aroclor-1262 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:22	MJC
Aroclor-1268 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:22	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	84.2	30-150		12/24/14 14:22
Decachlorobiphenyl [2]	101	30-150		12/24/14 14:22
Tetrachloro-m-xylene [1]	97.2	30-150		12/24/14 14:22
Tetrachloro-m-xylene [2]	105	30-150		12/24/14 14:22

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Project Location: Charlestown | Sample Description: | Work Order: 14L0967

Date Received: 12/22/2014

Field Sample #: CS 113 (0.5-2in) | Sampled: 12/19/2014 11:35

Sample ID: 14L0967-16

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.089	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:35	MJC
Aroclor-1221 [1]	ND	0.089	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:35	MJC
Aroclor-1232 [1]	ND	0.089	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:35	MJC
Aroclor-1242 [1]	ND	0.089	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:35	MJC
Aroclor-1248 [1]	ND	0.089	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:35	MJC
Aroclor-1254 [1]	ND	0.089	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:35	MJC
Aroclor-1260 [1]	ND	0.089	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:35	MJC
Aroclor-1262 [1]	ND	0.089	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:35	MJC
Aroclor-1268 [1]	ND	0.089	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:35	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	98.6	30-150		12/24/14 14:35
Decachlorobiphenyl [2]	115	30-150		12/24/14 14:35
Tetrachloro-m-xylene [1]	110	30-150		12/24/14 14:35
Tetrachloro-m-xylene [2]	120	30-150		12/24/14 14:35

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Project Location: Charlestown | Sample Description: | Work Order: 14L0967

Date Received: 12/22/2014

Field Sample #: CS 114 (0-0.5in) | Sampled: 12/19/2014 11:45

Sample ID: 14L0967-17

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:47	MJC
Aroclor-1221 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:47	MJC
Aroclor-1232 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:47	MJC
Aroclor-1242 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:47	MJC
Aroclor-1248 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:47	MJC
Aroclor-1254 [1]	0.79	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:47	MJC
Aroclor-1260 [2]	0.57	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:47	MJC
Aroclor-1262 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:47	MJC
Aroclor-1268 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 14:47	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	87.3	30-150		12/24/14 14:47
Decachlorobiphenyl [2]	101	30-150		12/24/14 14:47
Tetrachloro-m-xylene [1]	97.8	30-150		12/24/14 14:47
Tetrachloro-m-xylene [2]	105	30-150		12/24/14 14:47

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Project Location: Charlestown | Sample Description: | Work Order: 14L0967

Date Received: 12/22/2014

Field Sample #: CS 114 (0.5-2in) | Sampled: 12/19/2014 11:50

Sample ID: 14L0967-18

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 15:00	MJC
Aroclor-1221 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 15:00	MJC
Aroclor-1232 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 15:00	MJC
Aroclor-1242 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 15:00	MJC
Aroclor-1248 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 15:00	MJC
Aroclor-1254 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 15:00	MJC
Aroclor-1260 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 15:00	MJC
Aroclor-1262 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 15:00	MJC
Aroclor-1268 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/24/14 15:00	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	95.0	30-150		12/24/14 15:00
Decachlorobiphenyl [2]	107	30-150		12/24/14 15:00
Tetrachloro-m-xylene [1]	103	30-150		12/24/14 15:00
Tetrachloro-m-xylene [2]	112	30-150		12/24/14 15:00

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Project Location: Charlestown | Sample Description: | Work Order: 14L0967

Date Received: 12/22/2014

Field Sample #: CS 115 (0-0.5in) | Sampled: 12/18/2014 15:30

Sample ID: 14L0967-19

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/23/14	12/24/14 18:11	MJC
Aroclor-1221 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/23/14	12/24/14 18:11	MJC
Aroclor-1232 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/23/14	12/24/14 18:11	MJC
Aroclor-1242 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/23/14	12/24/14 18:11	MJC
Aroclor-1248 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/23/14	12/24/14 18:11	MJC
Aroclor-1254 [1]	13	1.9	mg/Kg	20		SW-846 8082A	12/23/14	12/24/14 18:11	MJC
Aroclor-1260 [1]	2.3	1.9	mg/Kg	20		SW-846 8082A	12/23/14	12/24/14 18:11	MJC
Aroclor-1262 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/23/14	12/24/14 18:11	MJC
Aroclor-1268 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/23/14	12/24/14 18:11	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	113	30-150		12/24/14 18:11
Decachlorobiphenyl [2]	102	30-150		12/24/14 18:11
Tetrachloro-m-xylene [1]	122	30-150		12/24/14 18:11
Tetrachloro-m-xylene [2]	106	30-150		12/24/14 18:11

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Project Location: Charlestown | Sample Description: | Work Order: 14L0967

Date Received: 12/22/2014

Field Sample #: CS 115 (0.5-2in) | Sampled: 12/18/2014 15:35

Sample ID: 14L0967-20

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.47	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 18:23	MJC
Aroclor-1221 [1]	ND	0.47	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 18:23	MJC
Aroclor-1232 [1]	ND	0.47	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 18:23	MJC
Aroclor-1242 [1]	ND	0.47	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 18:23	MJC
Aroclor-1248 [1]	ND	0.47	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 18:23	MJC
Aroclor-1254 [1]	2.5	0.47	mg/Kg	5	O-03	SW-846 8082A	12/23/14	12/24/14 18:23	MJC
Aroclor-1260 [1]	ND	0.47	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 18:23	MJC
Aroclor-1262 [1]	ND	0.47	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 18:23	MJC
Aroclor-1268 [1]	ND	0.47	mg/Kg	5		SW-846 8082A	12/23/14	12/24/14 18:23	MJC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	117	30-150		12/24/14 18:23
Decachlorobiphenyl [2]	117	30-150		12/24/14 18:23
Tetrachloro-m-xylene [1]	130	30-150		12/24/14 18:23
Tetrachloro-m-xylene [2]	125	30-150		12/24/14 18:23

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Sample Extraction Data

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14L0967-01 [CS 106 (0-0.5in)]	B112312	2.01	10.0	12/23/14
14L0967-02 [CS 106 (0.5-2in)]	B112312	2.04	10.0	12/23/14
14L0967-03 [CS 107 (0-0.5in)]	B112312	2.05	10.0	12/23/14
14L0967-04 [CS 107 (0.5-2in)]	B112312	2.12	10.0	12/23/14
14L0967-05 [CS 108 (0-0.5in)]	B112312	2.23	10.0	12/23/14
14L0967-06 [CS 108 (0.5-2in)]	B112312	2.07	10.0	12/23/14
14L0967-07 [CS 109 (0-0.5in)]	B112312	2.08	10.0	12/23/14
14L0967-08 [CS 109 (0.5-2in)]	B112312	2.12	10.0	12/23/14
14L0967-09 [CS 110 (0-0.5in)]	B112312	2.07	10.0	12/23/14
14L0967-10 [CS 110 (0.5-2in)]	B112312	2.00	10.0	12/23/14
14L0967-11 [CS 111 (0-0.5in)]	B112312	2.03	10.0	12/23/14
14L0967-12 [CS 111 (0.5-2in)]	B112312	2.07	10.0	12/23/14
14L0967-13 [CS 112 (0-0.5in)]	B112312	2.08	10.0	12/23/14
14L0967-14 [CS 112 (0.5-2in)]	B112312	2.04	10.0	12/23/14
14L0967-15 [CS 113 (0-0.5in)]	B112312	2.01	10.0	12/23/14
14L0967-16 [CS 113 (0.5-2in)]	B112312	2.24	10.0	12/23/14
14L0967-17 [CS 114 (0-0.5in)]	B112312	2.04	10.0	12/23/14
14L0967-18 [CS 114 (0.5-2in)]	B112312	2.29	10.0	12/23/14
14L0967-19 [CS 115 (0-0.5in)]	B112312	2.11	10.0	12/23/14
14L0967-20 [CS 115 (0.5-2in)]	B112312	2.14	10.0	12/23/14

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B112312 - SW-846 3540C										
Blank (B112312-BLK1)				Prepared: 12/23/14 Analyzed: 12/24/14						
Aroclor-1016	ND	0.10	mg/Kg							
Aroclor-1016 [2C]	ND	0.10	mg/Kg							
Aroclor-1221	ND	0.10	mg/Kg							
Aroclor-1221 [2C]	ND	0.10	mg/Kg							
Aroclor-1232	ND	0.10	mg/Kg							
Aroclor-1232 [2C]	ND	0.10	mg/Kg							
Aroclor-1242	ND	0.10	mg/Kg							
Aroclor-1242 [2C]	ND	0.10	mg/Kg							
Aroclor-1248	ND	0.10	mg/Kg							
Aroclor-1248 [2C]	ND	0.10	mg/Kg							
Aroclor-1254	ND	0.10	mg/Kg							
Aroclor-1254 [2C]	ND	0.10	mg/Kg							
Aroclor-1260	ND	0.10	mg/Kg							
Aroclor-1260 [2C]	ND	0.10	mg/Kg							
Aroclor-1262	ND	0.10	mg/Kg							
Aroclor-1262 [2C]	ND	0.10	mg/Kg							
Aroclor-1268	ND	0.10	mg/Kg							
Aroclor-1268 [2C]	ND	0.10	mg/Kg							
Surrogate: Decachlorobiphenyl	*0.918*		mg/Kg	1.00		91.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.03*		mg/Kg	1.00		103	30-150			
Surrogate: Tetrachloro-m-xylene	*0.805*		mg/Kg	1.00		80.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.863*		mg/Kg	1.00		86.3	30-150			
LCS (B112312-BS1)				Prepared: 12/23/14 Analyzed: 12/24/14						
Aroclor-1016	0.29	0.10	mg/Kg	0.250		117	40-140			
Aroclor-1016 [2C]	0.28	0.10	mg/Kg	0.250		110	40-140			
Aroclor-1260	0.30	0.10	mg/Kg	0.250		119	40-140			
Aroclor-1260 [2C]	0.29	0.10	mg/Kg	0.250		114	40-140			
Surrogate: Decachlorobiphenyl	*0.951*		mg/Kg	1.00		95.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.07*		mg/Kg	1.00		107	30-150			
Surrogate: Tetrachloro-m-xylene	*0.882*		mg/Kg	1.00		88.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.954*		mg/Kg	1.00		95.4	30-150			
LCS Dup (B112312-BSD1)				Prepared: 12/23/14 Analyzed: 12/24/14						
Aroclor-1016	0.29	0.10	mg/Kg	0.250		115	40-140	1.68	30	
Aroclor-1016 [2C]	0.27	0.10	mg/Kg	0.250		107	40-140	2.73	30	
Aroclor-1260	0.29	0.10	mg/Kg	0.250		118	40-140	0.612	30	
Aroclor-1260 [2C]	0.28	0.10	mg/Kg	0.250		113	40-140	0.743	30	
Surrogate: Decachlorobiphenyl	*0.944*		mg/Kg	1.00		94.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.06*		mg/Kg	1.00		106	30-150			
Surrogate: Tetrachloro-m-xylene	*0.870*		mg/Kg	1.00		87.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.936*		mg/Kg	1.00		93.6	30-150			

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 106 (0-0.5in)

Lab Sample ID: 14L0967-01 Date(s) Analyzed: 12/24/2014 12/24/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.59	
	2	0.00	0.00	0.00	0.55	7.7
Aroclor-1260	1	0.00	0.00	0.00	0.13	
	2	0.00	0.00	0.00	0.12	8.8

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 106 (0.5-2in)

Lab Sample ID: 14L0967-02 Date(s) Analyzed: 12/24/2014 12/24/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	29	
	2	0.00	0.00	0.00	29	0.0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 107 (0-0.5in)

Lab Sample ID: 14L0967-03 Date(s) Analyzed: 12/24/2014 12/24/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.72	
	2	0.00	0.00	0.00	0.74	3.3
Aroclor-1260	1	0.00	0.00	0.00	0.14	
	2	0.00	0.00	0.00	0.15	9.1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 107 (0.5-2in)

Lab Sample ID: 14L0967-04 Date(s) Analyzed: 12/24/2014 12/24/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.15	
	2	0.00	0.00	0.00	0.16	9.2

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 108 (0-0.5in)

Lab Sample ID: 14L0967-05 Date(s) Analyzed: 12/24/2014 12/24/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	50	
	2	0.00	0.00	0.00	52	4.7

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 108 (0.5-2in)

Lab Sample ID: 14L0967-06 Date(s) Analyzed: 12/24/2014 12/24/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	3.4	
	2	0.00	0.00	0.00	3.6	5.1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 109 (0-0.5in)

Lab Sample ID: 14L0967-07

Date(s) Analyzed: 12/24/2014 12/24/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	7.1	
	2	0.00	0.00	0.00	6.9	2.7
Aroclor-1260	1	0.00	0.00	0.00	1.5	
	2	0.00	0.00	0.00	1.4	4.2

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 109 (0.5-2in)

Lab Sample ID: 14L0967-08

Date(s) Analyzed: 12/24/2014 12/24/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	2.4	
	2	0.00	0.00	0.00	2.4	0.4

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 110 (0-0.5in)

Lab Sample ID: 14L0967-09 Date(s) Analyzed: 12/24/2014 12/24/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	5.6	
	2	0.00	0.00	0.00	4.9	13.9
Aroclor-1260	1	0.00	0.00	0.00	1.1	
	2	0.00	0.00	0.00	1.0	11.3

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 110 (0.5-2in)

Lab Sample ID: 14L0967-10 Date(s) Analyzed: 12/24/2014 12/24/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.66	
	2	0.00	0.00	0.00	0.61	7.7
Aroclor-1260	1	0.00	0.00	0.00	0.13	
	2	0.00	0.00	0.00	0.12	10.3

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 111 (0-0.5in)

Lab Sample ID: 14L0967-11 Date(s) Analyzed: 12/24/2014 12/24/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	4.1	
	2	0.00	0.00	0.00	3.8	6.9
Aroclor-1260	1	0.00	0.00	0.00	0.83	
	2	0.00	0.00	0.00	0.79	4.9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 111 (0.5-2in)

Lab Sample ID: 14L0967-12 Date(s) Analyzed: 12/24/2014 12/24/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.33	
	2	0.00	0.00	0.00	0.33	1.2

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 112 (0-0.5in)

Lab Sample ID: 14L0967-13 Date(s) Analyzed: 12/24/2014 12/24/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	1.0	
	2	0.00	0.00	0.00	1.1	5.6
Aroclor-1260	1	0.00	0.00	0.00	0.14	
	2	0.00	0.00	0.00	0.14	2.2

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 112 (0.5-2in)

Lab Sample ID: 14L0967-14 Date(s) Analyzed: 12/24/2014 12/24/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.38	
	2	0.00	0.00	0.00	0.43	11.3

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 113 (0-0.5in)

Lab Sample ID: 14L0967-15 Date(s) Analyzed: 12/24/2014 12/24/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.25	
	2	0.00	0.00	0.00	0.29	14.8

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 114 (0-0.5in)

Lab Sample ID: 14L0967-17 Date(s) Analyzed: 12/24/2014 12/24/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.79	
	2	0.00	0.00	0.00	0.72	8.9
Aroclor-1260	1	0.00	0.00	0.00	0.50	
	2	0.00	0.00	0.00	0.57	14.1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 115 (0-0.5in)

Lab Sample ID: 14L0967-19 Date(s) Analyzed: 12/24/2014 12/24/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	13	
	2	0.00	0.00	0.00	13	0.0
Aroclor-1260	1	0.00	0.00	0.00	2.3	
	2	0.00	0.00	0.00	2.2	5.7

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 115 (0.5-2in)

Lab Sample ID: 14L0967-20 Date(s) Analyzed: 12/24/2014 12/24/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	2.5	
	2	0.00	0.00	0.00	2.4	2.5

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B112312-BS1 Date(s) Analyzed: 12/24/2014 12/24/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.29	
	2	0.00	0.00	0.00	0.28	5
Aroclor-1260	1	0.00	0.00	0.00	0.30	
	2	0.00	0.00	0.00	0.29	2

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B112312-BSD1 Date(s) Analyzed: 12/24/2014 12/24/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.29	
	2	0.00	0.00	0.00	0.27	7
Aroclor-1260	1	0.00	0.00	0.00	0.29	
	2	0.00	0.00	0.00	0.28	5

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
O-03	Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
S-01	The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

con-test® ANALYTICAL LABORATORY

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Product/Solid	
Aroclor-1016	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA,NJ

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2015
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2015
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2015
RI	Rhode Island Department of Health	LAO00112	12/30/2014
NC	North Carolina Div. of Water Quality	652	12/31/2015
NJ	New Jersey DEP	MA007 NELAP	06/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2015
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2015
WA	State of Washington Department of Ecology	C2065	02/23/2015
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2015
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2015

CHAIN OF CUSTODY RECORD

con-test® ANALYTICAL LABORATORY
Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com
www.contestlabs.com
39 Spruce Street
East longmeadow, MA 01028

Rev 04.05.12

14L0967

Company Name: Weston & Sampson
Address:
Attention: Todd Bridges
Project Location: Charlestown
Sampled By: PTK

Telephone:
Project #
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email:
Format ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	# of Containers	** Preservation	***Container Code	ANALYSIS REQUESTED: PCBs SOXHLED
01	CS 106 0-0.5'	12/19	1650		X	S					X
02	CS 106 0.5-2'		1655		X	S					X
03	CS 107 0-0.5'		1330		X	S					X
04	CS 107 0.5-2'		1335		X	S					X
05	CS 108 0-0.5'		1705		X	S					X
06	CS 108 0.5-2'		1710		X	S					X
07	CS 109 0-0.5'		1345		X	S					X
08	CS 109 0.5-2'		1350		X	S					X
09	CS 110 0-0.5'	12/18	1400		X	S					X
10	CS 110 0.5-2'	12/18	1405		X	S					X

Comments:

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:**
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

****Preservation**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other_____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

Relinquished by: (signature)	Date/Time:
Sophia M. Sawin	12/19 1800
Received by: (signature)	Date/Time:
Tom Main 12/22/14	1650
Relinquished by: (signature)	Date/Time:
Tom Main 12/22/14	1900
Received by: (signature)	Date/Time:
Joseph Lash 4.9 12/22/14	1900

Turnaround ††
☐ 7-Day
☐ 10-Day
☐ Other ____
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other:

Is your project MCP or RCP ?
○ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

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Email: info@contestlabs.com
www.contestlabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Rev 04.05.12

14L0967

Company Name: Weston & Sampson
Address:
Attention: Todd Bridgeo
Project Location: Charlestown
Sampled By: PTK

Telephone:
Project #
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

ANALYSIS REQUESTED

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	PCB, SOXHLED										
11	CS111 0-0.5"	12/18	1415		X	S		X										
12	CS111 0.5-2"	12/18	1420		X	S		X										
13	CS112 0-0.5"	12/18	1330		X	S		X										
14	CS112 0.5-2"	12/18	1335		X	S		X										
15	CS113 0-0.5"	12/19	1130		X	S		X										
16	CS113 0.5-2"	12/19	1135		X	S		X										
17	CS114 0-0.5"	12/19	1145		X	S		X										
18	CS114 0.5-2"	12/19	1150		X	S		X										
19	CS115 0-0.5"	12/18	1530		X	S		X										
20	CS115 0.5-2"	12/18	1535		X	S		X										

# of Containers
** Preservation
***Container Code

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other _____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other _____

mments:

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:

H - High; M - Medium; L - Low; C - Clean; U - Unknown

linquished by: (signature) Sophie M. Swain — Date/Time: 12/19 1800
ceived by: (signature) Tom Mace 12/22/14 — Date/Time: 1650
linquished by: (signature) Tom Mace 12/22/14 — Date/Time: 1900
ceived by: (signature) Joseph Lowe 4.9 12/22/14 — Date/Time: 1900

Turnaround ††
☐ 7-Day
☐ 10-Day
☐ Other ____
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other:

Is your project MCP or RCP ?
○ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

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East Longmeadow, MA. 01028
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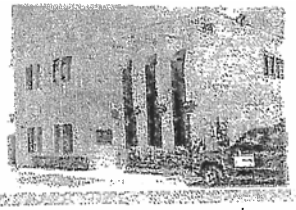
con-test ANALYTICAL LABORATORY



Sample Receipt Checklist

CLIENT NAME: Weston and Sampson RECEIVED BY: JDL DATE: 12/22/14

1) Was the chain(s) of custody relinquished and signed? (Yes) No No CoC Included
2) Does the chain agree with the samples? (Yes) No
If not, explain:
3) Are all the samples in good condition? (Yes) No
If not, explain:
4) How were the samples received:
On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒
Were the samples received in Temperature Compliance of (2-6°C)? (Yes) No N/A
Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.9
5) Are there Dissolved samples for the lab to filter? Yes (No)
Who was notified _____ Date _____ Time _____
6) Are there any RUSH or SHORT HOLDING TIME samples? Yes (No)
Who was notified _____ Date _____ Time _____
7) Location where samples are stored: 19
Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature: _____
8) Do all samples have the proper Acid pH: Yes No (N/A) _____
9) Do all samples have the proper Base pH: Yes No (N/A) _____
10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No (N/A)

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	60
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below		Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol _____
Bisulfate _____ # DI Water _____
Thiosulfate _____ Unpreserved

Time and Date Frozen:

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)
Any False statement will be brought to the attention of Client

Question	Answer (True/False) T/F/NA	Comment
1) The cooler's custody seal, if present, is intact.	NA	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	T	
18) There is sufficient volume for all requsted analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	NA	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	NA	
21) Samples do not require splitting or compositing.	T	

Who notified of False statements? Date/Time:

Doc #277 Rev. 4 August 2013 Log-In Technician Initials: JDL Date/Time: 12/22/14 1900

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

December 30, 2014

Todd Bridgeo
Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960

Project Location: Charlestown
Client Job Number:
Project Number: [none]
Laboratory Work Order Number: 14L0968

Enclosed are results of analyses for samples received by the laboratory on December 22, 2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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con-test® ANALYTICAL LABORATORY

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960
ATTN: Todd Bridgeo

REPORT DATE: 12/30/2014

PURCHASE ORDER NUMBER:

PROJECT NUMBER: [none]

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 14L0968

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Charlestown

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
CS 116 (0-0.5in)	14L0968-01	Product/Solid		SW-846 8082A	
CS 116 (0.5-2in)	14L0968-02	Product/Solid		SW-846 8082A	
CS 117 (0-0.5in)	14L0968-03	Product/Solid		SW-846 8082A	
CS 117 (0.5-2in)	14L0968-04	Product/Solid		SW-846 8082A	
CS 118 (0-0.5in)	14L0968-05	Product/Solid		SW-846 8082A	
CS 118 (0.5-2in)	14L0968-06	Product/Solid		SW-846 8082A	
CS 119 (0-0.5in)	14L0968-07	Product/Solid		SW-846 8082A	
CS 119 (0.5-2in)	14L0968-08	Product/Solid		SW-846 8082A	
CS 120 (0-0.5in)	14L0968-09	Product/Solid		SW-846 8082A	
CS 120 (0.5-2in)	14L0968-10	Product/Solid		SW-846 8082A	
CS 121 (0-0.5in)	14L0968-11	Product/Solid		SW-846 8082A	
CS 121 (0.5-2in)	14L0968-12	Product/Solid		SW-846 8082A	
CS 122 (0-0.5in)	14L0968-13	Product/Solid		SW-846 8082A	
CS 122 (0.5-2in)	14L0968-14	Product/Solid		SW-846 8082A	
CS 123 (0-0.5in)	14L0968-15	Product/Solid		SW-846 8082A	
CS 123 (0.5-2in)	14L0968-16	Product/Solid		SW-846 8082A	
CS 124 (0-0.5in)	14L0968-17	Product/Solid		SW-846 8082A	
CS 124 (0.5-2in)	14L0968-18	Product/Solid		SW-846 8082A	
CS 125 (0-0.5in)	14L0968-19	Product/Solid		SW-846 8082A	
CS 125 (0.5-2in)	14L0968-20	Product/Solid		SW-846 8082A	

con-test® ANALYTICAL LABORATORY

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SW-846 8082A

Qualifications:

MS-21

Matrix spike and/or spike duplicate recovery bias high due to contribution of other Aroclors present in the source sample.

Analyte & Samples(s) Qualified:

Aroclor-1016
B112342-MS1, B112342-MSD1

Aroclor-1016 [2C]
B112342-MS1, B112342-MSD1

Aroclor-1260
B112342-MS1, B112342-MSD1

Aroclor-1260 [2C]
B112342-MS1, B112342-MSD1

S-01

The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

Analyte & Samples(s) Qualified:

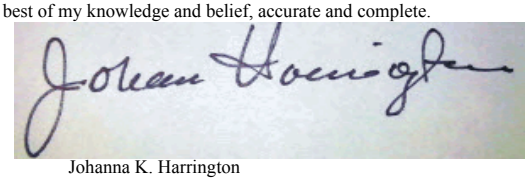
Decachlorobiphenyl
14L0968-05[CS 118 (0-0.5in)], 14L0968-06[CS 118 (0.5-2in)], 14L0968-07[CS 119 (0-0.5in)], 14L0968-09[CS 120 (0-0.5in)]

Decachlorobiphenyl [2C]
14L0968-05[CS 118 (0-0.5in)], 14L0968-06[CS 118 (0.5-2in)], 14L0968-07[CS 119 (0-0.5in)], 14L0968-09[CS 120 (0-0.5in)]

Tetrachloro-m-xylene
14L0968-05[CS 118 (0-0.5in)], 14L0968-06[CS 118 (0.5-2in)], 14L0968-07[CS 119 (0-0.5in)], 14L0968-09[CS 120 (0-0.5in)]

Tetrachloro-m-xylene [2C]
14L0968-05[CS 118 (0-0.5in)], 14L0968-06[CS 118 (0.5-2in)], 14L0968-07[CS 119 (0-0.5in)], 14L0968-09[CS 120 (0-0.5in)]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Johanna K. Harrington
Manager, Laboratory Reporting

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown | Sample Description: | Work Order: 14L0968

Date Received: 12/22/2014

Field Sample #: CS 116 (0-0.5in) | Sampled: 12/18/2014 15:20

Sample ID: 14L0968-01

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	12/23/14	12/26/14 20:08	KAL
Aroclor-1221 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	12/23/14	12/26/14 20:08	KAL
Aroclor-1232 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	12/23/14	12/26/14 20:08	KAL
Aroclor-1242 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	12/23/14	12/26/14 20:08	KAL
Aroclor-1248 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	12/23/14	12/26/14 20:08	KAL
Aroclor-1254 [2]	7.9	0.96	mg/Kg	10		SW-846 8082A	12/23/14	12/26/14 20:08	KAL
Aroclor-1260 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	12/23/14	12/26/14 20:08	KAL
Aroclor-1262 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	12/23/14	12/26/14 20:08	KAL
Aroclor-1268 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	12/23/14	12/26/14 20:08	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	74.5	30-150		12/26/14 20:08
Decachlorobiphenyl [2]	85.7	30-150		12/26/14 20:08
Tetrachloro-m-xylene [1]	87.4	30-150		12/26/14 20:08
Tetrachloro-m-xylene [2]	85.6	30-150		12/26/14 20:08

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown | Sample Description: | Work Order: 14L0968

Date Received: 12/22/2014

Field Sample #: CS 116 (0.5-2in) | Sampled: 12/18/2014 15:35

Sample ID: 14L0968-02

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.089	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 18:13	KAL
Aroclor-1221 [1]	ND	0.089	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 18:13	KAL
Aroclor-1232 [1]	ND	0.089	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 18:13	KAL
Aroclor-1242 [1]	ND	0.089	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 18:13	KAL
Aroclor-1248 [1]	ND	0.089	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 18:13	KAL
Aroclor-1254 [2]	0.43	0.089	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 18:13	KAL
Aroclor-1260 [1]	ND	0.089	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 18:13	KAL
Aroclor-1262 [1]	ND	0.089	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 18:13	KAL
Aroclor-1268 [1]	ND	0.089	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 18:13	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	73.0	30-150		12/26/14 18:13
Decachlorobiphenyl [2]	86.0	30-150		12/26/14 18:13
Tetrachloro-m-xylene [1]	87.6	30-150		12/26/14 18:13
Tetrachloro-m-xylene [2]	103	30-150		12/26/14 18:13

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown | Sample Description: | Work Order: 14L0968

Date Received: 12/22/2014

Field Sample #: CS 117 (0-0.5in) | Sampled: 12/19/2014 16:15

Sample ID: 14L0968-03

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/23/14	12/26/14 18:26	KAL
Aroclor-1221 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/23/14	12/26/14 18:26	KAL
Aroclor-1232 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/23/14	12/26/14 18:26	KAL
Aroclor-1242 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/23/14	12/26/14 18:26	KAL
Aroclor-1248 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/23/14	12/26/14 18:26	KAL
Aroclor-1254 [2]	6.6	1.9	mg/Kg	20		SW-846 8082A	12/23/14	12/26/14 18:26	KAL
Aroclor-1260 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/23/14	12/26/14 18:26	KAL
Aroclor-1262 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/23/14	12/26/14 18:26	KAL
Aroclor-1268 [1]	ND	1.9	mg/Kg	20		SW-846 8082A	12/23/14	12/26/14 18:26	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	65.8	30-150		12/26/14 18:26
Decachlorobiphenyl [2]	72.8	30-150		12/26/14 18:26
Tetrachloro-m-xylene [1]	84.0	30-150		12/26/14 18:26
Tetrachloro-m-xylene [2]	82.8	30-150		12/26/14 18:26

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Project Location: Charlestown | Sample Description: | Work Order: 14L0968

Date Received: 12/22/2014

Field Sample #: CS 117 (0.5-2in) | Sampled: 12/19/2014 16:30

Sample ID: 14L0968-04

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.88	mg/Kg	10		SW-846 8082A	12/23/14	12/26/14 18:39	KAL
Aroclor-1221 [1]	ND	0.88	mg/Kg	10		SW-846 8082A	12/23/14	12/26/14 18:39	KAL
Aroclor-1232 [1]	ND	0.88	mg/Kg	10		SW-846 8082A	12/23/14	12/26/14 18:39	KAL
Aroclor-1242 [1]	ND	0.88	mg/Kg	10		SW-846 8082A	12/23/14	12/26/14 18:39	KAL
Aroclor-1248 [1]	ND	0.88	mg/Kg	10		SW-846 8082A	12/23/14	12/26/14 18:39	KAL
Aroclor-1254 [2]	4.7	0.88	mg/Kg	10		SW-846 8082A	12/23/14	12/26/14 18:39	KAL
Aroclor-1260 [1]	ND	0.88	mg/Kg	10		SW-846 8082A	12/23/14	12/26/14 18:39	KAL
Aroclor-1262 [1]	ND	0.88	mg/Kg	10		SW-846 8082A	12/23/14	12/26/14 18:39	KAL
Aroclor-1268 [1]	ND	0.88	mg/Kg	10		SW-846 8082A	12/23/14	12/26/14 18:39	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	64.8	30-150		12/26/14 18:39
Decachlorobiphenyl [2]	71.6	30-150		12/26/14 18:39
Tetrachloro-m-xylene [1]	84.8	30-150		12/26/14 18:39
Tetrachloro-m-xylene [2]	87.6	30-150		12/26/14 18:39

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Project Location: Charlestown | Sample Description: | Work Order: 14L0968

Date Received: 12/22/2014

Field Sample #: CS 118 (0-0.5in) | Sampled: 12/19/2014 14:40

Sample ID: 14L0968-05

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	4.4	mg/Kg	50		SW-846 8082A	12/23/14	12/26/14 18:51	KAL
Aroclor-1221 [1]	ND	4.4	mg/Kg	50		SW-846 8082A	12/23/14	12/26/14 18:51	KAL
Aroclor-1232 [1]	ND	4.4	mg/Kg	50		SW-846 8082A	12/23/14	12/26/14 18:51	KAL
Aroclor-1242 [1]	ND	4.4	mg/Kg	50		SW-846 8082A	12/23/14	12/26/14 18:51	KAL
Aroclor-1248 [1]	ND	4.4	mg/Kg	50		SW-846 8082A	12/23/14	12/26/14 18:51	KAL
Aroclor-1254 [2]	18	4.4	mg/Kg	50		SW-846 8082A	12/23/14	12/26/14 18:51	KAL
Aroclor-1260 [1]	ND	4.4	mg/Kg	50		SW-846 8082A	12/23/14	12/26/14 18:51	KAL
Aroclor-1262 [1]	ND	4.4	mg/Kg	50		SW-846 8082A	12/23/14	12/26/14 18:51	KAL
Aroclor-1268 [1]	ND	4.4	mg/Kg	50		SW-846 8082A	12/23/14	12/26/14 18:51	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	*	30-150	S-01	12/26/14 18:51
Decachlorobiphenyl [2]	*	30-150	S-01	12/26/14 18:51
Tetrachloro-m-xylene [1]	*	30-150	S-01	12/26/14 18:51
Tetrachloro-m-xylene [2]	*	30-150	S-01	12/26/14 18:51

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Project Location: Charlestown | Sample Description: | Work Order: 14L0968

Date Received: 12/22/2014

Field Sample #: CS 118 (0.5-2in) | Sampled: 12/19/2014 14:50

Sample ID: 14L0968-06

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	37	mg/Kg	400		SW-846 8082A	12/23/14	12/26/14 19:04	KAL
Aroclor-1221 [1]	ND	37	mg/Kg	400		SW-846 8082A	12/23/14	12/26/14 19:04	KAL
Aroclor-1232 [1]	ND	37	mg/Kg	400		SW-846 8082A	12/23/14	12/26/14 19:04	KAL
Aroclor-1242 [1]	ND	37	mg/Kg	400		SW-846 8082A	12/23/14	12/26/14 19:04	KAL
Aroclor-1248 [1]	ND	37	mg/Kg	400		SW-846 8082A	12/23/14	12/26/14 19:04	KAL
Aroclor-1254 [2]	200	37	mg/Kg	400		SW-846 8082A	12/23/14	12/26/14 19:04	KAL
Aroclor-1260 [1]	ND	37	mg/Kg	400		SW-846 8082A	12/23/14	12/26/14 19:04	KAL
Aroclor-1262 [1]	ND	37	mg/Kg	400		SW-846 8082A	12/23/14	12/26/14 19:04	KAL
Aroclor-1268 [1]	ND	37	mg/Kg	400		SW-846 8082A	12/23/14	12/26/14 19:04	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	*	30-150	S-01	12/26/14 19:04
Decachlorobiphenyl [2]	*	30-150	S-01	12/26/14 19:04
Tetrachloro-m-xylene [1]	*	30-150	S-01	12/26/14 19:04
Tetrachloro-m-xylene [2]	*	30-150	S-01	12/26/14 19:04

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Project Location: Charlestown | Sample Description: | Work Order: 14L0968

Date Received: 12/22/2014

Field Sample #: CS 119 (0-0.5in) | Sampled: 12/19/2014 14:20

Sample ID: 14L0968-07

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	3.5	mg/Kg	40		SW-846 8082A	12/23/14	12/26/14 20:21	KAL
Aroclor-1221 [1]	ND	3.5	mg/Kg	40		SW-846 8082A	12/23/14	12/26/14 20:21	KAL
Aroclor-1232 [1]	ND	3.5	mg/Kg	40		SW-846 8082A	12/23/14	12/26/14 20:21	KAL
Aroclor-1242 [1]	ND	3.5	mg/Kg	40		SW-846 8082A	12/23/14	12/26/14 20:21	KAL
Aroclor-1248 [1]	ND	3.5	mg/Kg	40		SW-846 8082A	12/23/14	12/26/14 20:21	KAL
Aroclor-1254 [2]	29	3.5	mg/Kg	40		SW-846 8082A	12/23/14	12/26/14 20:21	KAL
Aroclor-1260 [1]	ND	3.5	mg/Kg	40		SW-846 8082A	12/23/14	12/26/14 20:21	KAL
Aroclor-1262 [1]	ND	3.5	mg/Kg	40		SW-846 8082A	12/23/14	12/26/14 20:21	KAL
Aroclor-1268 [1]	ND	3.5	mg/Kg	40		SW-846 8082A	12/23/14	12/26/14 20:21	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	*	30-150	S-01	12/26/14 20:21
Decachlorobiphenyl [2]	*	30-150	S-01	12/26/14 20:21
Tetrachloro-m-xylene [1]	*	30-150	S-01	12/26/14 20:21
Tetrachloro-m-xylene [2]	*	30-150	S-01	12/26/14 20:21

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown | Sample Description: | Work Order: 14L0968

Date Received: 12/22/2014

Field Sample #: CS 119 (0.5-2in) | Sampled: 12/19/2014 14:30

Sample ID: 14L0968-08

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	2.3	mg/Kg	25		SW-846 8082A	12/23/14	12/26/14 20:34	KAL
Aroclor-1221 [1]	ND	2.3	mg/Kg	25		SW-846 8082A	12/23/14	12/26/14 20:34	KAL
Aroclor-1232 [1]	ND	2.3	mg/Kg	25		SW-846 8082A	12/23/14	12/26/14 20:34	KAL
Aroclor-1242 [1]	ND	2.3	mg/Kg	25		SW-846 8082A	12/23/14	12/26/14 20:34	KAL
Aroclor-1248 [1]	ND	2.3	mg/Kg	25		SW-846 8082A	12/23/14	12/26/14 20:34	KAL
Aroclor-1254 [2]	18	2.3	mg/Kg	25		SW-846 8082A	12/23/14	12/26/14 20:34	KAL
Aroclor-1260 [1]	ND	2.3	mg/Kg	25		SW-846 8082A	12/23/14	12/26/14 20:34	KAL
Aroclor-1262 [1]	ND	2.3	mg/Kg	25		SW-846 8082A	12/23/14	12/26/14 20:34	KAL
Aroclor-1268 [1]	ND	2.3	mg/Kg	25		SW-846 8082A	12/23/14	12/26/14 20:34	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	70.8	30-150		12/26/14 20:34
Decachlorobiphenyl [2]	67.6	30-150		12/26/14 20:34
Tetrachloro-m-xylene [1]	93.5	30-150		12/26/14 20:34
Tetrachloro-m-xylene [2]	91.5	30-150		12/26/14 20:34

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown | Sample Description: | Work Order: 14L0968

Date Received: 12/22/2014

Field Sample #: CS 120 (0-0.5in) | Sampled: 12/19/2014 15:30

Sample ID: 14L0968-09

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	3.8	mg/Kg	40		SW-846 8082A	12/23/14	12/26/14 20:46	KAL
Aroclor-1221 [1]	ND	3.8	mg/Kg	40		SW-846 8082A	12/23/14	12/26/14 20:46	KAL
Aroclor-1232 [1]	ND	3.8	mg/Kg	40		SW-846 8082A	12/23/14	12/26/14 20:46	KAL
Aroclor-1242 [1]	ND	3.8	mg/Kg	40		SW-846 8082A	12/23/14	12/26/14 20:46	KAL
Aroclor-1248 [1]	ND	3.8	mg/Kg	40		SW-846 8082A	12/23/14	12/26/14 20:46	KAL
Aroclor-1254 [2]	32	3.8	mg/Kg	40		SW-846 8082A	12/23/14	12/26/14 20:46	KAL
Aroclor-1260 [1]	ND	3.8	mg/Kg	40		SW-846 8082A	12/23/14	12/26/14 20:46	KAL
Aroclor-1262 [1]	ND	3.8	mg/Kg	40		SW-846 8082A	12/23/14	12/26/14 20:46	KAL
Aroclor-1268 [1]	ND	3.8	mg/Kg	40		SW-846 8082A	12/23/14	12/26/14 20:46	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	*	30-150	S-01	12/26/14 20:46
Decachlorobiphenyl [2]	*	30-150	S-01	12/26/14 20:46
Tetrachloro-m-xylene [1]	*	30-150	S-01	12/26/14 20:46
Tetrachloro-m-xylene [2]	*	30-150	S-01	12/26/14 20:46

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Project Location: Charlestown | Sample Description: | Work Order: 14L0968

Date Received: 12/22/2014

Field Sample #: CS 120 (0.5-2in) | Sampled: 12/19/2014 15:35

Sample ID: 14L0968-10

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.45	mg/Kg	5		SW-846 8082A	12/23/14	12/27/14 9:44	KAL
Aroclor-1221 [1]	ND	0.45	mg/Kg	5		SW-846 8082A	12/23/14	12/27/14 9:44	KAL
Aroclor-1232 [1]	ND	0.45	mg/Kg	5		SW-846 8082A	12/23/14	12/27/14 9:44	KAL
Aroclor-1242 [1]	ND	0.45	mg/Kg	5		SW-846 8082A	12/23/14	12/27/14 9:44	KAL
Aroclor-1248 [1]	ND	0.45	mg/Kg	5		SW-846 8082A	12/23/14	12/27/14 9:44	KAL
Aroclor-1254 [2]	3.7	0.45	mg/Kg	5		SW-846 8082A	12/23/14	12/27/14 9:44	KAL
Aroclor-1260 [1]	ND	0.45	mg/Kg	5		SW-846 8082A	12/23/14	12/27/14 9:44	KAL
Aroclor-1262 [1]	ND	0.45	mg/Kg	5		SW-846 8082A	12/23/14	12/27/14 9:44	KAL
Aroclor-1268 [1]	ND	0.45	mg/Kg	5		SW-846 8082A	12/23/14	12/27/14 9:44	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	76.7	30-150		12/27/14 9:44
Decachlorobiphenyl [2]	92.9	30-150		12/27/14 9:44
Tetrachloro-m-xylene [1]	91.1	30-150		12/27/14 9:44
Tetrachloro-m-xylene [2]	95.0	30-150		12/27/14 9:44

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown | Sample Description: | Work Order: 14L0968

Date Received: 12/22/2014

Field Sample #: CS 121 (0-0.5in) | Sampled: 12/19/2014 13:00

Sample ID: 14L0968-11

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 21:38	KAL
Aroclor-1221 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 21:38	KAL
Aroclor-1232 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 21:38	KAL
Aroclor-1242 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 21:38	KAL
Aroclor-1248 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 21:38	KAL
Aroclor-1254 [1]	0.38	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 21:38	KAL
Aroclor-1260 [1]	0.19	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 21:38	KAL
Aroclor-1262 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 21:38	KAL
Aroclor-1268 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 21:38	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	64.1	30-150		12/26/14 21:38
Decachlorobiphenyl [2]	83.0	30-150		12/26/14 21:38
Tetrachloro-m-xylene [1]	73.4	30-150		12/26/14 21:38
Tetrachloro-m-xylene [2]	80.2	30-150		12/26/14 21:38

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Project Location: Charlestown | Sample Description: | Work Order: 14L0968

Date Received: 12/22/2014

Field Sample #: CS 121 (0.5-2in) | Sampled: 12/19/2014 13:10

Sample ID: 14L0968-12

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 21:50	KAL
Aroclor-1221 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 21:50	KAL
Aroclor-1232 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 21:50	KAL
Aroclor-1242 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 21:50	KAL
Aroclor-1248 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 21:50	KAL
Aroclor-1254 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 21:50	KAL
Aroclor-1260 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 21:50	KAL
Aroclor-1262 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 21:50	KAL
Aroclor-1268 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 21:50	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	77.5	30-150		12/26/14 21:50
Decachlorobiphenyl [2]	97.5	30-150		12/26/14 21:50
Tetrachloro-m-xylene [1]	92.4	30-150		12/26/14 21:50
Tetrachloro-m-xylene [2]	110	30-150		12/26/14 21:50

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Project Location: Charlestown | Sample Description: | Work Order: 14L0968

Date Received: 12/22/2014

Field Sample #: CS 122 (0-0.5in) | Sampled: 12/19/2014 13:45

Sample ID: 14L0968-13

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.46	mg/Kg	5		SW-846 8082A	12/23/14	12/27/14 9:57	KAL
Aroclor-1221 [1]	ND	0.46	mg/Kg	5		SW-846 8082A	12/23/14	12/27/14 9:57	KAL
Aroclor-1232 [1]	ND	0.46	mg/Kg	5		SW-846 8082A	12/23/14	12/27/14 9:57	KAL
Aroclor-1242 [1]	ND	0.46	mg/Kg	5		SW-846 8082A	12/23/14	12/27/14 9:57	KAL
Aroclor-1248 [1]	ND	0.46	mg/Kg	5		SW-846 8082A	12/23/14	12/27/14 9:57	KAL
Aroclor-1254 [2]	2.5	0.46	mg/Kg	5		SW-846 8082A	12/23/14	12/27/14 9:57	KAL
Aroclor-1260 [1]	0.54	0.46	mg/Kg	5		SW-846 8082A	12/23/14	12/27/14 9:57	KAL
Aroclor-1262 [1]	ND	0.46	mg/Kg	5		SW-846 8082A	12/23/14	12/27/14 9:57	KAL
Aroclor-1268 [1]	ND	0.46	mg/Kg	5		SW-846 8082A	12/23/14	12/27/14 9:57	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	65.2	30-150		12/27/14 9:57
Decachlorobiphenyl [2]	77.7	30-150		12/27/14 9:57
Tetrachloro-m-xylene [1]	82.4	30-150		12/27/14 9:57
Tetrachloro-m-xylene [2]	88.0	30-150		12/27/14 9:57

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Project Location: Charlestown | Sample Description: | Work Order: 14L0968

Date Received: 12/22/2014

Field Sample #: CS 122 (0.5-2in) | Sampled: 12/19/2014 13:50

Sample ID: 14L0968-14

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:16	KAL
Aroclor-1221 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:16	KAL
Aroclor-1232 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:16	KAL
Aroclor-1242 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:16	KAL
Aroclor-1248 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:16	KAL
Aroclor-1254 [1]	0.23	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:16	KAL
Aroclor-1260 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:16	KAL
Aroclor-1262 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:16	KAL
Aroclor-1268 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:16	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	67.3	30-150		12/26/14 22:16
Decachlorobiphenyl [2]	84.2	30-150		12/26/14 22:16
Tetrachloro-m-xylene [1]	83.5	30-150		12/26/14 22:16
Tetrachloro-m-xylene [2]	91.7	30-150		12/26/14 22:16

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Project Location: Charlestown | Sample Description: | Work Order: 14L0968

Date Received: 12/22/2014

Field Sample #: CS 123 (0-0.5in) | Sampled: 12/19/2014 14:00

Sample ID: 14L0968-15

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.093	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:29	KAL
Aroclor-1221 [1]	ND	0.093	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:29	KAL
Aroclor-1232 [1]	ND	0.093	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:29	KAL
Aroclor-1242 [1]	ND	0.093	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:29	KAL
Aroclor-1248 [1]	ND	0.093	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:29	KAL
Aroclor-1254 [1]	0.94	0.093	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:29	KAL
Aroclor-1260 [1]	0.36	0.093	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:29	KAL
Aroclor-1262 [1]	ND	0.093	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:29	KAL
Aroclor-1268 [1]	ND	0.093	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:29	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	60.9	30-150		12/26/14 22:29
Decachlorobiphenyl [2]	76.0	30-150		12/26/14 22:29
Tetrachloro-m-xylene [1]	76.8	30-150		12/26/14 22:29
Tetrachloro-m-xylene [2]	87.9	30-150		12/26/14 22:29

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Project Location: Charlestown | Sample Description: | Work Order: 14L0968

Date Received: 12/22/2014

Field Sample #: CS 123 (0.5-2in) | Sampled: 12/19/2014 14:10

Sample ID: 14L0968-16

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:42	KAL
Aroclor-1221 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:42	KAL
Aroclor-1232 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:42	KAL
Aroclor-1242 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:42	KAL
Aroclor-1248 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:42	KAL
Aroclor-1254 [1]	0.13	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:42	KAL
Aroclor-1260 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:42	KAL
Aroclor-1262 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:42	KAL
Aroclor-1268 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 22:42	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	66.8	30-150		12/26/14 22:42
Decachlorobiphenyl [2]	81.8	30-150		12/26/14 22:42
Tetrachloro-m-xylene [1]	84.2	30-150		12/26/14 22:42
Tetrachloro-m-xylene [2]	99.8	30-150		12/26/14 22:42

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Project Location: Charlestown | Sample Description: | Work Order: 14L0968

Date Received: 12/22/2014

Field Sample #: CS 124 (0-0.5in) | Sampled: 12/19/2014 15:50

Sample ID: 14L0968-17

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.87	mg/Kg	10		SW-846 8082A	12/23/14	12/27/14 10:10	KAL
Aroclor-1221 [1]	ND	0.87	mg/Kg	10		SW-846 8082A	12/23/14	12/27/14 10:10	KAL
Aroclor-1232 [1]	ND	0.87	mg/Kg	10		SW-846 8082A	12/23/14	12/27/14 10:10	KAL
Aroclor-1242 [1]	ND	0.87	mg/Kg	10		SW-846 8082A	12/23/14	12/27/14 10:10	KAL
Aroclor-1248 [1]	ND	0.87	mg/Kg	10		SW-846 8082A	12/23/14	12/27/14 10:10	KAL
Aroclor-1254 [2]	6.1	0.87	mg/Kg	10		SW-846 8082A	12/23/14	12/27/14 10:10	KAL
Aroclor-1260 [1]	0.96	0.87	mg/Kg	10		SW-846 8082A	12/23/14	12/27/14 10:10	KAL
Aroclor-1262 [1]	ND	0.87	mg/Kg	10		SW-846 8082A	12/23/14	12/27/14 10:10	KAL
Aroclor-1268 [1]	ND	0.87	mg/Kg	10		SW-846 8082A	12/23/14	12/27/14 10:10	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	70.8	30-150		12/27/14 10:10
Decachlorobiphenyl [2]	84.1	30-150		12/27/14 10:10
Tetrachloro-m-xylene [1]	83.5	30-150		12/27/14 10:10
Tetrachloro-m-xylene [2]	83.6	30-150		12/27/14 10:10

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown | Sample Description: | Work Order: 14L0968

Date Received: 12/22/2014

Field Sample #: CS 124 (0.5-2in) | Sampled: 12/19/2014 16:00

Sample ID: 14L0968-18

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.092	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:07	KAL
Aroclor-1221 [1]	ND	0.092	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:07	KAL
Aroclor-1232 [1]	ND	0.092	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:07	KAL
Aroclor-1242 [1]	ND	0.092	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:07	KAL
Aroclor-1248 [1]	ND	0.092	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:07	KAL
Aroclor-1254 [2]	0.45	0.092	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:07	KAL
Aroclor-1260 [1]	ND	0.092	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:07	KAL
Aroclor-1262 [1]	ND	0.092	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:07	KAL
Aroclor-1268 [1]	ND	0.092	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:07	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	65.4	30-150		12/26/14 23:07
Decachlorobiphenyl [2]	81.3	30-150		12/26/14 23:07
Tetrachloro-m-xylene [1]	74.8	30-150		12/26/14 23:07
Tetrachloro-m-xylene [2]	79.5	30-150		12/26/14 23:07

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Project Location: Charlestown | Sample Description: | Work Order: 14L0968

Date Received: 12/22/2014

Field Sample #: CS 125 (0-0.5in) | Sampled: 12/19/2014 15:45

Sample ID: 14L0968-19

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.088	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:20	KAL
Aroclor-1221 [1]	ND	0.088	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:20	KAL
Aroclor-1232 [1]	ND	0.088	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:20	KAL
Aroclor-1242 [1]	ND	0.088	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:20	KAL
Aroclor-1248 [2]	0.21	0.088	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:20	KAL
Aroclor-1254 [2]	0.45	0.088	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:20	KAL
Aroclor-1260 [1]	0.17	0.088	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:20	KAL
Aroclor-1262 [1]	ND	0.088	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:20	KAL
Aroclor-1268 [1]	ND	0.088	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:20	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	66.8	30-150		12/26/14 23:20
Decachlorobiphenyl [2]	85.2	30-150		12/26/14 23:20
Tetrachloro-m-xylene [1]	76.0	30-150		12/26/14 23:20
Tetrachloro-m-xylene [2]	84.8	30-150		12/26/14 23:20

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Project Location: Charlestown | Sample Description: | Work Order: 14L0968

Date Received: 12/22/2014

Field Sample #: CS 125 (0.5-2in) | Sampled: 12/19/2014 15:50

Sample ID: 14L0968-20

Sample Matrix: Product/Solid

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:33	KAL
Aroclor-1221 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:33	KAL
Aroclor-1232 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:33	KAL
Aroclor-1242 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:33	KAL
Aroclor-1248 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:33	KAL
Aroclor-1254 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:33	KAL
Aroclor-1260 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:33	KAL
Aroclor-1262 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:33	KAL
Aroclor-1268 [1]	ND	0.090	mg/Kg	1		SW-846 8082A	12/23/14	12/26/14 23:33	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	69.0	30-150		12/26/14 23:33
Decachlorobiphenyl [2]	85.4	30-150		12/26/14 23:33
Tetrachloro-m-xylene [1]	82.8	30-150		12/26/14 23:33
Tetrachloro-m-xylene [2]	93.5	30-150		12/26/14 23:33

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Sample Extraction Data

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
14L0968-01 [CS 116 (0-0.5in)]	B112342	2.08	10.0	12/23/14
14L0968-02 [CS 116 (0.5-2in)]	B112342	2.25	10.0	12/23/14
14L0968-03 [CS 117 (0-0.5in)]	B112342	2.11	10.0	12/23/14
14L0968-04 [CS 117 (0.5-2in)]	B112342	2.28	10.0	12/23/14
14L0968-05 [CS 118 (0-0.5in)]	B112342	2.28	10.0	12/23/14
14L0968-06 [CS 118 (0.5-2in)]	B112342	2.14	10.0	12/23/14
14L0968-07 [CS 119 (0-0.5in)]	B112342	2.27	10.0	12/23/14
14L0968-08 [CS 119 (0.5-2in)]	B112342	2.18	10.0	12/23/14
14L0968-09 [CS 120 (0-0.5in)]	B112342	2.09	10.0	12/23/14
14L0968-10 [CS 120 (0.5-2in)]	B112342	2.22	10.0	12/23/14
14L0968-11 [CS 121 (0-0.5in)]	B112342	2.22	10.0	12/23/14
14L0968-12 [CS 121 (0.5-2in)]	B112342	2.21	10.0	12/23/14
14L0968-13 [CS 122 (0-0.5in)]	B112342	2.19	10.0	12/23/14
14L0968-14 [CS 122 (0.5-2in)]	B112342	2.29	10.0	12/23/14
14L0968-15 [CS 123 (0-0.5in)]	B112342	2.14	10.0	12/23/14
14L0968-16 [CS 123 (0.5-2in)]	B112342	2.29	10.0	12/23/14
14L0968-17 [CS 124 (0-0.5in)]	B112342	2.29	10.0	12/23/14
14L0968-18 [CS 124 (0.5-2in)]	B112342	2.17	10.0	12/23/14
14L0968-19 [CS 125 (0-0.5in)]	B112342	2.28	10.0	12/23/14
14L0968-20 [CS 125 (0.5-2in)]	B112342	2.23	10.0	12/23/14

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B112342 - SW-846 3540C										
Blank (B112342-BLK1)				Prepared: 12/23/14 Analyzed: 12/26/14						
Aroclor-1016	ND	0.10	mg/Kg							
Aroclor-1016 [2C]	ND	0.10	mg/Kg							
Aroclor-1221	ND	0.10	mg/Kg							
Aroclor-1221 [2C]	ND	0.10	mg/Kg							
Aroclor-1232	ND	0.10	mg/Kg							
Aroclor-1232 [2C]	ND	0.10	mg/Kg							
Aroclor-1242	ND	0.10	mg/Kg							
Aroclor-1242 [2C]	ND	0.10	mg/Kg							
Aroclor-1248	ND	0.10	mg/Kg							
Aroclor-1248 [2C]	ND	0.10	mg/Kg							
Aroclor-1254	ND	0.10	mg/Kg							
Aroclor-1254 [2C]	ND	0.10	mg/Kg							
Aroclor-1260	ND	0.10	mg/Kg							
Aroclor-1260 [2C]	ND	0.10	mg/Kg							
Aroclor-1262	ND	0.10	mg/Kg							
Aroclor-1262 [2C]	ND	0.10	mg/Kg							
Aroclor-1268	ND	0.10	mg/Kg							
Aroclor-1268 [2C]	ND	0.10	mg/Kg							
Surrogate: Decachlorobiphenyl	*0.676*		mg/Kg	1.00		67.6	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.844*		mg/Kg	1.00		84.4	30-150			
Surrogate: Tetrachloro-m-xylene	*0.764*		mg/Kg	1.00		76.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.941*		mg/Kg	1.00		94.1	30-150			
LCS (B112342-BS1)				Prepared: 12/23/14 Analyzed: 12/26/14						
Aroclor-1016	0.21	0.10	mg/Kg	0.250		84.0	40-140			
Aroclor-1016 [2C]	0.24	0.10	mg/Kg	0.250		95.4	40-140			
Aroclor-1260	0.21	0.10	mg/Kg	0.250		84.0	40-140			
Aroclor-1260 [2C]	0.23	0.10	mg/Kg	0.250		90.3	40-140			
Surrogate: Decachlorobiphenyl	*0.636*		mg/Kg	1.00		63.6	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.781*		mg/Kg	1.00		78.1	30-150			
Surrogate: Tetrachloro-m-xylene	*0.712*		mg/Kg	1.00		71.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.870*		mg/Kg	1.00		87.0	30-150			
LCS Dup (B112342-BSD1)				Prepared: 12/23/14 Analyzed: 12/26/14						
Aroclor-1016	0.23	0.10	mg/Kg	0.250		91.5	40-140	8.55	30	
Aroclor-1016 [2C]	0.25	0.10	mg/Kg	0.250		101	40-140	5.63	30	
Aroclor-1260	0.22	0.10	mg/Kg	0.250		86.4	40-140	2.85	30	
Aroclor-1260 [2C]	0.24	0.10	mg/Kg	0.250		94.1	40-140	4.13	30	
Surrogate: Decachlorobiphenyl	*0.678*		mg/Kg	1.00		67.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.831*		mg/Kg	1.00		83.1	30-150			
Surrogate: Tetrachloro-m-xylene	*0.780*		mg/Kg	1.00		78.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.952*		mg/Kg	1.00		95.2	30-150			

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B112342 - SW-846 3540C											
Matrix Spike (B112342-MS1)	**Source: 14L0968-01**			Prepared: 12/23/14 Analyzed: 12/26/14							
Aroclor-1016	0.51	0.099	mg/Kg	0.248	ND	**207**	*	40-140			MS-21
Aroclor-1016 [2C]	0.52	0.099	mg/Kg	0.248	ND	**209**	*	40-140			MS-21
Aroclor-1260	2.4	0.099	mg/Kg	0.248	ND	**977**	*	40-140			MS-21
Aroclor-1260 [2C]	3.1	0.099	mg/Kg	0.248	ND	**1240**	*	40-140			MS-21
Surrogate: Decachlorobiphenyl	*0.630*		mg/Kg	0.990		63.7		30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.781*		mg/Kg	0.990		78.9		30-150			
Surrogate: Tetrachloro-m-xylene	*0.766*		mg/Kg	0.990		77.3		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.873*		mg/Kg	0.990		88.2		30-150			
Matrix Spike Dup (B112342-MSD1)	**Source: 14L0968-01**			Prepared: 12/23/14 Analyzed: 12/26/14							
Aroclor-1016	0.51	0.095	mg/Kg	0.237	ND	**213**	*	40-140	1.27	50	MS-21
Aroclor-1016 [2C]	0.52	0.095	mg/Kg	0.237	ND	**217**	*	40-140	0.522	50	MS-21
Aroclor-1260	2.4	0.095	mg/Kg	0.237	ND	**1010**	*	40-140	1.30	50	MS-21
Aroclor-1260 [2C]	3.1	0.095	mg/Kg	0.237	ND	**1290**	*	40-140	0.442	50	MS-21
Surrogate: Decachlorobiphenyl	*0.640*		mg/Kg	0.948		67.6		30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.762*		mg/Kg	0.948		80.4		30-150			
Surrogate: Tetrachloro-m-xylene	*0.732*		mg/Kg	0.948		77.3		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.833*		mg/Kg	0.948		87.9		30-150			

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 116 (0-0.5in)

Lab Sample ID: 14L0968-01 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	7.2	
	2	0.00	0.00	0.00	7.9	9.8

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 116 (0.5-2in)

Lab Sample ID: 14L0968-02 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.40	
	2	0.00	0.00	0.00	0.43	6.2

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 117 (0-0.5in)

Lab Sample ID: 14L0968-03 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	5.6	
	2	0.00	0.00	0.00	6.6	15.7

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 117 (0.5-2in)

Lab Sample ID: 14L0968-04 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	3.9	
	2	0.00	0.00	0.00	4.7	19.1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 118 (0-0.5in)

Lab Sample ID: 14L0968-05 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	16	
	2	0.00	0.00	0.00	18	11.1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 118 (0.5-2in)

Lab Sample ID: 14L0968-06 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	180	
	2	0.00	0.00	0.00	200	10.5

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 119 (0-0.5in)

Lab Sample ID: 14L0968-07 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	25	
	2	0.00	0.00	0.00	29	12.8

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 119 (0.5-2in)

Lab Sample ID: 14L0968-08 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	16	
	2	0.00	0.00	0.00	18	14.9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 120 (0-0.5in)

Lab Sample ID: 14L0968-09

Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	27	
	2	0.00	0.00	0.00	32	16.6

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 120 (0.5-2in)

Lab Sample ID: 14L0968-10 Date(s) Analyzed: 12/27/2014 12/27/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	3.2	
	2	0.00	0.00	0.00	3.7	13.9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 121 (0-0.5in)

Lab Sample ID: 14L0968-11 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.38	
	2	0.00	0.00	0.00	0.36	5.1
Aroclor-1260	1	0.00	0.00	0.00	0.19	
	2	0.00	0.00	0.00	0.19	0.5

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 122 (0-0.5in)

Lab Sample ID: 14L0968-13 Date(s) Analyzed: 12/27/2014 12/27/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	2.3	
	2	0.00	0.00	0.00	2.5	7.5
Aroclor-1260	1	0.00	0.00	0.00	0.54	
	2	0.00	0.00	0.00	0.50	8.6

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 122 (0.5-2in)

Lab Sample ID: 14L0968-14 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.23	
	2	0.00	0.00	0.00	0.21	7.3

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 123 (0-0.5in)

Lab Sample ID: 14L0968-15 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.94	
	2	0.00	0.00	0.00	0.94	0.0
Aroclor-1260	1	0.00	0.00	0.00	0.36	
	2	0.00	0.00	0.00	0.34	4.9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 123 (0.5-2in)

Lab Sample ID: 14L0968-16

Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.13	
	2	0.00	0.00	0.00	0.12	8.0

con-test® ANALYTICAL LABORATORY
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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 124 (0-0.5in)

Lab Sample ID: 14L0968-17 Date(s) Analyzed: 12/27/2014 12/27/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	5.3	
	2	0.00	0.00	0.00	6.1	14.0
Aroclor-1260	1	0.00	0.00	0.00	0.96	
	2	0.00	0.00	0.00	0.94	2.4

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 124 (0.5-2in)

Lab Sample ID: 14L0968-18

Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.43	
	2	0.00	0.00	0.00	0.45	3.4

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

CS 125 (0-0.5in)

Lab Sample ID: 14L0968-19 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1248	1	0.00	0.00	0.00	0.19	
	2	0.00	0.00	0.00	0.21	7.9
Aroclor-1254	1	0.00	0.00	0.00	0.41	
	2	0.00	0.00	0.00	0.45	9.1
Aroclor-1260	1	0.00	0.00	0.00	0.17	
	2	0.00	0.00	0.00	0.16	4.9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B112342-BS1 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.21	
	2	0.00	0.00	0.00	0.24	13
Aroclor-1260	1	0.00	0.00	0.00	0.21	
	2	0.00	0.00	0.00	0.23	9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B112342-BSD1 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.23	
	2	0.00	0.00	0.00	0.25	9
Aroclor-1260	1	0.00	0.00	0.00	0.22	
	2	0.00	0.00	0.00	0.24	11

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

Matrix Spike

Lab Sample ID: B112342-MS1 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.51	
	2	0.00	0.00	0.00	0.52	2
Aroclor-1260	1	0.00	0.00	0.00	2.4	
	2	0.00	0.00	0.00	3.1	25

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

Matrix Spike Dup

Lab Sample ID: B112342-MSD1 Date(s) Analyzed: 12/26/2014 12/26/2014

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.51	
	2	0.00	0.00	0.00	0.52	3
Aroclor-1260	1	0.00	0.00	0.00	2.4	
	2	0.00	0.00	0.00	3.1	26

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
MS-21	Matrix spike and/or spike duplicate recovery bias high due to contribution of other Aroclors present in the source sample.
S-01	The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Product/Solid	
Aroclor-1016	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA,NJ

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2015
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2015
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2015
RI	Rhode Island Department of Health	LAO00112	12/30/2014
NC	North Carolina Div. of Water Quality	652	12/31/2015
NJ	New Jersey DEP	MA007 NELAP	06/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2015
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2015
WA	State of Washington Department of Ecology	C2065	02/23/2015
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2015
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2015

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Email: info@contestlabs.com
www.contestlabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Rev 04.05.12

14L0968

Company Name: Weston & Sampson
Telephone:
Address:
Project #
Client PO#
Attention: Todd Bridgeo
Project Location: Charlestown
Sampled By: PTK

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	# of Containers	** Preservation	***Container Code	PCBs 50X HLED
01	CS116 0-0.5"	12/18	~~1530~~		X	S					X
02	CS116 0.5-2"	12/18	1535		X	S					X
03	CS117 0-0.5"	12/19	1615		X	S					X
04	CS117 0.5-2"	"	1630		X	S					X
05	CS118 0-0.5"		1440		X	S					X
06	CS118 0.5-2"		1450		X	S					X
07	CS119 0-0.5"		1420		X	S					X
08	CS119 0.5-2"		1430		X	S					X
09	CS120 0-0.5"		1530		X	S					X
10	CS120 0.5-2"	↓	1535		X	S					X

ANALYSIS REQUESTED

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other_____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

Comments:

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:

H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time:
John M. Smith	12/19 1800
Received by: (signature)	Date/Time:
Tom Mau 12/22/14	1650
Relinquished by: (signature)	Date/Time:
Tom Mau 12/22/14	1900
Received by: (signature)	Date/Time:
Joseph Smith 49 12/22/14	1900

Turnaround ††
☐ 7-Day
☐ 10-Day
☐ Other ____
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other:

Is your project MCP or RCP ?
○ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

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CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Rev 04.05.12

14L0968

Company Name: Weston & Sampson
Address:
Attention: Todd Bridgeo
Project Location: Charlsetown
Sampled By: PTK

Telephone:
Project #
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

ANALYSIS REQUESTED

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	PCB, SOXHLED										
11	CS121 0-0.5"	12/19	1300		X	S		X										
12	CS121 0.5-2"		1310		X	S		X										
13	CS122 0-0.5"		1345		X	S		X										
14	CS122 0.5-2"		1350		X	S		X										
15	CS123 0-0.5"		1400		X	S		X										
16	CS123 0.5-2"		1410		X	S		X										
17	CS124 0-0.5"		1550		X	S		X										
18	CS124 0.5-2"		1600		X	S		X										
19	CS125 0-0.5"		1545		X	S		X										
20	CS125 0.5-2"		1550		X	S		X										

# of Containers
** Preservation
***Container Code

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other_____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

Comments:

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:

H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature) Sylvia M Smith	Date/Time: 12/19 1800
Received by: (signature) Tom Mair 12/22/14	Date/Time: 1650
Relinquished by: (signature) Tom Mair 12/22/14	Date/Time: 1900
Received by: (signature) Joseph Lawton 4.9°C 12/22/14	Date/Time: 1900

Turnaround ††
☐ 7-Day
☐ 10-Day
☐ Other ____
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other:

Is your project MCP or RCP?
○ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

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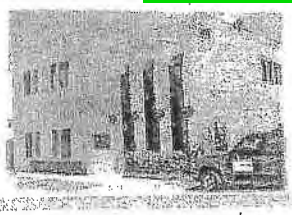

Sample Receipt Checklist

CLIENT NAME: Weston and Sampson RECEIVED BY: JDL DATE: 12/22/14

1) Was the chain(s) of custody relinquished and signed? (Yes) No No CoC Included
2) Does the chain agree with the samples? (Yes) No
If not, explain:
3) Are all the samples in good condition? (Yes) No
If not, explain:
4) How were the samples received:
On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒
Were the samples received in Temperature Compliance of (2-6°C)? (Yes) No N/A
Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.9
5) Are there Dissolved samples for the lab to filter? Yes (No)
Who was notified _____ Date _____ Time _____
6) Are there any RUSH or SHORT HOLDING TIME samples? Yes (No)
Who was notified _____ Date _____ Time _____
7) Location where samples are stored: 19
Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature: _____
8) Do all samples have the proper Acid pH: Yes No (N/A) _____
9) Do all samples have the proper Base pH: Yes No (N/A) _____
10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No (N/A)

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	60
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below		Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol _____
Bisulfate _____ # DI Water _____
Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)
Any False statement will be brought to the attention of Client

Question	Answer (True/False) T/F/NA	Comment
1) The cooler's custody seal, if present, is intact.	NA	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	T	
18) There is sufficient volume for all requsted analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	NA	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	NA	
21) Samples do not require splitting or compositing.	T	

Who notified of False statements? Date/Time:

Doc #277 Rev. 4 August 2013 Log-In Technician Initials: JDL Date/Time: 12/22/14 1900

con-test® ANALYTICAL LABORATORY
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January 23, 2015

Craig Miner
Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960

Project Location: Charlestown Bld 105
Client Job Number:
Project Number: [none]
Laboratory Work Order Number: 15A0499

Enclosed are results of analyses for samples received by the laboratory on January 16, 2015. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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con-test® ANALYTICAL LABORATORY

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Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960
ATTN: Craig Miner

REPORT DATE: 1/23/2015

PURCHASE ORDER NUMBER:

PROJECT NUMBER: [none]

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 15A0499

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Charlestown Bld 105

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
P-118C	15A0499-01	Concrete		SW-846 8082A	
P-115C	15A0499-02	Concrete		SW-846 8082A	
P-103C	15A0499-03	Concrete		SW-846 8082A	
P-105C	15A0499-04	Concrete		SW-846 8082A	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SW-846 8082A

Qualifications:

MS-21

Matrix spike and/or spike duplicate recovery bias high due to contribution of other Aroclors present in the source sample.

Analyte & Samples(s) Qualified:

Aroclor-1016
B113711-MS1, B113711-MSD1

Aroclor-1016 [2C]
B113711-MS1, B113711-MSD1

Aroclor-1260
B113711-MS1, B113711-MSD1

Aroclor-1260 [2C]
B113711-MS1, B113711-MSD1

S-01

The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

Analyte & Samples(s) Qualified:

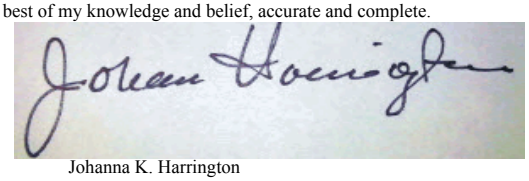
Decachlorobiphenyl
15A0499-01[P-118C], 15A0499-04[P-105C]

Decachlorobiphenyl [2C]
15A0499-01[P-118C], 15A0499-04[P-105C]

Tetrachloro-m-xylene
15A0499-01[P-118C], 15A0499-04[P-105C]

Tetrachloro-m-xylene [2C]
15A0499-01[P-118C], 15A0499-04[P-105C]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Johanna K. Harrington
Manager, Laboratory Reporting

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown Bld 105 | Sample Description: | Work Order: 15A0499

Date Received: 1/16/2015

Field Sample #: P-118C | Sampled: 1/15/2015 11:00

Sample ID: 15A0499-01

Sample Matrix: Concrete

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	1/19/15	1/21/15 22:39	PJG
Aroclor-1221 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	1/19/15	1/21/15 22:39	PJG
Aroclor-1232 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	1/19/15	1/21/15 22:39	PJG
Aroclor-1242 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	1/19/15	1/21/15 22:39	PJG
Aroclor-1248 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	1/19/15	1/21/15 22:39	PJG
Aroclor-1254 [1]	23	4.9	mg/Kg	50		SW-846 8082A	1/19/15	1/21/15 22:39	PJG
Aroclor-1260 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	1/19/15	1/21/15 22:39	PJG
Aroclor-1262 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	1/19/15	1/21/15 22:39	PJG
Aroclor-1268 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	1/19/15	1/21/15 22:39	PJG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	*	30-150	S-01	1/21/15 22:39
Decachlorobiphenyl [2]	*	30-150	S-01	1/21/15 22:39
Tetrachloro-m-xylene [1]	*	30-150	S-01	1/21/15 22:39
Tetrachloro-m-xylene [2]	*	30-150	S-01	1/21/15 22:39

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown Bld 105 | Sample Description: | Work Order: 15A0499

Date Received: 1/16/2015

Field Sample #: P-115C | Sampled: 1/15/2015 12:00

Sample ID: 15A0499-02

Sample Matrix: Concrete

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	2.0	mg/Kg	20		SW-846 8082A	1/19/15	1/21/15 20:57	PJG
Aroclor-1221 [1]	ND	2.0	mg/Kg	20		SW-846 8082A	1/19/15	1/21/15 20:57	PJG
Aroclor-1232 [1]	ND	2.0	mg/Kg	20		SW-846 8082A	1/19/15	1/21/15 20:57	PJG
Aroclor-1242 [1]	ND	2.0	mg/Kg	20		SW-846 8082A	1/19/15	1/21/15 20:57	PJG
Aroclor-1248 [1]	ND	2.0	mg/Kg	20		SW-846 8082A	1/19/15	1/21/15 20:57	PJG
Aroclor-1254 [2]	11	2.0	mg/Kg	20		SW-846 8082A	1/19/15	1/21/15 20:57	PJG
Aroclor-1260 [1]	ND	2.0	mg/Kg	20		SW-846 8082A	1/19/15	1/21/15 20:57	PJG
Aroclor-1262 [1]	ND	2.0	mg/Kg	20		SW-846 8082A	1/19/15	1/21/15 20:57	PJG
Aroclor-1268 [1]	ND	2.0	mg/Kg	20		SW-846 8082A	1/19/15	1/21/15 20:57	PJG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	111	30-150		1/21/15 20:57
Decachlorobiphenyl [2]	97.2	30-150		1/21/15 20:57
Tetrachloro-m-xylene [1]	112	30-150		1/21/15 20:57
Tetrachloro-m-xylene [2]	93.6	30-150		1/21/15 20:57

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Project Location: Charlestown Bld 105 | Sample Description: | Work Order: 15A0499

Date Received: 1/16/2015

Field Sample #: P-103C | Sampled: 1/15/2015 13:25

Sample ID: 15A0499-03

Sample Matrix: Concrete

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	2.0	mg/Kg	20		SW-846 8082A	1/19/15	1/21/15 21:10	PJG
Aroclor-1221 [1]	ND	2.0	mg/Kg	20		SW-846 8082A	1/19/15	1/21/15 21:10	PJG
Aroclor-1232 [1]	ND	2.0	mg/Kg	20		SW-846 8082A	1/19/15	1/21/15 21:10	PJG
Aroclor-1242 [1]	ND	2.0	mg/Kg	20		SW-846 8082A	1/19/15	1/21/15 21:10	PJG
Aroclor-1248 [1]	ND	2.0	mg/Kg	20		SW-846 8082A	1/19/15	1/21/15 21:10	PJG
Aroclor-1254 [1]	9.3	2.0	mg/Kg	20		SW-846 8082A	1/19/15	1/21/15 21:10	PJG
Aroclor-1260 [1]	2.1	2.0	mg/Kg	20		SW-846 8082A	1/19/15	1/21/15 21:10	PJG
Aroclor-1262 [1]	ND	2.0	mg/Kg	20		SW-846 8082A	1/19/15	1/21/15 21:10	PJG
Aroclor-1268 [1]	ND	2.0	mg/Kg	20		SW-846 8082A	1/19/15	1/21/15 21:10	PJG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	102	30-150		1/21/15 21:10
Decachlorobiphenyl [2]	91.0	30-150		1/21/15 21:10
Tetrachloro-m-xylene [1]	107	30-150		1/21/15 21:10
Tetrachloro-m-xylene [2]	89.1	30-150		1/21/15 21:10

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Project Location: Charlestown Bld 105 | Sample Description: | Work Order: 15A0499

Date Received: 1/16/2015

Field Sample #: P-105C | Sampled: 1/15/2015 13:40

Sample ID: 15A0499-04

Sample Matrix: Concrete

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	1/19/15	1/21/15 21:23	PJG
Aroclor-1221 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	1/19/15	1/21/15 21:23	PJG
Aroclor-1232 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	1/19/15	1/21/15 21:23	PJG
Aroclor-1242 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	1/19/15	1/21/15 21:23	PJG
Aroclor-1248 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	1/19/15	1/21/15 21:23	PJG
Aroclor-1254 [1]	33	4.9	mg/Kg	50		SW-846 8082A	1/19/15	1/21/15 21:23	PJG
Aroclor-1260 [1]	5.6	4.9	mg/Kg	50		SW-846 8082A	1/19/15	1/21/15 21:23	PJG
Aroclor-1262 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	1/19/15	1/21/15 21:23	PJG
Aroclor-1268 [1]	ND	4.9	mg/Kg	50		SW-846 8082A	1/19/15	1/21/15 21:23	PJG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	*	30-150	S-01	1/21/15 21:23
Decachlorobiphenyl [2]	*	30-150	S-01	1/21/15 21:23
Tetrachloro-m-xylene [1]	*	30-150	S-01	1/21/15 21:23
Tetrachloro-m-xylene [2]	*	30-150	S-01	1/21/15 21:23

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Sample Extraction Data

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
15A0499-01 [P-118C]	B113711	2.06	10.0	01/19/15
15A0499-02 [P-115C]	B113711	2.01	10.0	01/19/15
15A0499-03 [P-103C]	B113711	2.02	10.0	01/19/15
15A0499-04 [P-105C]	B113711	2.03	10.0	01/19/15

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B113711 - SW-846 3540C										
Blank (B113711-BLK1)				Prepared: 01/19/15 Analyzed: 01/21/15						
Aroclor-1016	ND	0.10	mg/Kg							
Aroclor-1016 [2C]	ND	0.10	mg/Kg							
Aroclor-1221	ND	0.10	mg/Kg							
Aroclor-1221 [2C]	ND	0.10	mg/Kg							
Aroclor-1232	ND	0.10	mg/Kg							
Aroclor-1232 [2C]	ND	0.10	mg/Kg							
Aroclor-1242	ND	0.10	mg/Kg							
Aroclor-1242 [2C]	ND	0.10	mg/Kg							
Aroclor-1248	ND	0.10	mg/Kg							
Aroclor-1248 [2C]	ND	0.10	mg/Kg							
Aroclor-1254	ND	0.10	mg/Kg							
Aroclor-1254 [2C]	ND	0.10	mg/Kg							
Aroclor-1260	ND	0.10	mg/Kg							
Aroclor-1260 [2C]	ND	0.10	mg/Kg							
Aroclor-1262	ND	0.10	mg/Kg							
Aroclor-1262 [2C]	ND	0.10	mg/Kg							
Aroclor-1268	ND	0.10	mg/Kg							
Aroclor-1268 [2C]	ND	0.10	mg/Kg							
Surrogate: Decachlorobiphenyl	*0.916*		mg/Kg	1.00		91.6	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.01*		mg/Kg	1.00		101	30-150			
Surrogate: Tetrachloro-m-xylene	*0.902*		mg/Kg	1.00		90.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.947*		mg/Kg	1.00		94.7	30-150			
LCS (B113711-BS1)				Prepared: 01/19/15 Analyzed: 01/21/15						
Aroclor-1016	0.28	0.10	mg/Kg	0.250		111	40-140			
Aroclor-1016 [2C]	0.25	0.10	mg/Kg	0.250		99.0	40-140			
Aroclor-1260	0.29	0.10	mg/Kg	0.250		114	40-140			
Aroclor-1260 [2C]	0.26	0.10	mg/Kg	0.250		105	40-140			
Surrogate: Decachlorobiphenyl	*0.943*		mg/Kg	1.00		94.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.05*		mg/Kg	1.00		105	30-150			
Surrogate: Tetrachloro-m-xylene	*0.925*		mg/Kg	1.00		92.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.971*		mg/Kg	1.00		97.1	30-150			
LCS Dup (B113711-BSD1)				Prepared: 01/19/15 Analyzed: 01/21/15						
Aroclor-1016	0.29	0.10	mg/Kg	0.250		115	40-140	3.59	30	
Aroclor-1016 [2C]	0.25	0.10	mg/Kg	0.250		102	40-140	2.96	30	
Aroclor-1260	0.29	0.10	mg/Kg	0.250		117	40-140	2.58	30	
Aroclor-1260 [2C]	0.27	0.10	mg/Kg	0.250		107	40-140	2.19	30	
Surrogate: Decachlorobiphenyl	*0.918*		mg/Kg	1.00		91.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.01*		mg/Kg	1.00		101	30-150			
Surrogate: Tetrachloro-m-xylene	*0.904*		mg/Kg	1.00		90.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.948*		mg/Kg	1.00		94.8	30-150			

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B113711 - SW-846 3540C											
Matrix Spike (B113711-MS1)	**Source: 15A0499-03**			Prepared: 01/19/15 Analyzed: 01/21/15							
Aroclor-1016	0.78	0.099	mg/Kg	0.248	ND	**315**	*	40-140			MS-21
Aroclor-1016 [2C]	1.2	0.099	mg/Kg	0.248	ND	**475**	*	40-140			MS-21
Aroclor-1260	2.5	0.099	mg/Kg	0.248	2.1	**160**	*	40-140			MS-21
Aroclor-1260 [2C]	5.2	0.099	mg/Kg	0.248	1.9	**1360**	*	40-140			MS-21
Surrogate: Decachlorobiphenyl	*0.771*		mg/Kg	0.990		77.9		30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.944*		mg/Kg	0.990		95.4		30-150			
Surrogate: Tetrachloro-m-xylene	*0.862*		mg/Kg	0.990		87.1		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.920*		mg/Kg	0.990		92.9		30-150			
Matrix Spike Dup (B113711-MSD1)	**Source: 15A0499-03**			Prepared: 01/19/15 Analyzed: 01/21/15							
Aroclor-1016	0.70	0.099	mg/Kg	0.248	ND	**284**	*	40-140	10.2	50	MS-21
Aroclor-1016 [2C]	1.1	0.099	mg/Kg	0.248	ND	**447**	*	40-140	6.13	50	MS-21
Aroclor-1260	2.3	0.099	mg/Kg	0.248	2.1	77.0		40-140	8.49	50	MS-21
Aroclor-1260 [2C]	4.1	0.099	mg/Kg	0.248	1.9	**880**	*	40-140	25.5	50	MS-21
Surrogate: Decachlorobiphenyl	*0.736*		mg/Kg	0.990		74.3		30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.916*		mg/Kg	0.990		92.5		30-150			
Surrogate: Tetrachloro-m-xylene	*0.823*		mg/Kg	0.990		83.1		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.897*		mg/Kg	0.990		90.6		30-150			

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

P-118C

Lab Sample ID: 15A0499-01 Date(s) Analyzed: 01/21/2015 01/21/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	23	
	2	0.00	0.00	0.00	22	6.6

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

P-115C

Lab Sample ID: 15A0499-02

Date(s) Analyzed: 01/21/2015 01/21/2015

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	11	
	2	0.00	0.00	0.00	11	0.9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

P-103C

Lab Sample ID: 15A0499-03

Date(s) Analyzed: 01/21/2015 01/21/2015

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	9.3	
	2	0.00	0.00	0.00	8.4	10.2

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

P-105C

Lab Sample ID: 15A0499-04 Date(s) Analyzed: 01/21/2015 01/21/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	33	
	2	0.00	0.00	0.00	33	1.2
Aroclor-1260	1	0.00	0.00	0.00	5.6	
	2	0.00	0.00	0.00	5.3	5.2

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B113711-BS1 Date(s) Analyzed: 01/21/2015 01/21/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.28	
	2	0.00	0.00	0.00	0.25	10
Aroclor-1260	1	0.00	0.00	0.00	0.29	
	2	0.00	0.00	0.00	0.26	10

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B113711-BSD1 Date(s) Analyzed: 01/21/2015 01/21/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.29	
	2	0.00	0.00	0.00	0.25	14
Aroclor-1260	1	0.00	0.00	0.00	0.29	
	2	0.00	0.00	0.00	0.27	9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

Matrix Spike

Lab Sample ID: B113711-MS1 Date(s) Analyzed: 01/21/2015 01/21/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.78	
	2	0.00	0.00	0.00	1.2	43
Aroclor-1260	1	0.00	0.00	0.00	2.5	
	2	0.00	0.00	0.00	5.2	69

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

Matrix Spike Dup

Lab Sample ID: B113711-MSD1 Date(s) Analyzed: 01/21/2015 01/21/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.70	
	2	0.00	0.00	0.00	1.1	44
Aroclor-1260	1	0.00	0.00	0.00	2.3	
	2	0.00	0.00	0.00	4.1	56

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
MS-21	Matrix spike and/or spike duplicate recovery bias high due to contribution of other Aroclors present in the source sample.
S-01	The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Product/Solid	
Aroclor-1016	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260	CT,NH,NY,ME,NC,VA,NJ
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA,NJ

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2015
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2015
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2015
RI	Rhode Island Department of Health	LAO00112	12/30/2015
NC	North Carolina Div. of Water Quality	652	12/31/2015
NJ	New Jersey DEP	MA007 NELAP	06/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2015
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2015
WA	State of Washington Department of Ecology	C2065	02/23/2015
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2015
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2015

CHAIN OF CUSTODY RECORD

15A0499

Rev 04.05.12

con-test® ANALYTICAL LABORATORY
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www.contestlabs.com
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East longmeadow, MA 01028

Page 1 of 1

Company Name: Weston & Sampson
Address: 5 Centennial Dr. Peabody, MA
Attention: Craig Miner
Project Location: Charlestown Bld 105
Sampled By: TB

Telephone: 978-532-1900
Project #:
Client PO#:

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #:
Email: MinerC@wseinc.com
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	PCB 5082 w/ Soxhlet	# of Containers	** Preservation	***Container Code
01	P-118C	1/15/15	11:00		X	O	U	X			
02	P-115C	1/15/15	1200		X	O	U	X			
03	P-103C	1/15/15	1325		X	O	U	X			
04	P-105C	1/15/15	1340		X	O	U	X			

ANALYSIS REQUESTED

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other Concrete Dust

Comments:

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time:
[signature] 1/15/15	2:00PM
Received by: (signature)	Date/Time:
[signature] 1/16/15	10:30
Relinquished by: (signature)	Date/Time:
[signature] 1/16/15	3:10
Received by: (signature)	Date/Time:
Joseph Smith 5.3 1/16/15	1510

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other:

Is your project MCP or RCP?
○ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID #

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

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39 Spruce St.
East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
www.contestlabs.com

con-test® ANALYTICAL LABORATORY

Sample Receipt Checklist

CLIENT NAME: Weston + Sampson RECEIVED BY: JDL DATE: 1/16/15

1) **Was the chain(s) of custody relinquished and signed?** (Yes) No No CoC Included
2) **Does the chain agree with the samples?** (Yes) No
   If not, explain:
3) **Are all the samples in good condition?** (Yes) No
   If not, explain:
4) **How were the samples received:**

On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒

Were the samples received in Temperature Compliance of (2-6°C)? (Yes) No N/A

Temperature °C by Temp blank _____ Temperature °C by Temp gun 5.3

5) **Are there Dissolved samples for the lab to filter?** Yes (No)
   Who was notified _____ Date _____ Time _____
6) **Are there any RUSH or SHORT HOLDING TIME samples?** Yes (No)
   Who was notified _____ Date _____ Time _____
7) **Location where samples are stored:** lab

Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature: _____

8) **Do all samples have the proper Acid pH:** Yes No (N/A) _____
9) **Do all samples have the proper Base pH:** Yes No (N/A) _____
10) **Was the PC notified of any discrepancies with the CoC vs the samples:** Yes No (N/A)

Containers received at Con-Test

	# of containers			# of containers
1 Liter Amber			8 oz amber/clear jar	
500 mL Amber			4 oz amber/clear jar	4
250 mL Amber (8oz amber)			2 oz amber/clear jar	
1 Liter Plastic			Plastic Bag / Ziploc	
500 mL Plastic			SOC Kit	
250 mL plastic			Non-ConTest Container	
40 mL Vial - type listed below			Perchlorate Kit	
Colisure / bacteria bottle			Flashpoint bottle	
Dissolved Oxygen bottle			Other glass jar	
Encore			Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol _____
Bisulfate _____ # DI Water _____
Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)
Any False statement will be brought to the attention of Client

Question	Answer (True/False) T/F/NA	Comment
1) The cooler's custody seal, if present, is intact.	NA	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	T	
18) There is sufficient volume for all requsted analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	NA	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	NA	
21) Samples do not require splitting or compositing.	T	

Who notified of False statements?
Log-In Technician Initials: JDL
Date/Time:
Date/Time: 1/16/15 1510

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

February 26, 2015

Craig Miner
Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960

Project Location: Bldg 105 Charlestown
Client Job Number:
Project Number: 2140398
Laboratory Work Order Number: 15B0655

Enclosed are results of analyses for samples received by the laboratory on February 19, 2015. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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con-test® ANALYTICAL LABORATORY

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960
ATTN: Craig Miner

REPORT DATE: 2/26/2015

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 2140398

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 15B0655

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Bldg 105 Charlestown

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
XP001-P	15B0655-01	Paint		SW-846 8082A	
XP002-P	15B0655-02	Paint		SW-846 8082A	
XP003-P	15B0655-03	Paint		SW-846 8082A	
XP004-P	15B0655-04	Paint		SW-846 8082A	
XP005-P	15B0655-05	Paint		SW-846 8082A	
XP006-P	15B0655-06	Paint		SW-846 8082A	
XP007-P	15B0655-07	Paint		SW-846 8082A	
XP008-P	15B0655-08	Paint		SW-846 8082A	
XP009-P	15B0655-09	Paint		SW-846 8082A	
XP010-P	15B0655-10	Paint		SW-846 8082A	
XP011-P	15B0655-11	Paint		SW-846 8082A	
XP001-WG	15B0655-12	Caulk		SW-846 8082A	
XP002-WG	15B0655-13	Caulk		SW-846 8082A	
XP003-WG	15B0655-14	Caulk		SW-846 8082A	
XP004-WG	15B0655-15	Caulk		SW-846 8082A	
XP005-WG	15B0655-16	Caulk		SW-846 8082A	
XP001-WC	15B0655-17	Caulk		SW-846 8082A	
XP002-WC	15B0655-18	Caulk		SW-846 8082A	
XP003-WC	15B0655-19	Caulk		SW-846 8082A	
XP004-WC	15B0655-20	Caulk		SW-846 8082A	
XP005-WC	15B0655-21	Caulk		SW-846 8082A	
PW-001	15B0655-22	Wipe		SW-846 8082A	
PW-002	15B0655-23	Wipe		SW-846 8082A	
PW-003	15B0655-24	Wipe		SW-846 8082A	
PW-004	15B0655-25	Wipe		SW-846 8082A	

con-test® ANALYTICAL LABORATORY

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SW-846 8082A

Qualifications:

O-04

Sample fingerprint does not match standard exactly. Sample was quantitated against the closest matching standard.

Analyte & Samples(s) Qualified:

Aroclor-1260
15B0655-06[XP006-P]

Aroclor-1260 [2C]
15B0655-06[XP006-P]

P-01

Result was confirmed using a dissimilar column. Relative percent difference between the two results was >40%. In accordance with the method, the higher result was reported.

Analyte & Samples(s) Qualified:

Aroclor-1254
15B0655-18[XP002-WC]

P-04

Due to continuing calibration non-conformance on the confirmatory detector, the lower of two results was reported.

Analyte & Samples(s) Qualified:

Aroclor-1260
15B0655-18[XP002-WC]

V-24

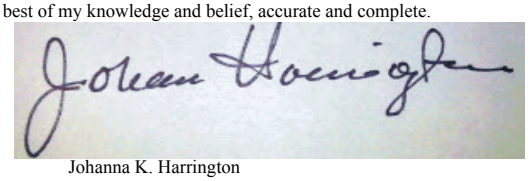
Continuing calibration verification was outside of control limits on the confirmation column, but within control limits on the primary column. All sample results are reported from the column within control criteria.

Analyte & Samples(s) Qualified:

Aroclor-1254
15B0655-18[XP002-WC]

Aroclor-1260
15B0655-18[XP002-WC]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Johanna K. Harrington
Manager, Laboratory Reporting

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP001-P | Sampled: 2/18/2015 08:05

Sample ID: 15B0655-01

Sample Matrix: Paint

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.50	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 3:00	KAL
Aroclor-1221 [1]	ND	0.50	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 3:00	KAL
Aroclor-1232 [1]	ND	0.50	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 3:00	KAL
Aroclor-1242 [1]	ND	0.50	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 3:00	KAL
Aroclor-1248 [1]	ND	0.50	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 3:00	KAL
Aroclor-1254 [2]	7.1	0.50	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 3:00	KAL
Aroclor-1260 [2]	1.9	0.50	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 3:00	KAL
Aroclor-1262 [1]	ND	0.50	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 3:00	KAL
Aroclor-1268 [1]	ND	0.50	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 3:00	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	114	30-150		2/25/15 3:00
Decachlorobiphenyl [2]	100	30-150		2/25/15 3:00
Tetrachloro-m-xylene [1]	111	30-150		2/25/15 3:00
Tetrachloro-m-xylene [2]	102	30-150		2/25/15 3:00

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP002-P | Sampled: 2/18/2015 08:09

Sample ID: 15B0655-02

Sample Matrix: Paint

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.44	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 3:18	KAL
Aroclor-1221 [1]	ND	0.44	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 3:18	KAL
Aroclor-1232 [1]	ND	0.44	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 3:18	KAL
Aroclor-1242 [1]	ND	0.44	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 3:18	KAL
Aroclor-1248 [1]	ND	0.44	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 3:18	KAL
Aroclor-1254 [1]	1.2	0.44	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 3:18	KAL
Aroclor-1260 [1]	0.85	0.44	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 3:18	KAL
Aroclor-1262 [1]	ND	0.44	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 3:18	KAL
Aroclor-1268 [1]	ND	0.44	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 3:18	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	119	30-150		2/25/15 3:18
Decachlorobiphenyl [2]	103	30-150		2/25/15 3:18
Tetrachloro-m-xylene [1]	114	30-150		2/25/15 3:18
Tetrachloro-m-xylene [2]	104	30-150		2/25/15 3:18

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP003-P | Sampled: 2/18/2015 08:12

Sample ID: 15B0655-03

Sample Matrix: Paint

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.49	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 4:42	KAL
Aroclor-1221 [1]	ND	0.49	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 4:42	KAL
Aroclor-1232 [1]	ND	0.49	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 4:42	KAL
Aroclor-1242 [1]	ND	0.49	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 4:42	KAL
Aroclor-1248 [1]	ND	0.49	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 4:42	KAL
Aroclor-1254 [2]	8.4	0.49	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 4:42	KAL
Aroclor-1260 [2]	1.8	0.49	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 4:42	KAL
Aroclor-1262 [1]	ND	0.49	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 4:42	KAL
Aroclor-1268 [1]	ND	0.49	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 4:42	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	107	30-150		2/25/15 4:42
Decachlorobiphenyl [2]	98.0	30-150		2/25/15 4:42
Tetrachloro-m-xylene [1]	112	30-150		2/25/15 4:42
Tetrachloro-m-xylene [2]	103	30-150		2/25/15 4:42

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP004-P | Sampled: 2/18/2015 08:14

Sample ID: 15B0655-04

Sample Matrix: Paint

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.50	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:00	KAL
Aroclor-1221 [1]	ND	0.50	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:00	KAL
Aroclor-1232 [1]	ND	0.50	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:00	KAL
Aroclor-1242 [1]	ND	0.50	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:00	KAL
Aroclor-1248 [1]	ND	0.50	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:00	KAL
Aroclor-1254 [1]	1.7	0.50	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:00	KAL
Aroclor-1260 [2]	2.0	0.50	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:00	KAL
Aroclor-1262 [1]	ND	0.50	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:00	KAL
Aroclor-1268 [1]	ND	0.50	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:00	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	119	30-150		2/25/15 5:00
Decachlorobiphenyl [2]	105	30-150		2/25/15 5:00
Tetrachloro-m-xylene [1]	113	30-150		2/25/15 5:00
Tetrachloro-m-xylene [2]	101	30-150		2/25/15 5:00

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP005-P | Sampled: 2/18/2015 08:18

Sample ID: 15B0655-05

Sample Matrix: Paint

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.46	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:18	KAL
Aroclor-1221 [1]	ND	0.46	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:18	KAL
Aroclor-1232 [1]	ND	0.46	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:18	KAL
Aroclor-1242 [1]	ND	0.46	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:18	KAL
Aroclor-1248 [1]	ND	0.46	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:18	KAL
Aroclor-1254 [1]	2.7	0.46	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:18	KAL
Aroclor-1260 [2]	2.1	0.46	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:18	KAL
Aroclor-1262 [1]	ND	0.46	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:18	KAL
Aroclor-1268 [1]	ND	0.46	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:18	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	117	30-150		2/25/15 5:18
Decachlorobiphenyl [2]	102	30-150		2/25/15 5:18
Tetrachloro-m-xylene [1]	114	30-150		2/25/15 5:18
Tetrachloro-m-xylene [2]	103	30-150		2/25/15 5:18

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP006-P | Sampled: 2/18/2015 08:44

Sample ID: 15B0655-06

Sample Matrix: Paint

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.48	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:36	KAL
Aroclor-1221 [1]	ND	0.48	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:36	KAL
Aroclor-1232 [1]	ND	0.48	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:36	KAL
Aroclor-1242 [1]	ND	0.48	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:36	KAL
Aroclor-1248 [1]	ND	0.48	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:36	KAL
Aroclor-1254 [1]	3.8	0.48	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:36	KAL
Aroclor-1260 [1]	5.5	0.48	mg/Kg	1	O-04	SW-846 8082A	2/20/15	2/25/15 5:36	KAL
Aroclor-1262 [1]	ND	0.48	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:36	KAL
Aroclor-1268 [1]	ND	0.48	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 5:36	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
Decachlorobiphenyl [1]	125	30-150		2/25/15	5:36
Decachlorobiphenyl [2]	111	30-150		2/25/15	5:36
Tetrachloro-m-xylene [1]	121	30-150		2/25/15	5:36
Tetrachloro-m-xylene [2]	110	30-150		2/25/15	5:36

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Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP007-P | Sampled: 2/18/2015 08:48

Sample ID: 15B0655-07

Sample Matrix: Paint

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	2.4	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 5:54	KAL
Aroclor-1221 [1]	ND	2.4	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 5:54	KAL
Aroclor-1232 [1]	ND	2.4	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 5:54	KAL
Aroclor-1242 [1]	ND	2.4	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 5:54	KAL
Aroclor-1248 [1]	ND	2.4	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 5:54	KAL
Aroclor-1254 [2]	20	2.4	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 5:54	KAL
Aroclor-1260 [2]	4.6	2.4	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 5:54	KAL
Aroclor-1262 [1]	ND	2.4	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 5:54	KAL
Aroclor-1268 [1]	ND	2.4	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 5:54	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
Decachlorobiphenyl [1]	116	30-150		2/25/15 5:54	
Decachlorobiphenyl [2]	102	30-150		2/25/15 5:54	
Tetrachloro-m-xylene [1]	107	30-150		2/25/15 5:54	
Tetrachloro-m-xylene [2]	99.0	30-150		2/25/15 5:54	

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Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP008-P | Sampled: 2/18/2015 08:52

Sample ID: 15B0655-08

Sample Matrix: Paint

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	2.2	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 6:12	KAL
Aroclor-1221 [1]	ND	2.2	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 6:12	KAL
Aroclor-1232 [1]	ND	2.2	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 6:12	KAL
Aroclor-1242 [1]	ND	2.2	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 6:12	KAL
Aroclor-1248 [1]	ND	2.2	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 6:12	KAL
Aroclor-1254 [1]	14	2.2	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 6:12	KAL
Aroclor-1260 [1]	4.7	2.2	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 6:12	KAL
Aroclor-1262 [1]	ND	2.2	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 6:12	KAL
Aroclor-1268 [1]	ND	2.2	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 6:12	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	120	30-150		2/25/15 6:12
Decachlorobiphenyl [2]	106	30-150		2/25/15 6:12
Tetrachloro-m-xylene [1]	110	30-150		2/25/15 6:12
Tetrachloro-m-xylene [2]	101	30-150		2/25/15 6:12

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Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP009-P | Sampled: 2/18/2015 08:53

Sample ID: 15B0655-09

Sample Matrix: Paint

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.95	mg/Kg	2		SW-846 8082A	2/20/15	2/25/15 6:30	KAL
Aroclor-1221 [1]	ND	0.95	mg/Kg	2		SW-846 8082A	2/20/15	2/25/15 6:30	KAL
Aroclor-1232 [1]	ND	0.95	mg/Kg	2		SW-846 8082A	2/20/15	2/25/15 6:30	KAL
Aroclor-1242 [1]	ND	0.95	mg/Kg	2		SW-846 8082A	2/20/15	2/25/15 6:30	KAL
Aroclor-1248 [1]	ND	0.95	mg/Kg	2		SW-846 8082A	2/20/15	2/25/15 6:30	KAL
Aroclor-1254 [2]	8.7	0.95	mg/Kg	2		SW-846 8082A	2/20/15	2/25/15 6:30	KAL
Aroclor-1260 [2]	2.6	0.95	mg/Kg	2		SW-846 8082A	2/20/15	2/25/15 6:30	KAL
Aroclor-1262 [1]	ND	0.95	mg/Kg	2		SW-846 8082A	2/20/15	2/25/15 6:30	KAL
Aroclor-1268 [1]	ND	0.95	mg/Kg	2		SW-846 8082A	2/20/15	2/25/15 6:30	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
Decachlorobiphenyl [1]	111	30-150		2/25/15 6:30	
Decachlorobiphenyl [2]	96.6	30-150		2/25/15 6:30	
Tetrachloro-m-xylene [1]	101	30-150		2/25/15 6:30	
Tetrachloro-m-xylene [2]	91.7	30-150		2/25/15 6:30	

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Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP010-P | Sampled: 2/18/2015 08:56

Sample ID: 15B0655-10

Sample Matrix: Paint

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.48	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 6:48	KAL
Aroclor-1221 [1]	ND	0.48	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 6:48	KAL
Aroclor-1232 [1]	ND	0.48	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 6:48	KAL
Aroclor-1242 [1]	ND	0.48	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 6:48	KAL
Aroclor-1248 [1]	ND	0.48	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 6:48	KAL
Aroclor-1254 [2]	2.7	0.48	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 6:48	KAL
Aroclor-1260 [2]	2.4	0.48	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 6:48	KAL
Aroclor-1262 [1]	ND	0.48	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 6:48	KAL
Aroclor-1268 [1]	ND	0.48	mg/Kg	1		SW-846 8082A	2/20/15	2/25/15 6:48	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
Decachlorobiphenyl [1]	115	30-150		2/25/15 6:48	
Decachlorobiphenyl [2]	101	30-150		2/25/15 6:48	
Tetrachloro-m-xylene [1]	101	30-150		2/25/15 6:48	
Tetrachloro-m-xylene [2]	90.7	30-150		2/25/15 6:48	

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Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP011-P | Sampled: 2/18/2015 09:00

Sample ID: 15B0655-11

Sample Matrix: Paint

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	2.2	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 7:06	KAL
Aroclor-1221 [1]	ND	2.2	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 7:06	KAL
Aroclor-1232 [1]	ND	2.2	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 7:06	KAL
Aroclor-1242 [1]	ND	2.2	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 7:06	KAL
Aroclor-1248 [1]	ND	2.2	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 7:06	KAL
Aroclor-1254 [1]	24	2.2	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 7:06	KAL
Aroclor-1260 [2]	5.1	2.2	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 7:06	KAL
Aroclor-1262 [1]	ND	2.2	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 7:06	KAL
Aroclor-1268 [1]	ND	2.2	mg/Kg	5		SW-846 8082A	2/20/15	2/25/15 7:06	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
Decachlorobiphenyl [1]	116	30-150		2/25/15 7:06	
Decachlorobiphenyl [2]	101	30-150		2/25/15 7:06	
Tetrachloro-m-xylene [1]	111	30-150		2/25/15 7:06	
Tetrachloro-m-xylene [2]	103	30-150		2/25/15 7:06	

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Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP001-WG | Sampled: 2/18/2015 09:02

Sample ID: 15B0655-12

Sample Matrix: Caulk

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:24	PJG
Aroclor-1221 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:24	PJG
Aroclor-1232 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:24	PJG
Aroclor-1242 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:24	PJG
Aroclor-1248 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:24	PJG
Aroclor-1254 [2]	1.7	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:24	PJG
Aroclor-1260 [2]	1.2	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:24	PJG
Aroclor-1262 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:24	PJG
Aroclor-1268 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:24	PJG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	88.1	30-150		2/25/15 7:24
Decachlorobiphenyl [2]	94.3	30-150		2/25/15 7:24
Tetrachloro-m-xylene [1]	89.1	30-150		2/25/15 7:24
Tetrachloro-m-xylene [2]	92.4	30-150		2/25/15 7:24

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Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP002-WG | Sampled: 2/18/2015 09:02

Sample ID: 15B0655-13

Sample Matrix: Caulk

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.79	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:37	PJG
Aroclor-1221 [1]	ND	0.79	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:37	PJG
Aroclor-1232 [1]	ND	0.79	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:37	PJG
Aroclor-1242 [1]	ND	0.79	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:37	PJG
Aroclor-1248 [1]	ND	0.79	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:37	PJG
Aroclor-1254 [2]	1.6	0.79	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:37	PJG
Aroclor-1260 [2]	1.1	0.79	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:37	PJG
Aroclor-1262 [1]	ND	0.79	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:37	PJG
Aroclor-1268 [1]	ND	0.79	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:37	PJG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	76.5	30-150		2/25/15 7:37
Decachlorobiphenyl [2]	82.1	30-150		2/25/15 7:37
Tetrachloro-m-xylene [1]	81.6	30-150		2/25/15 7:37
Tetrachloro-m-xylene [2]	84.6	30-150		2/25/15 7:37

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Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP003-WG | Sampled: 2/18/2015 09:07

Sample ID: 15B0655-14

Sample Matrix: Caulk

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.80	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:49	PJG
Aroclor-1221 [1]	ND	0.80	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:49	PJG
Aroclor-1232 [1]	ND	0.80	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:49	PJG
Aroclor-1242 [1]	ND	0.80	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:49	PJG
Aroclor-1248 [1]	ND	0.80	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:49	PJG
Aroclor-1254 [2]	2.9	0.80	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:49	PJG
Aroclor-1260 [1]	ND	0.80	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:49	PJG
Aroclor-1262 [1]	ND	0.80	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:49	PJG
Aroclor-1268 [1]	ND	0.80	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 7:49	PJG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	84.4	30-150		2/25/15 7:49
Decachlorobiphenyl [2]	89.3	30-150		2/25/15 7:49
Tetrachloro-m-xylene [1]	86.3	30-150		2/25/15 7:49
Tetrachloro-m-xylene [2]	89.2	30-150		2/25/15 7:49

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Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP004-WG | Sampled: 2/18/2015 09:10

Sample ID: 15B0655-15

Sample Matrix: Caulk

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:02	PJG
Aroclor-1221 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:02	PJG
Aroclor-1232 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:02	PJG
Aroclor-1242 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:02	PJG
Aroclor-1248 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:02	PJG
Aroclor-1254 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:02	PJG
Aroclor-1260 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:02	PJG
Aroclor-1262 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:02	PJG
Aroclor-1268 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:02	PJG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	78.0	30-150		2/25/15 8:02
Decachlorobiphenyl [2]	82.0	30-150		2/25/15 8:02
Tetrachloro-m-xylene [1]	80.6	30-150		2/25/15 8:02
Tetrachloro-m-xylene [2]	83.7	30-150		2/25/15 8:02

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Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP005-WG | Sampled: 2/18/2015 09:14

Sample ID: 15B0655-16

Sample Matrix: Caulk

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:15	PJG
Aroclor-1221 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:15	PJG
Aroclor-1232 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:15	PJG
Aroclor-1242 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:15	PJG
Aroclor-1248 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:15	PJG
Aroclor-1254 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:15	PJG
Aroclor-1260 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:15	PJG
Aroclor-1262 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:15	PJG
Aroclor-1268 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:15	PJG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	85.1	30-150		2/25/15 8:15
Decachlorobiphenyl [2]	89.8	30-150		2/25/15 8:15
Tetrachloro-m-xylene [1]	85.7	30-150		2/25/15 8:15
Tetrachloro-m-xylene [2]	88.2	30-150		2/25/15 8:15

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Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP001-WC | Sampled: 2/18/2015 09:16

Sample ID: 15B0655-17

Sample Matrix: Caulk

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.76	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:28	PJG
Aroclor-1221 [1]	ND	0.76	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:28	PJG
Aroclor-1232 [1]	ND	0.76	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:28	PJG
Aroclor-1242 [1]	ND	0.76	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:28	PJG
Aroclor-1248 [1]	ND	0.76	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:28	PJG
Aroclor-1254 [1]	ND	0.76	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:28	PJG
Aroclor-1260 [1]	ND	0.76	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:28	PJG
Aroclor-1262 [1]	ND	0.76	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:28	PJG
Aroclor-1268 [1]	ND	0.76	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 8:28	PJG

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
Decachlorobiphenyl [1]	65.0	30-150		2/25/15	8:28
Decachlorobiphenyl [2]	72.7	30-150		2/25/15	8:28
Tetrachloro-m-xylene [1]	80.2	30-150		2/25/15	8:28
Tetrachloro-m-xylene [2]	83.1	30-150		2/25/15	8:28

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Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP002-WC | Sampled: 2/18/2015 09:19

Sample ID: 15B0655-18

Sample Matrix: Caulk

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.79	mg/Kg	4		SW-846 8082A	2/20/15	2/26/15 14:45	PJG
Aroclor-1221 [1]	ND	0.79	mg/Kg	4		SW-846 8082A	2/20/15	2/26/15 14:45	PJG
Aroclor-1232 [1]	ND	0.79	mg/Kg	4		SW-846 8082A	2/20/15	2/26/15 14:45	PJG
Aroclor-1242 [1]	ND	0.79	mg/Kg	4		SW-846 8082A	2/20/15	2/26/15 14:45	PJG
Aroclor-1248 [1]	ND	0.79	mg/Kg	4		SW-846 8082A	2/20/15	2/26/15 14:45	PJG
Aroclor-1254 [1]	0.83	0.79	mg/Kg	4	P-01, V-24	SW-846 8082A	2/20/15	2/26/15 14:45	PJG
Aroclor-1260 [1]	0.89	0.79	mg/Kg	4	P-04, V-24	SW-846 8082A	2/20/15	2/26/15 14:45	PJG
Aroclor-1262 [1]	ND	0.79	mg/Kg	4		SW-846 8082A	2/20/15	2/26/15 14:45	PJG
Aroclor-1268 [1]	ND	0.79	mg/Kg	4		SW-846 8082A	2/20/15	2/26/15 14:45	PJG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	106	30-150		2/26/15 14:45
Decachlorobiphenyl [2]	92.2	30-150		2/26/15 14:45
Tetrachloro-m-xylene [1]	108	30-150		2/26/15 14:45
Tetrachloro-m-xylene [2]	100	30-150		2/26/15 14:45

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP003-WC | Sampled: 2/18/2015 09:20

Sample ID: 15B0655-19

Sample Matrix: Caulk

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.77	mg/Kg	4		SW-846 8082A	2/20/15	2/26/15 14:58	PJG
Aroclor-1221 [1]	ND	0.77	mg/Kg	4		SW-846 8082A	2/20/15	2/26/15 14:58	PJG
Aroclor-1232 [1]	ND	0.77	mg/Kg	4		SW-846 8082A	2/20/15	2/26/15 14:58	PJG
Aroclor-1242 [1]	ND	0.77	mg/Kg	4		SW-846 8082A	2/20/15	2/26/15 14:58	PJG
Aroclor-1248 [1]	ND	0.77	mg/Kg	4		SW-846 8082A	2/20/15	2/26/15 14:58	PJG
Aroclor-1254 [1]	ND	0.77	mg/Kg	4		SW-846 8082A	2/20/15	2/26/15 14:58	PJG
Aroclor-1260 [1]	ND	0.77	mg/Kg	4		SW-846 8082A	2/20/15	2/26/15 14:58	PJG
Aroclor-1262 [1]	ND	0.77	mg/Kg	4		SW-846 8082A	2/20/15	2/26/15 14:58	PJG
Aroclor-1268 [1]	ND	0.77	mg/Kg	4		SW-846 8082A	2/20/15	2/26/15 14:58	PJG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	82.7	30-150		2/26/15 14:58
Decachlorobiphenyl [2]	86.5	30-150		2/26/15 14:58
Tetrachloro-m-xylene [1]	96.8	30-150		2/26/15 14:58
Tetrachloro-m-xylene [2]	89.7	30-150		2/26/15 14:58

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Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP004-WC | Sampled: 2/18/2015 09:22

Sample ID: 15B0655-20

Sample Matrix: Caulk

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.77	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 9:07	PJG
Aroclor-1221 [1]	ND	0.77	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 9:07	PJG
Aroclor-1232 [1]	ND	0.77	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 9:07	PJG
Aroclor-1242 [1]	ND	0.77	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 9:07	PJG
Aroclor-1248 [1]	ND	0.77	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 9:07	PJG
Aroclor-1254 [1]	ND	0.77	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 9:07	PJG
Aroclor-1260 [1]	ND	0.77	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 9:07	PJG
Aroclor-1262 [1]	ND	0.77	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 9:07	PJG
Aroclor-1268 [1]	ND	0.77	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 9:07	PJG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	74.2	30-150		2/25/15 9:07
Decachlorobiphenyl [2]	80.1	30-150		2/25/15 9:07
Tetrachloro-m-xylene [1]	53.2	30-150		2/25/15 9:07
Tetrachloro-m-xylene [2]	56.0	30-150		2/25/15 9:07

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Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: XP005-WC | Sampled: 2/18/2015 09:25

Sample ID: 15B0655-21

Sample Matrix: Caulk

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 9:20	PJG
Aroclor-1221 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 9:20	PJG
Aroclor-1232 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 9:20	PJG
Aroclor-1242 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 9:20	PJG
Aroclor-1248 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 9:20	PJG
Aroclor-1254 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 9:20	PJG
Aroclor-1260 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 9:20	PJG
Aroclor-1262 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 9:20	PJG
Aroclor-1268 [1]	ND	0.78	mg/Kg	4		SW-846 8082A	2/20/15	2/25/15 9:20	PJG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	43.0	30-150		2/25/15 9:20
Decachlorobiphenyl [2]	45.2	30-150		2/25/15 9:20
Tetrachloro-m-xylene [1]	34.1	30-150		2/25/15 9:20
Tetrachloro-m-xylene [2]	36.7	30-150		2/25/15 9:20

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Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: PW-001 | Sampled: 2/18/2015 09:41

Sample ID: 15B0655-22

Sample Matrix: Wipe

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:20	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:20	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:20	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:20	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:20	KAL
Aroclor-1254 [2]	1.6	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:20	KAL
Aroclor-1260 [2]	0.48	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:20	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:20	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:20	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	81.5	30-150		2/25/15 18:20
Decachlorobiphenyl [2]	104	30-150		2/25/15 18:20
Tetrachloro-m-xylene [1]	85.5	30-150		2/25/15 18:20
Tetrachloro-m-xylene [2]	91.8	30-150		2/25/15 18:20

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Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: PW-002 | Sampled: 2/18/2015 09:43

Sample ID: 15B0655-23

Sample Matrix: Wipe

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:32	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:32	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:32	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:32	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:32	KAL
Aroclor-1254 [2]	2.3	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:32	KAL
Aroclor-1260 [2]	0.89	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:32	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:32	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:32	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	81.1	30-150		2/25/15 18:32
Decachlorobiphenyl [2]	105	30-150		2/25/15 18:32
Tetrachloro-m-xylene [1]	84.1	30-150		2/25/15 18:32
Tetrachloro-m-xylene [2]	90.8	30-150		2/25/15 18:32

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Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: PW-003 | Sampled: 2/18/2015 09:50

Sample ID: 15B0655-24

Sample Matrix: Wipe

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:45	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:45	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:45	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:45	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:45	KAL
Aroclor-1254 [2]	0.92	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:45	KAL
Aroclor-1260 [2]	1.3	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:45	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:45	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:45	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	73.0	30-150		2/25/15 18:45
Decachlorobiphenyl [2]	93.6	30-150		2/25/15 18:45
Tetrachloro-m-xylene [1]	81.0	30-150		2/25/15 18:45
Tetrachloro-m-xylene [2]	88.4	30-150		2/25/15 18:45

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Bldg 105 Charlestown | Sample Description: | Work Order: 15B0655

Date Received: 2/19/2015

Field Sample #: PW-004 | Sampled: 2/18/2015 09:58

Sample ID: 15B0655-25

Sample Matrix: Wipe

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:57	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:57	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:57	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:57	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:57	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:57	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:57	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:57	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	2/23/15	2/25/15 18:57	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	79.6	30-150		2/25/15 18:57
Decachlorobiphenyl [2]	98.8	30-150		2/25/15 18:57
Tetrachloro-m-xylene [1]	82.4	30-150		2/25/15 18:57
Tetrachloro-m-xylene [2]	89.1	30-150		2/25/15 18:57

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Sample Extraction Data

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
15B0655-12 [XP001-WG]	B115651	0.510	10.0	02/20/15
15B0655-13 [XP002-WG]	B115651	0.508	10.0	02/20/15
15B0655-14 [XP003-WG]	B115651	0.502	10.0	02/20/15
15B0655-15 [XP004-WG]	B115651	0.511	10.0	02/20/15
15B0655-16 [XP005-WG]	B115651	0.510	10.0	02/20/15
15B0655-17 [XP001-WC]	B115651	0.523	10.0	02/20/15
15B0655-18 [XP002-WC]	B115651	0.508	10.0	02/20/15
15B0655-19 [XP003-WC]	B115651	0.517	10.0	02/20/15
15B0655-20 [XP004-WC]	B115651	0.519	10.0	02/20/15
15B0655-21 [XP005-WC]	B115651	0.512	10.0	02/20/15

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
15B0655-01 [XP001-P]	B115737	0.201	10.0	02/20/15
15B0655-02 [XP002-P]	B115737	0.225	10.0	02/20/15
15B0655-03 [XP003-P]	B115737	0.203	10.0	02/20/15
15B0655-04 [XP004-P]	B115737	0.202	10.0	02/20/15
15B0655-05 [XP005-P]	B115737	0.219	10.0	02/20/15
15B0655-06 [XP006-P]	B115737	0.210	10.0	02/20/15
15B0655-07 [XP007-P]	B115737	0.210	10.0	02/20/15
15B0655-08 [XP008-P]	B115737	0.223	10.0	02/20/15
15B0655-09 [XP009-P]	B115737	0.211	10.0	02/20/15
15B0655-10 [XP010-P]	B115737	0.207	10.0	02/20/15
15B0655-11 [XP011-P]	B115737	0.225	10.0	02/20/15

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
15B0655-22 [PW-001]	B115810	1.00	10.0	02/23/15
15B0655-23 [PW-002]	B115810	1.00	10.0	02/23/15
15B0655-24 [PW-003]	B115810	1.00	10.0	02/23/15
15B0655-25 [PW-004]	B115810	1.00	10.0	02/23/15

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B115651 - SW-846 3540C										
Blank (B115651-BLK1)				Prepared: 02/20/15 Analyzed: 02/25/15						
Aroclor-1016	ND	0.20	mg/Kg							
Aroclor-1016 [2C]	ND	0.20	mg/Kg							
Aroclor-1221	ND	0.20	mg/Kg							
Aroclor-1221 [2C]	ND	0.20	mg/Kg							
Aroclor-1232	ND	0.20	mg/Kg							
Aroclor-1232 [2C]	ND	0.20	mg/Kg							
Aroclor-1242	ND	0.20	mg/Kg							
Aroclor-1242 [2C]	ND	0.20	mg/Kg							
Aroclor-1248	ND	0.20	mg/Kg							
Aroclor-1248 [2C]	ND	0.20	mg/Kg							
Aroclor-1254	ND	0.20	mg/Kg							
Aroclor-1254 [2C]	ND	0.20	mg/Kg							
Aroclor-1260	ND	0.20	mg/Kg							
Aroclor-1260 [2C]	ND	0.20	mg/Kg							
Aroclor-1262	ND	0.20	mg/Kg							
Aroclor-1262 [2C]	ND	0.20	mg/Kg							
Aroclor-1268	ND	0.20	mg/Kg							
Aroclor-1268 [2C]	ND	0.20	mg/Kg							
Surrogate: Decachlorobiphenyl	*3.58*		mg/Kg	4.00		89.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	*3.65*		mg/Kg	4.00		91.3	30-150			
Surrogate: Tetrachloro-m-xylene	*2.79*		mg/Kg	4.00		69.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*2.82*		mg/Kg	4.00		70.5	30-150			
LCS (B115651-BS1)				Prepared: 02/20/15 Analyzed: 02/25/15						
Aroclor-1016	3.0	0.20	mg/Kg	4.00		74.4	40-140			
Aroclor-1016 [2C]	2.7	0.20	mg/Kg	4.00		68.1	40-140			
Aroclor-1260	3.2	0.20	mg/Kg	4.00		80.4	40-140			
Aroclor-1260 [2C]	3.3	0.20	mg/Kg	4.00		82.2	40-140			
Surrogate: Decachlorobiphenyl	*3.48*		mg/Kg	4.00		87.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	*3.58*		mg/Kg	4.00		89.5	30-150			
Surrogate: Tetrachloro-m-xylene	*2.52*		mg/Kg	4.00		63.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*2.56*		mg/Kg	4.00		64.1	30-150			
LCS Dup (B115651-BSD1)				Prepared: 02/20/15 Analyzed: 02/25/15						
Aroclor-1016	3.3	0.20	mg/Kg	4.00		82.7	40-140	10.7	30	
Aroclor-1016 [2C]	3.1	0.20	mg/Kg	4.00		77.6	40-140	13.0	30	
Aroclor-1260	3.5	0.20	mg/Kg	4.00		87.6	40-140	8.52	30	
Aroclor-1260 [2C]	3.5	0.20	mg/Kg	4.00		87.3	40-140	6.04	30	
Surrogate: Decachlorobiphenyl	*3.55*		mg/Kg	4.00		88.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	*3.63*		mg/Kg	4.00		90.8	30-150			
Surrogate: Tetrachloro-m-xylene	*2.93*		mg/Kg	4.00		73.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*2.94*		mg/Kg	4.00		73.5	30-150			

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B115737 - SW-846 3540C										
Blank (B115737-BLK1)				Prepared: 02/20/15 Analyzed: 02/24/15						
Aroclor-1016	ND	0.50	mg/Kg							
Aroclor-1016 [2C]	ND	0.50	mg/Kg							
Aroclor-1221	ND	0.50	mg/Kg							
Aroclor-1221 [2C]	ND	0.50	mg/Kg							
Aroclor-1232	ND	0.50	mg/Kg							
Aroclor-1232 [2C]	ND	0.50	mg/Kg							
Aroclor-1242	ND	0.50	mg/Kg							
Aroclor-1242 [2C]	ND	0.50	mg/Kg							
Aroclor-1248	ND	0.50	mg/Kg							
Aroclor-1248 [2C]	ND	0.50	mg/Kg							
Aroclor-1254	ND	0.50	mg/Kg							
Aroclor-1254 [2C]	ND	0.50	mg/Kg							
Aroclor-1260	ND	0.50	mg/Kg							
Aroclor-1260 [2C]	ND	0.50	mg/Kg							
Aroclor-1262	ND	0.50	mg/Kg							
Aroclor-1262 [2C]	ND	0.50	mg/Kg							
Aroclor-1268	ND	0.50	mg/Kg							
Aroclor-1268 [2C]	ND	0.50	mg/Kg							
Surrogate: Decachlorobiphenyl	*11.5*		mg/Kg	10.0		115	30-150			
Surrogate: Decachlorobiphenyl [2C]	*9.94*		mg/Kg	10.0		99.4	30-150			
Surrogate: Tetrachloro-m-xylene	*9.58*		mg/Kg	10.0		95.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*9.03*		mg/Kg	10.0		90.3	30-150			
LCS (B115737-BS1)				Prepared: 02/20/15 Analyzed: 02/24/15						
Aroclor-1016	2.6	0.50	mg/Kg	2.50		104	40-140			
Aroclor-1016 [2C]	2.7	0.50	mg/Kg	2.50		107	40-140			
Aroclor-1260	3.0	0.50	mg/Kg	2.50		120	40-140			
Aroclor-1260 [2C]	2.9	0.50	mg/Kg	2.50		116	40-140			
Surrogate: Decachlorobiphenyl	*11.9*		mg/Kg	10.0		119	30-150			
Surrogate: Decachlorobiphenyl [2C]	*10.3*		mg/Kg	10.0		103	30-150			
Surrogate: Tetrachloro-m-xylene	*9.91*		mg/Kg	10.0		99.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*9.27*		mg/Kg	10.0		92.7	30-150			
LCS Dup (B115737-BSD1)				Prepared: 02/20/15 Analyzed: 02/24/15						
Aroclor-1016	2.6	0.50	mg/Kg	2.50		104	40-140	0.725	30	
Aroclor-1016 [2C]	2.6	0.50	mg/Kg	2.50		105	40-140	2.25	30	
Aroclor-1260	3.1	0.50	mg/Kg	2.50		123	40-140	2.61	30	
Aroclor-1260 [2C]	3.0	0.50	mg/Kg	2.50		118	40-140	2.12	30	
Surrogate: Decachlorobiphenyl	*12.3*		mg/Kg	10.0		123	30-150			
Surrogate: Decachlorobiphenyl [2C]	*10.7*		mg/Kg	10.0		107	30-150			
Surrogate: Tetrachloro-m-xylene	*9.44*		mg/Kg	10.0		94.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*8.87*		mg/Kg	10.0		88.7	30-150			

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B115810 - SW-846 3540C										
Blank (B115810-BLK1)				Prepared: 02/23/15 Analyzed: 02/24/15						
Aroclor-1016	ND	0.20	µg/Wipe							
Aroclor-1016 [2C]	ND	0.20	µg/Wipe							
Aroclor-1221	ND	0.20	µg/Wipe							
Aroclor-1221 [2C]	ND	0.20	µg/Wipe							
Aroclor-1232	ND	0.20	µg/Wipe							
Aroclor-1232 [2C]	ND	0.20	µg/Wipe							
Aroclor-1242	ND	0.20	µg/Wipe							
Aroclor-1242 [2C]	ND	0.20	µg/Wipe							
Aroclor-1248	ND	0.20	µg/Wipe							
Aroclor-1248 [2C]	ND	0.20	µg/Wipe							
Aroclor-1254	ND	0.20	µg/Wipe							
Aroclor-1254 [2C]	ND	0.20	µg/Wipe							
Aroclor-1260	ND	0.20	µg/Wipe							
Aroclor-1260 [2C]	ND	0.20	µg/Wipe							
Aroclor-1262	ND	0.20	µg/Wipe							
Aroclor-1262 [2C]	ND	0.20	µg/Wipe							
Aroclor-1268	ND	0.20	µg/Wipe							
Aroclor-1268 [2C]	ND	0.20	µg/Wipe							
Surrogate: Decachlorobiphenyl	*1.82*		µg/Wipe	2.00		91.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.09*		µg/Wipe	2.00		105	30-150			
Surrogate: Tetrachloro-m-xylene	*1.64*		µg/Wipe	2.00		82.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.74*		µg/Wipe	2.00		86.9	30-150			
LCS (B115810-BS1)				Prepared: 02/23/15 Analyzed: 02/24/15						
Aroclor-1016	0.44	0.20	µg/Wipe	0.500		87.9	40-140			
Aroclor-1016 [2C]	0.48	0.20	µg/Wipe	0.500		96.1	40-140			
Aroclor-1260	0.45	0.20	µg/Wipe	0.500		89.4	40-140			
Aroclor-1260 [2C]	0.53	0.20	µg/Wipe	0.500		107	40-140			
Surrogate: Decachlorobiphenyl	*1.79*		µg/Wipe	2.00		89.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.08*		µg/Wipe	2.00		104	30-150			
Surrogate: Tetrachloro-m-xylene	*1.64*		µg/Wipe	2.00		81.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.73*		µg/Wipe	2.00		86.5	30-150			
LCS Dup (B115810-BSD1)				Prepared: 02/23/15 Analyzed: 02/24/15						
Aroclor-1016	0.45	0.20	µg/Wipe	0.500		90.4	40-140	2.77	30	
Aroclor-1016 [2C]	0.48	0.20	µg/Wipe	0.500		95.4	40-140	0.725	30	
Aroclor-1260	0.44	0.20	µg/Wipe	0.500		88.5	40-140	0.972	30	
Aroclor-1260 [2C]	0.54	0.20	µg/Wipe	0.500		109	40-140	1.77	30	
Surrogate: Decachlorobiphenyl	*1.77*		µg/Wipe	2.00		88.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.07*		µg/Wipe	2.00		103	30-150			
Surrogate: Tetrachloro-m-xylene	*1.63*		µg/Wipe	2.00		81.3	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.71*		µg/Wipe	2.00		85.5	30-150			

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

XP001-P

Lab Sample ID: 15B0655-01 Date(s) Analyzed: 02/25/2015 02/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	6.6	
	2	0.00	0.00	0.00	7.1	7.0
Aroclor-1260	1	0.00	0.00	0.00	1.7	
	2	0.00	0.00	0.00	1.9	9.4

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

XP002-P

Lab Sample ID: 15B0655-02 Date(s) Analyzed: 02/25/2015 02/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	1.2	
	2	0.00	0.00	0.00	1.1	8.7
Aroclor-1260	1	0.00	0.00	0.00	0.85	
	2	0.00	0.00	0.00	0.80	5.8

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

XP003-P

Lab Sample ID: 15B0655-03 Date(s) Analyzed: 02/25/2015 02/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	7.0	
	2	0.00	0.00	0.00	8.4	18.3
Aroclor-1260	1	0.00	0.00	0.00	1.5	
	2	0.00	0.00	0.00	1.8	18.8

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

XP004-P

Lab Sample ID: 15B0655-04 Date(s) Analyzed: 02/25/2015 02/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	1.7	
	2	0.00	0.00	0.00	1.4	21.7
Aroclor-1260	1	0.00	0.00	0.00	2.0	
	2	0.00	0.00	0.00	2.0	0.0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

XP005-P

Lab Sample ID: 15B0655-05 Date(s) Analyzed: 02/25/2015 02/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	2.7	
	2	0.00	0.00	0.00	2.3	17.1
Aroclor-1260	1	0.00	0.00	0.00	2.1	
	2	0.00	0.00	0.00	2.1	1.9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

XP006-P

Lab Sample ID: 15B0655-06

Date(s) Analyzed: 02/25/2015 02/25/2015

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	3.8	
	2	0.00	0.00	0.00	3.2	16.1
Aroclor-1260	1	0.00	0.00	0.00	5.5	
	2	0.00	0.00	0.00	5.2	4.9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

XP007-P

Lab Sample ID: 15B0655-07 Date(s) Analyzed: 02/25/2015 02/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	17	
	2	0.00	0.00	0.00	20	14.5
Aroclor-1260	1	0.00	0.00	0.00	3.8	
	2	0.00	0.00	0.00	4.6	20.1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

XP008-P

Lab Sample ID: 15B0655-08 Date(s) Analyzed: 02/25/2015 02/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	14	
	2	0.00	0.00	0.00	11	24.0
Aroclor-1260	1	0.00	0.00	0.00	4.7	
	2	0.00	0.00	0.00	3.2	37.6

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

XP009-P

Lab Sample ID: 15B0655-09 Date(s) Analyzed: 02/25/2015 02/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	8.2	
	2	0.00	0.00	0.00	8.7	6.4
Aroclor-1260	1	0.00	0.00	0.00	2.2	
	2	0.00	0.00	0.00	2.6	18.0

con-test® ANALYTICAL LABORATORY
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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

XP010-P

Lab Sample ID: 15B0655-10 Date(s) Analyzed: 02/25/2015 02/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	2.6	
	2	0.00	0.00	0.00	2.7	3.4
Aroclor-1260	1	0.00	0.00	0.00	2.4	
	2	0.00	0.00	0.00	2.4	0.4

con-test® ANALYTICAL LABORATORY
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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

XP011-P

Lab Sample ID: 15B0655-11 Date(s) Analyzed: 02/25/2015 02/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	24	
	2	0.00	0.00	0.00	22	7.9
Aroclor-1260	1	0.00	0.00	0.00	3.7	
	2	0.00	0.00	0.00	5.1	31.6

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

XP001-WG

Lab Sample ID: 15B0655-12 Date(s) Analyzed: 02/25/2015 02/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	1.7	
	2	0.00	0.00	0.00	1.7	3.0
Aroclor-1260	1	0.00	0.00	0.00	1.0	
	2	0.00	0.00	0.00	1.2	16.2

con-test® ANALYTICAL LABORATORY
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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

XP002-WG

Lab Sample ID: 15B0655-13 Date(s) Analyzed: 02/25/2015 02/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	1.5	
	2	0.00	0.00	0.00	1.6	4.5
Aroclor-1260	1	0.00	0.00	0.00	1.0	
	2	0.00	0.00	0.00	1.1	8.5

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

XP003-WG

Lab Sample ID: 15B0655-14

Date(s) Analyzed: 02/25/2015 02/25/2015

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	2.4	
	2	0.00	0.00	0.00	2.9	19.7

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

XP002-WC

Lab Sample ID: 15B0655-18

Date(s) Analyzed: 02/26/2015 02/26/2015

Instrument ID (1):

Instrument ID (2):

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1260	1	0.00	0.00	0.00	0.89	
	2	0.00	0.00	0.00	0.93	4.3

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

PW-001

Lab Sample ID: 15B0655-22 Date(s) Analyzed: 02/25/2015 02/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	1.4	
	2	0.00	0.00	0.00	1.6	15.5
Aroclor-1260	1	0.00	0.00	0.00	0.37	
	2	0.00	0.00	0.00	0.48	25.9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

PW-002

Lab Sample ID: 15B0655-23 Date(s) Analyzed: 02/25/2015 02/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	2.0	
	2	0.00	0.00	0.00	2.3	16.0
Aroclor-1260	1	0.00	0.00	0.00	0.71	
	2	0.00	0.00	0.00	0.89	22.2

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

PW-003

Lab Sample ID: 15B0655-24 Date(s) Analyzed: 02/25/2015 02/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.85	
	2	0.00	0.00	0.00	0.92	7.6
Aroclor-1260	1	0.00	0.00	0.00	1.2	
	2	0.00	0.00	0.00	1.3	8.0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B115651-BS1 Date(s) Analyzed: 02/25/2015 02/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	3.0	
	2	0.00	0.00	0.00	2.7	10
Aroclor-1260	1	0.00	0.00	0.00	3.2	
	2	0.00	0.00	0.00	3.3	2

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B115651-BSD1 Date(s) Analyzed: 02/25/2015 02/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	3.3	
	2	0.00	0.00	0.00	3.1	7
Aroclor-1260	1	0.00	0.00	0.00	3.5	
	2	0.00	0.00	0.00	3.5	0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B115737-BS1 Date(s) Analyzed: 02/24/2015 02/24/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	2.6	
	2	0.00	0.00	0.00	2.7	3
Aroclor-1260	1	0.00	0.00	0.00	3.0	
	2	0.00	0.00	0.00	2.9	3

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B115737-BSD1 Date(s) Analyzed: 02/24/2015 02/24/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	2.6	
	2	0.00	0.00	0.00	2.6	0
Aroclor-1260	1	0.00	0.00	0.00	3.1	
	2	0.00	0.00	0.00	3.0	3

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B115810-BS1 Date(s) Analyzed: 02/24/2015 02/24/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.44	
	2	0.00	0.00	0.00	0.48	9
Aroclor-1260	1	0.00	0.00	0.00	0.45	
	2	0.00	0.00	0.00	0.53	17

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B115810-BSD1 Date(s) Analyzed: 02/24/2015 02/24/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.45	
	2	0.00	0.00	0.00	0.48	6
Aroclor-1260	1	0.00	0.00	0.00	0.44	
	2	0.00	0.00	0.00	0.54	20

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
O-04	Sample fingerprint does not match standard exactly. Sample was quantitated against the closest matching standard.
P-01	Result was confirmed using a dissimilar column. Relative percent difference between the two results was >40%. In accordance with the method, the higher result was reported.
P-04	Due to continuing calibration non-conformance on the confirmatory detector, the lower of two results was reported.
V-24	Continuing calibration verification was outside of control limits on the confirmation column, but within control limits on the primary column. All sample results are reported from the column within control criteria.

con-test® ANALYTICAL LABORATORY
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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications

No certified Analyses included in this Report

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2015
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2015
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2016
RI	Rhode Island Department of Health	LAO00112	12/30/2015
NC	North Carolina Div. of Water Quality	652	12/31/2015
NJ	New Jersey DEP	MA007 NELAP	06/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2015
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2015
WA	State of Washington Department of Ecology	C2065	02/23/2016
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2015
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2015

con-test® ANALYTICAL LABORATORY
Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com
www.contestlabs.com
39 Spruce Street
East longmeadow, MA 01028

CHAIN OF CUSTODY RECORD

15B0655

Rev 04.05.12

Company Name: Weston & Sampson
Address: 5 Centennial Drive
Peabody, MA 01960
Attention: Craig Miner
Project Location: Bldg 105 Charlestown
Sampled By: C. Miner

Telephone: 978-532-1900
Project # 2140398
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ◉ EMAIL ○ WEBSITE
Fax #
Email: minerc@wseinc.com
Format: ○ PDF ○ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	PCB 8082 w/ Soxhlet										# of Containers	** Preservation	***Container Code
								10										# of Containers		
								I										** Preservation		
								A										***Container Code		
01	XP001-P	2-18-15	0805			S		✓												
02	XP002-P	2-18-15	0809			S		✓												
03	XP003-P	2-18-15	0812			S		✓												
04	XP004-P	2-18-15	0814			S		✓												
05	XP005-P	2-18-15	0818			S		✓												
06	XP006-P	2-18-15	0844			S		✓												
07	XP007-P	2-18-15	0848			S		✓												
08	XP008-P	2-18-15	0852			S		✓												
09	XP009-P	2-18-15	0853			S		✓												
10	XP010-P	2-18-15	0856			S		✓												

ANALYSIS REQUESTED

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:**
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

****Preservation**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other_____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

Comments:

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:

H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time:
	2-18-15 1500
Received by: (signature)	Date/Time:
	2/19/15 1145
Relinquished by: (signature)	Date/Time:
	2/19/15 1655
Received by: (signature) 3.3	Date/Time:
	2/19/15 1855

Turnaround ††
☐ 7-Day
☐ 10-Day
◉ Other 5 day

RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other:

Is your project MCP or RCP ?
○ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

†† TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

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CHAIN OF CUSTODY RECORD

con-test® ANALYTICAL LABORATORY
Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com
www.contestlabs.com
39 Spruce Street
East longmeadow, MA 01028

15B0655

Rev 04.05.12

Company Name: Weston & Sampson
Address: 5 Centennial Drive
Peabody, MA 01960
Attention: Craig Miner
Project Location: Bldg 105 Charlestown
Sampled By: C. Miner

Telephone: 978-532-1900
Project # 2140398
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ◉ EMAIL ○ WEBSITE
Fax #
Email: minerc@wseinc.com
Format: ○ PDF ○ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	PCB 8082 w/ Soxhlet										# of Containers	** Preservation	***Container Code
								10	I	A										
11	XP011-P	2-18-15	0900			s		✓												
12	XP001-WG	2-18-15	0902			s		✓												
13	XP002-WG	2-18-15	0902			s		✓												
14	XP003-WG	2-18-15	0907			s		✓												
15	XP004-WG	2-18-15	0910			s		✓												
16	XP005-WG	2-18-15	0914			s		✓												
17	XP001-WC	2-18-15	0916			s		✓												
18	XP002-WC	2-18-15	0919			s		✓												
19	XP003-WC	2-18-15	0920			s		✓												
20	XP004-WC	2-18-15	0922			s		✓												

ANALYSIS REQUESTED

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:**
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

****Preservation**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other_____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

Comments:

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:

H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time: 2/19/15 11:45
Relinquished by: (signature)	Date/Time: 2/19/15 1655
Received by: (signature)	Date/Time: 2/19/15 1855

Turnaround ††
☐ 7-Day
☐ 10-Day
◉ Other 5 day
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other:

Is your project MCP or RCP ?
○ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

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CHAIN OF CUSTODY RECORD

15B0655

Rev 04.05.12

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39 Spruce Street
East longmeadow, MA 01028

Company Name: Weston & Sampson
Telephone: 978-532-1900
Address: 5 Centennial Drive
Peabody, MA 01960
Project # 2140398
Client PO#
Attention: Craig Miner
Project Location: Bldg 105 Charlestown
Sampled By: C. Miner

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

DATA DELIVERY (check all that apply)
○ FAX ◉ EMAIL ○ WEBSITE
Fax #
Email: minerc@wseinc.com
Format: ○ PDF ○ EXCEL ○ GIS
○ OTHER _____
○ "Enhanced Data Package"

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	# of Containers	** Preservation	***Container Code	PCB 8082 w/ Soxhlet	PCB 8082 w/ Soxhlet
21	XP005-WC	2-18-15	0925			○		1	I	A	✓	
22	PW-001	2-18-15	0941			○		4	O	g		✓
23	PW-002	2-18-15	0943			○						✓
24	PW-003	2-18-15	0950			○						✓
25	PW-004	2-18-15	0958			○						✓

ANALYSIS REQUESTED

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:**
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

****Preservation**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other hexane

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other wipe

Comments:

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:

H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time: 2/19/15 11:35
Relinquished by: (signature)	Date/Time: 2/19/15 10:3
Received by: (signature) 3.3	Date/Time: 2/19/15 1855

Turnaround ††
☐ 7-Day
☐ 10-Day
◉ Other 5 day
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other:

Is your project MCP or RCP ?
○ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

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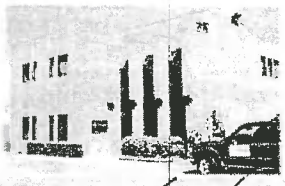
39 Spruce St.
East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
www.contestlabs.com

con-test® ANALYTICAL LABORATORY



Sample Receipt Checklist

CLIENT NAME: Weston and Sampson RECEIVED BY: JPL DATE: 1/19/15

1) **Was the chain(s) of custody relinquished and signed?** (Yes) No No CoC Included
2) **Does the chain agree with the samples?** (Yes) No
   If not, explain:
3) **Are all the samples in good condition?** (Yes) No
   If not, explain:
4) **How were the samples received:**

On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒

Were the samples received in Temperature Compliance of (2-6°C)? (Yes) No N/A

Temperature °C by Temp blank _____ Temperature °C by Temp gun 3.3

5) **Are there Dissolved samples for the lab to filter?** Yes (No)
   Who was notified _____ Date _____ Time _____
6) **Are there any RUSH or SHORT HOLDING TIME samples?** Yes (No)
   Who was notified _____ Date _____ Time _____
7) **Location where samples are stored:** 19

Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature: _____

8) **Do all samples have the proper Acid pH:** Yes No (N/A) _____
9) **Do all samples have the proper Base pH:** Yes No (N/A) _____
10) **Was the PC notified of any discrepancies with the CoC vs the samples:** Yes No (N/A)

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	21
500 mL Amber		4 oz amber/clear jar	4 w/ wipes
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below		Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol _____
Bisulfate _____ # DI Water _____
Thiosulfate _____ Unpreserved

Time and Date Frozen:

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)

Any False statement will be brought to the attention of Client

Question	Answer (True/False) T/F/NA	Comment
1) The cooler's custody seal, if present, is intact.	NA	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	T	
18) There is sufficient volume for all requsted analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	NA	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	NA	
21) Samples do not require splitting or compositing.	T	

Who notified of False statements? Date/Time:

Doc #277 Rev. 4 August 2013 Log-In Technician Initials: JDL Date/Time: 2/19/15 1855

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March 27, 2015

Prasanta Bhunia
Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960

Project Location: Charlestown, MA
Client Job Number:
Project Number: [none]
Laboratory Work Order Number: 15C0820

Enclosed are results of analyses for samples received by the laboratory on March 20, 2015. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960
ATTN: Prasanta Bhunia

REPORT DATE: 3/27/2015

PURCHASE ORDER NUMBER:

PROJECT NUMBER: [none]

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 15C0820

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Charlestown, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
SB-E1-0-6"	15C0820-01	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
SB-F2-12-42"	15C0820-02	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
SB-F3-0-15"	15C0820-03	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
SB-S5-0-6"	15C0820-04	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
SB-I2-14-51"	15C0820-05	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
SB-I2-DUP	15C0820-06	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
SB-S6-0-3"	15C0820-07	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
SB-H1-0-19"	15C0820-08	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
SB-O1-0-21"	15C0820-09	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	
SB-E3-4-24"	15C0820-10	Soil		MADEP-EPH-04-1.1	
				MADEP-VPH-04-1.1	
				SM 2540G	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

MADEP-VPH-04-1.1

Qualifications:

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

Naphthalene
B117869-BSD1

RL-05

Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.

Analyte & Samples(s) Qualified:

C5-C8 Aliphatics
15C0820-02[SB-F2-12-42"], 15C0820-05[SB-I2-14-51"], 15C0820-06[SB-I2-DUP]

Naphthalene
15C0820-05[SB-I2-14-51"], 15C0820-06[SB-I2-DUP]

Unadjusted C5-C8 Aliphatics
15C0820-02[SB-F2-12-42"], 15C0820-05[SB-I2-14-51"], 15C0820-06[SB-I2-DUP]

S-17

Surrogate recovery is outside of control limits. Data validation is not affected since all associated results are less than the reporting limit and bias is on the high side.

Analyte & Samples(s) Qualified:

2,5-Dibromotoluene (FID)
15C0820-04[SB-S5-0-6"]

2,5-Dibromotoluene (PID)
15C0820-01[SB-E1-0-6"], 15C0820-04[SB-S5-0-6"]

MADEP-EPH-04-1.1

SPE cartridge contamination with non-petroleum compounds, if present, is verified by GC/MS in each method blank per extraction batch and excluded from C11-C22 aromatic range fraction in all samples in the batch. No significant modifications were made to the method.

MADEP-VPH-04-1.1

No significant modifications were made to the method. All VPH samples were received preserved properly in methanol with a soil/methanol ratio of 1:1 +/- 25% completely covered by methanol in the proper containers specified on the chain-of-custody form unless specified in this narrative.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Tod E. Kopyscinski
Laboratory Director

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-E1-0-6'' | Sampled: 3/19/2015 10:00

Sample ID: 15C0820-01

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	380	57	mg/Kg dry	5		MADEP-EPH-04-1.1	3/25/15	3/27/15 11:19	SCS
C19-C36 Aliphatics	390	57	mg/Kg dry	5		MADEP-EPH-04-1.1	3/25/15	3/27/15 11:19	SCS
Unadjusted C11-C22 Aromatics	210	11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:04	SCS
C11-C22 Aromatics	210	11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:04	SCS
Acenaphthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:04	SCS
Acenaphthylene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:04	SCS
Anthracene	0.15	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:04	SCS
Benzo(a)anthracene	0.24	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:04	SCS
Benzo(a)pyrene	0.19	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:04	SCS
Benzo(b)fluoranthene	0.36	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:04	SCS
Benzo(g,h,i)perylene	0.18	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:04	SCS
Benzo(k)fluoranthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:04	SCS
Chrysene	0.25	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:04	SCS
Dibenz(a,h)anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:04	SCS
Fluoranthene	1.0	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:04	SCS
Fluorene	0.11	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:04	SCS
Indeno(1,2,3-cd)pyrene	0.19	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:04	SCS
2-Methylnaphthalene	0.31	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:04	SCS
Naphthalene	0.22	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:04	SCS
Phenanthrene	0.84	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:04	SCS
Pyrene	0.75	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:04	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	79.2	40-140		3/26/15 18:04
o-Terphenyl (OTP)	88.7	40-140		3/26/15 18:04
2-Bromonaphthalene	79.8	40-140		3/26/15 18:04
2-Fluorobiphenyl	96.6	40-140		3/26/15 18:04

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-E1-0-6'' | Sampled: 3/19/2015 10:00

Sample ID: 15C0820-01

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - VPH

Soil/Methanol Preservation Ratio: 1.09

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	12	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 6:51	EEH
C5-C8 Aliphatics	ND	12	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 6:51	EEH
Unadjusted C9-C12 Aliphatics	ND	12	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 6:51	EEH
C9-C12 Aliphatics	ND	12	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 6:51	EEH
C9-C10 Aromatics	ND	12	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 6:51	EEH
Benzene	ND	0.059	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 6:51	EEH
Ethylbenzene	ND	0.059	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 6:51	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.059	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 6:51	EEH
Naphthalene	ND	0.30	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 6:51	EEH
Toluene	ND	0.059	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 6:51	EEH
m+p Xylene	ND	0.12	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 6:51	EEH
o-Xylene	ND	0.059	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 6:51	EEH

Surrogates	% Recovery		Recovery Limits	Flag/Qual		
2,5-Dibromotoluene (FID)	126		70-130		3/27/15	6:51
2,5-Dibromotoluene (PID)	**132**	*	70-130	S-17	3/27/15	6:51

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Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-E1-0-6'' | Sampled: 3/19/2015 10:00

Sample ID: 15C0820-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	88.1		% Wt	1		SM 2540G	3/26/15	3/26/15 23:31	JJL

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Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-F2-12-42" | Sampled: 3/19/2015 11:00

Sample ID: 15C0820-02

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	3000	620	mg/Kg dry	50		MADEP-EPH-04-1.1	3/25/15	3/27/15 11:41	SCS
C19-C36 Aliphatics	4300	620	mg/Kg dry	50		MADEP-EPH-04-1.1	3/25/15	3/27/15 11:41	SCS
Unadjusted C11-C22 Aromatics	1600	120	mg/Kg dry	10		MADEP-EPH-04-1.1	3/25/15	3/27/15 11:41	SCS
C11-C22 Aromatics	1600	120	mg/Kg dry	10		MADEP-EPH-04-1.1	3/25/15	3/27/15 11:41	SCS
Acenaphthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:25	SCS
Acenaphthylene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:25	SCS
Anthracene	0.62	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:25	SCS
Benzo(a)anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:25	SCS
Benzo(a)pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:25	SCS
Benzo(b)fluoranthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:25	SCS
Benzo(g,h,i)perylene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:25	SCS
Benzo(k)fluoranthene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:25	SCS
Chrysene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:25	SCS
Dibenz(a,h)anthracene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:25	SCS
Fluoranthene	0.68	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:25	SCS
Fluorene	5.8	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:25	SCS
Indeno(1,2,3-cd)pyrene	ND	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:25	SCS
2-Methylnaphthalene	11	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:25	SCS
Naphthalene	2.3	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:25	SCS
Phenanthrene	1.9	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:25	SCS
Pyrene	0.56	0.12	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:25	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	73.7	40-140		3/26/15 18:25
o-Terphenyl (OTP)	124	40-140		3/26/15 18:25
2-Bromonaphthalene	84.0	40-140		3/26/15 18:25
2-Fluorobiphenyl	100	40-140		3/26/15 18:25

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Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-F2-12-42" | Sampled: 3/19/2015 11:00

Sample ID: 15C0820-02

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - VPH

Soil/Methanol Preservation Ratio: 1.15

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	67	mg/Kg dry	5	RL-05	MADEP-VPH-04-1.1	3/26/15	3/27/15 12:17	EEH
C5-C8 Aliphatics	ND	67	mg/Kg dry	5	RL-05	MADEP-VPH-04-1.1	3/26/15	3/27/15 12:17	EEH
Unadjusted C9-C12 Aliphatics	310	67	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 12:17	EEH
C9-C12 Aliphatics	ND	67	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 12:17	EEH
C9-C10 Aromatics	290	67	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 12:17	EEH
Benzene	ND	0.33	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 12:17	EEH
Ethylbenzene	ND	0.33	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 12:17	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.33	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 12:17	EEH
Naphthalene	2.1	1.7	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 12:17	EEH
Toluene	ND	0.33	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 12:17	EEH
m+p Xylene	ND	0.67	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 12:17	EEH
o-Xylene	ND	0.33	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 12:17	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,5-Dibromotoluene (FID)	89.2	70-130		3/27/15 12:17
2,5-Dibromotoluene (PID)	109	70-130		3/27/15 12:17

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Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-F2-12-42" | Sampled: 3/19/2015 11:00

Sample ID: 15C0820-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	80.1		% Wt	1		SM 2540G	3/26/15	3/26/15 23:31	JJL

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Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-F3-0-15" | Sampled: 3/19/2015 11:30

Sample ID: 15C0820-03

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	3100	2200	mg/Kg dry	100		MADEP-EPH-04-1.1	3/25/15	3/27/15 12:02	SCS
C19-C36 Aliphatics	21000	2200	mg/Kg dry	100		MADEP-EPH-04-1.1	3/25/15	3/27/15 12:02	SCS
Unadjusted C11-C22 Aromatics	3800	220	mg/Kg dry	10		MADEP-EPH-04-1.1	3/25/15	3/27/15 12:02	SCS
C11-C22 Aromatics	3800	220	mg/Kg dry	10		MADEP-EPH-04-1.1	3/25/15	3/27/15 12:02	SCS
Acenaphthene	ND	0.45	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:46	SCS
Acenaphthylene	ND	0.45	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:46	SCS
Anthracene	ND	0.45	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:46	SCS
Benzo(a)anthracene	ND	0.45	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:46	SCS
Benzo(a)pyrene	ND	0.45	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:46	SCS
Benzo(b)fluoranthene	ND	0.45	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:46	SCS
Benzo(g,h,i)perylene	ND	0.45	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:46	SCS
Benzo(k)fluoranthene	ND	0.45	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:46	SCS
Chrysene	ND	0.45	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:46	SCS
Dibenz(a,h)anthracene	ND	0.45	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:46	SCS
Fluoranthene	0.64	0.45	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:46	SCS
Fluorene	1.3	0.45	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:46	SCS
Indeno(1,2,3-cd)pyrene	ND	0.45	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:46	SCS
2-Methylnaphthalene	3.1	0.45	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:46	SCS
Naphthalene	0.97	0.45	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:46	SCS
Phenanthrene	1.0	0.45	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:46	SCS
Pyrene	1.5	0.45	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 18:46	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	90.6	40-140		3/26/15 18:46
o-Terphenyl (OTP)	105	40-140		3/26/15 18:46
2-Bromonaphthalene	82.1	40-140		3/26/15 18:46
2-Fluorobiphenyl	110	40-140		3/26/15 18:46

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-F3-0-15" | Sampled: 3/19/2015 11:30

Sample ID: 15C0820-03

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - VPH

Soil/Methanol Preservation Ratio: 1.14

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	11	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:05	EEH
C5-C8 Aliphatics	ND	11	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:05	EEH
Unadjusted C9-C12 Aliphatics	32	11	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:05	EEH
C9-C12 Aliphatics	ND	11	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:05	EEH
C9-C10 Aromatics	23	11	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:05	EEH
Benzene	ND	0.055	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:05	EEH
Ethylbenzene	ND	0.055	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:05	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.055	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:05	EEH
Naphthalene	ND	0.28	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:05	EEH
Toluene	ND	0.055	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:05	EEH
m+p Xylene	ND	0.11	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:05	EEH
o-Xylene	ND	0.055	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:05	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,5-Dibromotoluene (FID)	103	70-130		3/27/15 11:05
2,5-Dibromotoluene (PID)	118	70-130		3/27/15 11:05

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-F3-0-15'' | Sampled: 3/19/2015 11:30

Sample ID: 15C0820-03

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	89.5		% Wt	1		SM 2540G	3/26/15	3/26/15 23:31	JJL

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-S5-0-6" | Sampled: 3/19/2015 12:00

Sample ID: 15C0820-04

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	95	11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:08	SCS
C19-C36 Aliphatics	1200	110	mg/Kg dry	10		MADEP-EPH-04-1.1	3/25/15	3/27/15 12:23	SCS
Unadjusted C11-C22 Aromatics	380	11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:08	SCS
C11-C22 Aromatics	380	11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:08	SCS
Acenaphthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:08	SCS
Acenaphthylene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:08	SCS
Anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:08	SCS
Benzo(a)anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:08	SCS
Benzo(a)pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:08	SCS
Benzo(b)fluoranthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:08	SCS
Benzo(g,h,i)perylene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:08	SCS
Benzo(k)fluoranthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:08	SCS
Chrysene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:08	SCS
Dibenz(a,h)anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:08	SCS
Fluoranthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:08	SCS
Fluorene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:08	SCS
Indeno(1,2,3-cd)pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:08	SCS
2-Methylnaphthalene	0.12	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:08	SCS
Naphthalene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:08	SCS
Phenanthrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:08	SCS
Pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:08	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	77.1	40-140		3/26/15 19:08
o-Terphenyl (OTP)	84.0	40-140		3/26/15 19:08
2-Bromonaphthalene	73.8	40-140		3/26/15 19:08
2-Fluorobiphenyl	92.3	40-140		3/26/15 19:08

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-S5-0-6" | Sampled: 3/19/2015 12:00

Sample ID: 15C0820-04

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - VPH

Soil/Methanol Preservation Ratio: 0.99

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	13	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 7:27	EEH
C5-C8 Aliphatics	ND	13	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 7:27	EEH
Unadjusted C9-C12 Aliphatics	ND	13	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 7:27	EEH
C9-C12 Aliphatics	ND	13	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 7:27	EEH
C9-C10 Aromatics	ND	13	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 7:27	EEH
Benzene	ND	0.066	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 7:27	EEH
Ethylbenzene	ND	0.066	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 7:27	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.066	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 7:27	EEH
Naphthalene	ND	0.33	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 7:27	EEH
Toluene	ND	0.066	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 7:27	EEH
m+p Xylene	ND	0.13	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 7:27	EEH
o-Xylene	ND	0.066	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 7:27	EEH

Surrogates	% Recovery		Recovery Limits	Flag/Qual		
2,5-Dibromotoluene (FID)	**139**	*	70-130	S-17	3/27/15 7:27	
2,5-Dibromotoluene (PID)	**141**	*	70-130	S-17	3/27/15 7:27	

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-S5-0-6" | Sampled: 3/19/2015 12:00

Sample ID: 15C0820-04

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	86.7		% Wt	1		SM 2540G	3/26/15	3/26/15 23:31	JJL

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-I2-14-51'' | Sampled: 3/19/2015 12:45

Sample ID: 15C0820-05

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	1100	220	mg/Kg dry	20		MADEP-EPH-04-1.1	3/25/15	3/27/15 12:45	SCS
C19-C36 Aliphatics	270	220	mg/Kg dry	20		MADEP-EPH-04-1.1	3/25/15	3/27/15 12:45	SCS
Unadjusted C11-C22 Aromatics	360	11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:29	SCS
C11-C22 Aromatics	360	11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:29	SCS
Acenaphthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:29	SCS
Acenaphthylene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:29	SCS
Anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:29	SCS
Benzo(a)anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:29	SCS
Benzo(a)pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:29	SCS
Benzo(b)fluoranthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:29	SCS
Benzo(g,h,i)perylene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:29	SCS
Benzo(k)fluoranthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:29	SCS
Chrysene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:29	SCS
Dibenz(a,h)anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:29	SCS
Fluoranthene	0.21	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:29	SCS
Fluorene	1.5	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:29	SCS
Indeno(1,2,3-cd)pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:29	SCS
2-Methylnaphthalene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:29	SCS
Naphthalene	0.46	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:29	SCS
Phenanthrene	0.95	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:29	SCS
Pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:29	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	80.2	40-140		3/26/15 19:29
o-Terphenyl (OTP)	102	40-140		3/26/15 19:29
2-Bromonaphthalene	74.8	40-140		3/26/15 19:29
2-Fluorobiphenyl	90.7	40-140		3/26/15 19:29

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-I2-14-51'' | Sampled: 3/19/2015 12:45

Sample ID: 15C0820-05

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - VPH

Soil/Methanol Preservation Ratio: 1.03

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	57	mg/Kg dry	5	RL-05	MADEP-VPH-04-1.1	3/26/15	3/27/15 11:41	EEH
C5-C8 Aliphatics	ND	57	mg/Kg dry	5	RL-05	MADEP-VPH-04-1.1	3/26/15	3/27/15 11:41	EEH
Unadjusted C9-C12 Aliphatics	240	57	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:41	EEH
C9-C12 Aliphatics	ND	57	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:41	EEH
C9-C10 Aromatics	240	57	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:41	EEH
Benzene	ND	0.28	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:41	EEH
Ethylbenzene	ND	0.28	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:41	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.28	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:41	EEH
Naphthalene	ND	1.4	mg/Kg dry	5	RL-05	MADEP-VPH-04-1.1	3/26/15	3/27/15 11:41	EEH
Toluene	ND	0.28	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:41	EEH
m+p Xylene	ND	0.57	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:41	EEH
o-Xylene	ND	0.28	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 11:41	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,5-Dibromotoluene (FID)	91.7	70-130		3/27/15 11:41
2,5-Dibromotoluene (PID)	110	70-130		3/27/15 11:41

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Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-I2-14-51'' | Sampled: 3/19/2015 12:45

Sample ID: 15C0820-05

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	92.5		% Wt	1		SM 2540G	3/26/15	3/26/15 23:31	JJL

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-I2-DUP | Sampled: 3/19/2015 12:45

Sample ID: 15C0820-06

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	1400	230	mg/Kg dry	20		MADEP-EPH-04-1.1	3/25/15	3/27/15 13:06	SCS
C19-C36 Aliphatics	310	230	mg/Kg dry	20		MADEP-EPH-04-1.1	3/25/15	3/27/15 13:06	SCS
Unadjusted C11-C22 Aromatics	360	11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:50	SCS
C11-C22 Aromatics	360	11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:50	SCS
Acenaphthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:50	SCS
Acenaphthylene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:50	SCS
Anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:50	SCS
Benzo(a)anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:50	SCS
Benzo(a)pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:50	SCS
Benzo(b)fluoranthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:50	SCS
Benzo(g,h,i)perylene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:50	SCS
Benzo(k)fluoranthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:50	SCS
Chrysene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:50	SCS
Dibenz(a,h)anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:50	SCS
Fluoranthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:50	SCS
Fluorene	1.3	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:50	SCS
Indeno(1,2,3-cd)pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:50	SCS
2-Methylnaphthalene	0.24	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:50	SCS
Naphthalene	0.44	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:50	SCS
Phenanthrene	0.93	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:50	SCS
Pyrene	0.14	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 19:50	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	72.8	40-140		3/26/15 19:50
o-Terphenyl (OTP)	84.1	40-140		3/26/15 19:50
2-Bromonaphthalene	68.6	40-140		3/26/15 19:50
2-Fluorobiphenyl	73.0	40-140		3/26/15 19:50

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-I2-DUP | Sampled: 3/19/2015 12:45

Sample ID: 15C0820-06

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - VPH

Soil/Methanol Preservation Ratio: 1.05

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	61	mg/Kg dry	5	RL-05	MADEP-VPH-04-1.1	3/26/15	3/27/15 12:53	EEH
C5-C8 Aliphatics	ND	61	mg/Kg dry	5	RL-05	MADEP-VPH-04-1.1	3/26/15	3/27/15 12:53	EEH
Unadjusted C9-C12 Aliphatics	350	61	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 12:53	EEH
C9-C12 Aliphatics	67	61	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 12:53	EEH
C9-C10 Aromatics	290	61	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 12:53	EEH
Benzene	ND	0.31	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 12:53	EEH
Ethylbenzene	ND	0.31	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 12:53	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.31	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 12:53	EEH
Naphthalene	ND	1.5	mg/Kg dry	5	RL-05	MADEP-VPH-04-1.1	3/26/15	3/27/15 12:53	EEH
Toluene	ND	0.31	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 12:53	EEH
m+p Xylene	ND	0.61	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 12:53	EEH
o-Xylene	ND	0.31	mg/Kg dry	5		MADEP-VPH-04-1.1	3/26/15	3/27/15 12:53	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,5-Dibromotoluene (FID)	88.4	70-130		3/27/15 12:53
2,5-Dibromotoluene (PID)	113	70-130		3/27/15 12:53

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-I2-DUP | Sampled: 3/19/2015 12:45

Sample ID: 15C0820-06

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	87.8		% Wt	1		SM 2540G	3/26/15	3/26/15 23:31	JJL

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-S6-0-3" | Sampled: 3/19/2015 13:00

Sample ID: 15C0820-07

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	120	11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS
C19-C36 Aliphatics	150	11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS
Unadjusted C11-C22 Aromatics	89	11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS
C11-C22 Aromatics	88	11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS
Acenaphthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS
Acenaphthylene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS
Anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS
Benzo(a)anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS
Benzo(a)pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS
Benzo(b)fluoranthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS
Benzo(g,h,i)perylene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS
Benzo(k)fluoranthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS
Chrysene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS
Dibenz(a,h)anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS
Fluoranthene	0.14	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS
Fluorene	0.23	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS
Indeno(1,2,3-cd)pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS
2-Methylnaphthalene	0.41	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS
Naphthalene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS
Phenanthrene	0.20	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS
Pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:12	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	81.1	40-140		3/26/15 20:12
o-Terphenyl (OTP)	83.8	40-140		3/26/15 20:12
2-Bromonaphthalene	84.9	40-140		3/26/15 20:12
2-Fluorobiphenyl	111	40-140		3/26/15 20:12

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-S6-0-3" | Sampled: 3/19/2015 13:00

Sample ID: 15C0820-07

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - VPH

Soil/Methanol Preservation Ratio: 1.12

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	10	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:03	EEH
C5-C8 Aliphatics	ND	10	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:03	EEH
Unadjusted C9-C12 Aliphatics	ND	10	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:03	EEH
C9-C12 Aliphatics	ND	10	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:03	EEH
C9-C10 Aromatics	ND	10	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:03	EEH
Benzene	ND	0.052	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:03	EEH
Ethylbenzene	ND	0.052	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:03	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.052	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:03	EEH
Naphthalene	ND	0.26	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:03	EEH
Toluene	ND	0.052	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:03	EEH
m+p Xylene	ND	0.10	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:03	EEH
o-Xylene	ND	0.052	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:03	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,5-Dibromotoluene (FID)	113	70-130		3/27/15 8:03
2,5-Dibromotoluene (PID)	118	70-130		3/27/15 8:03

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-S6-0-3'' | Sampled: 3/19/2015 13:00

Sample ID: 15C0820-07

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	93.3		% Wt	1		SM 2540G	3/26/15	3/26/15 23:31	JJL

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Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-H1-0-19" | Sampled: 3/19/2015 13:30

Sample ID: 15C0820-08

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	1100	210	mg/Kg dry	20		MADEP-EPH-04-1.1	3/25/15	3/27/15 14:10	SCS
C19-C36 Aliphatics	1200	210	mg/Kg dry	20		MADEP-EPH-04-1.1	3/25/15	3/27/15 14:10	SCS
Unadjusted C11-C22 Aromatics	570	21	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 23:02	SCS
C11-C22 Aromatics	570	21	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 23:02	SCS
Acenaphthene	ND	0.21	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 23:02	SCS
Acenaphthylene	ND	0.21	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 23:02	SCS
Anthracene	ND	0.21	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 23:02	SCS
Benzo(a)anthracene	ND	0.21	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 23:02	SCS
Benzo(a)pyrene	ND	0.21	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 23:02	SCS
Benzo(b)fluoranthene	ND	0.21	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 23:02	SCS
Benzo(g,h,i)perylene	ND	0.21	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 23:02	SCS
Benzo(k)fluoranthene	ND	0.21	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 23:02	SCS
Chrysene	ND	0.21	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 23:02	SCS
Dibenz(a,h)anthracene	ND	0.21	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 23:02	SCS
Fluoranthene	1.4	0.21	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 23:02	SCS
Fluorene	0.72	0.21	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 23:02	SCS
Indeno(1,2,3-cd)pyrene	ND	0.21	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 23:02	SCS
2-Methylnaphthalene	0.26	0.21	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 23:02	SCS
Naphthalene	ND	0.21	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 23:02	SCS
Phenanthrene	1.1	0.21	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 23:02	SCS
Pyrene	0.34	0.21	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 23:02	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	56.3	40-140		3/26/15 23:02
o-Terphenyl (OTP)	83.5	40-140		3/26/15 23:02
2-Bromonaphthalene	69.2	40-140		3/26/15 23:02
2-Fluorobiphenyl	87.1	40-140		3/26/15 23:02

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-H1-0-19" | Sampled: 3/19/2015 13:30

Sample ID: 15C0820-08

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - VPH

Soil/Methanol Preservation Ratio: 1.01

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	11	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:41	EEH
C5-C8 Aliphatics	ND	11	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:41	EEH
Unadjusted C9-C12 Aliphatics	ND	11	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:41	EEH
C9-C12 Aliphatics	ND	11	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:41	EEH
C9-C10 Aromatics	ND	11	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:41	EEH
Benzene	ND	0.054	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:41	EEH
Ethylbenzene	ND	0.054	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:41	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.054	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:41	EEH
Naphthalene	ND	0.27	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:41	EEH
Toluene	ND	0.054	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:41	EEH
m+p Xylene	ND	0.11	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:41	EEH
o-Xylene	ND	0.054	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 8:41	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,5-Dibromotoluene (FID)	84.6	70-130		3/27/15 8:41
2,5-Dibromotoluene (PID)	93.4	70-130		3/27/15 8:41

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Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-H1-0-19" | Sampled: 3/19/2015 13:30

Sample ID: 15C0820-08

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	95.9		% Wt	1		SM 2540G	3/26/15	3/26/15 23:31	JJL

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Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-O1-0-21" | Sampled: 3/19/2015 14:30

Sample ID: 15C0820-09

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	240	56	mg/Kg dry	5		MADEP-EPH-04-1.1	3/25/15	3/27/15 13:27	SCS
C19-C36 Aliphatics	370	56	mg/Kg dry	5		MADEP-EPH-04-1.1	3/25/15	3/27/15 13:27	SCS
Unadjusted C11-C22 Aromatics	210	11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:33	SCS
C11-C22 Aromatics	210	11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:33	SCS
Acenaphthene	0.14	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:33	SCS
Acenaphthylene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:33	SCS
Anthracene	0.14	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:33	SCS
Benzo(a)anthracene	0.24	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:33	SCS
Benzo(a)pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:33	SCS
Benzo(b)fluoranthene	0.35	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:33	SCS
Benzo(g,h,i)perylene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:33	SCS
Benzo(k)fluoranthene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:33	SCS
Chrysene	0.35	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:33	SCS
Dibenz(a,h)anthracene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:33	SCS
Fluoranthene	0.57	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:33	SCS
Fluorene	0.21	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:33	SCS
Indeno(1,2,3-cd)pyrene	ND	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:33	SCS
2-Methylnaphthalene	0.90	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:33	SCS
Naphthalene	0.44	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:33	SCS
Phenanthrene	0.52	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:33	SCS
Pyrene	0.56	0.11	mg/Kg dry	1		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:33	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	82.2	40-140		3/26/15 20:33
o-Terphenyl (OTP)	93.9	40-140		3/26/15 20:33
2-Bromonaphthalene	91.3	40-140		3/26/15 20:33
2-Fluorobiphenyl	109	40-140		3/26/15 20:33

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-O1-0-21" | Sampled: 3/19/2015 14:30

Sample ID: 15C0820-09

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - VPH

Soil/Methanol Preservation Ratio: 0.98

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	13	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:17	EEH
C5-C8 Aliphatics	ND	13	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:17	EEH
Unadjusted C9-C12 Aliphatics	ND	13	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:17	EEH
C9-C12 Aliphatics	ND	13	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:17	EEH
C9-C10 Aromatics	ND	13	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:17	EEH
Benzene	ND	0.063	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:17	EEH
Ethylbenzene	ND	0.063	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:17	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.063	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:17	EEH
Naphthalene	ND	0.32	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:17	EEH
Toluene	ND	0.063	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:17	EEH
m+p Xylene	ND	0.13	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:17	EEH
o-Xylene	ND	0.063	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:17	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,5-Dibromotoluene (FID)	113	70-130		3/27/15 9:17
2,5-Dibromotoluene (PID)	123	70-130		3/27/15 9:17

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Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-O1-0-21" | Sampled: 3/19/2015 14:30

Sample ID: 15C0820-09

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	89.6		% Wt	1		SM 2540G	3/26/15	3/26/15 23:31	JJL

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-E3-4-24" | Sampled: 3/19/2015 15:15

Sample ID: 15C0820-10

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	1100	220	mg/Kg dry	20		MADEP-EPH-04-1.1	3/25/15	3/27/15 13:49	SCS
C19-C36 Aliphatics	360	220	mg/Kg dry	20		MADEP-EPH-04-1.1	3/25/15	3/27/15 13:49	SCS
Unadjusted C11-C22 Aromatics	520	22	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:54	SCS
C11-C22 Aromatics	520	22	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:54	SCS
Acenaphthene	ND	0.22	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:54	SCS
Acenaphthylene	ND	0.22	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:54	SCS
Anthracene	ND	0.22	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:54	SCS
Benzo(a)anthracene	ND	0.22	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:54	SCS
Benzo(a)pyrene	ND	0.22	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:54	SCS
Benzo(b)fluoranthene	ND	0.22	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:54	SCS
Benzo(g,h,i)perylene	ND	0.22	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:54	SCS
Benzo(k)fluoranthene	ND	0.22	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:54	SCS
Chrysene	ND	0.22	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:54	SCS
Dibenz(a,h)anthracene	ND	0.22	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:54	SCS
Fluoranthene	ND	0.22	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:54	SCS
Fluorene	ND	0.22	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:54	SCS
Indeno(1,2,3-cd)pyrene	ND	0.22	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:54	SCS
2-Methylnaphthalene	ND	0.22	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:54	SCS
Naphthalene	ND	0.22	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:54	SCS
Phenanthrene	ND	0.22	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:54	SCS
Pyrene	ND	0.22	mg/Kg dry	2		MADEP-EPH-04-1.1	3/25/15	3/26/15 20:54	SCS

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	71.5	40-140		3/26/15 20:54
o-Terphenyl (OTP)	96.5	40-140		3/26/15 20:54
2-Bromonaphthalene	74.3	40-140		3/26/15 20:54
2-Fluorobiphenyl	82.8	40-140		3/26/15 20:54

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-E3-4-24" | Sampled: 3/19/2015 15:15

Sample ID: 15C0820-10

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - VPH

Soil/Methanol Preservation Ratio: 1.19

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Unadjusted C5-C8 Aliphatics	ND	11	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:53	EEH
C5-C8 Aliphatics	ND	11	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:53	EEH
Unadjusted C9-C12 Aliphatics	ND	11	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:53	EEH
C9-C12 Aliphatics	ND	11	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:53	EEH
C9-C10 Aromatics	ND	11	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:53	EEH
Benzene	ND	0.053	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:53	EEH
Ethylbenzene	ND	0.053	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:53	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.053	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:53	EEH
Naphthalene	ND	0.26	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:53	EEH
Toluene	ND	0.053	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:53	EEH
m+p Xylene	ND	0.11	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:53	EEH
o-Xylene	ND	0.053	mg/Kg dry	1		MADEP-VPH-04-1.1	3/26/15	3/27/15 9:53	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,5-Dibromotoluene (FID)	107	70-130		3/27/15 9:53
2,5-Dibromotoluene (PID)	125	70-130		3/27/15 9:53

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Charlestown, MA | Sample Description: | Work Order: 15C0820

Date Received: 3/20/2015

Field Sample #: SB-E3-4-24" | Sampled: 3/19/2015 15:15

Sample ID: 15C0820-10

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	89.8		% Wt	1		SM 2540G	3/26/15	3/26/15 23:31	JJL

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Sample Extraction Data

Prep Method: SW-846 3546-MADEP-EPH-04-1.1

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
15C0820-01 [SB-E1-0-6"]	B117712	20.0	2.00	03/25/15
15C0820-02 [SB-F2-12-42"]	B117712	20.0	2.00	03/25/15
15C0820-03 [SB-F3-0-15"]	B117712	10.0	2.00	03/25/15
15C0820-04 [SB-S5-0-6"]	B117712	20.1	2.00	03/25/15
15C0820-05 [SB-I2-14-51"]	B117712	20.0	2.00	03/25/15
15C0820-06 [SB-I2-DUP]	B117712	20.0	2.00	03/25/15
15C0820-07 [SB-S6-0-3"]	B117712	20.0	2.00	03/25/15
15C0820-08 [SB-H1-0-19"]	B117712	20.0	2.00	03/25/15
15C0820-09 [SB-O1-0-21"]	B117712	20.0	2.00	03/25/15
15C0820-10 [SB-E3-4-24"]	B117712	20.1	2.00	03/25/15

Prep Method: MA VPH-MADEP-VPH-04-1.1

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
15C0820-01 [SB-E1-0-6"]	B117869	16.4	17.1	03/26/15
15C0820-02 [SB-F2-12-42"]	B117869	17.3	18.5	03/26/15
15C0820-03 [SB-F3-0-15"]	B117869	17.1	16.9	03/26/15
15C0820-04 [SB-S5-0-6"]	B117869	14.9	17.1	03/26/15
15C0820-05 [SB-I2-14-51"]	B117869	15.5	16.3	03/26/15
15C0820-06 [SB-I2-DUP]	B117869	15.8	17.0	03/26/15
15C0820-07 [SB-S6-0-3"]	B117869	16.8	16.2	03/26/15
15C0820-08 [SB-H1-0-19"]	B117869	15.2	15.7	03/26/15
15C0820-09 [SB-O1-0-21"]	B117869	14.7	16.6	03/26/15
15C0820-10 [SB-E3-4-24"]	B117869	17.8	16.9	03/26/15

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
15C0820-01 [SB-E1-0-6"]	B117838	03/26/15
15C0820-02 [SB-F2-12-42"]	B117838	03/26/15
15C0820-03 [SB-F3-0-15"]	B117838	03/26/15
15C0820-04 [SB-S5-0-6"]	B117838	03/26/15
15C0820-05 [SB-I2-14-51"]	B117838	03/26/15
15C0820-06 [SB-I2-DUP]	B117838	03/26/15
15C0820-07 [SB-S6-0-3"]	B117838	03/26/15
15C0820-08 [SB-H1-0-19"]	B117838	03/26/15
15C0820-09 [SB-O1-0-21"]	B117838	03/26/15
15C0820-10 [SB-E3-4-24"]	B117838	03/26/15

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B117712 - SW-846 3546										
Blank (B117712-BLK1)				Prepared: 03/25/15 Analyzed: 03/26/15						
C9-C18 Aliphatics	ND	10	mg/Kg wet							
C19-C36 Aliphatics	ND	10	mg/Kg wet							
Unadjusted C11-C22 Aromatics	ND	10	mg/Kg wet							
C11-C22 Aromatics	ND	10	mg/Kg wet							
Acenaphthene	ND	0.10	mg/Kg wet							
Acenaphthylene	ND	0.10	mg/Kg wet							
Anthracene	ND	0.10	mg/Kg wet							
Benzo(a)anthracene	ND	0.10	mg/Kg wet							
Benzo(a)pyrene	ND	0.10	mg/Kg wet							
Benzo(b)fluoranthene	ND	0.10	mg/Kg wet							
Benzo(g,h,i)perylene	ND	0.10	mg/Kg wet							
Benzo(k)fluoranthene	ND	0.10	mg/Kg wet							
Chrysene	ND	0.10	mg/Kg wet							
Dibenz(a,h)anthracene	ND	0.10	mg/Kg wet							
Fluoranthene	ND	0.10	mg/Kg wet							
Fluorene	ND	0.10	mg/Kg wet							
Indeno(1,2,3-cd)pyrene	ND	0.10	mg/Kg wet							
2-Methylnaphthalene	ND	0.10	mg/Kg wet							
Naphthalene	ND	0.10	mg/Kg wet							
Phenanthrene	ND	0.10	mg/Kg wet							
Pyrene	ND	0.10	mg/Kg wet							
n-Decane	ND	0.10	mg/Kg wet							
n-Docosane	ND	0.10	mg/Kg wet							
n-Dodecane	ND	0.10	mg/Kg wet							
n-Eicosane	ND	0.10	mg/Kg wet							
n-Hexacosane	ND	0.10	mg/Kg wet							
n-Hexadecane	ND	0.10	mg/Kg wet							
n-Hexatriacontane	ND	0.10	mg/Kg wet							
n-Nonadecane	ND	0.10	mg/Kg wet							
n-Nonane	ND	0.10	mg/Kg wet							
n-Octacosane	ND	0.10	mg/Kg wet							
n-Octadecane	ND	0.10	mg/Kg wet							
n-Tetracosane	ND	0.10	mg/Kg wet							
n-Tetradecane	ND	0.10	mg/Kg wet							
n-Triacontane	ND	0.10	mg/Kg wet							
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet							
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet							
Surrogate: Chlorooctadecane (COD)	*4.42*		mg/Kg wet	5.00		88.5	40-140			
Surrogate: o-Terphenyl (OTP)	*4.96*		mg/Kg wet	5.00		99.3	40-140			
Surrogate: 2-Bromonaphthalene	*4.58*		mg/Kg wet	5.00		91.6	40-140			
Surrogate: 2-Fluorobiphenyl	*5.22*		mg/Kg wet	5.00		104	40-140			
LCS (B117712-BS1)				Prepared: 03/25/15 Analyzed: 03/26/15						
Acenaphthene	4.74	0.10	mg/Kg wet	5.00		94.8	40-140			
Acenaphthylene	4.58	0.10	mg/Kg wet	5.00		91.5	40-140			
Anthracene	5.86	0.10	mg/Kg wet	5.00		117	40-140			
Benzo(a)anthracene	5.58	0.10	mg/Kg wet	5.00		112	40-140			
Benzo(a)pyrene	5.31	0.10	mg/Kg wet	5.00		106	40-140			
Benzo(b)fluoranthene	5.34	0.10	mg/Kg wet	5.00		107	40-140			
Benzo(g,h,i)perylene	4.99	0.10	mg/Kg wet	5.00		99.8	40-140			
Benzo(k)fluoranthene	5.25	0.10	mg/Kg wet	5.00		105	40-140			
Chrysene	5.59	0.10	mg/Kg wet	5.00		112	40-140			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B117712 - SW-846 3546										
LCS (B117712-BS1)				Prepared: 03/25/15 Analyzed: 03/26/15						
Dibenz(a,h)anthracene	5.03	0.10	mg/Kg wet	5.00		101	40-140			
Fluoranthene	5.56	0.10	mg/Kg wet	5.00		111	40-140			
Fluorene	5.12	0.10	mg/Kg wet	5.00		102	40-140			
Indeno(1,2,3-cd)pyrene	4.14	0.10	mg/Kg wet	5.00		82.9	40-140			
2-Methylnaphthalene	4.28	0.10	mg/Kg wet	5.00		85.6	40-140			
Naphthalene	3.85	0.10	mg/Kg wet	5.00		77.0	40-140			
Phenanthrene	5.41	0.10	mg/Kg wet	5.00		108	40-140			
Pyrene	5.57	0.10	mg/Kg wet	5.00		111	40-140			
n-Decane	3.00	0.10	mg/Kg wet	5.00		59.9	40-140			
n-Docosane	5.19	0.10	mg/Kg wet	5.00		104	40-140			
n-Dodecane	3.34	0.10	mg/Kg wet	5.00		66.8	40-140			
n-Eicosane	5.07	0.10	mg/Kg wet	5.00		101	40-140			
n-Hexacosane	5.09	0.10	mg/Kg wet	5.00		102	40-140			
n-Hexadecane	4.94	0.10	mg/Kg wet	5.00		98.8	40-140			
n-Hexatriacontane	4.66	0.10	mg/Kg wet	5.00		93.2	40-140			
n-Nonadecane	5.22	0.10	mg/Kg wet	5.00		104	40-140			
n-Nonane	2.07	0.10	mg/Kg wet	5.00		41.3	30-140			
n-Octacosane	4.85	0.10	mg/Kg wet	5.00		97.0	40-140			
n-Octadecane	5.21	0.10	mg/Kg wet	5.00		104	40-140			
n-Tetracosane	5.07	0.10	mg/Kg wet	5.00		101	40-140			
n-Tetradecane	4.35	0.10	mg/Kg wet	5.00		87.0	40-140			
n-Triacontane	4.90	0.10	mg/Kg wet	5.00		98.0	40-140			
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
Surrogate: Chlorooctadecane (COD)	*4.88*		mg/Kg wet	5.00		97.7	40-140			
Surrogate: o-Terphenyl (OTP)	*5.25*		mg/Kg wet	5.00		105	40-140			
Surrogate: 2-Bromonaphthalene	*4.69*		mg/Kg wet	5.00		93.7	40-140			
Surrogate: 2-Fluorobiphenyl	*5.39*		mg/Kg wet	5.00		108	40-140			
LCS Dup (B117712-BSD1)				Prepared: 03/25/15 Analyzed: 03/26/15						
Acenaphthene	4.51	0.10	mg/Kg wet	5.00		90.2	40-140	4.97	25	
Acenaphthylene	4.38	0.10	mg/Kg wet	5.00		87.7	40-140	4.33	25	
Anthracene	5.31	0.10	mg/Kg wet	5.00		106	40-140	9.92	25	
Benzo(a)anthracene	4.98	0.10	mg/Kg wet	5.00		99.7	40-140	11.3	25	
Benzo(a)pyrene	4.73	0.10	mg/Kg wet	5.00		94.6	40-140	11.5	25	
Benzo(b)fluoranthene	4.75	0.10	mg/Kg wet	5.00		94.9	40-140	11.8	25	
Benzo(g,h,i)perylene	4.46	0.10	mg/Kg wet	5.00		89.1	40-140	11.3	25	
Benzo(k)fluoranthene	4.67	0.10	mg/Kg wet	5.00		93.5	40-140	11.5	25	
Chrysene	5.03	0.10	mg/Kg wet	5.00		101	40-140	10.6	25	
Dibenz(a,h)anthracene	4.51	0.10	mg/Kg wet	5.00		90.1	40-140	10.9	25	
Fluoranthene	4.98	0.10	mg/Kg wet	5.00		99.6	40-140	11.1	25	
Fluorene	4.76	0.10	mg/Kg wet	5.00		95.1	40-140	7.35	25	
Indeno(1,2,3-cd)pyrene	3.69	0.10	mg/Kg wet	5.00		73.8	40-140	11.6	25	
2-Methylnaphthalene	4.22	0.10	mg/Kg wet	5.00		84.3	40-140	1.48	25	
Naphthalene	3.87	0.10	mg/Kg wet	5.00		77.4	40-140	0.474	25	
Phenanthrene	4.89	0.10	mg/Kg wet	5.00		97.7	40-140	10.2	25	
Pyrene	4.98	0.10	mg/Kg wet	5.00		99.6	40-140	11.1	25	
n-Decane	3.37	0.10	mg/Kg wet	5.00		67.4	40-140	11.7	25	
n-Docosane	5.35	0.10	mg/Kg wet	5.00		107	40-140	3.12	25	
n-Dodecane	3.82	0.10	mg/Kg wet	5.00		76.4	40-140	13.4	25	
n-Eicosane	5.23	0.10	mg/Kg wet	5.00		105	40-140	3.09	25	
n-Hexacosane	5.27	0.10	mg/Kg wet	5.00		105	40-140	3.39	25	

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B117712 - SW-846 3546										
LCS Dup (B117712-BSD1)				Prepared: 03/25/15 Analyzed: 03/26/15						
n-Hexadecane	5.15	0.10	mg/Kg wet	5.00		103	40-140	4.12	25	
n-Hexatriacontane	4.83	0.10	mg/Kg wet	5.00		96.7	40-140	3.60	25	
n-Nonadecane	5.38	0.10	mg/Kg wet	5.00		108	40-140	3.05	25	
n-Nonane	2.45	0.10	mg/Kg wet	5.00		49.1	30-140	17.2	25	
n-Octacosane	5.01	0.10	mg/Kg wet	5.00		100	40-140	3.27	25	
n-Octadecane	5.36	0.10	mg/Kg wet	5.00		107	40-140	2.85	25	
n-Tetracosane	5.25	0.10	mg/Kg wet	5.00		105	40-140	3.44	25	
n-Tetradecane	4.80	0.10	mg/Kg wet	5.00		96.1	40-140	9.89	25	
n-Triacontane	5.08	0.10	mg/Kg wet	5.00		102	40-140	3.54	25	
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
Surrogate: Chlorooctadecane (COD)	*5.01*		mg/Kg wet	5.00		100	40-140			
Surrogate: o-Terphenyl (OTP)	*4.60*		mg/Kg wet	5.00		92.0	40-140			
Surrogate: 2-Bromonaphthalene	*3.71*		mg/Kg wet	5.00		74.1	40-140			
Surrogate: 2-Fluorobiphenyl	*4.38*		mg/Kg wet	5.00		87.6	40-140			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - VPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B117869 - MA VPH											
Blank (B117869-BLK1)				Prepared & Analyzed: 03/26/15							
Unadjusted C5-C8 Aliphatics	ND	10	mg/Kg wet								
C5-C8 Aliphatics	ND	10	mg/Kg wet								
Unadjusted C9-C12 Aliphatics	ND	10	mg/Kg wet								
C9-C12 Aliphatics	ND	10	mg/Kg wet								
C9-C10 Aromatics	ND	10	mg/Kg wet								
Benzene	ND	0.050	mg/Kg wet								
Butylcyclohexane	ND	0.050	mg/Kg wet								
Decane	ND	0.050	mg/Kg wet								
Ethylbenzene	ND	0.050	mg/Kg wet								
Methyl tert-Butyl Ether (MTBE)	ND	0.050	mg/Kg wet								
2-Methylpentane	ND	0.050	mg/Kg wet								
Naphthalene	ND	0.25	mg/Kg wet								
Nonane	ND	0.050	mg/Kg wet								
Pentane	ND	0.050	mg/Kg wet								
Toluene	ND	0.050	mg/Kg wet								
1,2,4-Trimethylbenzene	ND	0.050	mg/Kg wet								
2,2,4-Trimethylpentane	ND	0.050	mg/Kg wet								
m+p Xylene	ND	0.10	mg/Kg wet								
o-Xylene	ND	0.050	mg/Kg wet								
Surrogate: 2,5-Dibromotoluene (FID)	*3.30*		mg/Kg wet	3.33		98.9		70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*3.40*		mg/Kg wet	3.33		102		70-130			
LCS (B117869-BS1)				Prepared & Analyzed: 03/26/15							
Benzene	0.101	0.0010	mg/Kg wet	0.100		101		70-130			
Butylcyclohexane	0.0829	0.0010	mg/Kg wet	0.100		82.9		70-130			
Decane	0.0915	0.0010	mg/Kg wet	0.100		91.5		70-130			
Ethylbenzene	0.103	0.0010	mg/Kg wet	0.100		103		70-130			
Methyl tert-Butyl Ether (MTBE)	0.107	0.0010	mg/Kg wet	0.100		107		70-130			
2-Methylpentane	0.0977	0.0010	mg/Kg wet	0.100		97.7		70-130			
Naphthalene	0.112	0.0050	mg/Kg wet	0.100		112		70-130			
Nonane	0.0835	0.0010	mg/Kg wet	0.100		83.5		30-130			
Pentane	0.106	0.0010	mg/Kg wet	0.100		106		70-130			
Toluene	0.101	0.0010	mg/Kg wet	0.100		101		70-130			
1,2,4-Trimethylbenzene	0.106	0.0010	mg/Kg wet	0.100		106		70-130			
2,2,4-Trimethylpentane	0.0907	0.0010	mg/Kg wet	0.100		90.7		70-130			
m+p Xylene	0.209	0.0020	mg/Kg wet	0.200		104		70-130			
o-Xylene	0.104	0.0010	mg/Kg wet	0.100		104		70-130			
Surrogate: 2,5-Dibromotoluene (FID)	*0.0461*		mg/Kg wet	0.0400		115		70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*0.0494*		mg/Kg wet	0.0400		123		70-130			
LCS Dup (B117869-BSD1)				Prepared & Analyzed: 03/26/15							
Benzene	0.101	0.0010	mg/Kg wet	0.100		101		70-130	0.224	25	
Butylcyclohexane	0.0840	0.0010	mg/Kg wet	0.100		84.0		70-130	1.27	25	
Decane	0.0927	0.0010	mg/Kg wet	0.100		92.7		70-130	1.29	25	
Ethylbenzene	0.102	0.0010	mg/Kg wet	0.100		102		70-130	0.456	25	
Methyl tert-Butyl Ether (MTBE)	0.108	0.0010	mg/Kg wet	0.100		108		70-130	0.721	25	
2-Methylpentane	0.0966	0.0010	mg/Kg wet	0.100		96.6		70-130	1.08	25	
Naphthalene	0.141	0.0050	mg/Kg wet	0.100		**141**	*	70-130	22.8	25	L-07
Nonane	0.0884	0.0010	mg/Kg wet	0.100		88.4		30-130	5.69	25	
Pentane	0.103	0.0010	mg/Kg wet	0.100		103		70-130	2.14	25	
Toluene	0.101	0.0010	mg/Kg wet	0.100		101		70-130	0.284	25	
1,2,4-Trimethylbenzene	0.108	0.0010	mg/Kg wet	0.100		108		70-130	2.24	25	

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - VPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B117869 - MA VPH										
LCS Dup (B117869-BSD1)				Prepared & Analyzed: 03/26/15						
2,2,4-Trimethylpentane	0.108	0.0010	mg/Kg wet	0.100		108	70-130	17.0	25	
m+p Xylene	0.208	0.0020	mg/Kg wet	0.200		104	70-130	0.452	25	
o-Xylene	0.104	0.0010	mg/Kg wet	0.100		104	70-130	0.0193	25	
Surrogate: 2,5-Dibromotoluene (FID)	*0.0437*		mg/Kg wet	0.0400		109	70-130			
Surrogate: 2,5-Dibromotoluene (PID)	*0.0508*		mg/Kg wet	0.0400		127	70-130			

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B117838 - % Solids										
Duplicate (B117838-DUP6)	**Source: 15C0820-01**		Prepared & Analyzed: 03/26/15							
% Solids	84.6		% Wt		88.1			4.05	20	

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
L-07	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
RL-05	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
S-17	Surrogate recovery is outside of control limits. Data validation is not affected since all associated results are less than the reporting limit and bias is on the high side.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
MADEP-EPH-04-1.1 in Soil	
C9-C18 Aliphatics	CT,NC,WA,ME,NH-P
C19-C36 Aliphatics	CT,NC,WA,ME,NH-P
Unadjusted C11-C22 Aromatics	CT,NC,WA,ME,NH-P
C11-C22 Aromatics	CT,NC,WA,ME,NH-P
Acenaphthene	CT,NC,WA,ME,NH-P
Acenaphthylene	CT,NC,WA,ME,NH-P
Anthracene	CT,NC,WA,ME,NH-P
Benzo(a)anthracene	CT,NC,WA,ME,NH-P
Benzo(a)pyrene	CT,NC,WA,ME,NH-P
Benzo(b)fluoranthene	CT,NC,WA,ME,NH-P
Benzo(g,h,i)perylene	CT,NC,WA,ME,NH-P
Benzo(k)fluoranthene	CT,NC,WA,ME,NH-P
Chrysene	CT,NC,WA,ME,NH-P
Dibenz(a,h)anthracene	CT,NC,WA,ME,NH-P
Fluoranthene	CT,NC,WA,ME,NH-P
Fluorene	CT,NC,WA,ME
Indeno(1,2,3-cd)pyrene	CT,NC,WA,ME,NH-P
2-Methylnaphthalene	CT,NC,WA,ME
Naphthalene	CT,NC,WA,ME,NH-P
Phenanthrene	CT,NC,WA,ME,NH-P
Pyrene	CT,NC,WA,ME,NH-P
MADEP-VPH-04-1.1 in Soil	
Unadjusted C5-C8 Aliphatics	CT,NC,WA,ME,NH-P
C5-C8 Aliphatics	CT,NC,WA,ME,NH-P
Unadjusted C9-C12 Aliphatics	CT,NC,WA,ME,NH-P
C9-C12 Aliphatics	CT,NC,WA,ME,NH-P
C9-C10 Aromatics	CT,NC,WA,ME,NH-P
Benzene	CT,NC,WA,ME,NH-P
Ethylbenzene	CT,NC,WA,ME,NH-P
Methyl tert-Butyl Ether (MTBE)	CT,NC,WA,ME,NH-P
Naphthalene	CT,NC,WA,ME,NH-P
Toluene	CT,NC,WA,ME,NH-P
m+p Xylene	CT,NC,WA,ME,NH-P
o-Xylene	CT,NC,WA,ME,NH-P

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The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2015
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2015
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2016
RI	Rhode Island Department of Health	LAO00112	12/30/2015
NC	North Carolina Div. of Water Quality	652	12/31/2015
NJ	New Jersey DEP	MA007 NELAP	06/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2015
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2015
WA	State of Washington Department of Ecology	C2065	02/23/2016
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2015
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2015

con-test® ANALYTICAL LABORATORY

Phone: 413-525-2332
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Email: info@contestlabs.com
www.contestlabs.com

CHAIN OF CUSTODY RECORD

15C0820

Rev 04.05.12

39 Spruce Street
East longmeadow, MA 01028

Page 1 of ____

Company Name: WESTON + SAMPSON
Address: 5 CENTENNIAL DRIVE
PEABODY, MA 01960
Attention: PRASANTA BHUNIA
Project Location: CHARLESTOWN, MA
Sampled By: DARON KURKJIAN

Telephone: 978-532-1900
Project #
Client PO#

DATA DELIVERY (check all that apply)
☒ FAX ☒ EMAIL ○ WEBSITE
Fax # bhuniap@wseinc.com
Email: kurkjiand@wseinc.com
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

ANALYSIS REQUESTED

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	VPH + TARGET VOCs	EPH + PAHs									
								I	I									
								M	I									
								V	A									
01	SB-E1-0-6"	3/19/15	10:00		X	S	L	X	X									
02	SB-F2-12-42"		11:00		X	S	M	X	X									
03	SB-F3-0-15"		11:30		X	S	M	X	X									
04	SB-S5-0-6"		12:00		X	S	L	X	X									
05	SB-I2-14-51"		12:45		X	S	H	X	X									
06	SB-I2-DUP		12:45		X	S	H	X	X									
07	SB-S6-0-3"		13:00		X	S	M	X	X									
08	SB-H1-0-19"		13:30		X	S	L	X	X									
09	SB-O1-0-21"		14:30		X	S	M	X	X									
10	SB-E3-4-24"		15:15		X	S	M	X	X									

3/19/15

Comments:

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:

H - High; M - Medium; L - Low; C - Clean; U - Unknown

# of Containers	
** Preservation	
***Container Code	

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other_____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

Relinquished by: (signature)	Date/Time: 3/20 10:31
Received by: (signature)	Date/Time: 3/20/15 10:36
Relinquished by: (signature)	Date/Time: 3/20/15 14:25
Received by: (signature) 5.3°C	Date/Time: 3/20/15 14:25

Turnaround ††
☐ 7-Day
☐ 10-Day
☐ Other ____
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts: S-1, S-2, S-3
Connecticut:
Other:

Is your project MCP or RCP ?
☒ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

Table of Contents

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East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
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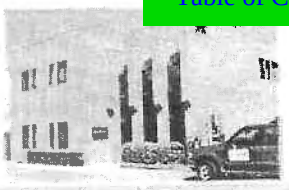

Sample Receipt Checklist

CLIENT NAME: Weston + Sampson RECEIVED BY: MJ DATE: 3/20/15

1) **Was the chain(s) of custody relinquished and signed?** (Yes) No No CoC Included

2) **Does the chain agree with the samples?** (Yes) No

If not, explain:

3) **Are all the samples in good condition?** (Yes) No

If not, explain:

4) **How were the samples received:**

On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒

Were the samples received in Temperature Compliance of (2-6°C)? (Yes) No N/A

Temperature °C by Temp blank _____ Temperature °C by Temp gun 5.3°C

5) **Are there Dissolved samples for the lab to filter?** Yes (No)

Who was notified _____ Date _____ Time _____

6) **Are there any RUSH or SHORT HOLDING TIME samples?** Yes (No)

Who was notified _____ Date _____ Time _____

7) **Location where samples are stored:** 19

Permission to subcontract samples? Yes No

(Walk-in clients only) if not already approved

Client Signature: _____

8) **Do all samples have the proper Acid pH:** Yes No (N/A) _____

9) **Do all samples have the proper Base pH:** Yes No (N/A) _____

10) **Was the PC notified of any discrepancies with the CoC vs the samples:** Yes No (N/A)

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	10
500 mL Amber		4 oz amber/clear jar	
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below	12 10 (MS)	Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol 12 10 (MS)

Bisulfate _____ # DI Water _____

Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)

Any False statement will be brought to the attention of Client

Question	Answer (True/False) T/F/NA	Comment
1) The cooler's custody seal, if present, is intact.	T	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	NA	
18) There is sufficient volume for all requsted analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	T	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	NA	
21) Samples do not require splitting or compositing.	T	

Who notified of False statements? **Date/Time:**

Doc #277 Rev. 4 August 2013 **Log-In Technician Initials:** **Date/Time:**

MJ 3/20/15 14:25

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 15C0820
Project Location: Charlestown, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

15C0820-01 thru 15C0820-10

Matrices: Soil

CAM Protocol (check all that below)

8260 VOC CAM II A ( )	7470/7471 Hg CAM IIIB ( )	MassDEP VPH CAM IV A (X)	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A (X)	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )
6010 Metals CAM III A ( )	6020 Metals CAM III D ( )	8082 PCB CAM V A ( )	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☑ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]
	A response to questions G, H and I below is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]
	<u>Data User Note:</u> Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.		
H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☐ Yes	☑ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☑ Yes	☐ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Tod Kopyscinski Position: Laboratory Director

Printed Name: Tod E. Kopyscinski Date: 03/27/15

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April 14, 2015

Prasanta Bhunia
Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960

Project Location: Bldg. 105, Charlestown, MA
Client Job Number:
Project Number: [none]
Laboratory Work Order Number: 15C1162

Enclosed are results of analyses for samples received by the laboratory on March 27, 2015. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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Weston & Sampson Engineers MA
5 Centennial Drive
Peabody, MA 01960
ATTN: Prasanta Bhunia

REPORT DATE: 4/14/2015

PURCHASE ORDER NUMBER:

PROJECT NUMBER: [none]

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 15C1162

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Bldg. 105, Charlestown, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
SG-E1	15C1162-01	Sub Slab		EPA TO-15	
SG-02	15C1162-02	Sub Slab		EPA TO-15	
SG-03	15C1162-03	Sub Slab		EPA TO-15	
SG-E3	15C1162-04	Sub Slab		EPA TO-15	
SG-F2	15C1162-05	Sub Slab		EPA TO-15	
SG-F3	15C1162-06	Sub Slab		EPA TO-15	
				MADEP APH rev 1	
SG-S5	15C1162-07	Sub Slab		EPA TO-15	
SG-S6	15C1162-08	Sub Slab		EPA TO-15	
SG-01	15C1162-09	Sub Slab		EPA TO-15	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

REVISED REPORT - 4/15/2015 - Per cleints request, APH analyzed on sample 15C1162-02.

EPA TO-15

Qualifications:

L-01

Laboratory fortified blank /laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.

Analyte & Samples(s) Qualified:

Benzyl chloride

B118436-BS1

V-05

Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

Dichlorodifluoromethane (Freon 1

15C1162-01[SG-E1], 15C1162-02[SG-02], 15C1162-03[SG-03], 15C1162-04[SG-E3], 15C1162-05[SG-F2], 15C1162-06[SG-F3], 15C1162-07[SG-S5], 15C1162-08[SG-S6], 15C1162-09[SG-01], B118436-BLK1, B118436-BS1, B118436-DUP1

V-06

Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.

Analyte & Samples(s) Qualified:

2-Hexanone (MBK)

B118436-BS1

4-Methyl-2-pentanone (MIBK)

B118436-BS1

MADEP APH rev 1

Qualifications:

L-03

Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

Naphthalene

15C1162-06[SG-F3], B118979-BLK1, B118979-BS1, B118979-DUP1

MADEP APH rev 1

No significant modifications were made to the APH method.

All performance/acceptance standards for required QA/QC procedures were achieved unless otherwise indicated in this case narrative.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Tod E. Kopyscinski
Laboratory Director

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ANALYTICAL RESULTS

Project Location: Bldg. 105, Charlestown, MA
Date Received: 3/27/2015
Field Sample #: SG-E1
Sample ID: 15C1162-01
Sample Matrix: Sub Slab
Sampled: 3/25/2015 16:50

Sample Description/Location:
Sub Description/Location:
Canister ID: 2006
Canister Size: 6 liter
Flow Controller ID: 3367
Sample Type: 8 hr

Work Order: 15C1162
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -6
Receipt Vacuum(in Hg): -2.3
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling: <20%

EPA TO-15

Analyte	ppbv Results	ppbv RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Acetone	23	4.0		55	9.5	2	3/29/15 23:41	TPH
Benzene	0.22	0.10		0.72	0.32	2	3/29/15 23:41	TPH
Benzyl chloride	ND	0.10		ND	0.52	2	3/29/15 23:41	TPH
Bromodichloromethane	ND	0.10		ND	0.67	2	3/29/15 23:41	TPH
Bromoform	ND	0.10		ND	1.0	2	3/29/15 23:41	TPH
Bromomethane	ND	0.10		ND	0.39	2	3/29/15 23:41	TPH
1,3-Butadiene	ND	0.10		ND	0.22	2	3/29/15 23:41	TPH
2-Butanone (MEK)	ND	4.0		ND	12	2	3/29/15 23:41	TPH
Carbon Disulfide	ND	1.0		ND	3.1	2	3/29/15 23:41	TPH
Carbon Tetrachloride	ND	0.10		ND	0.63	2	3/29/15 23:41	TPH
Chlorobenzene	ND	0.10		ND	0.46	2	3/29/15 23:41	TPH
Chloroethane	ND	0.10		ND	0.26	2	3/29/15 23:41	TPH
Chloroform	ND	0.10		ND	0.49	2	3/29/15 23:41	TPH
Chloromethane	0.22	0.20		0.46	0.41	2	3/29/15 23:41	TPH
Cyclohexane	ND	0.10		ND	0.34	2	3/29/15 23:41	TPH
Dibromochloromethane	ND	0.10		ND	0.85	2	3/29/15 23:41	TPH
1,2-Dibromoethane (EDB)	ND	0.10		ND	0.77	2	3/29/15 23:41	TPH
1,2-Dichlorobenzene	ND	0.10		ND	0.60	2	3/29/15 23:41	TPH
1,3-Dichlorobenzene	ND	0.10		ND	0.60	2	3/29/15 23:41	TPH
1,4-Dichlorobenzene	ND	0.10		ND	0.60	2	3/29/15 23:41	TPH
Dichlorodifluoromethane (Freon 12)	0.23	0.10	V-05	1.1	0.49	2	3/29/15 23:41	TPH
1,1-Dichloroethane	ND	0.10		ND	0.40	2	3/29/15 23:41	TPH
1,2-Dichloroethane	ND	0.10		ND	0.40	2	3/29/15 23:41	TPH
1,1-Dichloroethylene	ND	0.10		ND	0.40	2	3/29/15 23:41	TPH
cis-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/29/15 23:41	TPH
trans-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/29/15 23:41	TPH
1,2-Dichloropropane	ND	0.10		ND	0.46	2	3/29/15 23:41	TPH
cis-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/29/15 23:41	TPH
trans-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/29/15 23:41	TPH
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.10		ND	0.70	2	3/29/15 23:41	TPH
1,4-Dioxane	ND	1.0		ND	3.6	2	3/29/15 23:41	TPH
Ethanol	140	4.0		270	7.5	2	3/29/15 23:41	TPH
Ethyl Acetate	1.6	0.10		5.6	0.36	2	3/29/15 23:41	TPH
Ethylbenzene	0.16	0.10		0.69	0.43	2	3/29/15 23:41	TPH
4-Ethyltoluene	ND	0.10		ND	0.49	2	3/29/15 23:41	TPH
Heptane	0.20	0.10		0.80	0.41	2	3/29/15 23:41	TPH
Hexachlorobutadiene	ND	0.10		ND	1.1	2	3/29/15 23:41	TPH

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ANALYTICAL RESULTS

Project Location: Bldg. 105, Charlestown, MA
Date Received: 3/27/2015
Field Sample #: SG-E1
Sample ID: 15C1162-01
Sample Matrix: Sub Slab
Sampled: 3/25/2015 16:50

Sample Description/Location:
Sub Description/Location:
Canister ID: 2006
Canister Size: 6 liter
Flow Controller ID: 3367
Sample Type: 8 hr

Work Order: 15C1162
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -6
Receipt Vacuum(in Hg): -2.3
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling: <20%

EPA TO-15

Analyte	ppbv Results	ppbv RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Hexane	ND	4.0		ND	14	2	3/29/15 23:41	TPH
2-Hexanone (MBK)	ND	0.10		ND	0.41	2	3/29/15 23:41	TPH
Isopropanol	28	4.0		68	9.8	2	3/29/15 23:41	TPH
Methyl tert-Butyl Ether (MTBE)	ND	0.10		ND	0.36	2	3/29/15 23:41	TPH
Methylene Chloride	ND	1.0		ND	3.5	2	3/29/15 23:41	TPH
4-Methyl-2-pentanone (MIBK)	ND	0.10		ND	0.41	2	3/29/15 23:41	TPH
Naphthalene	ND	0.10		ND	0.52	2	3/29/15 23:41	TPH
Propene	ND	4.0		ND	6.9	2	3/29/15 23:41	TPH
Styrene	ND	0.10		ND	0.43	2	3/29/15 23:41	TPH
1,1,2,2-Tetrachloroethane	ND	0.10		ND	0.69	2	3/29/15 23:41	TPH
Tetrachloroethylene	ND	0.10		ND	0.68	2	3/29/15 23:41	TPH
Tetrahydrofuran	ND	0.10		ND	0.29	2	3/29/15 23:41	TPH
Toluene	1.1	0.10		4.0	0.38	2	3/29/15 23:41	TPH
1,2,4-Trichlorobenzene	ND	0.10		ND	0.74	2	3/29/15 23:41	TPH
1,1,1-Trichloroethane	ND	0.10		ND	0.55	2	3/29/15 23:41	TPH
1,1,2-Trichloroethane	ND	0.10		ND	0.55	2	3/29/15 23:41	TPH
Trichloroethylene	ND	0.10		ND	0.54	2	3/29/15 23:41	TPH
Trichlorofluoromethane (Freon 11)	ND	0.40		ND	2.2	2	3/29/15 23:41	TPH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.40		ND	3.1	2	3/29/15 23:41	TPH
1,2,4-Trimethylbenzene	0.25	0.10		1.2	0.49	2	3/29/15 23:41	TPH
1,3,5-Trimethylbenzene	ND	0.10		ND	0.49	2	3/29/15 23:41	TPH
Vinyl Acetate	ND	2.0		ND	7.0	2	3/29/15 23:41	TPH
Vinyl Chloride	ND	0.10		ND	0.26	2	3/29/15 23:41	TPH
m&p-Xylene	0.52	0.20		2.2	0.87	2	3/29/15 23:41	TPH
o-Xylene	0.21	0.10		0.89	0.43	2	3/29/15 23:41	TPH

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	85.1	70-130	3/29/15 23:41

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ANALYTICAL RESULTS

Project Location: Bldg. 105, Charlestown, MA
Date Received: 3/27/2015
Field Sample #: SG-02
Sample ID: 15C1162-02
Sample Matrix: Sub Slab
Sampled: 3/25/2015 16:55

Sample Description/Location:
Sub Description/Location:
Canister ID: 2043
Canister Size: 6 liter
Flow Controller ID: 3574
Sample Type: 8 hr

Work Order: 15C1162
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -7
Receipt Vacuum(in Hg): -5
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Acetone	28	4.0		65	9.5	2	3/30/15 0:23	TPH
Benzene	0.49	0.10		1.6	0.32	2	3/30/15 0:23	TPH
Benzyl chloride	ND	0.10		ND	0.52	2	3/30/15 0:23	TPH
Bromodichloromethane	ND	0.10		ND	0.67	2	3/30/15 0:23	TPH
Bromoform	ND	0.10		ND	1.0	2	3/30/15 0:23	TPH
Bromomethane	ND	0.10		ND	0.39	2	3/30/15 0:23	TPH
1,3-Butadiene	ND	0.10		ND	0.22	2	3/30/15 0:23	TPH
2-Butanone (MEK)	ND	4.0		ND	12	2	3/30/15 0:23	TPH
Carbon Disulfide	ND	1.0		ND	3.1	2	3/30/15 0:23	TPH
Carbon Tetrachloride	ND	0.10		ND	0.63	2	3/30/15 0:23	TPH
Chlorobenzene	ND	0.10		ND	0.46	2	3/30/15 0:23	TPH
Chloroethane	ND	0.10		ND	0.26	2	3/30/15 0:23	TPH
Chloroform	ND	0.10		ND	0.49	2	3/30/15 0:23	TPH
Chloromethane	ND	0.20		ND	0.41	2	3/30/15 0:23	TPH
Cyclohexane	0.36	0.10		1.2	0.34	2	3/30/15 0:23	TPH
Dibromochloromethane	ND	0.10		ND	0.85	2	3/30/15 0:23	TPH
1,2-Dibromoethane (EDB)	ND	0.10		ND	0.77	2	3/30/15 0:23	TPH
1,2-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 0:23	TPH
1,3-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 0:23	TPH
1,4-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 0:23	TPH
Dichlorodifluoromethane (Freon 12)	0.19	0.10	V-05	0.96	0.49	2	3/30/15 0:23	TPH
1,1-Dichloroethane	ND	0.10		ND	0.40	2	3/30/15 0:23	TPH
1,2-Dichloroethane	ND	0.10		ND	0.40	2	3/30/15 0:23	TPH
1,1-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 0:23	TPH
cis-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 0:23	TPH
trans-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 0:23	TPH
1,2-Dichloropropane	ND	0.10		ND	0.46	2	3/30/15 0:23	TPH
cis-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/30/15 0:23	TPH
trans-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/30/15 0:23	TPH
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.10		ND	0.70	2	3/30/15 0:23	TPH
1,4-Dioxane	ND	1.0		ND	3.6	2	3/30/15 0:23	TPH
Ethanol	170	4.0		320	7.5	2	3/30/15 0:23	TPH
Ethyl Acetate	1.1	0.10		4.0	0.36	2	3/30/15 0:23	TPH
Ethylbenzene	0.19	0.10		0.83	0.43	2	3/30/15 0:23	TPH
4-Ethyltoluene	ND	0.10		ND	0.49	2	3/30/15 0:23	TPH
Heptane	0.22	0.10		0.89	0.41	2	3/30/15 0:23	TPH
Hexachlorobutadiene	ND	0.10		ND	1.1	2	3/30/15 0:23	TPH

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ANALYTICAL RESULTS

Project Location: Bldg. 105, Charlestown, MA
Date Received: 3/27/2015
Field Sample #: SG-02
Sample ID: 15C1162-02
Sample Matrix: Sub Slab
Sampled: 3/25/2015 16:55

Sample Description/Location:
Sub Description/Location:
Canister ID: 2043
Canister Size: 6 liter
Flow Controller ID: 3574
Sample Type: 8 hr

Work Order: 15C1162
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -7
Receipt Vacuum(in Hg): -5
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Hexane	ND	4.0		ND	14	2	3/30/15 0:23	TPH
2-Hexanone (MBK)	ND	0.10		ND	0.41	2	3/30/15 0:23	TPH
Isopropanol	33	4.0		80	9.8	2	3/30/15 0:23	TPH
Methyl tert-Butyl Ether (MTBE)	ND	0.10		ND	0.36	2	3/30/15 0:23	TPH
Methylene Chloride	ND	1.0		ND	3.5	2	3/30/15 0:23	TPH
4-Methyl-2-pentanone (MIBK)	ND	0.10		ND	0.41	2	3/30/15 0:23	TPH
Naphthalene	ND	0.10		ND	0.52	2	3/30/15 0:23	TPH
Propene	ND	4.0		ND	6.9	2	3/30/15 0:23	TPH
Styrene	ND	0.10		ND	0.43	2	3/30/15 0:23	TPH
1,1,2,2-Tetrachloroethane	ND	0.10		ND	0.69	2	3/30/15 0:23	TPH
Tetrachloroethylene	ND	0.10		ND	0.68	2	3/30/15 0:23	TPH
Tetrahydrofuran	ND	0.10		ND	0.29	2	3/30/15 0:23	TPH
Toluene	1.1	0.10		4.2	0.38	2	3/30/15 0:23	TPH
1,2,4-Trichlorobenzene	ND	0.10		ND	0.74	2	3/30/15 0:23	TPH
1,1,1-Trichloroethane	1.1	0.10		6.2	0.55	2	3/30/15 0:23	TPH
1,1,2-Trichloroethane	ND	0.10		ND	0.55	2	3/30/15 0:23	TPH
Trichloroethylene	ND	0.10		ND	0.54	2	3/30/15 0:23	TPH
Trichlorofluoromethane (Freon 11)	ND	0.40		ND	2.2	2	3/30/15 0:23	TPH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.40		ND	3.1	2	3/30/15 0:23	TPH
1,2,4-Trimethylbenzene	0.24	0.10		1.2	0.49	2	3/30/15 0:23	TPH
1,3,5-Trimethylbenzene	ND	0.10		ND	0.49	2	3/30/15 0:23	TPH
Vinyl Acetate	ND	2.0		ND	7.0	2	3/30/15 0:23	TPH
Vinyl Chloride	ND	0.10		ND	0.26	2	3/30/15 0:23	TPH
m&p-Xylene	0.68	0.20		2.9	0.87	2	3/30/15 0:23	TPH
o-Xylene	0.26	0.10		1.1	0.43	2	3/30/15 0:23	TPH

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	84.2	70-130	3/30/15 0:23

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ANALYTICAL RESULTS

Project Location: Bldg. 105, Charlestown, MA
Date Received: 3/27/2015
Field Sample #: SG-03
Sample ID: 15C1162-03
Sample Matrix: Sub Slab
Sampled: 3/25/2015 16:55

Sample Description/Location:
Sub Description/Location:
Canister ID: 1972
Canister Size: 6 liter
Flow Controller ID: 3575
Sample Type: 8 hr

Work Order: 15C1162
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -7.5
Receipt Vacuum(in Hg): -5
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	Results	RL	Flag/Qual	Results	RL	Dilution	Analyzed	Analyst
Acetone	27	4.0		63	9.5	2	3/30/15 1:05	TPH
Benzene	1.6	0.10		5.1	0.32	2	3/30/15 1:05	TPH
Benzyl chloride	ND	0.10		ND	0.52	2	3/30/15 1:05	TPH
Bromodichloromethane	ND	0.10		ND	0.67	2	3/30/15 1:05	TPH
Bromoform	ND	0.10		ND	1.0	2	3/30/15 1:05	TPH
Bromomethane	ND	0.10		ND	0.39	2	3/30/15 1:05	TPH
1,3-Butadiene	ND	0.10		ND	0.22	2	3/30/15 1:05	TPH
2-Butanone (MEK)	ND	4.0		ND	12	2	3/30/15 1:05	TPH
Carbon Disulfide	2.5	1.0		7.7	3.1	2	3/30/15 1:05	TPH
Carbon Tetrachloride	ND	0.10		ND	0.63	2	3/30/15 1:05	TPH
Chlorobenzene	ND	0.10		ND	0.46	2	3/30/15 1:05	TPH
Chloroethane	ND	0.10		ND	0.26	2	3/30/15 1:05	TPH
Chloroform	0.12	0.10		0.61	0.49	2	3/30/15 1:05	TPH
Chloromethane	0.43	0.20		0.88	0.41	2	3/30/15 1:05	TPH
Cyclohexane	0.58	0.10		2.0	0.34	2	3/30/15 1:05	TPH
Dibromochloromethane	ND	0.10		ND	0.85	2	3/30/15 1:05	TPH
1,2-Dibromoethane (EDB)	ND	0.10		ND	0.77	2	3/30/15 1:05	TPH
1,2-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 1:05	TPH
1,3-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 1:05	TPH
1,4-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 1:05	TPH
Dichlorodifluoromethane (Freon 12)	0.20	0.10	V-05	0.98	0.49	2	3/30/15 1:05	TPH
1,1-Dichloroethane	ND	0.10		ND	0.40	2	3/30/15 1:05	TPH
1,2-Dichloroethane	ND	0.10		ND	0.40	2	3/30/15 1:05	TPH
1,1-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 1:05	TPH
cis-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 1:05	TPH
trans-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 1:05	TPH
1,2-Dichloropropane	ND	0.10		ND	0.46	2	3/30/15 1:05	TPH
cis-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/30/15 1:05	TPH
trans-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/30/15 1:05	TPH
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.10		ND	0.70	2	3/30/15 1:05	TPH
1,4-Dioxane	ND	1.0		ND	3.6	2	3/30/15 1:05	TPH
Ethanol	100	4.0		190	7.5	2	3/30/15 1:05	TPH
Ethyl Acetate	1.2	0.10		4.5	0.36	2	3/30/15 1:05	TPH
Ethylbenzene	0.14	0.10		0.61	0.43	2	3/30/15 1:05	TPH
4-Ethyltoluene	ND	0.10		ND	0.49	2	3/30/15 1:05	TPH
Heptane	0.71	0.10		2.9	0.41	2	3/30/15 1:05	TPH
Hexachlorobutadiene	ND	0.10		ND	1.1	2	3/30/15 1:05	TPH

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ANALYTICAL RESULTS

Project Location: Bldg. 105, Charlestown, MA
Date Received: 3/27/2015
Field Sample #: SG-03
Sample ID: 15C1162-03
Sample Matrix: Sub Slab
Sampled: 3/25/2015 16:55

Sample Description/Location:
Sub Description/Location:
Canister ID: 1972
Canister Size: 6 liter
Flow Controller ID: 3575
Sample Type: 8 hr

Work Order: 15C1162
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -7.5
Receipt Vacuum(in Hg): -5
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Hexane	4.4	4.0		16	14	2	3/30/15 1:05	TPH
2-Hexanone (MBK)	ND	0.10		ND	0.41	2	3/30/15 1:05	TPH
Isopropanol	21	4.0		52	9.8	2	3/30/15 1:05	TPH
Methyl tert-Butyl Ether (MTBE)	ND	0.10		ND	0.36	2	3/30/15 1:05	TPH
Methylene Chloride	ND	1.0		ND	3.5	2	3/30/15 1:05	TPH
4-Methyl-2-pentanone (MIBK)	ND	0.10		ND	0.41	2	3/30/15 1:05	TPH
Naphthalene	ND	0.10		ND	0.52	2	3/30/15 1:05	TPH
Propene	ND	4.0		ND	6.9	2	3/30/15 1:05	TPH
Styrene	ND	0.10		ND	0.43	2	3/30/15 1:05	TPH
1,1,2,2-Tetrachloroethane	ND	0.10		ND	0.69	2	3/30/15 1:05	TPH
Tetrachloroethylene	ND	0.10		ND	0.68	2	3/30/15 1:05	TPH
Tetrahydrofuran	ND	0.10		ND	0.29	2	3/30/15 1:05	TPH
Toluene	1.4	0.10		5.2	0.38	2	3/30/15 1:05	TPH
1,2,4-Trichlorobenzene	ND	0.10		ND	0.74	2	3/30/15 1:05	TPH
1,1,1-Trichloroethane	ND	0.10		ND	0.55	2	3/30/15 1:05	TPH
1,1,2-Trichloroethane	ND	0.10		ND	0.55	2	3/30/15 1:05	TPH
Trichloroethylene	ND	0.10		ND	0.54	2	3/30/15 1:05	TPH
Trichlorofluoromethane (Freon 11)	ND	0.40		ND	2.2	2	3/30/15 1:05	TPH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.40		ND	3.1	2	3/30/15 1:05	TPH
1,2,4-Trimethylbenzene	0.15	0.10		0.72	0.49	2	3/30/15 1:05	TPH
1,3,5-Trimethylbenzene	ND	0.10		ND	0.49	2	3/30/15 1:05	TPH
Vinyl Acetate	ND	2.0		ND	7.0	2	3/30/15 1:05	TPH
Vinyl Chloride	ND	0.10		ND	0.26	2	3/30/15 1:05	TPH
m&p-Xylene	0.45	0.20		1.9	0.87	2	3/30/15 1:05	TPH
o-Xylene	0.18	0.10		0.76	0.43	2	3/30/15 1:05	TPH

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	85.1	70-130	3/30/15 1:05

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ANALYTICAL RESULTS

Project Location: Bldg. 105, Charlestown, MA
Date Received: 3/27/2015
Field Sample #: SG-E3
Sample ID: 15C1162-04
Sample Matrix: Sub Slab
Sampled: 3/25/2015 17:05

Sample Description/Location:
Sub Description/Location:
Canister ID: 2007
Canister Size: 6 liter
Flow Controller ID: 3556
Sample Type: 8 hr

Work Order: 15C1162
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -7
Receipt Vacuum(in Hg): -4.7
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	Results	RL	Flag/Qual	Results	RL	Dilution	Analyzed	Analyst
Acetone	43	4.0		100	9.5	2	3/30/15 1:47	TPH
Benzene	0.51	0.10		1.6	0.32	2	3/30/15 1:47	TPH
Benzyl chloride	ND	0.10		ND	0.52	2	3/30/15 1:47	TPH
Bromodichloromethane	ND	0.10		ND	0.67	2	3/30/15 1:47	TPH
Bromoform	ND	0.10		ND	1.0	2	3/30/15 1:47	TPH
Bromomethane	ND	0.10		ND	0.39	2	3/30/15 1:47	TPH
1,3-Butadiene	0.27	0.10		0.59	0.22	2	3/30/15 1:47	TPH
2-Butanone (MEK)	ND	4.0		ND	12	2	3/30/15 1:47	TPH
Carbon Disulfide	ND	1.0		ND	3.1	2	3/30/15 1:47	TPH
Carbon Tetrachloride	ND	0.10		ND	0.63	2	3/30/15 1:47	TPH
Chlorobenzene	ND	0.10		ND	0.46	2	3/30/15 1:47	TPH
Chloroethane	ND	0.10		ND	0.26	2	3/30/15 1:47	TPH
Chloroform	ND	0.10		ND	0.49	2	3/30/15 1:47	TPH
Chloromethane	0.29	0.20		0.59	0.41	2	3/30/15 1:47	TPH
Cyclohexane	0.67	0.10		2.3	0.34	2	3/30/15 1:47	TPH
Dibromochloromethane	ND	0.10		ND	0.85	2	3/30/15 1:47	TPH
1,2-Dibromoethane (EDB)	ND	0.10		ND	0.77	2	3/30/15 1:47	TPH
1,2-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 1:47	TPH
1,3-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 1:47	TPH
1,4-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 1:47	TPH
Dichlorodifluoromethane (Freon 12)	0.19	0.10	V-05	0.96	0.49	2	3/30/15 1:47	TPH
1,1-Dichloroethane	ND	0.10		ND	0.40	2	3/30/15 1:47	TPH
1,2-Dichloroethane	ND	0.10		ND	0.40	2	3/30/15 1:47	TPH
1,1-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 1:47	TPH
cis-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 1:47	TPH
trans-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 1:47	TPH
1,2-Dichloropropane	ND	0.10		ND	0.46	2	3/30/15 1:47	TPH
cis-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/30/15 1:47	TPH
trans-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/30/15 1:47	TPH
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.10		ND	0.70	2	3/30/15 1:47	TPH
1,4-Dioxane	ND	1.0		ND	3.6	2	3/30/15 1:47	TPH
Ethanol	160	4.0		300	7.5	2	3/30/15 1:47	TPH
Ethyl Acetate	1.9	0.10		6.8	0.36	2	3/30/15 1:47	TPH
Ethylbenzene	0.22	0.10		0.96	0.43	2	3/30/15 1:47	TPH
4-Ethyltoluene	ND	0.10		ND	0.49	2	3/30/15 1:47	TPH
Heptane	0.35	0.10		1.4	0.41	2	3/30/15 1:47	TPH
Hexachlorobutadiene	ND	0.10		ND	1.1	2	3/30/15 1:47	TPH

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ANALYTICAL RESULTS

Project Location: Bldg. 105, Charlestown, MA
Date Received: 3/27/2015
Field Sample #: SG-E3
Sample ID: 15C1162-04
Sample Matrix: Sub Slab
Sampled: 3/25/2015 17:05

Sample Description/Location:
Sub Description/Location:
Canister ID: 2007
Canister Size: 6 liter
Flow Controller ID: 3556
Sample Type: 8 hr

Work Order: 15C1162
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -7
Receipt Vacuum(in Hg): -4.7
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

Analyte	ppbv Results	ppbv RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Hexane	6.5	4.0		23	14	2	3/30/15 1:47	TPH
2-Hexanone (MBK)	ND	0.10		ND	0.41	2	3/30/15 1:47	TPH
Isopropanol	26	4.0		64	9.8	2	3/30/15 1:47	TPH
Methyl tert-Butyl Ether (MTBE)	ND	0.10		ND	0.36	2	3/30/15 1:47	TPH
Methylene Chloride	ND	1.0		ND	3.5	2	3/30/15 1:47	TPH
4-Methyl-2-pentanone (MIBK)	ND	0.10		ND	0.41	2	3/30/15 1:47	TPH
Naphthalene	ND	0.10		ND	0.52	2	3/30/15 1:47	TPH
Propene	9.2	4.0		16	6.9	2	3/30/15 1:47	TPH
Styrene	ND	0.10		ND	0.43	2	3/30/15 1:47	TPH
1,1,2,2-Tetrachloroethane	ND	0.10		ND	0.69	2	3/30/15 1:47	TPH
Tetrachloroethylene	ND	0.10		ND	0.68	2	3/30/15 1:47	TPH
Tetrahydrofuran	ND	0.10		ND	0.29	2	3/30/15 1:47	TPH
Toluene	1.2	0.10		4.7	0.38	2	3/30/15 1:47	TPH
1,2,4-Trichlorobenzene	ND	0.10		ND	0.74	2	3/30/15 1:47	TPH
1,1,1-Trichloroethane	ND	0.10		ND	0.55	2	3/30/15 1:47	TPH
1,1,2-Trichloroethane	ND	0.10		ND	0.55	2	3/30/15 1:47	TPH
Trichloroethylene	ND	0.10		ND	0.54	2	3/30/15 1:47	TPH
Trichlorofluoromethane (Freon 11)	ND	0.40		ND	2.2	2	3/30/15 1:47	TPH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.40		ND	3.1	2	3/30/15 1:47	TPH
1,2,4-Trimethylbenzene	0.35	0.10		1.7	0.49	2	3/30/15 1:47	TPH
1,3,5-Trimethylbenzene	ND	0.10		ND	0.49	2	3/30/15 1:47	TPH
Vinyl Acetate	ND	2.0		ND	7.0	2	3/30/15 1:47	TPH
Vinyl Chloride	ND	0.10		ND	0.26	2	3/30/15 1:47	TPH
m&p-Xylene	0.77	0.20		3.3	0.87	2	3/30/15 1:47	TPH
o-Xylene	0.31	0.10		1.4	0.43	2	3/30/15 1:47	TPH

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	84.6	70-130	3/30/15 1:47

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ANALYTICAL RESULTS

Project Location: Bldg. 105, Charlestown, MA
Date Received: 3/27/2015
Field Sample #: SG-F2
Sample ID: 15C1162-05
Sample Matrix: Sub Slab
Sampled: 3/25/2015 17:15

Sample Description/Location:
Sub Description/Location:
Canister ID: 2062
Canister Size: 6 liter
Flow Controller ID: 3557
Sample Type: 8 hr

Work Order: 15C1162
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -9
Receipt Vacuum(in Hg): -6.7
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	Results	RL	Flag/Qual	Results	RL	Dilution	Analyzed	Analyst
Acetone	39	4.0		93	9.5	2	3/30/15 2:29	TPH
Benzene	0.39	0.10		1.3	0.32	2	3/30/15 2:29	TPH
Benzyl chloride	ND	0.10		ND	0.52	2	3/30/15 2:29	TPH
Bromodichloromethane	ND	0.10		ND	0.67	2	3/30/15 2:29	TPH
Bromoform	ND	0.10		ND	1.0	2	3/30/15 2:29	TPH
Bromomethane	ND	0.10		ND	0.39	2	3/30/15 2:29	TPH
1,3-Butadiene	ND	0.10		ND	0.22	2	3/30/15 2:29	TPH
2-Butanone (MEK)	ND	4.0		ND	12	2	3/30/15 2:29	TPH
Carbon Disulfide	ND	1.0		ND	3.1	2	3/30/15 2:29	TPH
Carbon Tetrachloride	ND	0.10		ND	0.63	2	3/30/15 2:29	TPH
Chlorobenzene	ND	0.10		ND	0.46	2	3/30/15 2:29	TPH
Chloroethane	ND	0.10		ND	0.26	2	3/30/15 2:29	TPH
Chloroform	0.16	0.10		0.79	0.49	2	3/30/15 2:29	TPH
Chloromethane	0.28	0.20		0.59	0.41	2	3/30/15 2:29	TPH
Cyclohexane	0.69	0.10		2.4	0.34	2	3/30/15 2:29	TPH
Dibromochloromethane	ND	0.10		ND	0.85	2	3/30/15 2:29	TPH
1,2-Dibromoethane (EDB)	ND	0.10		ND	0.77	2	3/30/15 2:29	TPH
1,2-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 2:29	TPH
1,3-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 2:29	TPH
1,4-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 2:29	TPH
Dichlorodifluoromethane (Freon 12)	0.17	0.10	V-05	0.83	0.49	2	3/30/15 2:29	TPH
1,1-Dichloroethane	ND	0.10		ND	0.40	2	3/30/15 2:29	TPH
1,2-Dichloroethane	ND	0.10		ND	0.40	2	3/30/15 2:29	TPH
1,1-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 2:29	TPH
cis-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 2:29	TPH
trans-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 2:29	TPH
1,2-Dichloropropane	ND	0.10		ND	0.46	2	3/30/15 2:29	TPH
cis-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/30/15 2:29	TPH
trans-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/30/15 2:29	TPH
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.10		ND	0.70	2	3/30/15 2:29	TPH
1,4-Dioxane	ND	1.0		ND	3.6	2	3/30/15 2:29	TPH
Ethanol	180	4.0		340	7.5	2	3/30/15 2:29	TPH
Ethyl Acetate	2.1	0.10		7.5	0.36	2	3/30/15 2:29	TPH
Ethylbenzene	0.18	0.10		0.76	0.43	2	3/30/15 2:29	TPH
4-Ethyltoluene	0.10	0.10		0.50	0.49	2	3/30/15 2:29	TPH
Heptane	0.45	0.10		1.9	0.41	2	3/30/15 2:29	TPH
Hexachlorobutadiene	ND	0.10		ND	1.1	2	3/30/15 2:29	TPH

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ANALYTICAL RESULTS

Project Location: Bldg. 105, Charlestown, MA
Date Received: 3/27/2015
Field Sample #: SG-F2
Sample ID: 15C1162-05
Sample Matrix: Sub Slab
Sampled: 3/25/2015 17:15

Sample Description/Location:
Sub Description/Location:
Canister ID: 2062
Canister Size: 6 liter
Flow Controller ID: 3557
Sample Type: 8 hr

Work Order: 15C1162
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -9
Receipt Vacuum(in Hg): -6.7
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

Analyte	ppbv Results	ppbv RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Hexane	8.1	4.0		28	14	2	3/30/15 2:29	TPH
2-Hexanone (MBK)	ND	0.10		ND	0.41	2	3/30/15 2:29	TPH
Isopropanol	28	4.0		70	9.8	2	3/30/15 2:29	TPH
Methyl tert-Butyl Ether (MTBE)	ND	0.10		ND	0.36	2	3/30/15 2:29	TPH
Methylene Chloride	ND	1.0		ND	3.5	2	3/30/15 2:29	TPH
4-Methyl-2-pentanone (MIBK)	ND	0.10		ND	0.41	2	3/30/15 2:29	TPH
Naphthalene	ND	0.10		ND	0.52	2	3/30/15 2:29	TPH
Propene	ND	4.0		ND	6.9	2	3/30/15 2:29	TPH
Styrene	ND	0.10		ND	0.43	2	3/30/15 2:29	TPH
1,1,2,2-Tetrachloroethane	ND	0.10		ND	0.69	2	3/30/15 2:29	TPH
Tetrachloroethylene	ND	0.10		ND	0.68	2	3/30/15 2:29	TPH
Tetrahydrofuran	ND	0.10		ND	0.29	2	3/30/15 2:29	TPH
Toluene	1.2	0.10		4.4	0.38	2	3/30/15 2:29	TPH
1,2,4-Trichlorobenzene	ND	0.10		ND	0.74	2	3/30/15 2:29	TPH
1,1,1-Trichloroethane	ND	0.10		ND	0.55	2	3/30/15 2:29	TPH
1,1,2-Trichloroethane	ND	0.10		ND	0.55	2	3/30/15 2:29	TPH
Trichloroethylene	ND	0.10		ND	0.54	2	3/30/15 2:29	TPH
Trichlorofluoromethane (Freon 11)	ND	0.40		ND	2.2	2	3/30/15 2:29	TPH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.40		ND	3.1	2	3/30/15 2:29	TPH
1,2,4-Trimethylbenzene	0.34	0.10		1.7	0.49	2	3/30/15 2:29	TPH
1,3,5-Trimethylbenzene	ND	0.10		ND	0.49	2	3/30/15 2:29	TPH
Vinyl Acetate	ND	2.0		ND	7.0	2	3/30/15 2:29	TPH
Vinyl Chloride	ND	0.10		ND	0.26	2	3/30/15 2:29	TPH
m&p-Xylene	0.59	0.20		2.6	0.87	2	3/30/15 2:29	TPH
o-Xylene	0.22	0.10		0.97	0.43	2	3/30/15 2:29	TPH

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	84.2	70-130	3/30/15 2:29

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

ANALYTICAL RESULTS

Project Location: Bldg. 105, Charlestown, MA
Date Received: 3/27/2015
Field Sample #: SG-F3
Sample ID: 15C1162-06
Sample Matrix: Sub Slab
Sampled: 3/25/2015 17:20

Sample Description/Location:
Sub Description/Location:
Canister ID: 2033
Canister Size: 6 liter
Flow Controller ID: 3187
Sample Type: 8 hr

Work Order: 15C1162
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -3
Receipt Vacuum(in Hg): -4
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	Results	RL	Flag/Qual	Results	RL	Dilution	Analyzed	Analyst
Acetone	68	4.0		160	9.5	2	3/30/15 3:11	TPH
Benzene	0.65	0.10		2.1	0.32	2	3/30/15 3:11	TPH
Benzyl chloride	ND	0.10		ND	0.52	2	3/30/15 3:11	TPH
Bromodichloromethane	ND	0.10		ND	0.67	2	3/30/15 3:11	TPH
Bromoform	ND	0.10		ND	1.0	2	3/30/15 3:11	TPH
Bromomethane	ND	0.10		ND	0.39	2	3/30/15 3:11	TPH
1,3-Butadiene	ND	0.10		ND	0.22	2	3/30/15 3:11	TPH
2-Butanone (MEK)	ND	4.0		ND	12	2	3/30/15 3:11	TPH
Carbon Disulfide	1.3	1.0		4.2	3.1	2	3/30/15 3:11	TPH
Carbon Tetrachloride	ND	0.10		ND	0.63	2	3/30/15 3:11	TPH
Chlorobenzene	ND	0.10		ND	0.46	2	3/30/15 3:11	TPH
Chloroethane	ND	0.10		ND	0.26	2	3/30/15 3:11	TPH
Chloroform	ND	0.10		ND	0.49	2	3/30/15 3:11	TPH
Chloromethane	0.22	0.20		0.46	0.41	2	3/30/15 3:11	TPH
Cyclohexane	0.97	0.10		3.3	0.34	2	3/30/15 3:11	TPH
Dibromochloromethane	ND	0.10		ND	0.85	2	3/30/15 3:11	TPH
1,2-Dibromoethane (EDB)	ND	0.10		ND	0.77	2	3/30/15 3:11	TPH
1,2-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 3:11	TPH
1,3-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 3:11	TPH
1,4-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 3:11	TPH
Dichlorodifluoromethane (Freon 12)	0.21	0.10	V-05	1.0	0.49	2	3/30/15 3:11	TPH
1,1-Dichloroethane	ND	0.10		ND	0.40	2	3/30/15 3:11	TPH
1,2-Dichloroethane	ND	0.10		ND	0.40	2	3/30/15 3:11	TPH
1,1-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 3:11	TPH
cis-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 3:11	TPH
trans-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 3:11	TPH
1,2-Dichloropropane	ND	0.10		ND	0.46	2	3/30/15 3:11	TPH
cis-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/30/15 3:11	TPH
trans-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/30/15 3:11	TPH
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.10		ND	0.70	2	3/30/15 3:11	TPH
1,4-Dioxane	ND	1.0		ND	3.6	2	3/30/15 3:11	TPH
Ethanol	120	4.0		220	7.5	2	3/30/15 3:11	TPH
Ethyl Acetate	0.80	0.10		2.9	0.36	2	3/30/15 3:11	TPH
Ethylbenzene	0.18	0.10		0.80	0.43	2	3/30/15 3:11	TPH
4-Ethyltoluene	ND	0.10		ND	0.49	2	3/30/15 3:11	TPH
Heptane	0.73	0.10		3.0	0.41	2	3/30/15 3:11	TPH
Hexachlorobutadiene	ND	0.10		ND	1.1	2	3/30/15 3:11	TPH

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

ANALYTICAL RESULTS

Project Location: Bldg. 105, Charlestown, MA
Date Received: 3/27/2015
Field Sample #: SG-F3
Sample ID: 15C1162-06
Sample Matrix: Sub Slab
Sampled: 3/25/2015 17:20

Sample Description/Location:
Sub Description/Location:
Canister ID: 2033
Canister Size: 6 liter
Flow Controller ID: 3187
Sample Type: 8 hr

Work Order: 15C1162
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -3
Receipt Vacuum(in Hg): -4
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

Analyte	ppbv Results	ppbv RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Hexane	7.2	4.0		25	14	2	3/30/15 3:11	TPH
2-Hexanone (MBK)	ND	0.10		ND	0.41	2	3/30/15 3:11	TPH
Isopropanol	27	4.0		66	9.8	2	3/30/15 3:11	TPH
Methyl tert-Butyl Ether (MTBE)	ND	0.10		ND	0.36	2	3/30/15 3:11	TPH
Methylene Chloride	ND	1.0		ND	3.5	2	3/30/15 3:11	TPH
4-Methyl-2-pentanone (MIBK)	ND	0.10		ND	0.41	2	3/30/15 3:11	TPH
Naphthalene	ND	0.10		ND	0.52	2	3/30/15 3:11	TPH
Propene	58	4.0		100	6.9	2	3/30/15 3:11	TPH
Styrene	ND	0.10		ND	0.43	2	3/30/15 3:11	TPH
1,1,2,2-Tetrachloroethane	ND	0.10		ND	0.69	2	3/30/15 3:11	TPH
Tetrachloroethylene	0.12	0.10		0.79	0.68	2	3/30/15 3:11	TPH
Tetrahydrofuran	ND	0.10		ND	0.29	2	3/30/15 3:11	TPH
Toluene	1.1	0.10		4.0	0.38	2	3/30/15 3:11	TPH
1,2,4-Trichlorobenzene	ND	0.10		ND	0.74	2	3/30/15 3:11	TPH
1,1,1-Trichloroethane	ND	0.10		ND	0.55	2	3/30/15 3:11	TPH
1,1,2-Trichloroethane	ND	0.10		ND	0.55	2	3/30/15 3:11	TPH
Trichloroethylene	ND	0.10		ND	0.54	2	3/30/15 3:11	TPH
Trichlorofluoromethane (Freon 11)	ND	0.40		ND	2.2	2	3/30/15 3:11	TPH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.40		ND	3.1	2	3/30/15 3:11	TPH
1,2,4-Trimethylbenzene	0.24	0.10		1.2	0.49	2	3/30/15 3:11	TPH
1,3,5-Trimethylbenzene	ND	0.10		ND	0.49	2	3/30/15 3:11	TPH
Vinyl Acetate	ND	2.0		ND	7.0	2	3/30/15 3:11	TPH
Vinyl Chloride	ND	0.10		ND	0.26	2	3/30/15 3:11	TPH
m&p-Xylene	0.65	0.20		2.8	0.87	2	3/30/15 3:11	TPH
o-Xylene	0.25	0.10		1.1	0.43	2	3/30/15 3:11	TPH

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	84.8	70-130	3/30/15 3:11

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

ANALYTICAL RESULTS

Project Location: Bldg. 105, Charlestown, MA
Date Received: 3/27/2015
Field Sample #: SG-F3
Sample ID: 15C1162-06
Sample Matrix: Sub Slab
Sampled: 3/25/2015 17:20

Sample Description/Location:
Sub Description/Location:
Canister ID: 2033
Canister Size: 6 liter
Flow Controller ID: 3187
Sample Type: 8 hr

Work Order: 15C1162
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -3
Receipt Vacuum(in Hg): -4
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

MADEP APH rev 1

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Benzene	0.55	0.38		1.8	1.2	2	4/8/15 5:08	TPH
1,3-Butadiene	ND	0.38		ND	0.83	2	4/8/15 5:08	TPH
Ethylbenzene	ND	0.38		ND	1.6	2	4/8/15 5:08	TPH
Methyl tert-Butyl Ether (MTBE)	ND	0.38		ND	1.4	2	4/8/15 5:08	TPH
Toluene	0.91	0.38		3.4	1.4	2	4/8/15 5:08	TPH
Naphthalene	ND	0.33	L-03	ND	1.8	2	4/8/15 5:08	TPH
m&p-Xylene	0.47	0.38		2.0	1.6	2	4/8/15 5:08	TPH
o-Xylene	ND	0.38		ND	1.6	2	4/8/15 5:08	TPH
C5-C8 Aliphatics				390	17	2	4/8/15 5:08	TPH
C9-C10 Aromatics				ND	19	2	4/8/15 5:08	TPH
C9-C12 Aliphatics				ND	27	2	4/8/15 5:08	TPH

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (4)	104	70-130	4/8/15 5:08

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ANALYTICAL RESULTS

Project Location: Bldg. 105, Charlestown, MA
Date Received: 3/27/2015
Field Sample #: SG-S5
Sample ID: 15C1162-07
Sample Matrix: Sub Slab
Sampled: 3/25/2015 17:35

Sample Description/Location:
Sub Description/Location:
Canister ID: 2040
Canister Size: 6 liter
Flow Controller ID: 3188
Sample Type: 8 hr

Work Order: 15C1162
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -6
Receipt Vacuum(in Hg): -3.6
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	Results	RL	Flag/Qual	Results	RL	Dilution	Analyzed	Analyst
Acetone	22	4.0		52	9.5	2	3/30/15 3:53	TPH
Benzene	0.69	0.10		2.2	0.32	2	3/30/15 3:53	TPH
Benzyl chloride	ND	0.10		ND	0.52	2	3/30/15 3:53	TPH
Bromodichloromethane	ND	0.10		ND	0.67	2	3/30/15 3:53	TPH
Bromoform	ND	0.10		ND	1.0	2	3/30/15 3:53	TPH
Bromomethane	ND	0.10		ND	0.39	2	3/30/15 3:53	TPH
1,3-Butadiene	ND	0.10		ND	0.22	2	3/30/15 3:53	TPH
2-Butanone (MEK)	ND	4.0		ND	12	2	3/30/15 3:53	TPH
Carbon Disulfide	ND	1.0		ND	3.1	2	3/30/15 3:53	TPH
Carbon Tetrachloride	ND	0.10		ND	0.63	2	3/30/15 3:53	TPH
Chlorobenzene	ND	0.10		ND	0.46	2	3/30/15 3:53	TPH
Chloroethane	ND	0.10		ND	0.26	2	3/30/15 3:53	TPH
Chloroform	0.22	0.10		1.1	0.49	2	3/30/15 3:53	TPH
Chloromethane	0.23	0.20		0.47	0.41	2	3/30/15 3:53	TPH
Cyclohexane	0.82	0.10		2.8	0.34	2	3/30/15 3:53	TPH
Dibromochloromethane	ND	0.10		ND	0.85	2	3/30/15 3:53	TPH
1,2-Dibromoethane (EDB)	ND	0.10		ND	0.77	2	3/30/15 3:53	TPH
1,2-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 3:53	TPH
1,3-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 3:53	TPH
1,4-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 3:53	TPH
Dichlorodifluoromethane (Freon 12)	0.20	0.10	V-05	1.00	0.49	2	3/30/15 3:53	TPH
1,1-Dichloroethane	ND	0.10		ND	0.40	2	3/30/15 3:53	TPH
1,2-Dichloroethane	ND	0.10		ND	0.40	2	3/30/15 3:53	TPH
1,1-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 3:53	TPH
cis-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 3:53	TPH
trans-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 3:53	TPH
1,2-Dichloropropane	ND	0.10		ND	0.46	2	3/30/15 3:53	TPH
cis-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/30/15 3:53	TPH
trans-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/30/15 3:53	TPH
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.10		ND	0.70	2	3/30/15 3:53	TPH
1,4-Dioxane	ND	1.0		ND	3.6	2	3/30/15 3:53	TPH
Ethanol	100	4.0		200	7.5	2	3/30/15 3:53	TPH
Ethyl Acetate	1.3	0.10		4.9	0.36	2	3/30/15 3:53	TPH
Ethylbenzene	0.20	0.10		0.88	0.43	2	3/30/15 3:53	TPH
4-Ethyltoluene	ND	0.10		ND	0.49	2	3/30/15 3:53	TPH
Heptane	0.49	0.10		2.0	0.41	2	3/30/15 3:53	TPH
Hexachlorobutadiene	ND	0.10		ND	1.1	2	3/30/15 3:53	TPH

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

ANALYTICAL RESULTS

Project Location: Bldg. 105, Charlestown, MA
Date Received: 3/27/2015
Field Sample #: SG-S5
Sample ID: 15C1162-07
Sample Matrix: Sub Slab
Sampled: 3/25/2015 17:35

Sample Description/Location:
Sub Description/Location:
Canister ID: 2040
Canister Size: 6 liter
Flow Controller ID: 3188
Sample Type: 8 hr

Work Order: 15C1162
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -6
Receipt Vacuum(in Hg): -3.6
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Hexane	46	4.0		160	14	2	3/30/15 3:53	TPH
2-Hexanone (MBK)	ND	0.10		ND	0.41	2	3/30/15 3:53	TPH
Isopropanol	19	4.0		46	9.8	2	3/30/15 3:53	TPH
Methyl tert-Butyl Ether (MTBE)	ND	0.10		ND	0.36	2	3/30/15 3:53	TPH
Methylene Chloride	ND	1.0		ND	3.5	2	3/30/15 3:53	TPH
4-Methyl-2-pentanone (MIBK)	ND	0.10		ND	0.41	2	3/30/15 3:53	TPH
Naphthalene	ND	0.10		ND	0.52	2	3/30/15 3:53	TPH
Propene	ND	4.0		ND	6.9	2	3/30/15 3:53	TPH
Styrene	ND	0.10		ND	0.43	2	3/30/15 3:53	TPH
1,1,2,2-Tetrachloroethane	ND	0.10		ND	0.69	2	3/30/15 3:53	TPH
Tetrachloroethylene	ND	0.10		ND	0.68	2	3/30/15 3:53	TPH
Tetrahydrofuran	ND	0.10		ND	0.29	2	3/30/15 3:53	TPH
Toluene	1.2	0.10		4.6	0.38	2	3/30/15 3:53	TPH
1,2,4-Trichlorobenzene	ND	0.10		ND	0.74	2	3/30/15 3:53	TPH
1,1,1-Trichloroethane	ND	0.10		ND	0.55	2	3/30/15 3:53	TPH
1,1,2-Trichloroethane	ND	0.10		ND	0.55	2	3/30/15 3:53	TPH
Trichloroethylene	0.49	0.10		2.6	0.54	2	3/30/15 3:53	TPH
Trichlorofluoromethane (Freon 11)	ND	0.40		ND	2.2	2	3/30/15 3:53	TPH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.40		ND	3.1	2	3/30/15 3:53	TPH
1,2,4-Trimethylbenzene	0.30	0.10		1.5	0.49	2	3/30/15 3:53	TPH
1,3,5-Trimethylbenzene	ND	0.10		ND	0.49	2	3/30/15 3:53	TPH
Vinyl Acetate	ND	2.0		ND	7.0	2	3/30/15 3:53	TPH
Vinyl Chloride	ND	0.10		ND	0.26	2	3/30/15 3:53	TPH
m&p-Xylene	0.73	0.20		3.2	0.87	2	3/30/15 3:53	TPH
o-Xylene	0.27	0.10		1.2	0.43	2	3/30/15 3:53	TPH

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	84.3	70-130	3/30/15 3:53

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

ANALYTICAL RESULTS

Project Location: Bldg. 105, Charlestown, MA
Date Received: 3/27/2015
Field Sample #: SG-S6
Sample ID: 15C1162-08
Sample Matrix: Sub Slab
Sampled: 3/25/2015 17:35

Sample Description/Location:
Sub Description/Location:
Canister ID: 2054
Canister Size: 6 liter
Flow Controller ID: 3567
Sample Type: 8 hr

Work Order: 15C1162
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -7
Receipt Vacuum(in Hg): -4.6
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	Results	RL	Flag/Qual	Results	RL	Dilution	Analyzed	Analyst
Acetone	22	4.0		51	9.5	2	3/30/15 4:35	TPH
Benzene	0.46	0.10		1.5	0.32	2	3/30/15 4:35	TPH
Benzyl chloride	ND	0.10		ND	0.52	2	3/30/15 4:35	TPH
Bromodichloromethane	ND	0.10		ND	0.67	2	3/30/15 4:35	TPH
Bromoform	ND	0.10		ND	1.0	2	3/30/15 4:35	TPH
Bromomethane	ND	0.10		ND	0.39	2	3/30/15 4:35	TPH
1,3-Butadiene	ND	0.10		ND	0.22	2	3/30/15 4:35	TPH
2-Butanone (MEK)	ND	4.0		ND	12	2	3/30/15 4:35	TPH
Carbon Disulfide	ND	1.0		ND	3.1	2	3/30/15 4:35	TPH
Carbon Tetrachloride	ND	0.10		ND	0.63	2	3/30/15 4:35	TPH
Chlorobenzene	ND	0.10		ND	0.46	2	3/30/15 4:35	TPH
Chloroethane	ND	0.10		ND	0.26	2	3/30/15 4:35	TPH
Chloroform	0.22	0.10		1.1	0.49	2	3/30/15 4:35	TPH
Chloromethane	ND	0.20		ND	0.41	2	3/30/15 4:35	TPH
Cyclohexane	0.41	0.10		1.4	0.34	2	3/30/15 4:35	TPH
Dibromochloromethane	ND	0.10		ND	0.85	2	3/30/15 4:35	TPH
1,2-Dibromoethane (EDB)	ND	0.10		ND	0.77	2	3/30/15 4:35	TPH
1,2-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 4:35	TPH
1,3-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 4:35	TPH
1,4-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 4:35	TPH
Dichlorodifluoromethane (Freon 12)	0.20	0.10	V-05	0.97	0.49	2	3/30/15 4:35	TPH
1,1-Dichloroethane	ND	0.10		ND	0.40	2	3/30/15 4:35	TPH
1,2-Dichloroethane	ND	0.10		ND	0.40	2	3/30/15 4:35	TPH
1,1-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 4:35	TPH
cis-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 4:35	TPH
trans-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 4:35	TPH
1,2-Dichloropropane	ND	0.10		ND	0.46	2	3/30/15 4:35	TPH
cis-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/30/15 4:35	TPH
trans-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/30/15 4:35	TPH
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.10		ND	0.70	2	3/30/15 4:35	TPH
1,4-Dioxane	ND	1.0		ND	3.6	2	3/30/15 4:35	TPH
Ethanol	120	4.0		220	7.5	2	3/30/15 4:35	TPH
Ethyl Acetate	1.8	0.10		6.4	0.36	2	3/30/15 4:35	TPH
Ethylbenzene	0.18	0.10		0.79	0.43	2	3/30/15 4:35	TPH
4-Ethyltoluene	ND	0.10		ND	0.49	2	3/30/15 4:35	TPH
Heptane	0.37	0.10		1.5	0.41	2	3/30/15 4:35	TPH
Hexachlorobutadiene	ND	0.10		ND	1.1	2	3/30/15 4:35	TPH

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ANALYTICAL RESULTS

Project Location: Bldg. 105, Charlestown, MA
Date Received: 3/27/2015
Field Sample #: SG-S6
Sample ID: 15C1162-08
Sample Matrix: Sub Slab
Sampled: 3/25/2015 17:35

Sample Description/Location:
Sub Description/Location:
Canister ID: 2054
Canister Size: 6 liter
Flow Controller ID: 3567
Sample Type: 8 hr

Work Order: 15C1162
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -7
Receipt Vacuum(in Hg): -4.6
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Hexane	11	4.0		40	14	2	3/30/15 4:35	TPH
2-Hexanone (MBK)	ND	0.10		ND	0.41	2	3/30/15 4:35	TPH
Isopropanol	23	4.0		56	9.8	2	3/30/15 4:35	TPH
Methyl tert-Butyl Ether (MTBE)	ND	0.10		ND	0.36	2	3/30/15 4:35	TPH
Methylene Chloride	ND	1.0		ND	3.5	2	3/30/15 4:35	TPH
4-Methyl-2-pentanone (MIBK)	ND	0.10		ND	0.41	2	3/30/15 4:35	TPH
Naphthalene	ND	0.10		ND	0.52	2	3/30/15 4:35	TPH
Propene	ND	4.0		ND	6.9	2	3/30/15 4:35	TPH
Styrene	ND	0.10		ND	0.43	2	3/30/15 4:35	TPH
1,1,2,2-Tetrachloroethane	ND	0.10		ND	0.69	2	3/30/15 4:35	TPH
Tetrachloroethylene	0.14	0.10		0.94	0.68	2	3/30/15 4:35	TPH
Tetrahydrofuran	ND	0.10		ND	0.29	2	3/30/15 4:35	TPH
Toluene	1.1	0.10		4.0	0.38	2	3/30/15 4:35	TPH
1,2,4-Trichlorobenzene	ND	0.10		ND	0.74	2	3/30/15 4:35	TPH
1,1,1-Trichloroethane	ND	0.10		ND	0.55	2	3/30/15 4:35	TPH
1,1,2-Trichloroethane	ND	0.10		ND	0.55	2	3/30/15 4:35	TPH
Trichloroethylene	ND	0.10		ND	0.54	2	3/30/15 4:35	TPH
Trichlorofluoromethane (Freon 11)	ND	0.40		ND	2.2	2	3/30/15 4:35	TPH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.40		ND	3.1	2	3/30/15 4:35	TPH
1,2,4-Trimethylbenzene	0.29	0.10		1.4	0.49	2	3/30/15 4:35	TPH
1,3,5-Trimethylbenzene	ND	0.10		ND	0.49	2	3/30/15 4:35	TPH
Vinyl Acetate	ND	2.0		ND	7.0	2	3/30/15 4:35	TPH
Vinyl Chloride	ND	0.10		ND	0.26	2	3/30/15 4:35	TPH
m&p-Xylene	0.64	0.20		2.8	0.87	2	3/30/15 4:35	TPH
o-Xylene	0.23	0.10		1.00	0.43	2	3/30/15 4:35	TPH

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	84.6	70-130	3/30/15 4:35

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ANALYTICAL RESULTS

Project Location: Bldg. 105, Charlestown, MA
Date Received: 3/27/2015
Field Sample #: SG-01
Sample ID: 15C1162-09
Sample Matrix: Sub Slab
Sampled: 3/25/2015 17:40

Sample Description/Location:
Sub Description/Location:
Canister ID: 1002
Canister Size: 6 liter
Flow Controller ID: 3566
Sample Type: 8 hr

Work Order: 15C1162
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -6.5
Receipt Vacuum(in Hg): -4.7
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Acetone	49	4.0		120	9.5	2	3/30/15 5:17	TPH
Benzene	0.88	0.10		2.8	0.32	2	3/30/15 5:17	TPH
Benzyl chloride	ND	0.10		ND	0.52	2	3/30/15 5:17	TPH
Bromodichloromethane	ND	0.10		ND	0.67	2	3/30/15 5:17	TPH
Bromoform	ND	0.10		ND	1.0	2	3/30/15 5:17	TPH
Bromomethane	ND	0.10		ND	0.39	2	3/30/15 5:17	TPH
1,3-Butadiene	ND	0.10		ND	0.22	2	3/30/15 5:17	TPH
2-Butanone (MEK)	ND	4.0		ND	12	2	3/30/15 5:17	TPH
Carbon Disulfide	2.0	1.0		6.1	3.1	2	3/30/15 5:17	TPH
Carbon Tetrachloride	ND	0.10		ND	0.63	2	3/30/15 5:17	TPH
Chlorobenzene	ND	0.10		ND	0.46	2	3/30/15 5:17	TPH
Chloroethane	ND	0.10		ND	0.26	2	3/30/15 5:17	TPH
Chloroform	0.36	0.10		1.8	0.49	2	3/30/15 5:17	TPH
Chloromethane	ND	0.20		ND	0.41	2	3/30/15 5:17	TPH
Cyclohexane	21	0.10		73	0.34	2	3/30/15 5:17	TPH
Dibromochloromethane	ND	0.10		ND	0.85	2	3/30/15 5:17	TPH
1,2-Dibromoethane (EDB)	ND	0.10		ND	0.77	2	3/30/15 5:17	TPH
1,2-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 5:17	TPH
1,3-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 5:17	TPH
1,4-Dichlorobenzene	ND	0.10		ND	0.60	2	3/30/15 5:17	TPH
Dichlorodifluoromethane (Freon 12)	0.18	0.10	V-05	0.87	0.49	2	3/30/15 5:17	TPH
1,1-Dichloroethane	ND	0.10		ND	0.40	2	3/30/15 5:17	TPH
1,2-Dichloroethane	ND	0.10		ND	0.40	2	3/30/15 5:17	TPH
1,1-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 5:17	TPH
cis-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 5:17	TPH
trans-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/30/15 5:17	TPH
1,2-Dichloropropane	ND	0.10		ND	0.46	2	3/30/15 5:17	TPH
cis-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/30/15 5:17	TPH
trans-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/30/15 5:17	TPH
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.10		ND	0.70	2	3/30/15 5:17	TPH
1,4-Dioxane	ND	1.0		ND	3.6	2	3/30/15 5:17	TPH
Ethanol	140	4.0		250	7.5	2	3/30/15 5:17	TPH
Ethyl Acetate	1.4	0.10		5.2	0.36	2	3/30/15 5:17	TPH
Ethylbenzene	0.30	0.10		1.3	0.43	2	3/30/15 5:17	TPH
4-Ethyltoluene	ND	0.10		ND	0.49	2	3/30/15 5:17	TPH
Heptane	9.3	0.10		38	0.41	2	3/30/15 5:17	TPH
Hexachlorobutadiene	ND	0.10		ND	1.1	2	3/30/15 5:17	TPH

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ANALYTICAL RESULTS

Project Location: Bldg. 105, Charlestown, MA
Date Received: 3/27/2015
Field Sample #: SG-01
Sample ID: 15C1162-09
Sample Matrix: Sub Slab
Sampled: 3/25/2015 17:40

Sample Description/Location:
Sub Description/Location:
Canister ID: 1002
Canister Size: 6 liter
Flow Controller ID: 3566
Sample Type: 8 hr

Work Order: 15C1162
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -6.5
Receipt Vacuum(in Hg): -4.7
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Hexane	7.2	4.0		25	14	2	3/30/15 5:17	TPH
2-Hexanone (MBK)	ND	0.10		ND	0.41	2	3/30/15 5:17	TPH
Isopropanol	25	4.0		62	9.8	2	3/30/15 5:17	TPH
Methyl tert-Butyl Ether (MTBE)	ND	0.10		ND	0.36	2	3/30/15 5:17	TPH
Methylene Chloride	ND	1.0		ND	3.5	2	3/30/15 5:17	TPH
4-Methyl-2-pentanone (MIBK)	ND	0.10		ND	0.41	2	3/30/15 5:17	TPH
Naphthalene	ND	0.10		ND	0.52	2	3/30/15 5:17	TPH
Propene	ND	4.0		ND	6.9	2	3/30/15 5:17	TPH
Styrene	ND	0.10		ND	0.43	2	3/30/15 5:17	TPH
1,1,2,2-Tetrachloroethane	ND	0.10		ND	0.69	2	3/30/15 5:17	TPH
Tetrachloroethylene	ND	0.10		ND	0.68	2	3/30/15 5:17	TPH
Tetrahydrofuran	ND	0.10		ND	0.29	2	3/30/15 5:17	TPH
Toluene	1.6	0.10		6.0	0.38	2	3/30/15 5:17	TPH
1,2,4-Trichlorobenzene	ND	0.10		ND	0.74	2	3/30/15 5:17	TPH
1,1,1-Trichloroethane	ND	0.10		ND	0.55	2	3/30/15 5:17	TPH
1,1,2-Trichloroethane	ND	0.10		ND	0.55	2	3/30/15 5:17	TPH
Trichloroethylene	ND	0.10		ND	0.54	2	3/30/15 5:17	TPH
Trichlorofluoromethane (Freon 11)	ND	0.40		ND	2.2	2	3/30/15 5:17	TPH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.40		ND	3.1	2	3/30/15 5:17	TPH
1,2,4-Trimethylbenzene	0.35	0.10		1.7	0.49	2	3/30/15 5:17	TPH
1,3,5-Trimethylbenzene	ND	0.10		ND	0.49	2	3/30/15 5:17	TPH
Vinyl Acetate	ND	2.0		ND	7.0	2	3/30/15 5:17	TPH
Vinyl Chloride	ND	0.10		ND	0.26	2	3/30/15 5:17	TPH
m&p-Xylene	0.95	0.20		4.1	0.87	2	3/30/15 5:17	TPH
o-Xylene	0.37	0.10		1.6	0.43	2	3/30/15 5:17	TPH

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	86.0	70-130	3/30/15 5:17

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Sample Extraction Data

Prep Method: TO-15 Prep-EPA TO-15

Lab Number [Field ID]	Batch	Pressure Dilution	Pre Dilution	Pre-Dil Initial mL	Pre-Dil Final mL	Default Injection mL	Actual Injection mL	Date
15C1162-01 [SG-E1]	B118436	1.5	1	N/A	1000	400	300	03/29/15
15C1162-02 [SG-02]	B118436	1.5	1	N/A	1000	400	300	03/29/15
15C1162-03 [SG-03]	B118436	1.5	1	N/A	1000	400	300	03/29/15
15C1162-04 [SG-E3]	B118436	1.5	1	N/A	1000	400	300	03/29/15
15C1162-05 [SG-F2]	B118436	1.5	1	N/A	1000	400	300	03/29/15
15C1162-06 [SG-F3]	B118436	1.5	1	N/A	1000	400	300	03/29/15
15C1162-07 [SG-S5]	B118436	1.5	1	N/A	1000	400	300	03/29/15
15C1162-08 [SG-S6]	B118436	1.5	1	N/A	1000	400	300	03/29/15
15C1162-09 [SG-01]	B118436	1.5	1	N/A	1000	400	300	03/29/15

Prep Method: APH Prep-MADEP APH rev 1

Lab Number [Field ID]	Batch	Pressure Dilution	Pre Dilution	Pre-Dil Initial mL	Pre-Dil Final mL	Default Injection mL	Actual Injection mL	Date
15C1162-06 [SG-F3]	B118979	1.5	1	N/A	1000	400	300	04/07/15

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QUALITY CONTROL

Air Petroleum Hydrocarbons Analyses - Quality Control

Analyte	ppbv Results	ppbv RL	ug/m3 Results	ug/m3 RL	Spike Level ppbv	Source Result	%REC		%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B118979 - APH Prep												
Blank (B118979-BLK1)					Prepared & Analyzed: 04/07/15							
Benzene	ND	0.094										
1,3-Butadiene	ND	0.094										
Ethylbenzene	ND	0.094										
Methyl tert-Butyl Ether (MTBE)	ND	0.094										
Toluene	ND	0.094										
Naphthalene	ND	0.084										L-03
m&p-Xylene	ND	0.094										
o-Xylene	ND	0.094										
C5-C8 Aliphatics			ND									
C9-C10 Aromatics			ND									
C9-C12 Aliphatics			ND									
Surrogate: 4-Bromofluorobenzene (4)	*8.40*				*8.00*		*105*		*70-130*			
LCS (B118979-BS1)					Prepared & Analyzed: 04/07/15							
Benzene	7.44				9.38		79.3		70-130			
1,3-Butadiene	8.42				9.38		89.8		70-130			
Decane	8.06				9.38		85.9		70-130			
Ethylbenzene	7.58				9.38		80.9		70-130			
Heptane	8.31				9.38		88.6		70-130			
Methyl tert-Butyl Ether (MTBE)	8.32				9.38		88.7		70-130			
Toluene	7.78				9.38		83.0		70-130			
1,3,5-Trimethylbenzene	6.85				9.38		73.0		70-130			
Naphthalene	3.99				8.35		**47.8**	*	50-150			L-03
m&p-Xylene	7.21				9.38		76.9		70-130			
o-Xylene	7.49				9.38		79.9		70-130			
Surrogate: 4-Bromofluorobenzene (4)	*8.91*				*8.00*		*111*		*70-130*			
Duplicate (B118979-DUP1)			**Source: 15C1162-06**		Prepared: 04/07/15 Analyzed: 04/08/15							
Benzene	0.54	0.38	1.7	1.2		0.55				2.56	30	
1,3-Butadiene	ND	0.38	ND	0.83		ND					30	
Ethylbenzene	ND	0.38	ND	1.6		ND					30	
Methyl tert-Butyl Ether (MTBE)	ND	0.38	ND	1.4		ND					30	
Toluene	0.90	0.38	3.4	1.4		0.91				1.33	30	
Naphthalene	ND	0.33	ND	1.8		ND					30	L-03
m&p-Xylene	0.47	0.38	2.0	1.6		0.47				1.28	30	
o-Xylene	ND	0.38	ND	1.6		ND					30	
C5-C8 Aliphatics			410			390				4.09	30	
C9-C10 Aromatics			ND			ND					30	
C9-C12 Aliphatics			ND			ND					30	
Surrogate: 4-Bromofluorobenzene (4)	*8.38*				*8.00*		*105*		*70-130*			

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QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv Results	ppbv RL	ug/m3 Results	ug/m3 RL	Spike Level ppbv	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B118436 - TO-15 Prep											
Blank (B118436-BLK1)					Prepared & Analyzed: 03/29/15						
Acetone	ND	1.0									
Benzene	ND	0.025									
Benzyl chloride	ND	0.025									
Bromodichloromethane	ND	0.025									
Bromoform	ND	0.025									
Bromomethane	ND	0.025									
1,3-Butadiene	ND	0.025									
2-Butanone (MEK)	ND	1.0									
Carbon Disulfide	ND	0.25									
Carbon Tetrachloride	ND	0.025									
Chlorobenzene	ND	0.025									
Chloroethane	ND	0.025									
Chloroform	ND	0.025									
Chloromethane	ND	0.050									
Cyclohexane	ND	0.025									
Dibromochloromethane	ND	0.025									
1,2-Dibromoethane (EDB)	ND	0.025									
1,2-Dichlorobenzene	ND	0.025									
1,3-Dichlorobenzene	ND	0.025									
1,4-Dichlorobenzene	ND	0.025									
Dichlorodifluoromethane (Freon 12)	ND	0.025									V-05
1,1-Dichloroethane	ND	0.025									
1,2-Dichloroethane	ND	0.025									
1,1-Dichloroethylene	ND	0.025									
cis-1,2-Dichloroethylene	ND	0.025									
trans-1,2-Dichloroethylene	ND	0.025									
1,2-Dichloropropane	ND	0.025									
cis-1,3-Dichloropropene	ND	0.025									
trans-1,3-Dichloropropene	ND	0.025									
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.025									
1,4-Dioxane	ND	0.25									
Ethanol	ND	1.0									
Ethyl Acetate	ND	0.025									
Ethylbenzene	ND	0.025									
4-Ethyltoluene	ND	0.025									
Heptane	ND	0.025									
Hexachlorobutadiene	ND	0.025									
Hexane	ND	1.0									
2-Hexanone (MBK)	ND	0.025									
Isopropanol	ND	1.0									
Methyl tert-Butyl Ether (MTBE)	ND	0.025									
Methylene Chloride	ND	0.25									
4-Methyl-2-pentanone (MIBK)	ND	0.025									
Naphthalene	ND	0.025									
Propene	ND	1.0									
Styrene	ND	0.025									

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QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv Results	ppbv RL	ug/m3 Results	ug/m3 RL	Spike Level ppbv	Source Result	%REC		%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B118436 - TO-15 Prep												
Blank (B118436-BLK1)					Prepared & Analyzed: 03/29/15							
1,1,2,2-Tetrachloroethane	ND	0.025										
Tetrachloroethylene	ND	0.025										
Tetrahydrofuran	ND	0.025										
Toluene	ND	0.025										
1,2,4-Trichlorobenzene	ND	0.025										
1,1,1-Trichloroethane	ND	0.025										
1,1,2-Trichloroethane	ND	0.025										
Trichloroethylene	ND	0.025										
Trichlorofluoromethane (Freon 11)	ND	0.10										
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.10										
1,2,4-Trimethylbenzene	ND	0.025										
1,3,5-Trimethylbenzene	ND	0.025										
Vinyl Acetate	ND	0.50										
Vinyl Chloride	ND	0.025										
m&p-Xylene	ND	0.050										
o-Xylene	ND	0.025										
Surrogate: 4-Bromofluorobenzene (1)	*6.73*				*8.00*		*84.1*		*70-130*			
LCS (B118436-BS1)					Prepared & Analyzed: 03/29/15							
Acetone	4.85				5.00		97.0		70-130			
Benzene	5.40				5.00		108		70-130			
Benzyl chloride	6.86				5.00		**137**	*	70-130			L-01
Bromodichloromethane	5.02				5.00		100		70-130			
Bromoform	4.72				5.00		94.4		70-130			
Bromomethane	4.06				5.00		81.3		70-130			
1,3-Butadiene	4.77				5.00		95.5		70-130			
2-Butanone (MEK)	4.62				5.00		92.5		70-130			
Carbon Disulfide	4.32				5.00		86.4		70-130			
Carbon Tetrachloride	5.13				5.00		103		70-130			
Chlorobenzene	4.56				5.00		91.1		70-130			
Chloroethane	4.67				5.00		93.4		70-130			
Chloroform	4.22				5.00		84.4		70-130			
Chloromethane	4.72				5.00		94.3		70-130			
Cyclohexane	5.27				5.00		105		70-130			
Dibromochloromethane	4.77				5.00		95.4		70-130			
1,2-Dibromoethane (EDB)	4.77				5.00		95.4		70-130			
1,2-Dichlorobenzene	5.01				5.00		100		70-130			
1,3-Dichlorobenzene	4.88				5.00		97.5		70-130			
1,4-Dichlorobenzene	4.86				5.00		97.1		70-130			
Dichlorodifluoromethane (Freon 12)	3.64				5.00		72.8		70-130			V-05
1,1-Dichloroethane	4.50				5.00		89.9		70-130			
1,2-Dichloroethane	4.62				5.00		92.3		70-130			
1,1-Dichloroethylene	4.76				5.00		95.2		70-130			
cis-1,2-Dichloroethylene	4.51				5.00		90.2		70-130			
trans-1,2-Dichloroethylene	4.51				5.00		90.2		70-130			
1,2-Dichloropropane	5.03				5.00		101		70-130			

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QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv Results	ppbv RL	ug/m3 Results	ug/m3 RL	Spike Level ppbv	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B118436 - TO-15 Prep											
LCS (B118436-BS1)					Prepared & Analyzed: 03/29/15						
cis-1,3-Dichloropropene	5.82				5.00		116	70-130			
trans-1,3-Dichloropropene	5.54				5.00		111	70-130			
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	4.16				5.00		83.2	70-130			
1,4-Dioxane	5.39				5.00		108	70-130			
Ethanol	4.60				5.00		92.0	70-130			
Ethyl Acetate	5.63				5.00		113	70-130			
Ethylbenzene	5.43				5.00		109	70-130			
4-Ethyltoluene	5.51				5.00		110	70-130			
Heptane	6.32				5.00		126	70-130			
Hexachlorobutadiene	5.45				5.00		109	70-130			
Hexane	6.26				5.00		125	70-130			
2-Hexanone (MBK)	6.10				5.00		122	70-130			V-06
Isopropanol	4.88				5.00		97.6	70-130			
Methyl tert-Butyl Ether (MTBE)	5.05				5.00		101	70-130			
Methylene Chloride	4.80				5.00		96.0	70-130			
4-Methyl-2-pentanone (MIBK)	6.06				5.00		121	70-130			V-06
Naphthalene	6.15				5.00		123	70-130			
Propene	4.83				5.00		96.6	70-130			
Styrene	5.35				5.00		107	70-130			
1,1,2,2-Tetrachloroethane	5.19				5.00		104	70-130			
Tetrachloroethylene	4.30				5.00		86.0	70-130			
Tetrahydrofuran	5.30				5.00		106	70-130			
Toluene	5.09				5.00		102	70-130			
1,2,4-Trichlorobenzene	5.65				5.00		113	70-130			
1,1,1-Trichloroethane	5.06				5.00		101	70-130			
1,1,2-Trichloroethane	4.77				5.00		95.5	70-130			
Trichloroethylene	4.84				5.00		96.9	70-130			
Trichlorofluoromethane (Freon 11)	4.23				5.00		84.5	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	4.34				5.00		86.7	70-130			
1,2,4-Trimethylbenzene	5.83				5.00		117	70-130			
1,3,5-Trimethylbenzene	5.71				5.00		114	70-130			
Vinyl Acetate	4.13				5.00		82.6	70-130			
Vinyl Chloride	4.40				5.00		88.0	70-130			
m&p-Xylene	11.0				10.0		110	70-130			
o-Xylene	5.44				5.00		109	70-130			
Surrogate: 4-Bromofluorobenzene (1)	*6.98*				*8.00*		*87.3*	*70-130*			

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QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv Results	ppbv RL	ug/m3 Results	ug/m3 RL	Spike Level ppbv	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B118436 - TO-15 Prep											
Duplicate (B118436-DUP1)			**Source: 15C1162-09**		Prepared: 03/29/15 Analyzed: 03/30/15						
Acetone	50	4.0	120	9.5		49			2.41	25	
Benzene	0.93	0.10	3.0	0.32		0.88			4.64	25	
Benzyl chloride	ND	0.10	ND	0.52		ND				25	
Bromodichloromethane	ND	0.10	ND	0.67		ND				25	
Bromoform	ND	0.10	ND	1.0		ND				25	
Bromomethane	ND	0.10	ND	0.39		ND				25	
1,3-Butadiene	ND	0.10	ND	0.22		ND				25	
2-Butanone (MEK)	1.1	4.0	3.3	12		1.1			0.722	25	
Carbon Disulfide	2.0	1.0	6.2	3.1		2.0			1.71	25	
Carbon Tetrachloride	ND	0.10	ND	0.63		ND				25	
Chlorobenzene	ND	0.10	ND	0.46		ND				25	
Chloroethane	ND	0.10	ND	0.26		ND				25	
Chloroform	0.36	0.10	1.8	0.49		0.36			0.00	25	
Chloromethane	0.19	0.20	0.39	0.41		0.19			1.05	25	
Cyclohexane	21	0.10	74	0.34		21			1.32	25	
Dibromochloromethane	ND	0.10	ND	0.85		ND				25	
1,2-Dibromoethane (EDB)	ND	0.10	ND	0.77		ND				25	
1,2-Dichlorobenzene	ND	0.10	ND	0.60		ND				25	
1,3-Dichlorobenzene	ND	0.10	ND	0.60		ND				25	
1,4-Dichlorobenzene	ND	0.10	ND	0.60		ND				25	
Dichlorodifluoromethane (Freon 12)	0.17	0.10	0.82	0.49		0.18			5.85	25	V-05
1,1-Dichloroethane	ND	0.10	ND	0.40		ND				25	
1,2-Dichloroethane	ND	0.10	ND	0.40		ND				25	
1,1-Dichloroethylene	ND	0.10	ND	0.40		ND				25	
cis-1,2-Dichloroethylene	ND	0.10	ND	0.40		ND				25	
trans-1,2-Dichloroethylene	ND	0.10	ND	0.40		ND				25	
1,2-Dichloropropane	ND	0.10	ND	0.46		ND				25	
cis-1,3-Dichloropropene	ND	0.10	ND	0.45		ND				25	
trans-1,3-Dichloropropene	ND	0.10	ND	0.45		ND				25	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.10	ND	0.70		ND				25	
1,4-Dioxane	ND	1.0	ND	3.6		ND				25	
Ethanol	130	4.0	250	7.5		140			0.882	25	
Ethyl Acetate	1.5	0.10	5.4	0.36		1.4			3.66	25	
Ethylbenzene	0.30	0.10	1.3	0.43		0.30			0.00	25	
4-Ethyltoluene	0.15	0.10	0.73	0.49		ND				25	
Heptane	9.2	0.10	38	0.41		9.3			0.389	25	
Hexachlorobutadiene	ND	0.10	ND	1.1		ND				25	
Hexane	7.1	4.0	25	14		7.2			0.419	25	
2-Hexanone (MBK)	ND	0.10	ND	0.41		ND				25	
Isopropanol	23	4.0	57	9.8		25			8.03	25	
Methyl tert-Butyl Ether (MTBE)	ND	0.10	ND	0.36		ND				25	
Methylene Chloride	ND	1.0	ND	3.5		ND				25	
4-Methyl-2-pentanone (MIBK)	ND	0.10	ND	0.41		ND				25	
Naphthalene	ND	0.10	ND	0.52		ND				25	
Propene	ND	4.0	ND	6.9		ND				25	
Styrene	ND	0.10	ND	0.43		ND				25	

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QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv Results	ppbv RL	ug/m3 Results	ug/m3 RL	Spike Level ppbv	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B118436 - TO-15 Prep											
Duplicate (B118436-DUP1)			**Source: 15C1162-09**		Prepared: 03/29/15 Analyzed: 03/30/15						
1,1,2,2-Tetrachloroethane	ND	0.10	ND	0.69		ND				25	
Tetrachloroethylene	ND	0.10	ND	0.68		ND				25	
Tetrahydrofuran	ND	0.10	ND	0.29		ND				25	
Toluene	1.6	0.10	6.1	0.38		1.6			2.61	25	
1,2,4-Trichlorobenzene	ND	0.10	ND	0.74		ND				25	
1,1,1-Trichloroethane	ND	0.10	ND	0.55		ND				25	
1,1,2-Trichloroethane	ND	0.10	ND	0.55		ND				25	
Trichloroethylene	ND	0.10	ND	0.54		ND				25	
Trichlorofluoromethane (Freon 11)	0.14	0.40	0.79	2.2		0.14			2.82	25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.40	ND	3.1		ND				25	
1,2,4-Trimethylbenzene	0.35	0.10	1.7	0.49		0.35			1.72	25	
1,3,5-Trimethylbenzene	ND	0.10	ND	0.49		ND				25	
Vinyl Acetate	ND	2.0	ND	7.0		ND				25	
Vinyl Chloride	ND	0.10	ND	0.26		ND				25	
m&p-Xylene	0.97	0.20	4.2	0.87		0.95			2.71	25	
o-Xylene	0.37	0.10	1.6	0.43		0.37			2.16	25	
Surrogate: 4-Bromofluorobenzene (1)	*6.83*				*8.00*		*85.4*	*70-130*			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
L-01	Laboratory fortified blank /laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.
L-03	Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the low side.
V-05	Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
V-06	Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.

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INTERNAL STANDARD AREA AND RT SUMMARY

MADEP APH rev 1

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S008250-CCV1)			Lab File ID: B040704.D			Analyzed: 04/07/15 17:35			
Bromochloromethane (4)	212785	8.258	252616	8.28	84	50 - 200	-0.0220	+/-0.50	
1,4-Difluorobenzene (4)	382807	10.139	437111	10.173	88	50 - 200	-0.0340	+/-0.50	
Chlorobenzene-d5 (4)	334331	14.904	374963	14.954	89	50 - 200	-0.0500	+/-0.50	
LCS (B118979-BS1)			Lab File ID: B040705.D			Analyzed: 04/07/15 18:14			
Bromochloromethane (4)	228414	8.253	212785	8.258	107	50 - 200	-0.0050	+/-0.50	
1,4-Difluorobenzene (4)	407577	10.14	382807	10.139	106	50 - 200	0.0010	+/-0.50	
Chlorobenzene-d5 (4)	355152	14.905	334331	14.904	106	50 - 200	0.0010	+/-0.50	
Blank (B118979-BLK1)			Lab File ID: B040711.D			Analyzed: 04/07/15 23:15			
Bromochloromethane (4)	203153	8.257	212785	8.258	95	50 - 200	-0.0010	+/-0.50	
1,4-Difluorobenzene (4)	348537	10.144	382807	10.139	91	50 - 200	0.0050	+/-0.50	
Chlorobenzene-d5 (4)	307453	14.903	334331	14.904	92	50 - 200	-0.0010	+/-0.50	
SG-F3 (15C1162-06)			Lab File ID: B040720.D			Analyzed: 04/08/15 05:08			
Bromochloromethane (4)	202453	8.253	212785	8.258	95	50 - 200	-0.0050	+/-0.50	
1,4-Difluorobenzene (4)	348184	10.146	382807	10.139	91	50 - 200	0.0070	+/-0.50	
Chlorobenzene-d5 (4)	305901	14.905	334331	14.904	91	50 - 200	0.0010	+/-0.50	
Duplicate (B118979-DUP1)			Lab File ID: B040721.D			Analyzed: 04/08/15 05:47			
Bromochloromethane (4)	206523	8.256	212785	8.258	97	50 - 200	-0.0020	+/-0.50	
1,4-Difluorobenzene (4)	353067	10.143	382807	10.139	92	50 - 200	0.0040	+/-0.50	
Chlorobenzene-d5 (4)	305856	14.908	334331	14.904	91	50 - 200	0.0040	+/-0.50	

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CONTINUING CALIBRATION CHECK

MADEP APH rev 1

S008250-CCV1

COMPOUND	TYPE	CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Benzene	A	9.38	7.58	0.788663	0.6374125	0.05	-19.2	30
1,3-Butadiene	A	9.38	8.71	0.3156076	0.2929291	0.05	-7.2	30
Ethylbenzene	A	9.38	7.88	1.194193	1.003857	0.05	-15.9	30
Methyl tert-Butyl Ether (MTBE)	A	9.38	8.60	1.141456	1.046593	0.05	-8.3	30
Toluene	A	9.38	8.04	0.7724277	0.6619446	0.05	-14.3	30
Naphthalene	A	9.38	7.85	0.937891	0.7851749	0.05	-16.3	30
m&p-Xylene	A	9.38	7.62	0.9464494	0.7693	0.05	-18.7	30
o-Xylene	A	9.38	7.95	0.9181589	0.7786546	0.05	-15.2	30
C5-C8 Aliphatics (µg/m³)	A	214	205	0.518912	0.4974706	0.05	-4.1	30
C9-C10 Aromatics (µg/m³)	A	236	204	7.769163E-02	6.708545E-02	0.05	-13.7	30
C9-C12 Aliphatics (µg/m³)	A	333	307	0.6254355	0.5767318	0.05	-7.8	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA TO-15 in Air	
Acetone	AIHA,NY,ME
Benzene	AIHA,FL,NJ,NY,VA,ME
Benzyl chloride	AIHA,FL,NJ,NY,VA,ME
Bromodichloromethane	AIHA,NJ,NY,VA,ME
Bromoform	AIHA,NJ,NY,VA,ME
Bromomethane	AIHA,FL,NJ,NY,ME
1,3-Butadiene	AIHA,NJ,NY,VA,ME
2-Butanone (MEK)	AIHA,FL,NJ,NY,VA,ME
Carbon Disulfide	AIHA,NJ,NY,VA,ME
Carbon Tetrachloride	AIHA,FL,NJ,NY,VA,ME
Chlorobenzene	AIHA,FL,NJ,NY,VA,ME
Chloroethane	AIHA,FL,NJ,NY,VA,ME
Chloroform	AIHA,FL,NJ,NY,VA,ME
Chloromethane	AIHA,FL,NJ,NY,VA,ME
Cyclohexane	AIHA,NJ,NY,VA,ME
Dibromochloromethane	AIHA,NY,ME
1,2-Dibromoethane (EDB)	AIHA,NJ,NY,ME
1,2-Dichlorobenzene	AIHA,FL,NJ,NY,VA,ME
1,3-Dichlorobenzene	AIHA,NJ,NY,ME
1,4-Dichlorobenzene	AIHA,FL,NJ,NY,VA,ME
Dichlorodifluoromethane (Freon 12)	AIHA,NY,ME
1,1-Dichloroethane	AIHA,FL,NJ,NY,VA,ME
1,2-Dichloroethane	AIHA,FL,NJ,NY,VA,ME
1,1-Dichloroethylene	AIHA,FL,NJ,NY,VA,ME
cis-1,2-Dichloroethylene	AIHA,FL,NY,VA,ME
trans-1,2-Dichloroethylene	AIHA,NJ,NY,VA,ME
1,2-Dichloropropane	AIHA,FL,NJ,NY,VA,ME
cis-1,3-Dichloropropene	AIHA,FL,NJ,NY,VA,ME
trans-1,3-Dichloropropene	AIHA,NY,ME
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	AIHA,NJ,NY,VA,ME
1,4-Dioxane	AIHA,NJ,NY,VA,ME
Ethanol	AIHA
Ethyl Acetate	AIHA
Ethylbenzene	AIHA,FL,NJ,NY,VA,ME
4-Ethyltoluene	AIHA,NJ
Heptane	AIHA,NJ,NY,VA,ME
Hexachlorobutadiene	AIHA,NJ,NY,VA,ME
Hexane	AIHA,FL,NJ,NY,VA,ME
2-Hexanone (MBK)	AIHA
Isopropanol	AIHA,NY,ME
Methyl tert-Butyl Ether (MTBE)	AIHA,FL,NJ,NY,VA,ME
Methylene Chloride	AIHA,FL,NJ,NY,VA,ME
4-Methyl-2-pentanone (MIBK)	AIHA,FL,NJ,NY,ME
Naphthalene	NY,ME
Propene	AIHA
Styrene	AIHA,FL,NJ,NY,VA,ME
1,1,2,2-Tetrachloroethane	AIHA,FL,NJ,NY,VA,ME

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA TO-15 in Air	
Tetrachloroethylene	AIHA,FL,NJ,NY,VA,ME
Tetrahydrofuran	AIHA
Toluene	AIHA,FL,NJ,NY,VA,ME
1,2,4-Trichlorobenzene	AIHA,NJ,NY,VA,ME
1,1,1-Trichloroethane	AIHA,FL,NJ,NY,VA,ME
1,1,2-Trichloroethane	AIHA,FL,NJ,NY,VA,ME
Trichloroethylene	AIHA,FL,NJ,NY,VA,ME
Trichlorofluoromethane (Freon 11)	AIHA,NY,ME
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	AIHA,NJ,NY,VA,ME
1,2,4-Trimethylbenzene	AIHA,NJ,NY,ME
1,3,5-Trimethylbenzene	AIHA,NJ,NY,ME
Vinyl Acetate	AIHA,FL,NJ,NY,VA,ME
Vinyl Chloride	AIHA,FL,NJ,NY,VA,ME
m&p-Xylene	AIHA,FL,NJ,NY,VA,ME
o-Xylene	AIHA,FL,NJ,NY,VA,ME
MADEP APH rev 1 in Air	
Benzene	ME
1,3-Butadiene	ME
Ethylbenzene	ME
Methyl tert-Butyl Ether (MTBE)	ME
Toluene	ME
Naphthalene	ME
m&p-Xylene	ME
o-Xylene	ME
C5-C8 Aliphatics	ME
C9-C10 Aromatics	ME
C9-C12 Aliphatics	ME

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2015
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2016
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2016
RI	Rhode Island Department of Health	LAO00112	12/30/2015
NC	North Carolina Div. of Water Quality	652	12/31/2015
NJ	New Jersey DEP	MA007 NELAP	06/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2015
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2015
WA	State of Washington Department of Ecology	C2065	02/23/2016
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2015
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2015

con-test ANALYTICAL LABORATORY
www.contestlabs.com
Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com
39 SPRUCE ST
EAST LONGMEADOW, MA 01028

AIR SAMPLE CHAIN OF CUSTODY RECORD

15C1162

DOC#284
Rev. Feb 2014

Company Name: WESTON SAMPSON
Address: 5 CENTENNIAL DR. PEABODY, MA 01960
Attention: PRAVANTA BHUNIA
Project Location: BLDG 105 CHARLESTOWN MA
Sampled By: DARON KURKJIAN

Telephone: 978-532-1900
Project #:
Client PO #:

DATA DELIVERY (check one):
☐FAX ☒EMAIL ☐WEBSITE CLIENT
Fax #: bhunia.p@wston.com
Email: kurkjian.d@wston.com
Format: ☒EXCEL ☒PDF ☐GIS KEY ☐OTHER

Proposal Provided? (For Billing purposes)
☐yes proposal date

Field ID	Sample Description	Media	Lab #	Date Sampled Start Time	Date Sampled Stop Time	ONLY USE WHEN USING PUMPS Total Minutes Sampled	Flow Rate M³/Min. or L/Min.	Volume Liters or M³	Matrix Code*	ANALYSIS REQUESTED TO-15	"Hg Initial pressure	"Hg Final pressure	"Hg Lab Receipt pressure	Summa Canister ID	Flow Controller ID
	SG-E1	S	01	3/25/15 2:40	16:50				SS	X	30	6	-2.7	2006	3367
	SG-02	↓	02	08:55	16:55				↓	X	↓	7	-5	2043	3579
	SG-03		03	08:50	16:55					X		75	-5	1972	3575
	SG-E3		04	09:05	17:05					X		7	-4.1	2007	3556
	SG-F2		05	09:15	17:15					X		9	-6.2	2062	3557
	SG-F3		06	09:20	17:20					X		3	-4	2033	3187
	SG-S5		07	09:30	17:35					X		6	-3.6	BL2040	3182
	SG-S6	↓	08	09:35	17:35				↓	X	↓	7	-4.6	2054	3564

Please fill out completely, sign, date and retain the yellow copy for your record.

Summa canisters and flow controllers must be returned within 14 days of receipt or rental fees will apply.

For summa canister and flow controller information please refer to Con-Test's Air Media Agreement.

Laboratory Comments

CLIENT COMMENTS:

Relinquished by: (signature)	3/	Date/Time:
Received by: (signature)	3/26/15	Date/Time: 1009
Relinquished by: (signature)	3/27/15	Date/Time: 3:25
Received by: (signature)	3/27/15	Date/Time: 15:25

Turnaround **
☒ 7-Day
☐ 10-Day
☐ Other
RUSH *
☐ *24-Hr ☐ *48-Hr
☐ *72-Hr ☐ *4-Day
*Approval Required

Special Requirements
Regulations:
Data Enhancement/RCP? ☐Y ☐N
Enhanced Data Package ☐Y ☐N
(Surchage Applies)
Required Detection Limits:
Other:

*Matrix Code:
SG= SOIL GAS
IA= INDOOR AIR
AMB=AMBIENT
SS = SUB SLAB
D = DUP
BL = BLANK
O = other

**Media Codes:
S=summa can
T=tedlar bag
P=PUF
T=tube
F= filter
C=cassette
O = Other

** TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT. NELAC & AIHA-LAP, LLC Accredited/WBE/DBE Certifie

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Email: info@contestlabs.com
39 SPRUCE ST
EAST LONGMEADOW, MA 01028

AIR SAMPLE CHAIN OF CUSTODY RECORD

15C1162

DOC#284
Rev. Feb 2014

Company Name: WESTON & SAMPSON
Address: See pg 1
Attention: See pg 1
Project Location: Bldg 105
Sampled By: DARON KHACHIAN
Telephone: 978-532-1900
Project #:
Client PO #:

DATA DELIVERY (check one):
☐FAX ☐EMAIL ☐WEBSITE CLIENT
Fax #: See page 1
Email:
Format: ☐EXCEL ☐PDF ☐GIS KEY ☐OTHER

Proposal Provided? (For Billing purposes)
☐yes _____ proposal date

ANALYSIS REQUESTED

Field ID	Sample Description	Media	Lab #	Date Sampled Start Time	Date Sampled Stop Time	ONLY USE WHEN USING PUMPS: Total Minutes Sampled	Flow Rate M³/Min. or L/Min.	Volume Liters or M³	Matrix Code*	TO-15	"Hg Initial pressure	"Hg Final pressure	Lab Receipt Pressure	Summa Canister ID	Flow Controller ID
	SG-01	S	09	09:40 3/24/15	17:40 3/24/15				SS	X	30	6.5	-4.7	1002	3566

Please fill out completely, sign, date and retain the yellow copy for your record.

Summa canisters and flow controllers must be returned within 14 days of receipt or rental fees will apply.

For summa canister and flow controller information please refer to Con-Test's Air Media Agreement.

Laboratory Comments:

CLIENT COMMENTS:

Relinquished by: (signature)	Date/Time:	
Received by: (signature)	Date/Time: 3/27/15 1010	
Relinquished by: (signature)	Date/Time: 3/27/15 325	
Received by: (signature) 3/27/15	Date/Time: 15:25	

Turnaround **
☐ 7-Day
☐ 10-Day
☐ Other ___
RUSH *
☐ *24-Hr ☐ *48-Hr
☐ *72-Hr ☐ *4-Day
*Approval Required

Special Requirements
Regulations:
Data Enhancement/RCP? ☐Y ☐N
Enhanced Data Package ☐Y ☐N
(Surchage Applies)
Required Detection Limits:
Other:

***Matrix Code:**
SG= SOIL GAS
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P=PUF
T=tube
F= filter
C=cassette
O = Other

* TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT. NELAC & AIHA-LAP, LLC Accredited/WBE/DBE Certified

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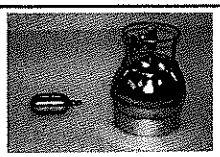

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con-test® ANALYTICAL LABORATORY

Page 1 of 2

39 Spruce St.
East Longmeadow, MA.
01028
P: 413-525-2332
F: 413-525-6405

AIR Only Receipt Checklist

CLIENT NAME: Weston & Sampson RECEIVED BY: KB DATE: 3/27/15

1) Was the chain(s) of custody relinquished and signed? (Yes) No

2) Does the chain agree with the samples? (Yes) No
If not, explain:

3) Are all the samples in good condition? (Yes) No
If not, explain:

4) Are there any samples "On Hold"? Yes (No) Stored where:

5) Are there any RUSH or SHORT HOLDING TIME samples? Yes (No)
Who was notified _____ Date _____ Time _____

6) Location where samples are stored: Air Lab

Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature: _____

7) Number of cans Individually Certified or Batch Certified? _____

Containers received at Con-Test

		# of Containers	Types (Size, Duration)
Summa Cans (TO-14/TO-15/APH)		9	6L
Tedlar Bags			
TO-17 Tubes			
Regulators		9	8 Hr.
Restrictors			
Hg/Hopcalite Tube (NIOSH 6009)			
(TO-4A/ TO-10A/TO-13) PUFs			
PCB Florisil Tubes (NIOSH 5503)			
Air cassette			
PM 2.5/PM 10			
TO-11A Cartridges			
Other			

Unused Summas/PUF Media:

Unused Regulators:

1) Was all media (used & unused) checked into the WASP?

2) Were all returned summa cans, Restrictors & Regulators and PUF's documented as returned in the Air Lab Inbound/Outbound Excel Spreadsheet?

Laboratory Comments:

2062 2054 2006 1972 2033 2043 2007 2040 1002

3367 3556 3188 3574 3557 3567 3575 3187 3566

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)

Any False statement will be brought to the attention of Client

Question	Answer (True/False) T/F/NA	Comment
1) The coolers'/boxes' custody seal, if present, is intact.	NA	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	F	
4) Cooler Temperature is acceptable.	NA	
5) Cooler Temperature is recorded.	NA	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) Samples are received within Holding Time.	T	
10) Sample containers have legible labels.	T	
11) Containers/media are not broken or leaking and valves and caps are closed tightly.	T	
12) Sample collection date/times are provided.	T	
13) Appropriate sample/media containers are used.	T	
14) There is sufficient volume for all requsted analyses, including any requested MS/MSDs.	T	
15) Trip blanks provided if applicable.	NA	

Who notified of False statements? **Date/Time:**

Log-In Technician Initials: KB **Date/Time:** 3/27/15 15:25

Doc #278 Rev. 5 October 2014

Air Sampling Media Certificate of Analysis

Date Analyzed: 3/5/2015 **Batch #:** 15CC149

Certification Type: *Batch Certified* ☑ *Individual Certified* ☐

Media Type: *Summa Canister* ☑ *Flow Controllers* ☐

Media IDs: BC2033

Note:Two ID's grouped together, for example BC2136/BC3145, represents matched pairs of certified summa canisters and flow controllers.

Units: **PPBv**

RL	
<0.188	1,3-Butadiene
<0.188	Methyl tert-butyl Ether
<0.188	Benzene
<0.188	Toluene
<0.188	Ethylbenzene
<0.188	m,p-Xylenes
<0.188	o-Xylene
<0.188	Naphthalene

Ug/M3

RL	
<0.416	1,3-Butadiene
<0.678	Methyl tert-butyl Ether
<0.601	Benzene
<0.708	Toluene
<0.816	Ethylbenzene
<0.816	m,p-Xylenes
<0.816	o-Xylene
<0.986	Naphthalene
<8.5	C5 - C8 Aliphatic Range
<13.3	C9 - C12 Aliphatic Range
<9.5	C9 - C10 Aromatic Range

Special Notes:

Analyst Initials/Date: TPH 4/9/15

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 15C1162
Project Location: Bldg. 105, Charlestown, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

15C1162-01 thru 15C1162-09

Matrices: Air

CAM Protocol (check all that below)

8260 VOC CAM II A ( )	7470/7471 Hg CAM IIIB ( )	MassDEP VPH CAM IV A ( )	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A (X)
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A ( )	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B (X)
6010 Metals CAM III A ( )	6020 Metals CAM III D ( )	8082 PCB CAM V A ( )	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☑ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☑ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]
	A response to questions G, H and I below is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☑ Yes	☐ No[1]
	***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**		
H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☐ Yes	☑ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☑ Yes	☐ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Tod Kopyscinski Position: Laboratory Director

Printed Name: Tod E. Kopyscinski Date: 04/14/15

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

Report Prepared for:

Todd Bridgeo
Weston and Sampson Engineers
5 Centennial Drive
Peabody MA 01960

REPORT OF LABORATORY ANALYSIS FOR PCBs

Report Information:

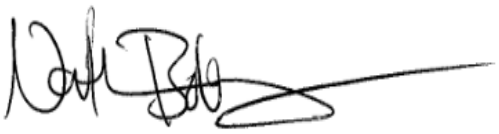
Pace Project #: 10292584
Sample Receipt Date: 12/22/2014
Client Project #: Soils
Client Sub PO #: N/A
State Cert #: N/A

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCB Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Nathan Boberg, your Pace Project Manager.

This report has been reviewed by:



January 20, 2015
Nathan Boberg, Project Manager

(612) 607-6444 (fax)
nathan.boberg@pacelabs.com

Report Prepared Date:
January 19, 2015

ACCREDITED IN ACCORDANCE WITH nelac

Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on six samples submitted by a representative of Weston and Sampson Engineers. The samples were analyzed for the presence or absence of polychlorinated biphenyl (PCB) congeners using USEPA Method 1668A. Reporting limits were set to 27-75 ppt and adjusted for the amount of dry sample extracted.

The recoveries of the isotopically-labeled PCB internal standards in the sample extracts ranged from 47-145%. All of the labeled standard recoveries obtained for this project were within the target ranges specified in Method 1668A. Since the quantification of the native congeners was based on isotope dilution and internal standard methodology, the data were automatically corrected for variation in recovery and accurate values were obtained.

Incorrect isotope ratios were obtained for selected PCB congeners. The affected congeners were flagged "I" on the results tables. The associated target analyte results were provided under the estimated maximum possible concentration (EMPC) column on the results tables.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to be free of PCB congeners at the reporting limits. This indicates that the sample preparation steps did not significantly contribute to the measurement of the native congeners in the field samples.

Laboratory spike samples were also prepared with the sample batch using a reference matrix that had been fortified with native standards. The results show that the spiked native compounds were recovered at 89-120%, with relative percent differences of 0.0-5.5%. These results were within method limits. Matrix spikes were not prepared with the sample batch.

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Mississippi	MN00064
Alabama	40770	Montana	92
Alaska	MN00064	Nebraska	
Arizona	AZ0014	Nevada	MN_00064_200
Arkansas	88-0680	New Jersey (NE	MN002
California	01155CA	New York (NEL	11647
Colorado	MN00064	North Carolina	27700
Connecticut	PH-0256	North Dakota	R-036
EPA Region 8	8TMS-Q	Ohio	4150
Florida (NELAP	E87605	Oklahoma	D9922
Georgia (DNR)	959	Oregon (ELAP)	MN200001-005
Guam	959	Oregon (OREL	MN300001-001
Hawaii	SLD	Pennsylvania	68-00563
Idaho	MN00064	Puerto Rico	MN00064
Illinois	200012	Saipan	MP0003
Indiana	C-MN-01	South Carolina	74003001
Indiana	C-MN-01	Tennessee	TN02818
Iowa	368	Texas	T104704192-08
Kansas	E-10167	Utah (NELAP)	MN00064
Kentucky	90062	Virginia	00251
Louisiana	03086	Washington	C755
Maine	2007029	West Virginia	9952C
Maryland	322	Wisconsin	999407970
Michigan	9909	Wyoming	8TMS-Q
Minnesota	027-053-137		

REPORT OF LABORATORY ANALYSIS

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Appendix A

Sample Management

Pace Analytical®
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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10292584

Page: of

1855782

Section A Required Client Information:

Company:	Weston & Sampson
Address:	5 Centennial Dr. Peabody Ma 01960
Email To:	BridgeoT@wseinc.com
Phone:	978-532-1900
Fax:	—
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	TODD BRIDGEO
Copy To:	
Purchase Order No.:	
Project Name:	
Project Number:	

Section C Invoice Information:

Attention:	
Company Name:	WESTON & SAMPSON
Address:	5 CENTENNIAL DRIVE
Pace Quote Reference:	1800 SAMPSON
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: MA.

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	DIOXINS	PCB-CONGENERS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	WSB-101 0-0.5"			12/19	1000					X									X	X		001
2	WSSB 101 0-6"	SL		12/19	1030					X												002
3	WSB-102 0.0.5"			12/19	1030					X												003
4	WSSB 102 0-6"	SL		12/19	1120					X												004
5	WSB 103 0-0.5"			12/19	1045					X												005
6	WSSB 103 0-6"	SL		12/19	1150					X												006
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Padraic Kavanagh	12/20/14	1300	[signature]	12/22	9:00	6.6	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE: Padraic Kavanagh

PRINT Name of SAMPLER: PADRAIC KAVANAGH

SIGNATURE of SAMPLER: Padraic Kavanagh

DATE Signed (MM/DD/YY): 12/20/14

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical®	Document Name: Sample Condition Upon Receipt Form	Document Revised: 28Feb2014 Page 1 of 1
	Document No.: F-MN-L-213-rev.09	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Weston & Sampson

Project #: WO# : 10292584

10292584

Courier: ☐ Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No **Optional:** Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermom. Used: ☑ B88A9130516413 ☐ B88A912167504 ☐ B88A9132521491 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 6.6 **Cooler Temp Corrected (°C):** 6.6 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.0 **Date and Initials of Person Examining Contents:** KH 12/23/14

				Comments:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	12.
-Includes Date/Time/ID/Analysis Matrix: SL				
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	☐ Yes	☑ No		Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Date: 12/23/14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion

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Appendix B

Sample Analysis Summary

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - Weston and Sampson Engineers

Client's Sample ID	WSB-101 0-0.5"		
Lab Sample ID	10292584001		
Filename	P150116A_09		
Injected By	CVS		
Total Amount Extracted	10.2 g	Matrix	Solid
% Moisture	1.2	Dilution	10
Dry Weight Extracted	10.1 g	Collected	12/19/2014 10:00
ICAL ID	P150116A02	Received	12/22/2014 09:30
CCal Filename(s)	P150116A_01	Extracted	01/12/2015 20:00
Method Blank ID	BLANK-43573	Analyzed	01/16/2015 18:45

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	8.849	3.49	2.0	1.42	71
13C-4-MoCB	3	11.604	3.09	2.0	1.54	77
13C-2,2'-DiCB	4	11.892	1.57	2.0	1.57	79
13C-4,4'-DiCB	15	18.899	1.58	2.0	1.50	75
13C-2,2',6-TrCB	19	15.665	1.16	2.0	1.83	91
13C-3,4,4'-TrCB	37	26.674	0.94	2.0	1.39	70
13C-2,2',6,6'-TeCB	54	19.211	0.79	2.0	1.53	76
13C-3,4,4',5-TeCB	81	33.873	0.85	2.0	1.04	52
13C-3,3',4,4'-TeCB	77	34.477	0.81	2.0	0.973	49
13C-2,2',4,6,6'-PeCB	104	25.332	1.67	2.0	1.95	97
13C-2,3,3',4,4'-PeCB	105	38.104	1.53	2.0	1.00	50
13C-2,3,4,4',5-PeCB	114	37.434	1.62	2.0	0.946	47
13C-2,3',4,4',5-PeCB	118	36.914	1.73	2.0	1.07	54
13C-2,3',4,4',5'-PeCB	123	36.545	1.61	2.0	1.10	55
13C-3,3',4,4',5-PeCB	126	41.358	1.55	2.0	0.934	47
13C-2,2',4,4',6,6'-HxCB	155	31.425	1.30	2.0	2.30	115
13C-HxCB (156/157)	156/157	44.432	1.27	4.0	2.49	62
13C-2,3',4,4',5,5'-HxCB	167	43.258	1.24	2.0	1.33	66
13C-3,3',4,4',5,5'-HxCB	169	47.786	1.25	2.0	1.17	58
13C-2,2',3,4',5,6,6'-HpCB	188	37.400	1.06	2.0	2.32	116
13C-2,3,3',4,4',5,5'-HpCB	189	50.290	1.00	2.0	1.56	78
13C-2,2',3,3',5,5',6,6'-OcCB	202	42.940	0.97	2.0	1.71	86
13C-2,3,3',4,4',5,5',6-OcCB	205	52.855	0.92	2.0	1.43	72
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.558	0.88	2.0	1.48	74
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	49.729	0.75	2.0	1.41	71
13C--DeCB	209	56.088	0.68	2.0	1.53	77
Cleanup Standards						
13C-2,4,4'-TrCB	28	22.297	1.06	2.0	1.55	77
13C-2,3,3',5,5'-PeCB	111	34.527	1.54	2.0	1.25	63
13C-2,2',3,3',5,5',6-HpCB	178	40.570	1.17	2.0	1.42	71
Recovery Standards						
13C-2,5-DiCB	9	14.442	1.60	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	24.326	0.88	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	31.660	1.59	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.100	1.36	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.381	0.92	2.0	NA	NA

Conc = Concentration
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R = Recovery outside of Method 1668A control limits
Nn = Value obtained from additional analyses

Results reported on a dry weight basis

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
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ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	WSB-101 0-0.5"
Lab Sample ID	10292584001
Filename	P150116A_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		8.873	3.11	41.3	---	24.8
2		---	---	ND	---	24.8
3		11.616	3.14	48.7	---	24.8
4		11.904	1.06 I	---	53.1	24.8
5		---	---	ND	---	24.8
6		14.886	1.40	61.4	---	24.8
7		---	---	ND	---	24.8
8		15.365	1.38	271	---	24.8
9		---	---	ND	---	24.8
10		---	---	ND	---	24.8
11		---	---	ND	---	243
12	12/13	18.540	1.36	58.5	---	49.6
13	12/13	18.540	1.36	(58.5)	---	49.6
14		---	---	ND	---	24.8
15		18.924	1.62	202	---	32.7
16		18.828	1.08	376	---	24.8
17		18.324	1.05	336	---	24.8
18	18/30	17.845	1.08	657	---	49.6
19		15.676	1.17	40.1	---	24.8
20	20/28	22.330	1.03	1560	---	128
21	21/33	22.582	1.04	1130	---	134
22		23.001	1.04	681	---	94.3
23		---	---	ND	---	24.8
24		---	---	ND	---	24.8
25		21.643	1.04	136	---	24.8
26	26/29	21.375	1.07	304	---	49.6
27		18.564	1.10	54.3	---	24.8
28	20/28	22.330	1.03	(1560)	---	128
29	26/29	21.375	1.07	(304)	---	49.6
30	18/30	17.845	1.08	(657)	---	49.6
31		21.995	1.07	1550	---	129
32		19.429	1.07	171	---	24.8
33	21/33	22.582	1.04	(1130)	---	134
34		---	---	ND	---	24.8
35		26.254	1.03	84.8	---	24.8
36		---	---	ND	---	24.8
37		26.707	1.06	1220	---	52.6
38		---	---	ND	---	24.8
39		---	---	ND	---	24.8
40	40/41/71	26.489	0.79	3810	---	149
41	40/41/71	26.489	0.79	(3810)	---	149
42		25.969	0.82	1650	---	49.6
43	43/73	24.594	0.87	167	---	49.6
44	44/47/65	25.382	0.80	16500	---	149
45	45/51	22.381	0.82	455	---	99.2
46		22.733	0.81	176	---	49.6
47	44/47/65	25.382	0.80	(16500)	---	149
48		25.181	0.84	1130	---	49.6

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSB-101 0-0.5"
Lab Sample ID 10292584001
Filename P150116A_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
49	49/69	24.879	0.80	6600	---	99.2
50	50/53	21.660	0.80	593	---	99.2
51	45/51	22.381	0.82	(455)	---	99.2
52		24.343	0.79	37700	---	153
53	50/53	21.660	0.80	(593)	---	99.2
54		---	---	ND	---	49.6
55		30.016	0.66	158	---	49.6
56		30.536	0.78	7360	---	49.6
57		28.456	0.75	221	---	49.6
58		---	---	ND	---	49.6
59	59/62/75	25.735	0.76	358	---	149
60		30.771	0.79	3480	---	49.6
61	61/70/74/76	29.496	0.79	63300	---	198
62	59/62/75	25.735	0.76	(358)	---	149
63		29.161	0.78	595	---	49.6
64		26.741	0.78	5760	---	49.6
65	44/47/65	25.382	0.80	(16500)	---	149
66		29.848	0.78	12400	---	83.4
67		28.876	0.81	289	---	49.6
68		---	---	ND	---	49.6
69	49/69	24.879	0.80	(6600)	---	99.2
70	61/70/74/76	29.496	0.79	(63300)	---	198
71	40/41/71	26.489	0.79	(3810)	---	149
72		---	---	ND	---	49.6
73	43/73	24.594	0.87	(167)	---	49.6
74	61/70/74/76	29.496	0.79	(63300)	---	198
75	59/62/75	25.735	0.76	(358)	---	149
76	61/70/74/76	29.496	0.79	(63300)	---	198
77		34.494	0.81	1430	---	49.6
78		---	---	ND	---	49.6
79		32.817	0.76	1130	---	49.6
80		---	---	ND	---	49.6
81		33.873	0.81	138	---	49.6
82		34.057	1.61	20200	---	49.6
83		32.163	1.61	12700	---	49.6
84		29.681	1.58	38800	---	49.6
85	85/116/117	33.571	1.59	37900	---	149
86	86/87/97/108/119/125	32.917	1.58	170000	---	298
87	86/87/97/108/119/125	32.917	1.58	(170000)	---	298
88	88/91	29.463	1.60	18500	---	99.2
89		30.184	1.60	1040	---	49.6
90	90/101/113	31.693	1.59	236000	---	149
91	88/91	29.463	1.60	(18500)	---	99.2
92		31.073	1.58	26900	---	49.6
93	93/98/100/102	28.926	1.58	3680	---	198
94		28.071	1.58	409	---	49.6
95		28.540	1.60	106000	---	94.3
96		25.718	1.60	380	---	49.6

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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSB-101 0-0.5"
Lab Sample ID 10292584001
Filename P150116A_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	32.917	1.58	(170000)	---	298
98	93/98/100/102	28.926	1.58	(3680)	---	198
99		32.314	1.60	86300	---	49.6
100	93/98/100/102	28.926	1.58	(3680)	---	198
101	90/101/113	31.693	1.59	(236000)	---	149
102	93/98/100/102	28.926	1.58	(3680)	---	198
103		27.853	1.63	452	---	49.6
104		---	---	ND	---	49.6
105		38.121	1.48	106000	---	49.6
106		---	---	ND	---	49.6
107	107/124	36.193	1.55	11000	---	99.2
108	86/87/97/108/119/125	32.917	1.58	(170000)	---	298
109		36.444	1.52	16000	---	49.6
110	110/115	33.739	1.58	245000	---	99.2
111		---	---	ND	---	49.6
112		---	---	ND	---	49.6
113	90/101/113	31.693	1.59	(236000)	---	149
114		37.451	1.44	4390	---	49.6
115	110/115	33.739	1.58	(245000)	---	99.2
116	85/116/117	33.571	1.59	(37900)	---	149
117	85/116/117	33.571	1.59	(37900)	---	149
118		36.914	1.54	258000	---	63.5
119	86/87/97/108/119/125	32.917	1.58	(170000)	---	298
120		35.014	1.75	121	---	49.6
121		---	---	ND	---	49.6
122		37.266	1.58	2470	---	49.6
123		36.578	1.50	3130	---	49.6
124	107/124	36.193	1.55	(11000)	---	99.2
125	86/87/97/108/119/125	32.917	1.58	(170000)	---	298
126		41.341	1.47	270	---	49.6
127		39.715	1.46	238	---	49.6
128	128/166	41.425	1.26	47100	---	99.2
129	129/138/163	40.134	1.23	289000	---	149
130		39.480	1.24	16800	---	49.6
131		36.511	1.24	5510	---	49.6
132		36.964	1.20	106000	---	49.6
133		37.551	1.28	3430	---	49.6
134	134/143	35.874	1.24	16800	---	99.2
135	135/151	34.729	1.25	81900	---	99.2
136		32.146	1.30	31500	---	49.6
137		39.715	1.24	22000	---	49.6
138	129/138/163	40.134	1.23	(289000)	---	149
139	139/140	36.310	1.22	6830	---	99.2
140	139/140	36.310	1.22	(6830)	---	99.2
141		39.061	1.26	47500	---	49.6
142		36.662	1.24	68.8	---	49.6
143	134/143	35.874	1.24	(16800)	---	99.2
144		35.320	1.23	20300	---	49.6

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Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSB-101 0-0.5"
Lab Sample ID 10292584001
Filename P150116A_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145		32.481	1.43	135	---	49.6
146		38.222	1.23	27500	---	49.6
147	147/149	35.689	1.20	163000	---	99.2
148		34.091	1.27	144	---	49.6
149	147/149	35.689	1.20	(163000)	---	99.2
150		31.794	1.34	277	---	49.6
151	135/151	34.729	1.25	(81900)	---	99.2
152		31.593	1.21	283	---	49.6
153	153/168	38.859	1.23	205000	---	99.2
154		35.014	1.27	2360	---	49.6
155		---	---	ND	---	49.6
156	156/157	44.432	1.27	51100	---	99.2
157	156/157	44.432	1.27	(51100)	---	99.2
158		40.553	1.28	33200	---	49.6
159		42.437	1.20	100	---	49.6
160		---	---	ND	---	49.6
161		---	---	ND	---	49.6
162		42.772	1.23	613	---	49.6
163	129/138/163	40.134	1.23	(289000)	---	149
164		39.815	1.25	17000	---	49.6
165		---	---	ND	---	49.6
166	128/166	41.425	1.26	(47100)	---	99.2
167		43.292	1.25	14800	---	49.6
168	153/168	38.859	1.23	(205000)	---	99.2
169		---	---	ND	---	49.6
170		47.132	1.05	29500	---	49.6
171	171/173	43.510	1.06	9450	---	99.2
172		45.203	1.04	5020	---	49.6
173	171/173	43.510	1.06	(9450)	---	99.2
174		42.403	1.04	27200	---	49.6
175		41.257	1.04	1610	---	49.6
176		38.675	1.08	4280	---	49.6
177		42.856	1.06	13600	---	49.6
178		40.603	1.10	6080	---	49.6
179		37.736	1.04	14700	---	49.6
180	180/193	45.874	1.05	53000	---	99.2
181		43.292	1.06	684	---	49.6
182		41.749	1.05	283	---	49.6
183	183/185	42.185	1.06	20600	---	99.2
184		---	---	ND	---	49.6
185	183/185	42.185	1.06	(20600)	---	99.2
186		---	---	ND	---	49.6
187		41.509	1.10	25800	---	49.6
188		---	---	ND	---	49.6
189		50.354	1.05	1610	---	49.6
190		47.686	1.07	5270	---	49.6
191		46.227	1.06	1080	---	49.6
192		---	---	ND	---	49.6

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSB-101 0-0.5"
Lab Sample ID 10292584001
Filename P150116A_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	45.874	1.05	(53000)	---	99.2
194		52.402	0.89	10100	---	74.4
195		50.031	0.90	3990	---	74.4
196		48.507	0.92	7240	---	74.4
197	197/200	44.952	0.90	2010	---	149
198	198/199	47.836	0.90	15100	---	149
199	198/199	47.836	0.90	(15100)	---	149
200	197/200	44.952	0.90	(2010)	---	149
201		43.929	0.88	2000	---	74.4
202		42.973	0.92	2720	---	74.4
203		48.708	0.92	9830	---	74.4
204		---	---	ND	---	74.4
205		52.876	0.89	636	---	74.4
206		54.558	0.80	6790	---	74.4
207		50.721	0.81	1380	---	74.4
208		49.772	0.81	2420	---	74.4
209		56.131	0.71	22700	---	74.4

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NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
RT = Retention Time
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ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	WSB-101 0-0.5"
Lab Sample ID	10292584001
Filename	P150116A_09

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	90.0
Total Dichloro Biphenyls	593
Total Trichloro Biphenyls	8290
Total Tetrachloro Biphenyls	165000
Total Pentachloro Biphenyls	1410000
Total Hexachloro Biphenyls	1210000
Total Heptachloro Biphenyls	220000
Total Octachloro Biphenyls	53600
Total Nonachloro Biphenyls	10600
Decachloro Biphenyls	22700
Total PCBs	3100000

ND = Not Detected
Results reported on a dry weight basis

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - Weston and Sampson Engineers

Client's Sample ID	WSSB-101 0-6"		
Lab Sample ID	10292584002		
Filename	P150116A_06		
Injected By	CVS		
Total Amount Extracted	10.1 g	Matrix	Solid
% Moisture	17.1	Dilution	10
Dry Weight Extracted	8.37 g	Collected	12/19/2014 10:30
ICAL ID	P150116A02	Received	12/22/2014 09:30
CCal Filename(s)	P150116A_01	Extracted	01/12/2015 20:00
Method Blank ID	BLANK-43573	Analyzed	01/16/2015 15:45

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	8.825	3.33	2.0	1.08	54
13C-4-MoCB	3	11.568	3.17	2.0	1.28	64
13C-2,2'-DiCB	4	11.856	1.63	2.0	1.26	63
13C-4,4'-DiCB	15	18.815	1.62	2.0	1.75	87
13C-2,2',6-TrCB	19	15.616	1.15	2.0	1.64	82
13C-3,4,4'-TrCB	37	26.538	1.18	2.0	2.10	105
13C-2,2',6,6'-TeCB	54	19.127	0.88	2.0	1.43	72
13C-3,4,4',5-TeCB	81	33.669	0.84	2.0	1.94	97
13C-3,3',4,4'-TeCB	77	34.256	0.88	2.0	1.83	91
13C-2,2',4,6,6'-PeCB	104	25.214	1.59	2.0	1.32	66
13C-2,3,3',4,4'-PeCB	105	37.833	1.52	2.0	1.37	68
13C-2,3,4,4',5-PeCB	114	37.179	1.74	2.0	1.38	69
13C-2,3',4,4',5-PeCB	118	36.626	1.62	2.0	1.49	75
13C-2,3',4,4',5'-PeCB	123	36.307	1.53	2.0	1.44	72
13C-3,3',4,4',5-PeCB	126	41.019	1.58	2.0	1.51	75
13C-2,2',4,4',6,6'-HxCB	155	31.238	1.32	2.0	1.69	85
13C-HxCB (156/157)	156/157	44.092	1.25	4.0	3.99	100
13C-2,3',4,4',5,5'-HxCB	167	42.918	1.23	2.0	2.03	102
13C-3,3',4,4',5,5'-HxCB	169	47.395	1.25	2.0	2.15	108
13C-2,2',3,4',5,6,6'-HpCB	188	37.145	1.06	2.0	1.47	73
13C-2,3,3',4,4',5,5'-HpCB	189	49.918	1.04	2.0	1.96	98
13C-2,2',3,3',5,5',6,6'-OcCB	202	42.633	0.91	2.0	1.65	83
13C-2,3,3',4,4',5,5',6-OcCB	205	52.525	0.93	2.0	1.70	85
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.228	0.82	2.0	1.37	68
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	49.400	0.81	2.0	1.37	69
13C--DeCB	209	55.844	0.77	2.0	1.32	66
Cleanup Standards						
13C-2,4,4'-TrCB	28	22.229	1.15	2.0	2.22	111
13C-2,3,3',5,5'-PeCB	111	34.306	1.66	2.0	1.45	73
13C-2,2',3,3',5,5',6-HpCB	178	40.281	1.08	2.0	1.73	86
Recovery Standards						
13C-2,5-DiCB	9	14.358	1.60	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	24.191	0.88	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	31.473	1.65	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	39.828	1.28	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.030	0.91	2.0	NA	NA

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
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A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
Nn = Value obtained from additional analyses

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ND = Not Detected
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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSSB-101 0-6"
Lab Sample ID 10292584002
Filename P150116A_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		---	---	ND	---	29.9
2		11.365	2.97	54.8	---	29.9
3		11.592	3.17	66.6	---	29.9
4		---	---	ND	---	29.9
5		---	---	ND	---	29.9
6		---	---	ND	---	29.9
7		---	---	ND	---	29.9
8		---	---	ND	---	29.9
9		---	---	ND	---	29.9
10		---	---	ND	---	29.9
11		---	---	ND	---	293
12	12/13	---	---	ND	---	59.7
13	12/13	---	---	ND	---	59.7
14		---	---	ND	---	29.9
15		---	---	ND	---	39.4
16		---	---	ND	---	29.9
17		---	---	ND	---	29.9
18	18/30	---	---	ND	---	59.7
19		---	---	ND	---	29.9
20	20/28	---	---	ND	---	154
21	21/33	---	---	ND	---	161
22		---	---	ND	---	113
23		---	---	ND	---	29.9
24		---	---	ND	---	29.9
25		---	---	ND	---	29.9
26	26/29	---	---	ND	---	59.7
27		---	---	ND	---	29.9
28	20/28	---	---	ND	---	154
29	26/29	---	---	ND	---	59.7
30	18/30	---	---	ND	---	59.7
31		---	---	ND	---	155
32		---	---	ND	---	29.9
33	21/33	---	---	ND	---	161
34		---	---	ND	---	29.9
35		---	---	ND	---	29.9
36		---	---	ND	---	29.9
37		---	---	ND	---	63.3
38		---	---	ND	---	29.9
39		---	---	ND	---	29.9
40	40/41/71	---	---	ND	---	179
41	40/41/71	---	---	ND	---	179
42		---	---	ND	---	59.7
43	43/73	---	---	ND	---	59.7
44	44/47/65	25.264	0.84	194	---	179
45	45/51	---	---	ND	---	119
46		---	---	ND	---	59.7
47	44/47/65	25.264	0.84	(194)	---	179
48		---	---	ND	---	59.7

Conc = Concentration
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSSB-101 0-6"
Lab Sample ID 10292584002
Filename P150116A_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
49	49/69	---	---	ND	---	119
50	50/53	---	---	ND	---	119
51	45/51	---	---	ND	---	119
52		24.224	0.82	474	---	184
53	50/53	---	---	ND	---	119
54		---	---	ND	---	59.7
55		---	---	ND	---	59.7
56		---	---	ND	---	59.7
57		---	---	ND	---	59.7
58		---	---	ND	---	59.7
59	59/62/75	---	---	ND	---	179
60		---	---	ND	---	59.7
61	61/70/74/76	29.327	0.79	550	---	239
62	59/62/75	---	---	ND	---	179
63		---	---	ND	---	59.7
64		26.622	0.83	67.3	---	59.7
65	44/47/65	25.264	0.84	(194)	---	179
66		29.695	0.74	136	---	100
67		---	---	ND	---	59.7
68		---	---	ND	---	59.7
69	49/69	---	---	ND	---	119
70	61/70/74/76	29.327	0.79	(550)	---	239
71	40/41/71	---	---	ND	---	179
72		---	---	ND	---	59.7
73	43/73	---	---	ND	---	59.7
74	61/70/74/76	29.327	0.79	(550)	---	239
75	59/62/75	---	---	ND	---	179
76	61/70/74/76	29.327	0.79	(550)	---	239
77		---	---	ND	---	59.7
78		---	---	ND	---	59.7
79		---	---	ND	---	59.7
80		---	---	ND	---	59.7
81		---	---	ND	---	59.7
82		33.854	1.62	117	---	59.7
83		31.993	1.67	204	---	59.7
84		29.528	1.60	1390	---	59.7
85	85/116/117	33.384	1.64	250	---	179
86	86/87/97/108/119/125	32.630	1.63	1160	---	358
87	86/87/97/108/119/125	32.630	1.63	(1160)	---	358
88	88/91	29.310	1.63	579	---	119
89		---	---	ND	---	59.7
90	90/101/113	31.506	1.58	1530	---	179
91	88/91	29.310	1.63	(579)	---	119
92		30.886	1.64	325	---	59.7
93	93/98/100/102	---	---	ND	---	239
94		---	---	ND	---	59.7
95		28.388	1.64	3910	---	113
96		---	---	ND	---	59.7

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSSB-101 0-6"
Lab Sample ID 10292584002
Filename P150116A_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	32.630	1.63	(1160)	---	358
98	93/98/100/102	---	---	ND	---	239
99		32.127	1.61	646	---	59.7
100	93/98/100/102	---	---	ND	---	239
101	90/101/113	31.506	1.58	(1530)	---	179
102	93/98/100/102	---	---	ND	---	239
103		---	---	ND	---	59.7
104		---	---	ND	---	59.7
105		37.866	1.50	584	---	59.7
106		---	---	ND	---	59.7
107	107/124	---	---	ND	---	119
108	86/87/97/108/119/125	32.630	1.63	(1160)	---	358
109		36.207	1.53	75.6	---	59.7
110	110/115	33.552	1.58	4190	---	119
111		---	---	ND	---	59.7
112		---	---	ND	---	59.7
113	90/101/113	31.506	1.58	(1530)	---	179
114		---	---	ND	---	59.7
115	110/115	33.552	1.58	(4190)	---	119
116	85/116/117	33.384	1.64	(250)	---	179
117	85/116/117	33.384	1.64	(250)	---	179
118		36.659	1.56	1390	---	76.4
119	86/87/97/108/119/125	32.630	1.63	(1160)	---	358
120		---	---	ND	---	59.7
121		---	---	ND	---	59.7
122		---	---	ND	---	59.7
123		---	---	ND	---	59.7
124	107/124	---	---	ND	---	119
125	86/87/97/108/119/125	32.630	1.63	(1160)	---	358
126		---	---	ND	---	59.7
127		---	---	ND	---	59.7
128	128/166	41.136	1.28	630	---	119
129	129/138/163	39.845	1.19	3020	---	179
130		39.174	1.18	218	---	59.7
131		36.290	1.14	71.5	---	59.7
132		36.743	1.26	1540	---	59.7
133		---	---	ND	---	59.7
134	134/143	35.653	1.16	240	---	119
135	135/151	34.508	1.29	1110	---	119
136		31.993	1.30	521	---	59.7
137		39.409	1.38	220	---	59.7
138	129/138/163	39.845	1.19	(3020)	---	179
139	139/140	---	---	ND	---	119
140	139/140	---	---	ND	---	119
141		38.772	1.28	431	---	59.7
142		---	---	ND	---	59.7
143	134/143	35.653	1.16	(240)	---	119
144		35.095	1.27	189	---	59.7

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Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	WSSB-101 0-6"
Lab Sample ID	10292584002
Filename	P150116A_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145		---	---	ND	---	59.7
146		37.950	1.24	345	---	59.7
147	147/149	35.452	1.19	2640	---	119
148		---	---	ND	---	59.7
149	147/149	35.452	1.19	(2640)	---	119
150		---	---	ND	---	59.7
151	135/151	34.508	1.29	(1110)	---	119
152		---	---	ND	---	59.7
153	153/168	38.587	1.25	1640	---	119
154		---	---	ND	---	59.7
155		---	---	ND	---	59.7
156	156/157	44.092	1.30	276	---	119
157	156/157	44.092	1.30	(276)	---	119
158		40.264	1.23	298	---	59.7
159		---	---	ND	---	59.7
160		---	---	ND	---	59.7
161		---	---	ND	---	59.7
162		---	---	ND	---	59.7
163	129/138/163	39.845	1.19	(3020)	---	179
164		39.527	1.19	225	---	59.7
165		---	---	ND	---	59.7
166	128/166	41.136	1.28	(630)	---	119
167		42.935	1.30	146	---	59.7
168	153/168	38.587	1.25	(1640)	---	119
169		---	---	ND	---	59.7
170		46.775	1.08	398	---	59.7
171	171/173	43.187	1.09	123	---	119
172		44.830	1.15	70.8	---	59.7
173	171/173	43.187	1.09	(123)	---	119
174		42.080	1.06	434	---	59.7
175		---	---	ND	---	59.7
176		38.420	1.01	63.3	---	59.7
177		42.533	1.08	222	---	59.7
178		40.298	1.12	84.4	---	59.7
179		37.498	1.07	208	---	59.7
180	180/193	45.500	1.04	945	---	119
181		---	---	ND	---	59.7
182		---	---	ND	---	59.7
183	183/185	41.845	1.05	343	---	119
184		---	---	ND	---	59.7
185	183/185	41.845	1.05	(343)	---	119
186		---	---	ND	---	59.7
187		41.220	1.07	645	---	59.7
188		---	---	ND	---	59.7
189		---	---	ND	---	59.7
190		47.328	1.00	71.0	---	59.7
191		---	---	ND	---	59.7
192		---	---	ND	---	59.7

Conc = Concentration
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	WSSB-101 0-6"
Lab Sample ID	10292584002
Filename	P150116A_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	45.500	1.04	(945)	---	119
194		52.051	0.92	295	---	89.6
195		---	---	ND	---	89.6
196		48.150	0.89	184	---	89.6
197	197/200	---	---	ND	---	179
198	198/199	47.479	0.91	521	---	179
199	198/199	47.479	0.91	(521)	---	179
200	197/200	---	---	ND	---	179
201		---	---	ND	---	89.6
202		42.650	0.88	123	---	89.6
203		48.351	0.94	350	---	89.6
204		---	---	ND	---	89.6
205		---	---	ND	---	89.6
206		54.271	0.78	507	---	89.6
207		---	---	ND	---	89.6
208		49.422	0.84	168	---	89.6
209		55.866	0.71	856	---	89.6

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	WSSB-101 0-6"
Lab Sample ID	10292584002
Filename	P150116A_06

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	121
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	1420
Total Pentachloro Biphenyls	16300
Total Hexachloro Biphenyls	13800
Total Heptachloro Biphenyls	3610
Total Octachloro Biphenyls	1470
Total Nonachloro Biphenyls	675
Decachloro Biphenyls	856
Total PCBs	38300

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Results reported on a dry weight basis

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - Weston and Sampson Engineers

Client's Sample ID	WSB-102 0-0.5"		
Lab Sample ID	10292584003		
Filename	P150116A_10		
Injected By	CVS		
Total Amount Extracted	10.1 g	Matrix	Solid
% Moisture	1.3	Dilution	10
Dry Weight Extracted	9.97 g	Collected	12/19/2014 10:30
ICAL ID	P150116A02	Received	12/22/2014 09:30
CCal Filename(s)	P150116A_01	Extracted	01/12/2015 20:00
Method Blank ID	BLANK-43573	Analyzed	01/16/2015 19:45

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	8.849	3.10	2.0	1.44	72
13C-4-MoCB	3	11.604	3.39	2.0	1.58	79
13C-2,2'-DiCB	4	11.892	1.65	2.0	1.65	83
13C-4,4'-DiCB	15	18.886	1.55	2.0	1.55	78
13C-2,2',6-TrCB	19	15.651	1.11	2.0	2.18	109
13C-3,4,4'-TrCB	37	26.672	1.17	2.0	1.58	79
13C-2,2',6,6'-TeCB	54	19.193	0.87	2.0	1.95	97
13C-3,4,4',5-TeCB	81	33.888	0.83	2.0	1.11	55
13C-3,3',4,4'-TeCB	77	34.475	0.82	2.0	1.10	55
13C-2,2',4,6,6'-PeCB	104	25.331	1.65	2.0	1.96	98
13C-2,3,3',4,4'-PeCB	105	38.085	1.67	2.0	1.05	53
13C-2,3,4,4',5-PeCB	114	37.431	1.55	2.0	1.14	57
13C-2,3',4,4',5-PeCB	118	36.878	1.66	2.0	1.23	62
13C-2,3',4,4',5'-PeCB	123	36.543	1.59	2.0	1.16	58
13C-3,3',4,4',5-PeCB	126	41.322	1.67	2.0	1.05	53
13C-2,2',4,4',6,6'-HxCB	155	31.423	1.25	2.0	2.31	115
13C-HxCB (156/157)	156/157	44.379	1.23	4.0	2.67	67
13C-2,3',4,4',5,5'-HxCB	167	43.222	1.23	2.0	1.50	75
13C-3,3',4,4',5,5'-HxCB	169	47.716	1.14	2.0	1.33	66
13C-2,2',3,4',5,6,6'-HpCB	188	37.381	1.08	2.0	2.73	137
13C-2,3,3',4,4',5,5'-HpCB	189	50.265	1.06	2.0	1.89	95
13C-2,2',3,3',5,5',6,6'-OcCB	202	42.904	0.88	2.0	2.18	109
13C-2,3,3',4,4',5,5',6-OcCB	205	52.830	0.96	2.0	1.73	86
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.532	0.69	2.0	1.64	82
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	49.704	0.85	2.0	1.61	81
13C--DeCB	209	56.106	0.74	2.0	1.88	94
Cleanup Standards						
13C-2,4,4'-TrCB	28	22.312	0.92	2.0	1.73	87
13C-2,3,3',5,5'-PeCB	111	34.508	1.60	2.0	1.35	67
13C-2,2',3,3',5,5',6-HpCB	178	40.517	1.08	2.0	1.92	96
Recovery Standards						
13C-2,5-DiCB	9	14.406	1.61	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	24.324	0.84	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	31.674	1.53	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.098	1.28	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.334	0.88	2.0	NA	NA

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSB-102 0-0.5"
Lab Sample ID 10292584003
Filename P150116A_10

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		8.861	3.10	115	---	25.1
2		11.389	3.10	37.3	---	25.1
3		11.616	3.28	147	---	25.1
4		11.904	1.40	116	---	25.1
5		---	---	ND	---	25.1
6		14.849	1.36	125	---	25.1
7		14.597	1.12 I	---	37.4	25.1
8		15.340	1.53	528	---	25.1
9		14.417	1.36	43.3	---	25.1
10		---	---	ND	---	25.1
11		---	---	ND	---	246
12	12/13	18.539	1.13 I	---	96.2	50.2
13	12/13	18.539	1.13 I	---	(96.2)	50.2
14		---	---	ND	---	25.1
15		18.910	1.51	418	---	33.1
16		18.814	1.06	591	---	25.1
17		18.311	1.09	534	---	25.1
18	18/30	17.832	1.07	1060	---	50.2
19		15.663	1.05	51.4	---	25.1
20	20/28	22.329	1.05	2250	---	129
21	21/33	22.581	1.05	1630	---	135
22		23.017	1.07	962	---	95.3
23		---	---	ND	---	25.1
24		---	---	ND	---	25.1
25		21.642	1.02	189	---	25.1
26	26/29	21.373	1.03	425	---	50.2
27		18.551	1.08	82.7	---	25.1
28	20/28	22.329	1.05	(2250)	---	129
29	26/29	21.373	1.03	(425)	---	50.2
30	18/30	17.832	1.07	(1060)	---	50.2
31		21.994	1.05	2260	---	130
32		19.428	1.04	247	---	25.1
33	21/33	22.581	1.05	(1630)	---	135
34		---	---	ND	---	25.1
35		26.270	0.99	69.0	---	25.1
36		---	---	ND	---	25.1
37		26.722	1.06	1560	---	53.2
38		---	---	ND	---	25.1
39		---	---	ND	---	25.1
40	40/41/71	26.504	0.79	5080	---	150
41	40/41/71	26.504	0.79	(5080)	---	150
42		25.968	0.75	2300	---	50.2
43	43/73	24.593	0.81	212	---	50.2
44	44/47/65	25.398	0.80	25500	---	150
45	45/51	22.396	0.80	682	---	100
46		22.732	0.85	249	---	50.2
47	44/47/65	25.398	0.80	(25500)	---	150
48		25.180	0.79	1530	---	50.2

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSB-102 0-0.5"
Lab Sample ID 10292584003
Filename P150116A_10

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
49	49/69	24.878	0.81	9980	---	100
50	50/53	21.642	0.78	963	---	100
51	45/51	22.396	0.80	(682)	---	100
52		24.341	0.79	60400	---	154
53	50/53	21.642	0.78	(963)	---	100
54		---	---	ND	---	50.2
55		30.014	0.78	175	---	50.2
56		30.551	0.80	9180	---	50.2
57		28.471	0.75	414	---	50.2
58		---	---	ND	---	50.2
59	59/62/75	25.750	0.85	439	---	150
60		30.785	0.78	4180	---	50.2
61	61/70/74/76	29.511	0.79	82400	---	201
62	59/62/75	25.750	0.85	(439)	---	150
63		29.176	0.78	741	---	50.2
64		26.756	0.80	8030	---	50.2
65	44/47/65	25.398	0.80	(25500)	---	150
66		29.863	0.78	15600	---	84.3
67		28.891	0.79	290	---	50.2
68		---	---	ND	---	50.2
69	49/69	24.878	0.81	(9980)	---	100
70	61/70/74/76	29.511	0.79	(82400)	---	201
71	40/41/71	26.504	0.79	(5080)	---	150
72		---	---	ND	---	50.2
73	43/73	24.593	0.81	(212)	---	50.2
74	61/70/74/76	29.511	0.79	(82400)	---	201
75	59/62/75	25.750	0.85	(439)	---	150
76	61/70/74/76	29.511	0.79	(82400)	---	201
77		34.492	0.78	1540	---	50.2
78		---	---	ND	---	50.2
79		32.832	0.76	1600	---	50.2
80		---	---	ND	---	50.2
81		33.888	0.80	156	---	50.2
82		34.072	1.61	29100	---	50.2
83		32.177	1.56	23200	---	50.2
84		29.696	1.58	59200	---	50.2
85	85/116/117	33.586	1.59	55000	---	150
86	86/87/97/108/119/125	32.915	1.57	233000	---	301
87	86/87/97/108/119/125	32.915	1.57	(233000)	---	301
88	88/91	29.478	1.59	27200	---	100
89		30.199	1.60	1390	---	50.2
90	90/101/113	31.691	1.60	323000	---	150
91	88/91	29.478	1.59	(27200)	---	100
92		31.087	1.60	39400	---	50.2
93	93/98/100/102	28.941	1.59	5120	---	201
94		28.069	1.56	611	---	50.2
95		28.555	1.59	157000	---	95.3
96		25.716	1.58	626	---	50.2

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSB-102 0-0.5"
Lab Sample ID 10292584003
Filename P150116A_10

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	32.915	1.57	(233000)	---	301
98	93/98/100/102	28.941	1.59	(5120)	---	201
99		32.312	1.59	117000	---	50.2
100	93/98/100/102	28.941	1.59	(5120)	---	201
101	90/101/113	31.691	1.60	(323000)	---	150
102	93/98/100/102	28.941	1.59	(5120)	---	201
103		27.868	1.68	677	---	50.2
104		---	---	ND	---	50.2
105		38.119	1.49	139000	---	50.2
106		---	---	ND	---	50.2
107	107/124	36.174	1.52	14900	---	100
108	86/87/97/108/119/125	32.915	1.57	(233000)	---	301
109		36.442	1.47	19900	---	50.2
110	110/115	33.754	1.61	342000	---	100
111		---	---	ND	---	50.2
112		---	---	ND	---	50.2
113	90/101/113	31.691	1.60	(323000)	---	150
114		37.448	1.52	9060	---	50.2
115	110/115	33.754	1.61	(342000)	---	100
116	85/116/117	33.586	1.59	(55000)	---	150
117	85/116/117	33.586	1.59	(55000)	---	150
118		36.929	1.48	340000	---	64.2
119	86/87/97/108/119/125	32.915	1.57	(233000)	---	301
120		34.995	1.43	126	---	50.2
121		---	---	ND	---	50.2
122		37.247	1.54	3400	---	50.2
123		36.560	1.59	4870	---	50.2
124	107/124	36.174	1.52	(14900)	---	100
125	86/87/97/108/119/125	32.915	1.57	(233000)	---	301
126		41.305	1.40	520	---	50.2
127		39.662	1.43	256	---	50.2
128	128/166	41.389	1.22	62900	---	100
129	129/138/163	40.115	1.26	396000	---	150
130		39.444	1.27	25700	---	50.2
131		36.509	1.25	7060	---	50.2
132		36.962	1.21	142000	---	50.2
133		37.532	1.24	4760	---	50.2
134	134/143	35.872	1.24	21300	---	100
135	135/151	34.726	1.27	109000	---	100
136		32.177	1.26	42800	---	50.2
137		39.679	1.28	31800	---	50.2
138	129/138/163	40.115	1.26	(396000)	---	150
139	139/140	36.308	1.28	9540	---	100
140	139/140	36.308	1.28	(9540)	---	100
141		39.025	1.25	65200	---	50.2
142		---	---	ND	---	50.2
143	134/143	35.872	1.24	(21300)	---	100
144		35.179	1.28	894	---	50.2

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSB-102 0-0.5"
Lab Sample ID 10292584003
Filename P150116A_10

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145		32.479	1.15	180	---	50.2
146		38.203	1.25	37100	---	50.2
147	147/149	35.671	1.24	234000	---	100
148		34.106	1.27	221	---	50.2
149	147/149	35.671	1.24	(234000)	---	100
150		31.809	1.20	349	---	50.2
151	135/151	34.726	1.27	(109000)	---	100
152		31.607	1.33	393	---	50.2
153	153/168	38.840	1.25	273000	---	100
154		34.995	1.26	3110	---	50.2
155		---	---	ND	---	50.2
156	156/157	44.413	1.25	68600	---	100
157	156/157	44.413	1.25	(68600)	---	100
158		40.517	1.24	46600	---	50.2
159		---	---	ND	---	50.2
160		---	---	ND	---	50.2
161		---	---	ND	---	50.2
162		42.736	1.30	786	---	50.2
163	129/138/163	40.115	1.26	(396000)	---	150
164		39.796	1.27	24100	---	50.2
165		---	---	ND	---	50.2
166	128/166	41.389	1.22	(62900)	---	100
167		43.256	1.26	19900	---	50.2
168	153/168	38.840	1.25	(273000)	---	100
169		---	---	ND	---	50.2
170		47.079	1.06	37500	---	50.2
171	171/173	43.474	1.07	12300	---	100
172		45.151	1.02	6530	---	50.2
173	171/173	43.474	1.07	(12300)	---	100
174		42.350	1.06	33900	---	50.2
175		41.222	0.99	2230	---	50.2
176		38.639	1.05	5780	---	50.2
177		42.820	1.05	18700	---	50.2
178		40.568	1.04	8040	---	50.2
179		37.734	1.06	17900	---	50.2
180	180/193	45.821	1.04	68800	---	100
181		43.239	1.00	1020	---	50.2
182		---	---	ND	---	50.2
183	183/185	42.149	1.05	28700	---	100
184		---	---	ND	---	50.2
185	183/185	42.149	1.05	(28700)	---	100
186		---	---	ND	---	50.2
187		41.490	1.05	43200	---	50.2
188		---	---	ND	---	50.2
189		50.286	0.95	2140	---	50.2
190		47.632	1.06	6820	---	50.2
191		46.174	1.06	1400	---	50.2
192		---	---	ND	---	50.2

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSB-102 0-0.5"
Lab Sample ID 10292584003
Filename P150116A_10

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	45.821	1.04	(68800)	---	100
194		52.377	0.90	12300	---	75.2
195		49.985	0.86	4650	---	75.2
196		48.454	0.89	9730	---	75.2
197	197/200	44.899	0.93	2680	---	150
198	198/199	47.783	0.92	20100	---	150
199	198/199	47.783	0.92	(20100)	---	150
200	197/200	44.899	0.93	(2680)	---	150
201		43.876	0.92	2680	---	75.2
202		42.920	0.89	3880	---	75.2
203		48.655	0.91	13100	---	75.2
204		---	---	ND	---	75.2
205		52.851	0.87	811	---	75.2
206		54.554	0.79	10200	---	75.2
207		50.674	0.80	1830	---	75.2
208		49.726	0.81	3550	---	75.2
209		56.127	0.71	28800	---	75.2

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	WSB-102 0-0.5"
Lab Sample ID	10292584003
Filename	P150116A_10

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	300
Total Dichloro Biphenyls	1230
Total Trichloro Biphenyls	11900
Total Tetrachloro Biphenyls	232000
Total Pentachloro Biphenyls	1950000
Total Hexachloro Biphenyls	1630000
Total Heptachloro Biphenyls	295000
Total Octachloro Biphenyls	70000
Total Nonachloro Biphenyls	15600
Decachloro Biphenyls	28800
Total PCBs	4230000

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - Weston and Sampson Engineers

Client's Sample ID	WSSB-102 0-6"		
Lab Sample ID	10292584004		
Filename	P150116A_05		
Injected By	CVS		
Total Amount Extracted	10.0 g	Matrix	Solid
% Moisture	14.8	Dilution	10
Dry Weight Extracted	8.52 g	Collected	12/19/2014 11:20
ICAL ID	P150116A02	Received	12/22/2014 09:30
CCal Filename(s)	P150116A_01	Extracted	01/12/2015 20:00
Method Blank ID	BLANK-43573	Analyzed	01/16/2015 14:45

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery	
Labeled Analytes							
13C-2-MoCB	1	8.849	3.38	2.0	0.999	50	
13C-4-MoCB	3	11.604	3.00	2.0	1.28	64	
13C-2,2'-DiCB	4	11.880	1.66	2.0	1.19	59	
13C-4,4'-DiCB	15	18.826	1.60	2.0	1.64	82	
13C-2,2',6-TrCB	19	15.616	1.43	2.0	1.78	106	I
13C-3,4,4'-TrCB	37	26.555	1.02	2.0	1.89	94	
13C-2,2',6,6'-TeCB	54	19.143	0.85	2.0	1.60	80	
13C-3,4,4',5-TeCB	81	33.670	0.87	2.0	1.76	88	
13C-3,3',4,4'-TeCB	77	34.291	0.76	2.0	1.51	76	
13C-2,2',4,6,6'-PeCB	104	25.213	1.70	2.0	1.27	63	
13C-2,3,3',4,4'-PeCB	105	37.868	1.62	2.0	1.41	71	
13C-2,3,4,4',5-PeCB	114	37.214	1.59	2.0	1.41	70	
13C-2,3',4,4',5-PeCB	118	36.678	1.66	2.0	1.41	71	
13C-2,3',4,4',5'-PeCB	123	36.325	1.54	2.0	1.12	56	
13C-3,3',4,4',5-PeCB	126	41.054	1.60	2.0	1.52	76	
13C-2,2',4,4',6,6'-HxCB	155	31.256	1.29	2.0	1.84	92	
13C-HxCB (156/157)	156/157	44.095	1.24	4.0	4.25	106	
13C-2,3',4,4',5,5'-HxCB	167	42.938	1.27	2.0	2.23	112	
13C-3,3',4,4',5,5'-HxCB	169	47.398	1.31	2.0	2.27	114	
13C-2,2',3,4',5,6,6'-HpCB	188	37.181	1.08	2.0	1.56	78	
13C-2,3,3',4,4',5,5'-HpCB	189	49.942	1.06	2.0	1.93	97	
13C-2,2',3,3',5,5',6,6'-OcCB	202	42.653	0.93	2.0	1.69	84	
13C-2,3,3',4,4',5,5',6-OcCB	205	52.529	0.89	2.0	1.71	85	
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.275	0.77	2.0	1.42	71	
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	49.425	0.76	2.0	1.43	71	
13C--DeCB	209	55.869	0.74	2.0	1.45	72	
Cleanup Standards							
13C-2,4,4'-TrCB	28	22.212	1.15	2.0	2.07	104	
13C-2,3,3',5,5'-PeCB	111	34.324	1.60	2.0	1.48	74	
13C-2,2',3,3',5,5',6-HpCB	178	40.300	1.06	2.0	2.02	101	
Recovery Standards							
13C-2,5-DiCB	9	14.334	1.66	2.0	NA	NA	
13C-2,2',5,5'-TeCB	52	24.190	0.88	2.0	NA	NA	
13C-2,2',4,5,5'-PeCB	101	31.507	1.54	2.0	NA	NA	
13C-2,2',3,4,4',5'-HxCB	138	39.864	1.25	2.0	NA	NA	
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.055	0.88	2.0	NA	NA	

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
Nn = Value obtained from additional analyses

Results reported on a dry weight basis

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
RT = Retention Time
I = Interference
ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSSB-102 0-6"
Lab Sample ID 10292584004
Filename P150116A_05

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		---	---	ND	---	29.3
2		11.401	2.98	50.1	---	29.3
3		11.616	3.18	54.9	---	29.3
4		---	---	ND	---	29.3
5		---	---	ND	---	29.3
6		---	---	ND	---	29.3
7		---	---	ND	---	29.3
8		---	---	ND	---	29.3
9		---	---	ND	---	29.3
10		---	---	ND	---	29.3
11		---	---	ND	---	288
12	12/13	---	---	ND	---	58.7
13	12/13	---	---	ND	---	58.7
14		---	---	ND	---	29.3
15		---	---	ND	---	38.7
16		---	---	ND	---	29.3
17		---	---	ND	---	29.3
18	18/30	---	---	ND	---	58.7
19		---	---	ND	---	29.3
20	20/28	---	---	ND	---	151
21	21/33	---	---	ND	---	158
22		---	---	ND	---	112
23		---	---	ND	---	29.3
24		---	---	ND	---	29.3
25		---	---	ND	---	29.3
26	26/29	---	---	ND	---	58.7
27		---	---	ND	---	29.3
28	20/28	---	---	ND	---	151
29	26/29	---	---	ND	---	58.7
30	18/30	---	---	ND	---	58.7
31		---	---	ND	---	153
32		---	---	ND	---	29.3
33	21/33	---	---	ND	---	158
34		---	---	ND	---	29.3
35		---	---	ND	---	29.3
36		---	---	ND	---	29.3
37		---	---	ND	---	62.2
38		---	---	ND	---	29.3
39		---	---	ND	---	29.3
40	40/41/71	---	---	ND	---	176
41	40/41/71	---	---	ND	---	176
42		---	---	ND	---	58.7
43	43/73	---	---	ND	---	58.7
44	44/47/65	---	---	ND	---	176
45	45/51	---	---	ND	---	117
46		---	---	ND	---	58.7
47	44/47/65	---	---	ND	---	176
48		---	---	ND	---	58.7

Conc = Concentration
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Minneapolis, MN 55414

Tel: 612-607-1700
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSSB-102 0-6"
Lab Sample ID 10292584004
Filename P150116A_05

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
49	49/69	---	---	ND	---	117
50	50/53	---	---	ND	---	117
51	45/51	---	---	ND	---	117
52		---	---	ND	---	181
53	50/53	---	---	ND	---	117
54		---	---	ND	---	58.7
55		---	---	ND	---	58.7
56		---	---	ND	---	58.7
57		---	---	ND	---	58.7
58		---	---	ND	---	58.7
59	59/62/75	---	---	ND	---	176
60		---	---	ND	---	58.7
61	61/70/74/76	---	---	ND	---	235
62	59/62/75	---	---	ND	---	176
63		---	---	ND	---	58.7
64		---	---	ND	---	58.7
65	44/47/65	---	---	ND	---	176
66		---	---	ND	---	98.6
67		---	---	ND	---	58.7
68		---	---	ND	---	58.7
69	49/69	---	---	ND	---	117
70	61/70/74/76	---	---	ND	---	235
71	40/41/71	---	---	ND	---	176
72		---	---	ND	---	58.7
73	43/73	---	---	ND	---	58.7
74	61/70/74/76	---	---	ND	---	235
75	59/62/75	---	---	ND	---	176
76	61/70/74/76	---	---	ND	---	235
77		---	---	ND	---	58.7
78		---	---	ND	---	58.7
79		---	---	ND	---	58.7
80		---	---	ND	---	58.7
81		---	---	ND	---	58.7
82		---	---	ND	---	58.7
83		---	---	ND	---	58.7
84		29.562	1.67	174	---	58.7
85	85/116/117	---	---	ND	---	176
86	86/87/97/108/119/125	---	---	ND	---	352
87	86/87/97/108/119/125	---	---	ND	---	352
88	88/91	---	---	ND	---	117
89		---	---	ND	---	58.7
90	90/101/113	31.524	1.64	347	---	176
91	88/91	---	---	ND	---	117
92		---	---	ND	---	58.7
93	93/98/100/102	---	---	ND	---	235
94		---	---	ND	---	58.7
95		28.405	1.64	507	---	112
96		---	---	ND	---	58.7

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSSB-102 0-6"
Lab Sample ID 10292584004
Filename P150116A_05

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	---	---	ND	---	352
98	93/98/100/102	---	---	ND	---	235
99		32.145	1.59	128	---	58.7
100	93/98/100/102	---	---	ND	---	235
101	90/101/113	31.524	1.64	(347)	---	176
102	93/98/100/102	---	---	ND	---	235
103		---	---	ND	---	58.7
104		---	---	ND	---	58.7
105		37.885	1.60	216	---	58.7
106		---	---	ND	---	58.7
107	107/124	---	---	ND	---	117
108	86/87/97/108/119/125	---	---	ND	---	352
109		---	---	ND	---	58.7
110	110/115	33.570	1.65	1040	---	117
111		---	---	ND	---	58.7
112		---	---	ND	---	58.7
113	90/101/113	31.524	1.64	(347)	---	176
114		---	---	ND	---	58.7
115	110/115	33.570	1.65	(1040)	---	117
116	85/116/117	---	---	ND	---	176
117	85/116/117	---	---	ND	---	176
118		36.711	1.51	468	---	75.1
119	86/87/97/108/119/125	---	---	ND	---	352
120		---	---	ND	---	58.7
121		---	---	ND	---	58.7
122		---	---	ND	---	58.7
123		---	---	ND	---	58.7
124	107/124	---	---	ND	---	117
125	86/87/97/108/119/125	---	---	ND	---	352
126		---	---	ND	---	58.7
127		---	---	ND	---	58.7
128	128/166	41.172	1.29	185	---	117
129	129/138/163	39.881	1.21	669	---	176
130		39.210	1.28	77.3	---	58.7
131		---	---	ND	---	58.7
132		36.778	1.24	483	---	58.7
133		---	---	ND	---	58.7
134	134/143	---	---	ND	---	117
135	135/151	34.526	1.30	356	---	117
136		32.010	1.35	153	---	58.7
137		---	---	ND	---	58.7
138	129/138/163	39.881	1.21	(669)	---	176
139	139/140	---	---	ND	---	117
140	139/140	---	---	ND	---	117
141		38.790	1.23	88.1	---	58.7
142		---	---	ND	---	58.7
143	134/143	---	---	ND	---	117
144		---	---	ND	---	58.7

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSSB-102 0-6"
Lab Sample ID 10292584004
Filename P150116A_05

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145		---	---	ND	---	58.7
146		37.969	1.24	82.9	---	58.7
147	147/149	35.487	1.23	792	---	117
148		---	---	ND	---	58.7
149	147/149	35.487	1.23	(792)	---	117
150		---	---	ND	---	58.7
151	135/151	34.526	1.30	(356)	---	117
152		---	---	ND	---	58.7
153	153/168	38.606	1.27	366	---	117
154		---	---	ND	---	58.7
155		---	---	ND	---	58.7
156	156/157	---	---	ND	---	117
157	156/157	---	---	ND	---	117
158		40.283	1.29	74.8	---	58.7
159		---	---	ND	---	58.7
160		---	---	ND	---	58.7
161		---	---	ND	---	58.7
162		---	---	ND	---	58.7
163	129/138/163	39.881	1.21	(669)	---	176
164		39.545	1.23	86.8	---	58.7
165		---	---	ND	---	58.7
166	128/166	41.172	1.29	(185)	---	117
167		---	---	ND	---	58.7
168	153/168	38.606	1.27	(366)	---	117
169		---	---	ND	---	58.7
170		46.794	1.04	163	---	58.7
171	171/173	---	---	ND	---	117
172		---	---	ND	---	58.7
173	171/173	---	---	ND	---	117
174		42.099	1.06	178	---	58.7
175		---	---	ND	---	58.7
176		---	---	ND	---	58.7
177		42.552	1.03	94.8	---	58.7
178		---	---	ND	---	58.7
179		37.516	1.10	86.1	---	58.7
180	180/193	45.520	1.02	360	---	117
181		---	---	ND	---	58.7
182		---	---	ND	---	58.7
183	183/185	41.881	1.08	137	---	117
184		---	---	ND	---	58.7
185	183/185	41.881	1.08	(137)	---	117
186		---	---	ND	---	58.7
187		41.256	1.07	263	---	58.7
188		---	---	ND	---	58.7
189		---	---	ND	---	58.7
190		---	---	ND	---	58.7
191		---	---	ND	---	58.7
192		---	---	ND	---	58.7

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	WSSB-102 0-6"
Lab Sample ID	10292584004
Filename	P150116A_05

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	45.520	1.02	(360)	---	117
194		52.076	0.92	145	---	88.0
195		---	---	ND	---	88.0
196		---	---	ND	---	88.0
197	197/200	---	---	ND	---	176
198	198/199	47.499	0.93	261	---	176
199	198/199	47.499	0.93	(261)	---	176
200	197/200	---	---	ND	---	176
201		---	---	ND	---	88.0
202		---	---	ND	---	88.0
203		48.371	0.97	175	---	88.0
204		---	---	ND	---	88.0
205		---	---	ND	---	88.0
206		54.296	0.84	366	---	88.0
207		---	---	ND	---	88.0
208		49.446	0.80	114	---	88.0
209		55.891	0.68	696	---	88.0

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	WSSB-102 0-6"
Lab Sample ID	10292584004
Filename	P150116A_05

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	105
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	ND
Total Pentachloro Biphenyls	2880
Total Hexachloro Biphenyls	3410
Total Heptachloro Biphenyls	1280
Total Octachloro Biphenyls	581
Total Nonachloro Biphenyls	480
Decachloro Biphenyls	696
Total PCBs	9440

ND = Not Detected
Results reported on a dry weight basis

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - Weston and Sampson Engineers

Client's Sample ID	WSB-103 0-0.5"		
Lab Sample ID	10292584005		
Filename	P150116A_07		
Injected By	CVS		
Total Amount Extracted	10.0 g	Matrix	Solid
% Moisture	3.7	Dilution	10
Dry Weight Extracted	9.63 g	Collected	12/19/2014 10:45
ICAL ID	P150116A02	Received	12/22/2014 09:30
CCal Filename(s)	P150116A_01	Extracted	01/12/2015 20:00
Method Blank ID	BLANK-43573	Analyzed	01/16/2015 16:45

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	8.849	3.49	2.0	1.36	68
13C-4-MoCB	3	11.604	3.44	2.0	1.55	78
13C-2,2'-DiCB	4	11.892	1.64	2.0	1.48	74
13C-4,4'-DiCB	15	18.898	1.61	2.0	1.44	72
13C-2,2',6-TrCB	19	15.639	1.19	2.0	1.92	96
13C-3,4,4'-TrCB	37	26.688	0.95	2.0	1.42	71
13C-2,2',6,6'-TeCB	54	19.193	0.88	2.0	1.92	96
13C-3,4,4',5-TeCB	81	33.937	0.80	2.0	0.996	50
13C-3,3',4,4'-TeCB	77	34.541	0.86	2.0	0.957	48
13C-2,2',4,6,6'-PeCB	104	25.347	1.65	2.0	2.11	106
13C-2,3,3',4,4'-PeCB	105	38.202	1.56	2.0	0.984	49
13C-2,3,4,4',5-PeCB	114	37.531	1.54	2.0	0.941	47
13C-2,3',4,4',5-PeCB	118	36.978	1.66	2.0	1.03	52
13C-2,3',4,4',5'-PeCB	123	36.625	1.62	2.0	1.09	54
13C-3,3',4,4',5-PeCB	126	41.455	1.69	2.0	0.934	47
13C-2,2',4,4',6,6'-HxCB	155	31.456	1.28	2.0	2.90	145
13C-HxCB (156/157)	156/157	44.528	1.24	4.0	2.87	72
13C-2,3',4,4',5,5'-HxCB	167	43.388	1.19	2.0	1.53	76
13C-3,3',4,4',5,5'-HxCB	169	47.849	1.13	2.0	1.34	67
13C-2,2',3,4',5,6,6'-HpCB	188	37.464	1.17	2.0	2.36	118
13C-2,3,3',4,4',5,5'-HpCB	189	50.349	1.05	2.0	1.88	94
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.019	0.90	2.0	1.98	99
13C-2,3,3',4,4',5,5',6-OcCB	205	52.871	0.82	2.0	1.87	93
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.552	0.76	2.0	1.59	79
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	49.789	0.86	2.0	1.59	79
13C--DeCB	209	56.104	0.66	2.0	1.81	90
Cleanup Standards						
13C-2,4,4'-TrCB	28	22.295	1.07	2.0	1.79	89
13C-2,3,3',5,5'-PeCB	111	34.591	1.57	2.0	1.30	65
13C-2,2',3,3',5,5',6-HpCB	178	40.650	1.05	2.0	1.81	90
Recovery Standards						
13C-2,5-DiCB	9	14.369	1.66	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	24.324	0.84	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	31.707	1.70	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.214	1.26	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.397	0.89	2.0	NA	NA

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	WSB-103 0-0.5"
Lab Sample ID	10292584005
Filename	P150116A_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		---	---	ND	---	26.0
2		---	---	ND	---	26.0
3		11.616	3.27	30.1	---	26.0
4		11.903	1.48	118	---	26.0
5		---	---	ND	---	26.0
6		14.837	1.55	103	---	26.0
7		---	---	ND	---	26.0
8		15.340	1.51	486	---	26.0
9		14.381	1.60	32.6	---	26.0
10		---	---	ND	---	26.0
11		---	---	ND	---	254
12	12/13	18.527	1.42	63.2	---	51.9
13	12/13	18.527	1.42	(63.2)	---	51.9
14		---	---	ND	---	26.0
15		18.922	1.66	337	---	34.3
16		18.826	1.06	579	---	26.0
17		18.311	1.08	553	---	26.0
18	18/30	17.831	1.06	1070	---	51.9
19		15.663	1.11	53.0	---	26.0
20	20/28	22.329	1.05	2320	---	134
21	21/33	22.580	1.05	1600	---	140
22		23.016	1.07	955	---	98.7
23		---	---	ND	---	26.0
24		---	---	ND	---	26.0
25		21.641	1.04	186	---	26.0
26	26/29	21.373	1.02	413	---	51.9
27		18.551	1.02	86.7	---	26.0
28	20/28	22.329	1.05	(2320)	---	134
29	26/29	21.373	1.02	(413)	---	51.9
30	18/30	17.831	1.06	(1070)	---	51.9
31		21.993	1.04	2080	---	135
32		19.428	1.05	258	---	26.0
33	21/33	22.580	1.05	(1600)	---	140
34		---	---	ND	---	26.0
35		26.286	1.09	71.2	---	26.0
36		---	---	ND	---	26.0
37		26.722	1.06	1680	---	55.0
38		---	---	ND	---	26.0
39		---	---	ND	---	26.0
40	40/41/71	26.504	0.78	2490	---	156
41	40/41/71	26.504	0.78	(2490)	---	156
42		25.967	0.78	1150	---	51.9
43	43/73	24.609	0.78	142	---	51.9
44	44/47/65	25.397	0.79	6650	---	156
45	45/51	22.396	0.80	515	---	104
46		22.731	0.80	181	---	51.9
47	44/47/65	25.397	0.79	(6650)	---	156
48		25.179	0.78	1000	---	51.9

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Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSB-103 0-0.5"
Lab Sample ID 10292584005
Filename P150116A_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
49	49/69	24.877	0.78	2900	---	104
50	50/53	21.641	0.80	451	---	104
51	45/51	22.396	0.80	(515)	---	104
52		24.341	0.80	12500	---	160
53	50/53	21.641	0.80	(451)	---	104
54		---	---	ND	---	51.9
55		30.047	0.74	98.2	---	51.9
56		30.567	0.78	2910	---	51.9
57		28.488	0.77	129	---	51.9
58		28.605	0.78	129	---	51.9
59	59/62/75	25.766	0.82	320	---	156
60		30.819	0.78	1670	---	51.9
61	61/70/74/76	29.510	0.78	17300	---	208
62	59/62/75	25.766	0.82	(320)	---	156
63		29.175	0.81	241	---	51.9
64		26.755	0.79	2540	---	51.9
65	44/47/65	25.397	0.79	(6650)	---	156
66		29.879	0.79	4860	---	87.2
67		28.907	0.76	163	---	51.9
68		---	---	ND	---	51.9
69	49/69	24.877	0.78	(2900)	---	104
70	61/70/74/76	29.510	0.78	(17300)	---	208
71	40/41/71	26.504	0.78	(2490)	---	156
72		---	---	ND	---	51.9
73	43/73	24.609	0.78	(142)	---	51.9
74	61/70/74/76	29.510	0.78	(17300)	---	208
75	59/62/75	25.766	0.82	(320)	---	156
76	61/70/74/76	29.510	0.78	(17300)	---	208
77		34.575	0.77	865	---	51.9
78		---	---	ND	---	51.9
79		32.965	0.82	410	---	51.9
80		---	---	ND	---	51.9
81		---	---	ND	---	51.9
82		34.105	1.50	3420	---	51.9
83		32.210	1.62	3250	---	51.9
84		29.695	1.62	9620	---	51.9
85	85/116/117	33.636	1.61	8300	---	156
86	86/87/97/108/119/125	32.965	1.63	34200	---	312
87	86/87/97/108/119/125	32.965	1.63	(34200)	---	312
88	88/91	29.494	1.60	4610	---	104
89		30.215	1.59	275	---	51.9
90	90/101/113	31.724	1.61	66700	---	156
91	88/91	29.494	1.60	(4610)	---	104
92		31.120	1.61	7180	---	51.9
93	93/98/100/102	28.940	1.69	978	---	208
94		28.069	1.58	121	---	51.9
95		28.555	1.59	38500	---	98.7
96		25.733	1.60	142	---	51.9

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Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSB-103 0-0.5"
Lab Sample ID 10292584005
Filename P150116A_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	32.965	1.63	(34200)	---	312
98	93/98/100/102	28.940	1.69	(978)	---	208
99		32.361	1.62	16700	---	51.9
100	93/98/100/102	28.940	1.69	(978)	---	208
101	90/101/113	31.724	1.61	(66700)	---	156
102	93/98/100/102	28.940	1.69	(978)	---	208
103		27.884	1.57	148	---	51.9
104		---	---	ND	---	51.9
105		38.218	1.55	18500	---	51.9
106		---	---	ND	---	51.9
107	107/124	36.273	1.52	1700	---	104
108	86/87/97/108/119/125	32.965	1.63	(34200)	---	312
109		36.542	1.53	2440	---	51.9
110	110/115	33.803	1.57	46400	---	104
111		---	---	ND	---	51.9
112		---	---	ND	---	51.9
113	90/101/113	31.724	1.61	(66700)	---	156
114		37.565	1.51	1070	---	51.9
115	110/115	33.803	1.57	(46400)	---	104
116	85/116/117	33.636	1.61	(8300)	---	156
117	85/116/117	33.636	1.61	(8300)	---	156
118		37.011	1.56	45800	---	66.5
119	86/87/97/108/119/125	32.965	1.63	(34200)	---	312
120		---	---	ND	---	51.9
121		---	---	ND	---	51.9
122		37.347	1.51	430	---	51.9
123		36.642	1.55	611	---	51.9
124	107/124	36.273	1.52	(1700)	---	104
125	86/87/97/108/119/125	32.965	1.63	(34200)	---	312
126		41.455	1.61	180	---	51.9
127		---	---	ND	---	51.9
128	128/166	41.505	1.28	7010	---	104
129	129/138/163	40.231	1.22	94800	---	156
130		39.560	1.25	3630	---	51.9
131		36.575	1.29	1020	---	51.9
132		37.045	1.24	32000	---	51.9
133		37.632	1.21	1050	---	51.9
134	134/143	35.955	1.27	4350	---	104
135	135/151	34.809	1.25	53200	---	104
136		32.194	1.28	19100	---	51.9
137		39.795	1.26	3340	---	51.9
138	129/138/163	40.231	1.22	(94800)	---	156
139	139/140	36.374	1.23	1050	---	104
140	139/140	36.374	1.23	(1050)	---	104
141		39.141	1.23	23600	---	51.9
142		---	---	ND	---	51.9
143	134/143	35.955	1.27	(4350)	---	104
144		35.385	1.24	11600	---	51.9

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Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSB-103 0-0.5"
Lab Sample ID 10292584005
Filename P150116A_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145		---	---	ND	---	51.9
146		38.302	1.27	11900	---	51.9
147	147/149	35.754	1.24	90300	---	104
148		---	---	ND	---	51.9
149	147/149	35.754	1.24	(90300)	---	104
150		31.858	1.13	97.9	---	51.9
151	135/151	34.809	1.25	(53200)	---	104
152		31.623	1.29	53.0	---	51.9
153	153/168	38.956	1.24	98700	---	104
154		35.077	1.21	549	---	51.9
155		---	---	ND	---	51.9
156	156/157	44.528	1.25	11100	---	104
157	156/157	44.528	1.25	(11100)	---	104
158		40.650	1.22	9210	---	51.9
159		42.550	1.27	92.5	---	51.9
160		---	---	ND	---	51.9
161		---	---	ND	---	51.9
162		42.852	1.37	105	---	51.9
163	129/138/163	40.231	1.22	(94800)	---	156
164		39.912	1.31	5810	---	51.9
165		---	---	ND	---	51.9
166	128/166	41.505	1.28	(7010)	---	104
167		43.388	1.28	3820	---	51.9
168	153/168	38.956	1.24	(98700)	---	104
169		47.882	1.69 I	---	86.9	51.9
170		47.211	1.05	27500	---	51.9
171	171/173	43.590	1.04	8860	---	104
172		45.283	1.06	5430	---	51.9
173	171/173	43.590	1.04	(8860)	---	104
174		42.483	1.06	36300	---	51.9
175		41.337	1.07	1960	---	51.9
176		38.755	1.08	5300	---	51.9
177		42.936	1.04	17900	---	51.9
178		40.683	1.07	8720	---	51.9
179		37.816	1.07	22300	---	51.9
180	180/193	45.954	1.05	69700	---	104
181		43.405	1.09	439	---	51.9
182		41.846	0.94	131	---	51.9
183	183/185	42.282	1.05	27500	---	104
184		---	---	ND	---	51.9
185	183/185	42.282	1.05	(27500)	---	104
186		---	---	ND	---	51.9
187		41.627	1.05	58300	---	51.9
188		---	---	ND	---	51.9
189		50.393	1.06	1230	---	51.9
190		47.748	1.03	5490	---	51.9
191		46.306	1.10	1070	---	51.9
192		---	---	ND	---	51.9

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	WSB-103 0-0.5"
Lab Sample ID	10292584005
Filename	P150116A_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	45.954	1.05	(69700)	---	104
194		52.418	0.91	17200	---	77.9
195		50.091	0.91	6810	---	77.9
196		48.553	0.91	12100	---	77.9
197	197/200	45.015	0.92	3430	---	156
198	198/199	47.899	0.90	24000	---	156
199	198/199	47.899	0.90	(24000)	---	156
200	197/200	45.015	0.92	(3430)	---	156
201		44.009	0.92	3250	---	77.9
202		43.053	0.90	4690	---	77.9
203		48.771	0.91	15200	---	77.9
204		---	---	ND	---	77.9
205		52.893	0.89	1010	---	77.9
206		54.574	0.84	10900	---	77.9
207		50.759	0.79	1600	---	77.9
208		49.811	0.82	3140	---	77.9
209		56.126	0.69	13800	---	77.9

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	WSB-103 0-0.5"
Lab Sample ID	10292584005
Filename	P150116A_07

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	30.1
Total Dichloro Biphenyls	1140
Total Trichloro Biphenyls	11900
Total Tetrachloro Biphenyls	59600
Total Pentachloro Biphenyls	311000
Total Hexachloro Biphenyls	488000
Total Heptachloro Biphenyls	298000
Total Octachloro Biphenyls	87700
Total Nonachloro Biphenyls	15700
Decachloro Biphenyls	13800
Total PCBs	1290000

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - Weston and Sampson Engineers

Client's Sample ID	WSSB-103 0-6"		
Lab Sample ID	10292584006		
Filename	P150116A_08		
Injected By	CVS		
Total Amount Extracted	10.3 g	Matrix	Solid
% Moisture	20.5	Dilution	10
Dry Weight Extracted	8.19 g	Collected	12/19/2014 10:50
ICAL ID	P150116A02	Received	12/22/2014 09:30
CCal Filename(s)	P150116A_01	Extracted	01/12/2015 20:00
Method Blank ID	BLANK-43573	Analyzed	01/16/2015 17:45

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	8.849	3.06	2.0	1.31	65
13C-4-MoCB	3	11.616	3.38	2.0	1.41	71
13C-2,2'-DiCB	4	11.904	1.55	2.0	1.45	72
13C-4,4'-DiCB	15	18.875	1.60	2.0	1.83	92
13C-2,2',6-TrCB	19	15.700	1.16	2.0	1.46	73
13C-3,4,4'-TrCB	37	26.588	1.02	2.0	1.86	93
13C-2,2',6,6'-TeCB	54	19.177	0.86	2.0	1.27	63
13C-3,4,4',5-TeCB	81	33.703	0.88	2.0	1.86	93
13C-3,3',4,4'-TeCB	77	34.290	0.84	2.0	1.74	87
13C-2,2',4,6,6'-PeCB	104	25.247	1.72	2.0	1.55	78
13C-2,3,3',4,4'-PeCB	105	37.883	1.62	2.0	1.44	72
13C-2,3,4,4',5-PeCB	114	37.212	1.66	2.0	1.43	71
13C-2,3',4,4',5-PeCB	118	36.676	1.66	2.0	1.48	74
13C-2,3',4,4',5'-PeCB	123	36.340	1.67	2.0	1.46	73
13C-3,3',4,4',5-PeCB	126	41.052	1.65	2.0	1.61	81
13C-2,2',4,4',6,6'-HxCB	155	31.288	1.27	2.0	1.87	93
13C-HxCB (156/157)	156/157	44.126	1.26	4.0	3.74	94
13C-2,3',4,4',5,5'-HxCB	167	42.952	1.30	2.0	1.91	95
13C-3,3',4,4',5,5'-HxCB	169	47.429	1.28	2.0	1.96	98
13C-2,2',3,4',5,6,6'-HpCB	188	37.179	1.09	2.0	1.65	83
13C-2,3,3',4,4',5,5'-HpCB	189	49.961	1.06	2.0	1.95	98
13C-2,2',3,3',5,5',6,6'-OcCB	202	42.650	0.92	2.0	1.76	88
13C-2,3,3',4,4',5,5',6-OcCB	205	52.547	0.86	2.0	1.87	94
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.271	0.79	2.0	1.53	76
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	49.422	0.81	2.0	1.41	70
13C--DeCB	209	55.866	0.73	2.0	1.55	77
Cleanup Standards						
13C-2,4,4'-TrCB	28	22.246	1.20	2.0	2.30	115
13C-2,3,3',5,5'-PeCB	111	34.340	1.63	2.0	1.49	75
13C-2,2',3,3',5,5',6-HpCB	178	40.314	1.07	2.0	1.79	89
Recovery Standards						
13C-2,5-DiCB	9	14.490	1.63	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	24.224	0.88	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	31.506	1.64	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	39.878	1.24	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.051	0.88	2.0	NA	NA

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSSB-103 0-6"
Lab Sample ID 10292584006
Filename P150116A_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		---	---	ND	---	30.5
2		11.401	2.91	31.8	---	30.5
3		11.628	2.85	38.6	---	30.5
4		---	---	ND	---	30.5
5		---	---	ND	---	30.5
6		---	---	ND	---	30.5
7		---	---	ND	---	30.5
8		---	---	ND	---	30.5
9		---	---	ND	---	30.5
10		---	---	ND	---	30.5
11		---	---	ND	---	299
12	12/13	---	---	ND	---	61.1
13	12/13	---	---	ND	---	61.1
14		---	---	ND	---	30.5
15		---	---	ND	---	40.3
16		---	---	ND	---	30.5
17		---	---	ND	---	30.5
18	18/30	---	---	ND	---	61.1
19		---	---	ND	---	30.5
20	20/28	---	---	ND	---	158
21	21/33	---	---	ND	---	165
22		---	---	ND	---	116
23		---	---	ND	---	30.5
24		---	---	ND	---	30.5
25		---	---	ND	---	30.5
26	26/29	---	---	ND	---	61.1
27		---	---	ND	---	30.5
28	20/28	---	---	ND	---	158
29	26/29	---	---	ND	---	61.1
30	18/30	---	---	ND	---	61.1
31		---	---	ND	---	159
32		---	---	ND	---	30.5
33	21/33	---	---	ND	---	165
34		---	---	ND	---	30.5
35		---	---	ND	---	30.5
36		---	---	ND	---	30.5
37		---	---	ND	---	64.7
38		---	---	ND	---	30.5
39		---	---	ND	---	30.5
40	40/41/71	---	---	ND	---	183
41	40/41/71	---	---	ND	---	183
42		---	---	ND	---	61.1
43	43/73	---	---	ND	---	61.1
44	44/47/65	---	---	ND	---	183
45	45/51	---	---	ND	---	122
46		---	---	ND	---	61.1
47	44/47/65	---	---	ND	---	183
48		---	---	ND	---	61.1

Conc = Concentration
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Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSSB-103 0-6"
Lab Sample ID 10292584006
Filename P150116A_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
49	49/69	---	---	ND	---	122
50	50/53	---	---	ND	---	122
51	45/51	---	---	ND	---	122
52		---	---	ND	---	188
53	50/53	---	---	ND	---	122
54		---	---	ND	---	61.1
55		---	---	ND	---	61.1
56		---	---	ND	---	61.1
57		---	---	ND	---	61.1
58		---	---	ND	---	61.1
59	59/62/75	---	---	ND	---	183
60		---	---	ND	---	61.1
61	61/70/74/76	29.360	0.79	250	---	244
62	59/62/75	---	---	ND	---	183
63		---	---	ND	---	61.1
64		---	---	ND	---	61.1
65	44/47/65	---	---	ND	---	183
66		---	---	ND	---	103
67		---	---	ND	---	61.1
68		---	---	ND	---	61.1
69	49/69	---	---	ND	---	122
70	61/70/74/76	29.360	0.79	(250)	---	244
71	40/41/71	---	---	ND	---	183
72		---	---	ND	---	61.1
73	43/73	---	---	ND	---	61.1
74	61/70/74/76	29.360	0.79	(250)	---	244
75	59/62/75	---	---	ND	---	183
76	61/70/74/76	29.360	0.79	(250)	---	244
77		---	---	ND	---	61.1
78		---	---	ND	---	61.1
79		---	---	ND	---	61.1
80		---	---	ND	---	61.1
81		---	---	ND	---	61.1
82		---	---	ND	---	61.1
83		---	---	ND	---	61.1
84		29.561	1.57	112	---	61.1
85	85/116/117	---	---	ND	---	183
86	86/87/97/108/119/125	32.764	1.63	408	---	366
87	86/87/97/108/119/125	32.764	1.63	(408)	---	366
88	88/91	---	---	ND	---	122
89		---	---	ND	---	61.1
90	90/101/113	31.540	1.62	583	---	183
91	88/91	---	---	ND	---	122
92		30.903	1.66	87.7	---	61.1
93	93/98/100/102	---	---	ND	---	244
94		---	---	ND	---	61.1
95		28.438	1.61	316	---	116
96		---	---	ND	---	61.1

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Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	WSSB-103 0-6"
Lab Sample ID	10292584006
Filename	P150116A_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	32.764	1.63	(408)	---	366
98	93/98/100/102	---	---	ND	---	244
99		32.160	1.62	192	---	61.1
100	93/98/100/102	---	---	ND	---	244
101	90/101/113	31.540	1.62	(583)	---	183
102	93/98/100/102	---	---	ND	---	244
103		---	---	ND	---	61.1
104		---	---	ND	---	61.1
105		37.900	1.52	302	---	61.1
106		---	---	ND	---	61.1
107	107/124	---	---	ND	---	122
108	86/87/97/108/119/125	32.764	1.63	(408)	---	366
109		---	---	ND	---	61.1
110	110/115	33.585	1.61	739	---	122
111		---	---	ND	---	61.1
112		---	---	ND	---	61.1
113	90/101/113	31.540	1.62	(583)	---	183
114		---	---	ND	---	61.1
115	110/115	33.585	1.61	(739)	---	122
116	85/116/117	---	---	ND	---	183
117	85/116/117	---	---	ND	---	183
118		36.692	1.60	687	---	78.2
119	86/87/97/108/119/125	32.764	1.63	(408)	---	366
120		---	---	ND	---	61.1
121		---	---	ND	---	61.1
122		---	---	ND	---	61.1
123		---	---	ND	---	61.1
124	107/124	---	---	ND	---	122
125	86/87/97/108/119/125	32.764	1.63	(408)	---	366
126		---	---	ND	---	61.1
127		---	---	ND	---	61.1
128	128/166	41.169	1.23	138	---	122
129	129/138/163	39.895	1.21	1010	---	183
130		---	---	ND	---	61.1
131		---	---	ND	---	61.1
132		36.776	1.14	348	---	61.1
133		---	---	ND	---	61.1
134	134/143	---	---	ND	---	122
135	135/151	34.541	1.31	357	---	122
136		32.009	1.24	116	---	61.1
137		---	---	ND	---	61.1
138	129/138/163	39.895	1.21	(1010)	---	183
139	139/140	---	---	ND	---	122
140	139/140	---	---	ND	---	122
141		38.822	1.24	192	---	61.1
142		---	---	ND	---	61.1
143	134/143	---	---	ND	---	122
144		---	---	ND	---	61.1

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSSB-103 0-6"
Lab Sample ID 10292584006
Filename P150116A_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145		---	---	ND	---	61.1
146		37.984	1.30	102	---	61.1
147	147/149	35.502	1.21	726	---	122
148		---	---	ND	---	61.1
149	147/149	35.502	1.21	(726)	---	122
150		---	---	ND	---	61.1
151	135/151	34.541	1.31	(357)	---	122
152		---	---	ND	---	61.1
153	153/168	38.621	1.22	696	---	122
154		---	---	ND	---	61.1
155		---	---	ND	---	61.1
156	156/157	44.109	1.23	134	---	122
157	156/157	44.109	1.23	(134)	---	122
158		40.314	1.21	107	---	61.1
159		---	---	ND	---	61.1
160		---	---	ND	---	61.1
161		---	---	ND	---	61.1
162		---	---	ND	---	61.1
163	129/138/163	39.895	1.21	(1010)	---	183
164		39.560	1.21	65.4	---	61.1
165		---	---	ND	---	61.1
166	128/166	41.169	1.23	(138)	---	122
167		---	---	ND	---	61.1
168	153/168	38.621	1.22	(696)	---	122
169		---	---	ND	---	61.1
170		46.808	1.04	223	---	61.1
171	171/173	---	---	ND	---	122
172		---	---	ND	---	61.1
173	171/173	---	---	ND	---	122
174		42.113	1.08	255	---	61.1
175		---	---	ND	---	61.1
176		---	---	ND	---	61.1
177		42.566	1.01	126	---	61.1
178		---	---	ND	---	61.1
179		37.548	0.99	110	---	61.1
180	180/193	45.534	1.07	509	---	122
181		---	---	ND	---	61.1
182		---	---	ND	---	61.1
183	183/185	41.896	1.03	177	---	122
184		---	---	ND	---	61.1
185	183/185	41.896	1.03	(177)	---	122
186		---	---	ND	---	61.1
187		41.253	1.08	303	---	61.1
188		---	---	ND	---	61.1
189		---	---	ND	---	61.1
190		---	---	ND	---	61.1
191		---	---	ND	---	61.1
192		---	---	ND	---	61.1

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID WSSB-103 0-6"
Lab Sample ID 10292584006
Filename P150116A_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	45.534	1.07	(509)	---	122
194		52.095	0.88	110	---	91.6
195		---	---	ND	---	91.6
196		---	---	ND	---	91.6
197	197/200	---	---	ND	---	183
198	198/199	---	---	ND	---	183
199	198/199	---	---	ND	---	183
200	197/200	---	---	ND	---	183
201		---	---	ND	---	91.6
202		---	---	ND	---	91.6
203		48.385	0.85	95.0	---	91.6
204		---	---	ND	---	91.6
205		---	---	ND	---	91.6
206		---	---	ND	---	91.6
207		---	---	ND	---	91.6
208		---	---	ND	---	91.6
209		55.888	0.72	103	---	91.6

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	WSSB-103 0-6"
Lab Sample ID	10292584006
Filename	P150116A_08

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	70.4
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	250
Total Pentachloro Biphenyls	3430
Total Hexachloro Biphenyls	3990
Total Heptachloro Biphenyls	1700
Total Octachloro Biphenyls	205
Total Nonachloro Biphenyls	ND
Decachloro Biphenyls	103
Total PCBs	9750

ND = Not Detected
Results reported on a dry weight basis

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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID	BLANK-43573		
Filename	P150116A_04		
Injected By	BAL	Matrix	Solid
Total Amount Extracted	10.0 g	Extracted	01/12/2015 20:00
ICAL ID	P150116A02	Analyzed	01/16/2015 13:45
CCal Filename(s)	P150116A_01	Dilution	5

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	8.849	3.30	2.0	1.13	56
13C-4-MoCB	3	11.616	3.32	2.0	1.26	63
13C-2,2'-DiCB	4	11.903	1.68	2.0	1.16	58
13C-4,4'-DiCB	15	18.850	1.59	2.0	1.62	81
13C-2,2',6-TrCB	19	15.711	1.08	2.0	1.47	74
13C-3,4,4'-TrCB	37	26.554	1.10	2.0	1.64	82
13C-2,2',6,6'-TeCB	54	19.143	0.80	2.0	1.18	59
13C-3,4,4',5-TeCB	81	33.669	0.85	2.0	1.60	80
13C-3,3',4,4'-TeCB	77	34.323	0.84	2.0	1.52	76
13C-2,2',4,6,6'-PeCB	104	25.196	1.69	2.0	1.27	64
13C-2,3,3',4,4'-PeCB	105	37.833	1.57	2.0	1.29	64
13C-2,3,4,4',5-PeCB	114	37.179	1.72	2.0	1.33	67
13C-2,3',4,4',5-PeCB	118	36.626	1.60	2.0	1.39	70
13C-2,3',4,4',5'-PeCB	123	36.290	1.62	2.0	1.24	62
13C-3,3',4,4',5-PeCB	126	41.019	1.56	2.0	1.36	68
13C-2,2',4,4',6,6'-HxCB	155	31.255	1.35	2.0	1.77	88
13C-HxCB (156/157)	156/157	44.076	1.26	4.0	4.18	105
13C-2,3',4,4',5,5'-HxCB	167	42.919	1.25	2.0	1.95	97
13C-3,3',4,4',5,5'-HxCB	169	47.362	1.30	2.0	2.18	109
13C-2,2',3,4',5,6,6'-HpCB	188	37.146	1.11	2.0	1.44	72
13C-2,3,3',4,4',5,5'-HpCB	189	49.897	1.06	2.0	1.85	93
13C-2,2',3,3',5,5',6,6'-OcCB	202	42.617	0.93	2.0	1.57	78
13C-2,3,3',4,4',5,5',6-OcCB	205	52.483	0.91	2.0	1.71	86
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.229	0.82	2.0	1.35	67
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	49.401	0.78	2.0	1.38	69
13C--DeCB	209	55.824	0.74	2.0	1.46	73
Cleanup Standards						
13C-2,4,4'-TrCB	28	22.211	1.07	2.0	1.69	84
13C-2,3,3',5,5'-PeCB	111	34.340	1.58	2.0	1.36	68
13C-2,2',3,3',5,5',6-HpCB	178	40.264	1.11	2.0	1.89	94
Recovery Standards						
13C-2,5-DiCB	9	14.597	1.63	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	24.190	0.86	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	31.473	1.59	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	39.828	1.30	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.009	0.93	2.0	NA	NA

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
Nn = Value obtained from additional analyses

Results reported on a total weight basis

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
RT = Retention Time
I = Interference
ng's = Nanograms

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Minneapolis, MN 55414

Tel: 612-607-1700
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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-43573
Filename P150116A_04

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		---	---	ND	---	25.0
2		---	---	ND	---	25.0
3		---	---	ND	---	25.0
4		---	---	ND	---	25.0
5		---	---	ND	---	25.0
6		---	---	ND	---	25.0
7		---	---	ND	---	25.0
8		---	---	ND	---	25.0
9		---	---	ND	---	25.0
10		---	---	ND	---	25.0
11		---	---	ND	---	245
12	12/13	---	---	ND	---	50.0
13	12/13	---	---	ND	---	50.0
14		---	---	ND	---	25.0
15		---	---	ND	---	25.0
16		---	---	ND	---	25.0
17		---	---	ND	---	25.0
18	18/30	---	---	ND	---	50.0
19		---	---	ND	---	25.0
20	20/28	---	---	ND	---	129
21	21/33	---	---	ND	---	135
22		---	---	ND	---	95.0
23		---	---	ND	---	25.0
24		---	---	ND	---	25.0
25		---	---	ND	---	25.0
26	26/29	---	---	ND	---	50.0
27		---	---	ND	---	25.0
28	20/28	---	---	ND	---	129
29	26/29	---	---	ND	---	50.0
30	18/30	---	---	ND	---	50.0
31		---	---	ND	---	130
32		---	---	ND	---	25.0
33	21/33	---	---	ND	---	135
34		---	---	ND	---	25.0
35		---	---	ND	---	25.0
36		---	---	ND	---	25.0
37		---	---	ND	---	53.0
38		---	---	ND	---	25.0
39		---	---	ND	---	25.0
40	40/41/71	---	---	ND	---	150
41	40/41/71	---	---	ND	---	150
42		---	---	ND	---	50.0
43	43/73	---	---	ND	---	50.0
44	44/47/65	---	---	ND	---	150
45	45/51	---	---	ND	---	100

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
RT = Retention Time
I = Interference

Results reported on a total weight basis

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Tel: 612-607-1700
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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-43573
Filename P150116A_04

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
46		---	---	ND	---	50.0
47	44/47/65	---	---	ND	---	150
48		---	---	ND	---	50.0
49	49/69	---	---	ND	---	100
50	50/53	---	---	ND	---	100
51	45/51	---	---	ND	---	100
52		---	---	ND	---	154
53	50/53	---	---	ND	---	100
54		---	---	ND	---	50.0
55		---	---	ND	---	50.0
56		---	---	ND	---	50.0
57		---	---	ND	---	50.0
58		---	---	ND	---	50.0
59	59/62/75	---	---	ND	---	150
60		---	---	ND	---	50.0
61	61/70/74/76	---	---	ND	---	200
62	59/62/75	---	---	ND	---	150
63		---	---	ND	---	50.0
64		---	---	ND	---	50.0
65	44/47/65	---	---	ND	---	150
66		---	---	ND	---	84.0
67		---	---	ND	---	50.0
68		---	---	ND	---	50.0
69	49/69	---	---	ND	---	100
70	61/70/74/76	---	---	ND	---	200
71	40/41/71	---	---	ND	---	150
72		---	---	ND	---	50.0
73	43/73	---	---	ND	---	50.0
74	61/70/74/76	---	---	ND	---	200
75	59/62/75	---	---	ND	---	150
76	61/70/74/76	---	---	ND	---	200
77		---	---	ND	---	50.0
78		---	---	ND	---	50.0
79		---	---	ND	---	50.0
80		---	---	ND	---	50.0
81		---	---	ND	---	50.0
82		---	---	ND	---	50.0
83		---	---	ND	---	50.0
84		---	---	ND	---	50.0
85	85/116/117	---	---	ND	---	150
86	86/87/97/108/119/125	---	---	ND	---	300
87	86/87/97/108/119/125	---	---	ND	---	300
88	88/91	---	---	ND	---	100
89		---	---	ND	---	50.0
90	90/101/113	---	---	ND	---	150

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
RT = Retention Time
I = Interference

Results reported on a total weight basis

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Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-43573
Filename P150116A_04

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
91	88/91	---	---	ND	---	100
92		---	---	ND	---	50.0
93	93/98/100/102	---	---	ND	---	200
94		---	---	ND	---	50.0
95		---	---	ND	---	95.0
96		---	---	ND	---	50.0
97	86/87/97/108/119/125	---	---	ND	---	300
98	93/98/100/102	---	---	ND	---	200
99		---	---	ND	---	50.0
100	93/98/100/102	---	---	ND	---	200
101	90/101/113	---	---	ND	---	150
102	93/98/100/102	---	---	ND	---	200
103		---	---	ND	---	50.0
104		---	---	ND	---	50.0
105		---	---	ND	---	50.0
106		---	---	ND	---	50.0
107	107/124	---	---	ND	---	100
108	86/87/97/108/119/125	---	---	ND	---	300
109		---	---	ND	---	50.0
110	110/115	---	---	ND	---	100
111		---	---	ND	---	50.0
112		---	---	ND	---	50.0
113	90/101/113	---	---	ND	---	150
114		---	---	ND	---	50.0
115	110/115	---	---	ND	---	100
116	85/116/117	---	---	ND	---	150
117	85/116/117	---	---	ND	---	150
118		---	---	ND	---	64.0
119	86/87/97/108/119/125	---	---	ND	---	300
120		---	---	ND	---	50.0
121		---	---	ND	---	50.0
122		---	---	ND	---	50.0
123		---	---	ND	---	50.0
124	107/124	---	---	ND	---	100
125	86/87/97/108/119/125	---	---	ND	---	300
126		---	---	ND	---	50.0
127		---	---	ND	---	50.0
128	128/166	---	---	ND	---	100
129	129/138/163	---	---	ND	---	150
130		---	---	ND	---	50.0
131		---	---	ND	---	50.0
132		---	---	ND	---	50.0
133		---	---	ND	---	50.0
134	134/143	---	---	ND	---	100
135	135/151	---	---	ND	---	100

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
RT = Retention Time
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Results reported on a total weight basis

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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-43573
Filename P150116A_04

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
136		---	---	ND	---	50.0
137		---	---	ND	---	50.0
138	129/138/163	---	---	ND	---	150
139	139/140	---	---	ND	---	100
140	139/140	---	---	ND	---	100
141		---	---	ND	---	50.0
142		---	---	ND	---	50.0
143	134/143	---	---	ND	---	100
144		---	---	ND	---	50.0
145		---	---	ND	---	50.0
146		---	---	ND	---	50.0
147	147/149	---	---	ND	---	100
148		---	---	ND	---	50.0
149	147/149	---	---	ND	---	100
150		---	---	ND	---	50.0
151	135/151	---	---	ND	---	100
152		---	---	ND	---	50.0
153	153/168	---	---	ND	---	100
154		---	---	ND	---	50.0
155		---	---	ND	---	50.0
156	156/157	---	---	ND	---	100
157	156/157	---	---	ND	---	100
158		---	---	ND	---	50.0
159		---	---	ND	---	50.0
160		---	---	ND	---	50.0
161		---	---	ND	---	50.0
162		---	---	ND	---	50.0
163	129/138/163	---	---	ND	---	150
164		---	---	ND	---	50.0
165		---	---	ND	---	50.0
166	128/166	---	---	ND	---	100
167		---	---	ND	---	50.0
168	153/168	---	---	ND	---	100
169		---	---	ND	---	50.0
170		---	---	ND	---	50.0
171	171/173	---	---	ND	---	100
172		---	---	ND	---	50.0
173	171/173	---	---	ND	---	100
174		---	---	ND	---	50.0
175		---	---	ND	---	50.0
176		---	---	ND	---	50.0
177		---	---	ND	---	50.0
178		---	---	ND	---	50.0
179		---	---	ND	---	50.0
180	180/193	---	---	ND	---	100

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

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NA = Not Applicable
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Results reported on a total weight basis

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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-43573
Filename P150116A_04

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
181		---	---	ND	---	50.0
182		---	---	ND	---	50.0
183	183/185	---	---	ND	---	100
184		---	---	ND	---	50.0
185	183/185	---	---	ND	---	100
186		---	---	ND	---	50.0
187		---	---	ND	---	50.0
188		---	---	ND	---	50.0
189		---	---	ND	---	50.0
190		---	---	ND	---	50.0
191		---	---	ND	---	50.0
192		---	---	ND	---	50.0
193	180/193	---	---	ND	---	100
194		---	---	ND	---	75.0
195		---	---	ND	---	75.0
196		---	---	ND	---	75.0
197	197/200	---	---	ND	---	150
198	198/199	---	---	ND	---	150
199	198/199	---	---	ND	---	150
200	197/200	---	---	ND	---	150
201		---	---	ND	---	75.0
202		---	---	ND	---	75.0
203		---	---	ND	---	75.0
204		---	---	ND	---	75.0
205		---	---	ND	---	75.0
206		---	---	ND	---	75.0
207		---	---	ND	---	75.0
208		---	---	ND	---	75.0
209		---	---	ND	---	75.0

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
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Results reported on a total weight basis

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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Client Sample ID	CBLKLW
Lab Sample ID	BLANK-43573
Filename	P150116A_04

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	ND
Total Pentachloro Biphenyls	ND
Total Hexachloro Biphenyls	ND
Total Heptachloro Biphenyls	ND
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
Decachloro Biphenyls	ND
Total PCBs	ND

ND = Not Detected
Results reported on a total weight basis

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Method 1668A Polychlorobiphenyls
Laboratory Control Spike Analysis Results

Lab Sample ID	LCS-43574		
Filename	P150116B_05	Matrix	Solid
Total Amount Extracted	10.4 g	Dilution	5
ICAL ID	P150116B02	Extracted	01/12/2015 20:00
CCal Filename(s)	P150116B_01	Analyzed	01/17/2015 03:46
Method Blank ID	BLANK-43573	Injected By	BAL

	Native Analytes			Labeled Analytes		
PCB Isomer	**Spiked (ng)**	**Found (ng)**	**% Recovery**	**Spiked (ng)**	**Found (ng)**	**% Recovery**
1	1.0	1.05	105	2.0	1.04	52
3	1.0	1.04	104	2.0	1.24	62
4	1.0	0.943	94	2.0	1.37	68
15	1.0	1.08	108	2.0	1.57	79
19	1.0	0.953	95	2.0	1.56	78
37	1.0	0.996	100	2.0	1.62	81
54	1.0	0.922	92	2.0	1.33	67
81	1.0	0.986	99	2.0	1.77	88
77	1.0	1.07	107	2.0	1.67	83
104	1.0	1.01	101	2.0	1.40	70
105	1.0	1.06	106	2.0	1.54	77
114	1.0	1.01	101	2.0	1.41	70
118	1.0	1.20	120	2.0	1.47	73
123	1.0	1.01	101	2.0	1.50	75
126	1.0	0.974	97	2.0	1.61	80
155	1.0	0.966	97	2.0	1.60	80
156/157	2.0	2.02	101	4.0	3.29	82
167	1.0	1.01	101	2.0	1.69	84
169	1.0	1.02	102	2.0	1.71	85
188	1.0	0.995	99	2.0	1.47	74
189	1.0	0.944	94	2.0	1.85	92
202	1.0	0.994	99	2.0	1.66	83
205	1.0	1.02	102	2.0	1.70	85
206	1.0	1.06	106	2.0	1.37	69
208	1.0	1.04	104	2.0	1.41	70
209	1.0	0.956	96	2.0	1.62	81

R = Recovery outside of method 1668A control limits
Nn = Result obtained from alternate analysis
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
ng = Nanograms
I = Interference

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Method 1668A Polychlorobiphenyls
Laboratory Control Spike Analysis Results

Lab Sample ID	LCSD-43575		
Filename	P150116B_06	Matrix	Solid
Total Amount Extracted	10.2 g	Dilution	5
ICAL ID	P150116B02	Extracted	01/12/2015 20:00
CCal Filename(s)	P150116B_01	Analyzed	01/17/2015 04:46
Method Blank ID	BLANK-43573	Injected By	BAL

	Native Analytes			Labeled Analytes		
PCB Isomer	**Spiked (ng)**	**Found (ng)**	**% Recovery**	**Spiked (ng)**	**Found (ng)**	**% Recovery**
1	1.0	1.06	106	2.0	1.00	50
3	1.0	1.00	100	2.0	1.25	62
4	1.0	0.886	89	2.0	1.38	69
15	1.0	1.05	105	2.0	1.64	82
19	1.0	0.922	92	2.0	1.62	81
37	1.0	1.03	103	2.0	1.66	83
54	1.0	0.960	96	2.0	1.36	68
81	1.0	1.01	101	2.0	1.77	88
77	1.0	1.03	103	2.0	1.70	85
104	1.0	1.01	101	2.0	1.48	74
105	1.0	1.06	106	2.0	1.54	77
114	1.0	1.02	102	2.0	1.48	74
118	1.0	1.14	114	2.0	1.56	78
123	1.0	0.999	100	2.0	1.56	78
126	1.0	1.02	102	2.0	1.60	80
155	1.0	0.956	96	2.0	1.60	80
156/157	2.0	2.00	100	4.0	3.17	79
167	1.0	1.01	101	2.0	1.62	81
169	1.0	0.992	99	2.0	1.70	85
188	1.0	0.995	100	2.0	1.47	73
189	1.0	0.973	97	2.0	1.85	93
202	1.0	0.980	98	2.0	1.71	85
205	1.0	1.05	105	2.0	1.65	83
206	1.0	1.06	106	2.0	1.38	69
208	1.0	1.04	104	2.0	1.42	71
209	1.0	0.972	97	2.0	1.59	80

R = Recovery outside of method 1668A control limits
Nn = Result obtained from alternate analysis
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
ng = Nanograms
I = Interference

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Method 1668A

Spike Recovery Relative Percent Difference (RPD) Results

Client	Weston and Sampson Engineers		
Spike 1 ID	LCS-43574	Spike 2 ID	LCSD-43575
Spike 1 Filename	P150116B_05	Spike 2 Filename	P150116B_06

Compound	IUPAC	Spike 1 %REC	Spike 2 %REC	%RPD
2-MoCB	1	105	106	0.9
4-MoCB	3	104	100	3.9
2,2'-DiCB	4	94	89	5.5
4,4'-DiCB	15	108	105	2.8
2,2',6-TrCB	19	95	92	3.2
3,4,4'-TrCB	37	100	103	3.0
2,2',6,6'-TeCB	54	92	96	4.3
3,3',4,4'-TeCB	77	107	103	3.8
3,4,4',5-TeCB	81	99	101	2.0
2,2',4,6,6'-PeCB	104	101	101	0.0
2,3,3',4,4'-PeCB	105	106	106	0.0
2,3,4,4',5-PeCB	114	101	102	1.0
2,3',4,4',5-PeCB	118	120	114	5.1
2,3',4,4',5'-PeCB	123	101	100	1.0
3,3',4,4',5-PeCB	126	97	102	5.0
2,2',4,4',6,6'-HxCB	155	97	96	1.0
(156/157)	156/157	101	100	1.0
2,3',4,4',5,5'-HxCB	167	101	101	0.0
3,3',4,4',5,5'-HxCB	169	102	99	3.0
2,2',3,4',5,6,6'-HpCB	188	99	100	1.0
2,3,3',4,4',5,5'-HpCB	189	94	97	3.1
2,2',3,3',5,5',6,6'-OcCB	202	99	98	1.0
2,3,3',4,4',5,5',6-OcCB	205	102	105	2.9
2,2',3,3',4,4',5,5',6-NoCB	206	106	106	0.0
2,2',3,3',4,5,5',6,6'-NoCB	208	104	104	0.0
Decachlorobiphenyl	209	96	97	1.0

%REC = Percent Recovered
RPD = The difference between the two values divided by the mean value

REPORT OF LABORATORY ANALYSIS

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www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

Report Prepared for:

Todd Bridgeo
Weston and Sampson Engineers
5 Centennial Drive
Peabody MA 01960

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Information:

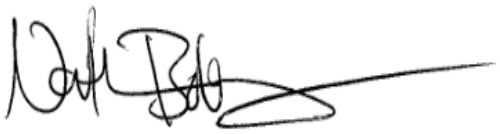
Pace Project #: 10292584
Sample Receipt Date: 12/22/2014
Client Project #: Soils
Client Sub PO #: N/A
State Cert #: N/A

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Nathan Boberg, your Pace Project Manager.

This report has been reviewed by:



January 20, 2015
Nathan Boberg, Project Manager

(612) 607-6444 (fax)
nathan.boberg@pacelabs.com

Report Prepared Date:
January 13, 2015

ACCREDITED IN ACCORDANCE WITH nelac

Report of Laboratory Analysis

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The results relate only to the samples included in this report.

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DISCUSSION

This report presents the results from the analyses performed on six samples submitted by a representative of Weston and Sampson Engineers. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. The reporting limits were set to correspond to the lowest calibration points and a nominal 10-gram sample amount. Estimated Maximum Possible Concentration (EMPC) values were treated as positives in the toxic equivalence calculations. The samples were received above the recommended temperature range of 0-6 degrees Celsius.

Second column confirmation analyses of 2,3,7,8-TCDF values obtained from the primary (DB5-MS) column are performed only when specifically requested for a project and only when the values are above the concentration of the lowest calibration standard. Typical resolution for this isomer using the DB5-MS column ranges from 25-30%.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 62-104%. All of the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

In one case, an interfering substance impacted the determination of a PCDF congener; the affected value was flagged "P" due to the presence of a polychlorinated diphenyl ether. Concentrations below the calibration range were flagged "J" and should be regarded as estimates.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to be free of PCDDs and PCDFs at the reporting limits. These results indicate that the sample processing steps did not significantly impact the results reported for the field samples.

A laboratory spike sample was also prepared with the sample batch using clean sand that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at 95-129%, indicating a high degree of accuracy for these determinations. Matrix spikes were prepared with the sample batch using sample material from a separate project; results from these analyses will be provided upon request.

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Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Mississippi	MN00064
Alabama	40770	Montana	92
Alaska	MN00064	Nebraska	
Arizona	AZ0014	Nevada	MN_00064_200
Arkansas	88-0680	New Jersey (NE	MN002
California	01155CA	New York (NEL	11647
Colorado	MN00064	North Carolina	27700
Connecticut	PH-0256	North Dakota	R-036
EPA Region 8	8TMS-Q	Ohio	4150
Florida (NELAP	E87605	Oklahoma	D9922
Georgia (DNR)	959	Oregon (ELAP)	MN200001-005
Guam	959	Oregon (OREL	MN300001-001
Hawaii	SLD	Pennsylvania	68-00563
Idaho	MN00064	Puerto Rico	MN00064
Illinois	200012	Saipan	MP0003
Indiana	C-MN-01	South Carolina	74003001
Indiana	C-MN-01	Tennessee	TN02818
Iowa	368	Texas	T104704192-08
Kansas	E-10167	Utah (NELAP)	MN00064
Kentucky	90062	Virginia	00251
Louisiana	03086	Washington	C755
Maine	2007029	West Virginia	9952C
Maryland	322	Wisconsin	999407970
Michigan	9909	Wyoming	8TMS-Q
Minnesota	027-053-137		

REPORT OF LABORATORY ANALYSIS

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Report No.....10292584

Appendix A

Sample Management

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10292584

Page: of

1855782

Section A Required Client Information:

Company:	Weston & Sampson
Address:	5 Centennial Dr. Peabody Ma 01960
Email To:	BridgeoT@wseinc.com
Phone:	978-532-1900
Fax:	—
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	TODD BRIDGEO
Copy To:	
Purchase Order No.:	
Project Name:	
Project Number:	

Section C Invoice Information:

Attention:	
Company Name:	WESTON & SAMPSON
Address:	5 CENTENNIAL DRIVE
Pace Quote Reference:	1800 SAMPSON
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: MA.

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	DIOXINS	PCB-CONGENERS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	WSB-101 0-0.5"			12/19	1000					X									X	X		001
2	WSSB 101 0-6"	SL		12/19	1030					X												002
3	WSB-102 0.0.5"			12/19	1030					X												003
4	WSSB 102 0-6"	SL		12/19	1120					X												004
5	WSB 103 0-0.5"			12/19	1045					X												005
6	WSSB 103 0-6"	SL		12/19	1150					X												006
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Padraic Kavanagh	12/20/14	1300	[signature]	12/22	9:00	6.6	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE: Padraic Kavanagh

PRINT Name of SAMPLER: PADRAIC KAVANAGH

SIGNATURE of SAMPLER: Padraic Kavanagh

DATE Signed (MM/DD/YY): 12/20/14

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical®	Document Name: Sample Condition Upon Receipt Form	Document Revised: 28Feb2014 Page 1 of 1
	Document No.: F-MN-L-213-rev.09	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Weston & Sampson

Project #: WO# : 10292584

10292584

Courier: ☐ Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No **Optional:** Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermom. Used: ☑ B88A9130516413 ☐ B88A912167504 ☐ B88A9132521491 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 6.6 **Cooler Temp Corrected (°C):** 6.6 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.0 **Date and Initials of Person Examining Contents:** KH 12/23/14

				Comments:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	12.
-Includes Date/Time/ID/Analysis Matrix: SL				
~~All containers needing acid/base preservation have been~~ checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	☐ Yes	☑ No		Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Date: 12/23/14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
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Tel: 612-607-1700
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Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion

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Appendix B

Sample Analysis Summary

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Minneapolis, MN 55414

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Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Weston and Sampson Engineers

Client's Sample ID	WSB-101 0-0.5"		
Lab Sample ID	10292584001		
Filename	F150109B_11		
Injected By	BAL		
Total Amount Extracted	10.1 g	Matrix	Solid
% Moisture	1.2	Dilution	NA
Dry Weight Extracted	9.98 g	Collected	12/19/2014 10:00
ICAL ID	F141223	Received	12/22/2014 09:30
CCal Filename(s)	F150109B_01 & F150109B_19	Extracted	01/05/2015 17:50
Method Blank ID	BLANK-43468	Analyzed	01/09/2015 22:35

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	42.0	-----	1.0	2,3,7,8-TCDF-13C	2.00	74
Total TCDF	420.0	-----	1.0	2,3,7,8-TCDD-13C	2.00	86
				1,2,3,7,8-PeCDF-13C	2.00	81
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	80
Total TCDD	28.0	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	93
				1,2,3,4,7,8-HxCDF-13C	2.00	71
1,2,3,7,8-PeCDF	13.0	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	74
2,3,4,7,8-PeCDF	20.0	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	76
Total PeCDF	190.0	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	73
				1,2,3,4,7,8-HxCDD-13C	2.00	74
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	66
Total PeCDD	21.0	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	66
				1,2,3,4,7,8,9-HpCDF-13C	2.00	66
1,2,3,4,7,8-HxCDF	10.0	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	73
1,2,3,6,7,8-HxCDF	6.3	-----	5.0	OCDD-13C	4.00	62
2,3,4,6,7,8-HxCDF	6.2	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	92.0	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	84
1,2,3,6,7,8-HxCDD	6.9	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	52.0	-----	5.0			
1,2,3,4,6,7,8-HpCDF	28.0	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 51 ng/Kg		
Total HpCDF	74.0	-----	5.0	(Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	89.0	-----	5.0			
Total HpCDD	160.0	-----	5.0			
OCDF	62.0	-----	10.0			
OCDD	500.0	-----	10.0			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

REPORT OF LABORATORY ANALYSIS

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Method 8290 Sample Analysis Results

Client - Weston and Sampson Engineers

Client's Sample ID	WSSB-101 0-6"		
Lab Sample ID	10292584002		
Filename	F150109B_12		
Injected By	BAL		
Total Amount Extracted	10.0 g	Matrix	Solid
% Moisture	17.1	Dilution	NA
Dry Weight Extracted	8.29 g	Collected	12/19/2014 10:30
ICAL ID	F141223	Received	12/22/2014 09:30
CCal Filename(s)	F150109B_01 & F150109B_19	Extracted	01/05/2015 17:50
Method Blank ID	BLANK-43468	Analyzed	01/09/2015 23:17

Native Isomers	**Conc** ng/Kg	**EMPC** ng/Kg	**RL** ng/Kg		**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	5.7	-----	1.0		2,3,7,8-TCDF-13C	2.00	76
Total TCDF	130.0	-----	1.0		2,3,7,8-TCDD-13C	2.00	91
					1,2,3,7,8-PeCDF-13C	2.00	80
2,3,7,8-TCDD	ND	-----	1.0		2,3,4,7,8-PeCDF-13C	2.00	80
Total TCDD	58.0	-----	1.0		1,2,3,7,8-PeCDD-13C	2.00	90
					1,2,3,4,7,8-HxCDF-13C	2.00	80
1,2,3,7,8-PeCDF	ND	-----	5.0		1,2,3,6,7,8-HxCDF-13C	2.00	79
2,3,4,7,8-PeCDF	11.0	-----	5.0		2,3,4,6,7,8-HxCDF-13C	2.00	82
Total PeCDF	110.0	-----	5.0		1,2,3,7,8,9-HxCDF-13C	2.00	77
					1,2,3,4,7,8-HxCDD-13C	2.00	80
1,2,3,7,8-PeCDD	ND	-----	5.0		1,2,3,6,7,8-HxCDD-13C	2.00	70
Total PeCDD	46.0	-----	5.0		1,2,3,4,6,7,8-HpCDF-13C	2.00	70
					1,2,3,4,7,8,9-HpCDF-13C	2.00	68
1,2,3,4,7,8-HxCDF	9.0	-----	5.0		1,2,3,4,6,7,8-HpCDD-13C	2.00	77
1,2,3,6,7,8-HxCDF	5.9	-----	5.0	J	OCDD-13C	4.00	68
2,3,4,6,7,8-HxCDF	7.2	-----	5.0				
1,2,3,7,8,9-HxCDF	ND	-----	5.0		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	88.0	-----	5.0		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0		2,3,7,8-TCDD-37Cl4	0.20	94
1,2,3,6,7,8-HxCDD	5.6	-----	5.0	J			
1,2,3,7,8,9-HxCDD	ND	-----	5.0				
Total HxCDD	66.0	-----	5.0				
1,2,3,4,6,7,8-HpCDF	66.0	-----	5.0		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0		Equivalence: 29 ng/Kg		
Total HpCDF	95.0	-----	5.0		(Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	22.0	-----	5.0				
Total HpCDD	41.0	-----	5.0				
OCDF	18.0	-----	10.0				
OCDD	100.0	-----	10.0				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value

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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Weston and Sampson Engineers

Client's Sample ID	WSB-102 0-0.5"		
Lab Sample ID	10292584003		
Filename	F150109B_13		
Injected By	BAL		
Total Amount Extracted	10.6 g	Matrix	Solid
% Moisture	1.3	Dilution	NA
Dry Weight Extracted	10.5 g	Collected	12/19/2014 10:30
ICAL ID	F141223	Received	12/22/2014 09:30
CCal Filename(s)	F150109B_01 & F150109B_19	Extracted	01/05/2015 17:50
Method Blank ID	BLANK-43468	Analyzed	01/09/2015 23:59

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	24.0	-----	1.0	2,3,7,8-TCDF-13C	2.00	82
Total TCDF	270.0	-----	1.0	2,3,7,8-TCDD-13C	2.00	96
				1,2,3,7,8-PeCDF-13C	2.00	88
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	86
Total TCDD	29.0	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	97
				1,2,3,4,7,8-HxCDF-13C	2.00	81
1,2,3,7,8-PeCDF	8.9	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	83
2,3,4,7,8-PeCDF	17.0	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	83
Total PeCDF	160.0	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	79
				1,2,3,4,7,8-HxCDD-13C	2.00	77
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	75
Total PeCDD	23.0	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	70
				1,2,3,4,7,8,9-HpCDF-13C	2.00	72
1,2,3,4,7,8-HxCDF	10.0	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	76
1,2,3,6,7,8-HxCDF	8.5	-----	5.0	OCDD-13C	4.00	66
2,3,4,6,7,8-HxCDF	7.1	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	100.0	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	98
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	37.0	-----	5.0			
1,2,3,4,6,7,8-HpCDF	39.0	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 42 ng/Kg		
Total HpCDF	87.0	-----	5.0	(Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	66.0	-----	5.0			
Total HpCDD	120.0	-----	5.0			
OCDF	73.0	-----	10.0			
OCDD	630.0	-----	10.0			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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Method 8290 Sample Analysis Results

Client - Weston and Sampson Engineers

Client's Sample ID	WSSB-102 0-6"		
Lab Sample ID	10292584004		
Filename	F150109B_14		
Injected By	BAL		
Total Amount Extracted	10.8 g	Matrix	Solid
% Moisture	14.8	Dilution	NA
Dry Weight Extracted	9.20 g	Collected	12/19/2014 11:20
ICAL ID	F141223	Received	12/22/2014 09:30
CCal Filename(s)	F150109B_01 & F150109B_19	Extracted	01/05/2015 17:50
Method Blank ID	BLANK-43468	Analyzed	01/10/2015 00:41

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	5.5	-----	1.0		2,3,7,8-TCDF-13C	2.00	84
Total TCDF	85.0	-----	1.0		2,3,7,8-TCDD-13C	2.00	99
					1,2,3,7,8-PeCDF-13C	2.00	85
2,3,7,8-TCDD	ND	-----	1.0		2,3,4,7,8-PeCDF-13C	2.00	85
Total TCDD	59.0	-----	1.0		1,2,3,7,8-PeCDD-13C	2.00	96
					1,2,3,4,7,8-HxCDF-13C	2.00	86
1,2,3,7,8-PeCDF	ND	-----	5.0		1,2,3,6,7,8-HxCDF-13C	2.00	82
2,3,4,7,8-PeCDF	6.6	-----	5.0		2,3,4,6,7,8-HxCDF-13C	2.00	81
Total PeCDF	39.0	-----	5.0		1,2,3,7,8,9-HxCDF-13C	2.00	78
					1,2,3,4,7,8-HxCDD-13C	2.00	83
1,2,3,7,8-PeCDD	ND	-----	5.0		1,2,3,6,7,8-HxCDD-13C	2.00	71
Total PeCDD	62.0	-----	5.0		1,2,3,4,6,7,8-HpCDF-13C	2.00	67
					1,2,3,4,7,8,9-HpCDF-13C	2.00	67
1,2,3,4,7,8-HxCDF	5.8	-----	5.0		1,2,3,4,6,7,8-HpCDD-13C	2.00	75
1,2,3,6,7,8-HxCDF	ND	-----	5.0		OCDD-13C	4.00	65
2,3,4,6,7,8-HxCDF	ND	-----	5.0				
1,2,3,7,8,9-HxCDF	ND	-----	5.0		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	18.0	-----	5.0		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0		2,3,7,8-TCDD-37Cl4	0.20	97
1,2,3,6,7,8-HxCDD	5.3	-----	5.0	J			
1,2,3,7,8,9-HxCDD	ND	-----	5.0				
Total HxCDD	68.0	-----	5.0				
1,2,3,4,6,7,8-HpCDF	18.0	-----	5.0		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0		Equivalence: 18 ng/Kg		
Total HpCDF	18.0	-----	5.0		(Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	25.0	-----	5.0				
Total HpCDD	54.0	-----	5.0				
OCDF	ND	-----	10.0				
OCDD	1700.0	-----	10.0				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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J = Estimated value

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Method 8290 Sample Analysis Results

Client - Weston and Sampson Engineers

Client's Sample ID	WSB-103 0-0.5"		
Lab Sample ID	10292584005		
Filename	F150109B_15		
Injected By	BAL		
Total Amount Extracted	10.1 g	Matrix	Solid
% Moisture	3.7	Dilution	NA
Dry Weight Extracted	9.73 g	Collected	12/19/2014 10:45
ICAL ID	F141223	Received	12/22/2014 09:30
CCal Filename(s)	F150109B_01 & F150109B_19	Extracted	01/05/2015 17:50
Method Blank ID	BLANK-43468	Analyzed	01/10/2015 01:23

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	2.1	-----	1.0		2,3,7,8-TCDF-13C	2.00	87
Total TCDF	120.0	-----	1.0		2,3,7,8-TCDD-13C	2.00	101
					1,2,3,7,8-PeCDF-13C	2.00	92
2,3,7,8-TCDD	ND	-----	1.0		2,3,4,7,8-PeCDF-13C	2.00	91
Total TCDD	6.6	-----	1.0		1,2,3,7,8-PeCDD-13C	2.00	104
					1,2,3,4,7,8-HxCDF-13C	2.00	87
1,2,3,7,8-PeCDF	ND	-----	5.0		1,2,3,6,7,8-HxCDF-13C	2.00	86
2,3,4,7,8-PeCDF	33.0	-----	5.0		2,3,4,6,7,8-HxCDF-13C	2.00	88
Total PeCDF	260.0	-----	5.0		1,2,3,7,8,9-HxCDF-13C	2.00	84
					1,2,3,4,7,8-HxCDD-13C	2.00	87
1,2,3,7,8-PeCDD	ND	-----	5.0		1,2,3,6,7,8-HxCDD-13C	2.00	75
Total PeCDD	5.9	-----	5.0		1,2,3,4,6,7,8-HpCDF-13C	2.00	71
					1,2,3,4,7,8,9-HpCDF-13C	2.00	75
1,2,3,4,7,8-HxCDF	-----	33	5.0	P	1,2,3,4,6,7,8-HpCDD-13C	2.00	80
1,2,3,6,7,8-HxCDF	7.3	-----	5.0		OCDD-13C	4.00	74
2,3,4,6,7,8-HxCDF	15.0	-----	5.0				
1,2,3,7,8,9-HxCDF	ND	-----	5.0		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	220.0	-----	5.0		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0		2,3,7,8-TCDD-37Cl4	0.20	101
1,2,3,6,7,8-HxCDD	18.0	-----	5.0				
1,2,3,7,8,9-HxCDD	6.9	-----	5.0				
Total HxCDD	93.0	-----	5.0				
1,2,3,4,6,7,8-HpCDF	110.0	-----	5.0		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	7.1	-----	5.0		Equivalence: 90 ng/Kg		
Total HpCDF	260.0	-----	5.0		(Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	310.0	-----	5.0				
Total HpCDD	540.0	-----	5.0				
OCDF	230.0	-----	10.0				
OCDD	3400.0	-----	10.0				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
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ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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Method 8290 Sample Analysis Results

Client - Weston and Sampson Engineers

Client's Sample ID	WSSB-103 0-6"		
Lab Sample ID	10292584006		
Filename	F150109B_16		
Injected By	BAL		
Total Amount Extracted	10.1 g	Matrix	Solid
% Moisture	20.5	Dilution	NA
Dry Weight Extracted	8.03 g	Collected	12/19/2014 10:50
ICAL ID	F141223	Received	12/22/2014 09:30
CCal Filename(s)	F150109B_01 & F150109B_19	Extracted	01/05/2015 17:50
Method Blank ID	BLANK-43468	Analyzed	01/10/2015 02:05

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	3.3	-----	1.0		2,3,7,8-TCDF-13C	2.00	79
Total TCDF	46.0	-----	1.0		2,3,7,8-TCDD-13C	2.00	92
					1,2,3,7,8-PeCDF-13C	2.00	79
2,3,7,8-TCDD	ND	-----	1.0		2,3,4,7,8-PeCDF-13C	2.00	79
Total TCDD	21.0	-----	1.0		1,2,3,7,8-PeCDD-13C	2.00	82
					1,2,3,4,7,8-HxCDF-13C	2.00	85
1,2,3,7,8-PeCDF	ND	-----	5.0		1,2,3,6,7,8-HxCDF-13C	2.00	72
2,3,4,7,8-PeCDF	ND	-----	5.0		2,3,4,6,7,8-HxCDF-13C	2.00	77
Total PeCDF	11.0	-----	5.0		1,2,3,7,8,9-HxCDF-13C	2.00	75
					1,2,3,4,7,8-HxCDD-13C	2.00	84
1,2,3,7,8-PeCDD	ND	-----	5.0		1,2,3,6,7,8-HxCDD-13C	2.00	69
Total PeCDD	42.0	-----	5.0		1,2,3,4,6,7,8-HpCDF-13C	2.00	66
					1,2,3,4,7,8,9-HpCDF-13C	2.00	67
1,2,3,4,7,8-HxCDF	ND	-----	5.0		1,2,3,4,6,7,8-HpCDD-13C	2.00	76
1,2,3,6,7,8-HxCDF	ND	-----	5.0		OCDD-13C	4.00	65
2,3,4,6,7,8-HxCDF	ND	-----	5.0				
1,2,3,7,8,9-HxCDF	ND	-----	5.0		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	5.8	-----	5.0	J	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0		2,3,7,8-TCDD-37Cl4	0.20	92
1,2,3,6,7,8-HxCDD	7.4	-----	5.0				
1,2,3,7,8,9-HxCDD	ND	-----	5.0				
Total HxCDD	74.0	-----	5.0				
1,2,3,4,6,7,8-HpCDF	6.6	-----	5.0		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0		Equivalence: 8.7 ng/Kg		
Total HpCDF	6.6	-----	5.0		(Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	26.0	-----	5.0				
Total HpCDD	50.0	-----	5.0				
OCDF	ND	-----	10.0				
OCDD	93.0	-----	10.0				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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J = Estimated value

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Method 8290 Blank Analysis Results

Lab Sample ID	BLANK-43468	Matrix	Solid
Filename	F150108B_07	Dilution	NA
Total Amount Extracted	30.3 g	Extracted	01/05/2015 17:50
ICAL ID	F141223	Analyzed	01/08/2015 13:54
CCal Filename(s)	F150108B_03 & F150108B_13	Injected By	SMT

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	55
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	73
				1,2,3,7,8-PeCDF-13C	2.00	67
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	67
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	79
				1,2,3,4,7,8-HxCDF-13C	2.00	69
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	74
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	76
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	71
				1,2,3,4,7,8-HxCDD-13C	2.00	75
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	66
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	76
				1,2,3,4,7,8,9-HpCDF-13C	2.00	71
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	83
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	63
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	73
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10.0			
OCDD	ND	-----	10.0			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

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Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-43469		
Filename	F150108B_12	Matrix	Solid
Total Amount Extracted	30.4 g	Dilution	NA
ICAL ID	F141223	Extracted	01/05/2015 17:50
CCal Filename(s)	F150108B_03 & F150108B_13	Analyzed	01/08/2015 17:24
Method Blank ID	BLANK-43468	Injected By	SMT

Native Isomers	**Qs** (ng)	**Qm** (ng)	% Rec.	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	0.20	0.23	113	2,3,7,8-TCDF-13C	2.0	60
Total TCDF				2,3,7,8-TCDD-13C	2.0	77
				1,2,3,7,8-PeCDF-13C	2.0	69
2,3,7,8-TCDD	0.20	0.19	95	2,3,4,7,8-PeCDF-13C	2.0	72
Total TCDD				1,2,3,7,8-PeCDD-13C	2.0	83
				1,2,3,4,7,8-HxCDF-13C	2.0	69
1,2,3,7,8-PeCDF	1.0	1.2	123	1,2,3,6,7,8-HxCDF-13C	2.0	74
2,3,4,7,8-PeCDF	1.0	1.2	118	2,3,4,6,7,8-HxCDF-13C	2.0	74
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.0	74
				1,2,3,4,7,8-HxCDD-13C	2.0	74
1,2,3,7,8-PeCDD	1.0	1.0	103	1,2,3,6,7,8-HxCDD-13C	2.0	72
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.0	79
				1,2,3,4,7,8,9-HpCDF-13C	2.0	75
1,2,3,4,7,8-HxCDF	1.0	1.2	124	1,2,3,4,6,7,8-HpCDD-13C	2.0	87
1,2,3,6,7,8-HxCDF	1.0	1.2	117	OCDD-13C	4.0	68
2,3,4,6,7,8-HxCDF	1.0	1.1	115			
1,2,3,7,8,9-HxCDF	1.0	1.2	118	1,2,3,4-TCDD-13C	2.0	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.0	NA
1,2,3,4,7,8-HxCDD	1.0	1.2	120	2,3,7,8-TCDD-37Cl4	0.20	80
1,2,3,6,7,8-HxCDD	1.0	1.3	128			
1,2,3,7,8,9-HxCDD	1.0	1.2	123			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.0	1.2	117			
1,2,3,4,7,8,9-HpCDF	1.0	1.1	105			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.0	1.1	108			
Total HpCDD						
OCDF	2.0	2.3	113			
OCDD	2.0	2.6	129			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range
Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

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APPENDIX F

Method 3 Risk Characterization Supporting Documentation

Appendix F
Summary of Analytical Data for Soil Samples Collected in 2014 and 2015
Former Building 105
Charlestown, Massachusetts

Constituent	Frequency of Detection	Range Detected (mg/kg)	Location of Maximum Detected Concentration	Arithmetic Mean Concentration (mg/kg)	95th Percentile on the Mean (mg/kg)
Extractable Petroleum Hydrocarbons					
C9-C18 Aliphatics	23 / 24	44 - 16,000	WSB-10	2229	3694
C19-C36 Aliphatics	23 / 24	29 - 21,000	SB-F3-0-15"	2517	4660
C11-C22 Aromatics	23 / 24	86 - 8,900	WSB-10	1226	2047
Targert Polycyclic Aromatic Hydrocarbons					
Acenaphthene	11 / 24	0.14 - 7	WSB-10	0.66	1.3
Acenaphthylene	6 / 24	0.16 - 10	WSB-10	0.86	1.8
Anthracene	4 / 24	0.14 - 0.7	WSB-22	0.12	0.18
Benzo(a)anthracene	3 / 24	0.24 - 1.4	WSB-22	0.10	0.14
Benzo(a)pyrene	2 / 24	0.19 - 1.4	WSB-22	0.08	0.11
Benzo(b)fluoranthene	3 / 24	0.35 - 1.8	WSB-22	0.12	0.16
Benzo(g,h,i)perylene	2 / 24	0.18 - 0.8	WSB-22	0.08	0.11
Benzo(k)fluoranthene	1 / 24	0.72	WSB-22	0.08	0.11
Chrysene	3 / 24	0.25 - 1.5	WSB-22	0.11	0.15
Dibenz(a,h)anthracene	1 / 24	0.19	WSB-22	0.07	0.09
Fluoranthene	17 / 24	0.13 - 3.5	WSB-10	1	0.9
Fluorene	20 / 24	0.11 - 10	WSB-4	2	3
Indeno(1,2,3-cd)pyrene	2 / 24	0.19 - 0.9	WSB-22	0.08	0.11
2-Methylnaphthalene	21 / 24	0.12 - 23	WSB-4	4	6
Naphthalene	17 / 24	0.22 - 6.9	WSB-10	1	1.8
Phenanthrene	18 / 24	0.20 - 3.6	WSB-4	1	1.1
Pyrene	11 / 24	0.10 - 3.1	WSB-22	0.27	0.4
Volatile Petroleum Hydrocarbons					
C9-C12 Aliphatics	4 / 24	10 - 140	WSB-4	34	51
C9-C10 Aromatics	16 / 24	22 - 430	WSB-4	138	198
Targert Volatile Organic Compound					
N-Butylbenzene	7 / 15	0.003 - 2	WSB-19	0.46	0.76
Sec-Butylbenzene	7 / 15	0.002 - 1	WSB-19	0.29	0.48
Ethylbenzene	1 / 24	0.003	WSB-21	0.05	0.003
Isopropylbenzene	5 / 15	0.002 - 1	WSB-19	0.13	0.22
P-Isopropyltoluene	2 / 15	0.002 - 0.11	WSB-1	0.06	0.09
Naphthalene	3 / 24	0.01 - 2	SB-F2-12-42"	0.31	0.51
N-Propylbenzene	6 / 15	0.003 - 1	WSB-19	0.24	0.40
Toluene	1 / 24	0.001	WSB-21	0.05	0.001
Trichloroethylene	1 / 15	0.001	WSB-14	0.001	0.001
1,2,4-Trimethylbenzene	2 / 15	0.02 - 0.17	WSB-11	0.08	0.11
Xylenes, total	1 / 24	0.03	WSB-21	0.09	0.03
Polychlorinated Biphenyls	26 / 52	0.11 - 72	WSB-19	2.6	3.4
Metals					
Arsenic	7 / 15	3 - 23	WSB-23	6	8
Barium	15 / 15	31 - 180	WSB-23	60	70
Cadmium	8 / 15	1 - 120	WSB-23	9	9
Chromium	15 / 15	18 - 220	WSB-23	57	69
Lead	15 / 15	8 - 1,500	WSB-23	195	261
Mercury	12 / 15	0.04 - 1	WSB-23	0.17	0.20
Silver	1 / 15	1.3	WSB-23	0.36	0.37
2,3,7,8-TCDD TEQ	3 / 3	8.7E-06 - 2.9E-05	WSSB 101 0-6	#REF!	too small sample size

Notes:

1. For the purpose of calculating arithmetic mean concentrations, one-half the method detection limit was used to represent the concentrations of constituents reported as non-detects (ND).

2. Analytical results for constituents aside from PCBs were based on samples: SB-E1-0-6", SB-E3-4-24", SB-F2-12-42", SB-F3-0-15", SB-H1-0-19", SB-I2-14-51", SB-O1-0-21", SB-S5-0-6", SB-S6-0-3", WSB-1 (4-6 Feet), WSB-4 (2-4 Feet), WSB-8 (0.5-2 Feet), WSB-9 (4-6 Feet), WSB-10 (2-4 Feet), WSB-13 (4-6 Feet), WSB-14 (0-2 Feet), WSB-11 (4-6 Feet), WSB-12 (2-4 Feet), and WSB-19 (2-4 Feet) collected between August 2014 and March 2015.

3. Analytical results for PCBs were based on samples: WSB-1 (0-0.5 Feet), WSB-1 (0.5-2 Feet), WSB-1 (4-6 Feet), WSB-3 (0-0.5 Feet), WSB-3 (0.5-2 Feet), WSB-4 (0-0.5 Feet), WSB-4 (0.5-2 Feet), WSB-4 (2-4 Feet), WSB-5 (0-0.5 Feet), WSB-5 (0.5-2 Feet), WSB-5 (2-4 Feet), WSB-6 (0-0.5 Feet), WSB-6 (0.5-2 Feet), WSB-7 (0-0.5 Feet), WSB-7 (0.5-2 Feet), WSB-8 (0-0.5 Feet), WSB-8 (0.5-2 Feet), WSB-9 (0-0.5 Feet), WSB-9 (0.5-2 Feet), WSB-9 (4-6 Feet), WSB-10 (0-0.5 Feet), WSB-10 (0.5-2 Feet), WSB-10 (2-4 Feet), WSB-11 (0-0.5 Feet), WSB-11 (0.5-2 Feet), WSB-12 (0-0.5 Feet), WSB-12 (0.5-2 Feet), WSB-13 (0-0.5 Feet), WSB-13 (0.5-2 Feet), WSB-13 (4-6 Feet), WSB-14 (0-0.5 Feet), WSB-14 (0.5-2 Feet), WSB-14 (0-2 Feet), WSB-15 (0-0.5 Feet), WSB-15 (0.5-2 Feet), WSB-16 (0-0.5 Feet), WSB-16 (0.5-2 Feet), WSB-17 (0-0.5 Feet), WSB-17 (0.5-2 Feet), WSB-18 (0-0.5 Feet), WSB-18 (0.5-2 Feet), WSB-19 (0-0.5 Feet), WSB-19 (0.5-2 Feet), WSB-20 (0-0.5 Feet), WSB-20 (0.5-2 Feet), WSB-20 (4-6 Feet), WSB-21 (0-0.5 Feet), WSB-21 (0.5-2 Feet), WSB-22 (0-0.5 Feet), WSB-22 (0.5-2 Feet), WSB-23 (0-0.5 Feet), and WSB-23 (0.5-2 Feet) collected in August 2014.

4. Analytical results for 2,3,7,8-TCDD TEQ were based on data collected from soil samples WSSB 101 0-6", WSSB 102 0-6", WSSB 103 0-6", WSB 101 0-0.5", WSB 102 0-0.5", and WSB 103 0-0.5" collected in December 2014.

Appendix F
Summary of Analytical Data for Concrete Samples Collected in 2014
Former Building 105
Charlestown, Massachusetts

Constituent	Frequency of Detection	Range Detected (mg/kg)	Location of Maximum Detected Concentration	Arithmetic Mean Concentration (mg/kg)	95th Percentile on the Mean (mg/kg)
Polychlorinated Biphenyls	59 / 66	0.13 - 200	CS 118	11.9	19.5
2,3,7,8-TCDD TEQ	3 / 3	4.2E-05 - 9.0E-05	WSB 103 0-0.5	6.1E-05	too small sample size

Notes:

1. For the purpose of calculating arithmetic mean concentrations, one-half the method detection limit was used to represent the concentrations of constituents reported as non-detects (ND).

2. Analytical results for PCBs were based on samples: CS-1(0-0.5 in.), CS-2(0-0.5 in.), CS-3(0-0.5 in.), CS-4(0-0.5 in.), CS-5(0-0.5 in.), CS-6(0-0.5 in.), CS-7(0-0.5 in.), CS-8(0-0.5 in.), CS-9(0-0.5 in.), CS-10(0-0.5 in.), CS-11(0-0.5 in.), CS-12(0-0.5 in.), CS-13(0-0.5 in.), CS-14(0-0.5 in.), CS-15(0-0.5 in.), CS-16(0-0.5 in.), CS-17(0-0.5 in.), CS-18(0-0.5 in.), CS 101(0-0.5in), CS 101(0.5-2in), CS 102(0-0.5in), CS 102(0.5-2in), CS 103 (0-0.5in), CS 103 (0.5-2in), CS 104(0-0.5in), CS 104(0.5-2in), CS 105(0-0.5in), CS 105(0.5-2in), CS 106(0-0.5in), CS 106(0.5-2in), CS 107(0-0.5in), CS 107(0.5-2in), CS 108(0-0.5in), CS 108(0.5-2in), CS 109(0-0.5in), CS 109(0.5-2in), CS 110(0-0.5in), CS 110(0.5-2in), CS 111(0-0.5in), CS 111(0.5-2in), CS 112(0-0.5in), CS 112(0.5-2in), CS 113(0-0.5in), CS 113(0.5-2in), CS 114 (0-0.5in), CS 114 (0.5-2in), CS 115 (0-0.5in), CS 115 (0.5-2in), CS 116(0-0.5in), CS 116(0.5-2in), CS 117(0-0.5in), CS 117(0.5-2in), CS 118 (0-0.5in), CS 118 (0.5-2in), CS 119(0-0.5in), CS 119(0.5-2in), CS 120(0-0.5in), CS 120(0.5-2in), CS 121(0-0.5in), CS 121(0.5-2in), CS 123(0-0.5in), CS 123(0.5-2in), CS 124 (0-0.5in), CS 124 (0.5-2in), CS 125 (0-0.5in), collected in August 2014.

3. Analytical results for PCBs were based on samples: WSB 101 0-0.5", WSB 102 0-0.5", and WSB 103 0-0.5" collected in December 2014.

Appendix F
Summary of Analytical Data for Groundwater Samples
Former Building 105
Charlestown, Massachusetts

Constituent	Frequency of Detection	Range Detected (ug/L)	Location of Maximum Detected Concentration	Arithmetic Mean Concentration (ug/L)
Extractable Petroleum Hydrocarbons				
C9-C18 Aliphatics	3 / 6	140 - 210	MW-WS1	117
C11-C22 Aromatics	4 / 6	160 - 300	MW-20/DUP	180
Polycyclic Aromatic Hydrocarbons				
2-Methylnaphthalene	1 / 6	4	MW-EX03	1
Volatile Petroleum Hydrocarbons				
C9-C12 Aliphatics	1 / 7	140	MW-EX03	63
Volatile Organic Compounds				
Acetone	2 / 7	23 - 55	MW-EX01	20
Dissolved Metals				
Arsenic	3 / 7	0.02 - 0.02	MW-EX02	0.01
Barium	4 / 7	0.06 - 0.25	MW-101	0.17
Polychlorinated Biphenyls	1 / 6	0.26	MW-102A	0.26

Notes:

1. For the purpose of calculating arithmetic mean concentrations, one-half the method detection limit was used to represent the concentrations of constituents reported as non-detects (ND).

2. Analytical results were based on samples collected from monitoring wells: MW-101, MW-102A, MW-EX01, MW-EX02, MW-EX03, MW-WS1, and MW-20/DUP collected in September 2014.

Appendix F.1
Weighted EPC for Visitor
Former Building 105
Charlestown, Massachusetts

Constituent	Floor Weight: 25% (mg/100 cm^2)	Equipment Weight: 25% (mg/100 cm^2)	Walls <8ft Weight: 25% (mg/100 cm^2)	Supplemental Wipe Weight: 25% (mg/100 cm^2)	Weighted EPC (mg/100 cm^2)
Polychlorinated Biphenyls	7.9E-03	4.5E-03	9.3E-04	7.9E-04	1.4E-02

Notes:

1. Assuming visitors have an equal opportinity to come into contact with floor, equipment, wall <8 ft and equipment, floor and brick (supplemental) surfaces, the calculated EPC is less than the PCB EPC calculated in the previous risk characterization prepared by GZA (historic EPC = 1.8E-2 mg/100 cm2).

Appendix F.2
Weighted EPC for Maintenance Worker
Former Building 105
Charlestown, Massachusetts

Constituent	Ceiling Weight: 5% (mg/100 cm^2)	Floor Weight: 25% (mg/100 cm^2)	Equipment Weight: 25% (mg/100 cm^2)	Walls <8ft Weight: 20% (mg/100 cm^2)	Walls >8ft Weight: 15% (mg/100 cm^2)	Supplemental Wipe Weight: 10% (mg/100 cm^2)	Weighted EPC (mg/100 cm^2)
Polychlorinated Biphenyls	0.0025	7.9E-03	4.5E-03	7.4E-04	2.9E-04	3.2E-04	1.6E-02

Notes:

1. Assuming maintenance workers have opportinity to come into contact with ceiling, floor, equipment, wall <8 ft, wall >8ft, and equipment, floor and brick (supplemental) surfaces in the approximate percentages presented, the calculated EPC is the same as the PCB EPC calculated in the previous risk characterization prepared by GZA (historic EPC = 1.6E-2 mg/100 cm^2).

Appendix F.3
Comparison of Historic versus Recent Soil/Concrete Samples and Calculation of Soil/Concrete EPC
Former Building 105
Charlestown, Massachusetts

Constituent	Historic Soil/Concrete Samples				Recent Soil/Concrete Samples				Estimated Soil/Concrete EPC 95th Percetile on Mean (mg/kg)
	Frequency of Detection	Arithmetic Mean Concentration (mg/kg)	95th Percentile on the Mean (mg/kg)	Maximum Concentration (mg/kg)	Frequency of Detection	Arithmetic Mean Concentration (mg/kg)	95th Percentile on the Mean (mg/kg)	Maximum Concentration (mg/kg)	
Extractable Petroleum Hydrocarbons									
C9-C18 Aliphatics	NA / NA	NA	NA	NA	23 / 24	2.2E+03	3.7E+03	1.6E+04	3.7E+03
C19-C36 Aliphatics	NA / NA	NA	NA	NA	23 / 24	2.5E+03	4.7E+03	2.1E+04	4.7E+03
C11-C22 Aromatics	NA / NA	NA	NA	NA	23 / 24	1.2E+03	2.0E+03	8.9E+03	2.0E+03
Targert Polycyclic Aromatic Hydrocarbons									
Acenaphthene	NA / NA	NA	NA	NA	11 / 24	6.6E-01	1.3E+00	7.2E+00	7.2E+00
Acenaphthylene	1 / 49	6.7E+00	9.4E+00	5.0E+01	6 / 24	8.6E-01	1.8E+00	1.0E+01	6.9E+00
Anthracene	3 / 49	7.2E+00	9.9E+00	5.0E+01	4 / 24	1.2E-01	1.8E-01	6.9E-01	6.7E+00
Benzo(a)anthracene	11 / 49	7.1E+00	1.0E+01	5.0E+01	3 / 24	1.0E-01	1.4E-01	1.4E+00	6.8E+00
Benzo(a)pyrene	8 / 49	6.9E+00	9.7E+00	5.0E+01	2 / 24	8.4E-02	1.1E-01	1.4E+00	6.5E+00
Benzo(b)fluoranthene	10 / 49	7.3E+00	1.0E+01	5.0E+01	3 / 24	1.2E-01	1.6E-01	1.8E+00	6.8E+00
Benzo(g,h,i)perylene	4 / 49	6.9E+00	9.5E+00	5.0E+01	2 / 24	8.4E-02	1.1E-01	8.2E-01	6.4E+00
Benzo(k)fluoranthene	6 / 49	7.0E+00	9.7E+00	5.0E+01	1 / 24	8.5E-02	1.1E-01	7.2E-01	6.5E+00
Chrysene	16 / 49	6.6E+00	9.4E+00	5.0E+01	3 / 24	1.1E-01	1.5E-01	1.5E+00	6.4E+00
Dibenz(a,h)anthracene	2 / 49	6.8E+00	9.5E+00	5.0E+01	1 / 24	7.3E-02	9.0E-02	1.9E-01	6.4E+00
Fluoranthene	19 / 49	8.2E+00	1.3E+01	9.8E+01	17 / 24	5.7E-01	8.9E-01	3.5E+00	9.0E+00
Fluorene	NA / NA	NA	NA	NA	20 / 24	2.0E+00	3.2E+00	1.0E+01	3.2E+00
Indeno(1,2,3-cd)pyrene	3 / 49	7.0E+00	9.7E+00	5.0E+01	2 / 24	8.4E-02	1.1E-01	9.1E-01	6.5E+00
2-Methylnaphthalene	NA / NA	NA	NA	NA	21 / 24	3.7E+00	6.2E+00	2.3E+01	6.2E+00
Naphthalene	4 / 49	6.5E+00	9.0E+00	5.0E+01	17 / 24	1.1E+00	1.8E+00	6.9E+00	6.6E+00
Phenanthrene	32 / 49	7.8E+00	1.3E+00	1.0E+02	18 / 24	8.1E-01	1.1E+00	3.6E+00	1.3E+00
Pyrene	20 / 49	6.7E+00	1.0E+01	5.6E+01	11 / 24	2.7E-01	4.2E-01	3.1E+00	6.8E+00
Volatile Petroleum Hydrocarbons									
C9-C12 Aliphatics	NA / NA	NA	NA	NA	4 / 24	3.4E+01	5.1E+01	1.4E+02	See note 3
C9-C10 Aromatics	NA / NA	NA	NA	NA	16 / 24	1.4E+02	2.0E+02	4.3E+02	2.0E+02
Targert Volatile Organic Compound									
N-Butylbenzene	NA / NA	NA	NA	NA	7 / 15	4.6E-01	7.6E-01	1.6E+00	See note 2
Sec-Butylbenzene	NA / NA	NA	NA	NA	7 / 15	2.9E-01	4.8E-01	1.2E+00	See note 2
Ethylbenzene	NA / NA	NA	NA	NA	1 / 24	4.7E-02	2.8E-03	2.8E-03	2.8E-03
Isopropylbenzene	NA / NA	NA	NA	NA	5 / 15	1.3E-01	2.2E-01	5.3E-01	See note 2
P-Isopropyltoluene	NA / NA	NA	NA	NA	2 / 15	6.2E-02	8.7E-02	1.1E-01	See note 2
Naphthalene	NA / NA	NA	NA	NA	3 / 24	3.1E-01	5.1E-01	2.1E+00	See note 3
N-Propylbenzene	NA / NA	NA	NA	NA	6 / 15	2.4E-01	4.0E-01	8.9E-01	See note 2
Toluene	NA / NA	NA	NA	NA	1 / 24	5.0E-02	1.4E-03	1.4E-03	1.4E-03
Trichloroethylene	NA / NA	NA	NA	NA	1 / 15	1.2E-03	1.3E-03	1.3E-03	1.3E-03
1,2,4-Trimethylbenzene	NA / NA	NA	NA	NA	2 / 15	8.1E-02	1.1E-01	1.7E-01	See note 2
Xylenes, total	NA / NA	NA	NA	NA	1 / 24	9.4E-02	2.5E-02	2.5E-02	2.5E-02
Polychlorinated Biphenyls	318 / 330	4.1E+01	6.5E+01	2.7E+03	85 / 118	7.8E+00	1.2E+01	2.0E+02	5.1E+01
Metals									
Antimony	49 / 49	2.2E+01	3.5E+01	2.8E+02	NA / NA	NA	NA	NA	3.5E+01
Arsenic	49 / 49	8.0E+00	9.9E+00	3.2E+01	7 / 15	5.7E+00	7.9E+00	2.3E+01	9.4E+00
Barium	49 / 49	6.6E+01	7.4E+01	1.7E+02	15 / 15	6.0E+01	7.0E+01	1.8E+02	7.3E+01
Beryllium	27 / 49	3.6E-01	3.9E-01	6.7E-01	NA / NA	NA	NA	NA	3.9E-01
Cadmium	49 / 49	1.7E+00	2.3E+00	1.1E+01	8 / 15	8.5E+00	8.8E+00	1.2E+02	3.8E+00
Chromium	NA / NA	NA	NA	NA	15 / 15	5.7E+01	6.9E+01	2.2E+02	6.9E+01
Lead	49 / 49	1.6E+02	2.4E+02	1.0E+03	15 / 15	1.9E+02	2.6E+02	1.5E+03	2.4E+02
Mercury	NA / NA	NA	NA	NA	12 / 15	1.7E-01	2.0E-01	1.2E+00	See note 4
Nickel	48 / 49	3.1E+02	5.1E+02	3.0E+03	NA / NA	NA	NA	NA	5.1E+02
Silver	4 / 49	3.4E-01	3.8E-01	5.5E-01	1 / 15	3.6E-01	3.7E-01	1.3E+00	3.8E-01
2,3,7,8-TCDD TEQ	52 / 54	NA	1.3E-06	NA	6 / 6	4.0E-05	6.3E-06	9.0E-05	1.8E-06

Notes:

1. NA = Not available for this data set.

2. N-Butylbenzene, sec-butylbenzene, isopropylbenzene, p-isopropyltoluene, n-propylbenzene, and 1,2,4-trimethylbenzene are part of the C9 to C10 aromatics. Since an EPC has been calculated for this fraction range, to include these constituents would count them twice. Therefore, they were excluded from the EPCs.

3. C9 to C12 Aliphatics are counted within the C9 to C36 Aliphatics fraction range and naphthalene is analyzed via both VPH and EPH methods. Since the concentrations of C9 to C12 aliphatics are less than the C9 to C36 aliphatics, the C9 to C12 aliphatics were eliminated as COPCs. Similarly, naphthalenes detected via VPH method were less than naphthalenes detected via EPH method. Therefore, naphthalenes detected via VPH method were eliminated.

4. The maximum concentration of mercury is less than Massachusetts background concentrations in "Natural" soil obtained from MADEP, 2002, Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil, May. Mercury was therefore eliminated as a COPC.

Table F.4
Summary of Total Hazard Indices and Risk Estimates - Central Tendency Case
Former Building 105
Charlestown, Massachusetts

Potential Receptor	Exposure Media/Route		Noncarcinogenic Hazard Index		Exceeds Target HI?	ELCR	
			Subchronic	Chronic			
Museum/Hotel/Restaurant Visitors	Dermal Contact with Surfaces (Floor, Equipment, Walls <8ft, Window Paint)	Subtotal:	NA	7E-04		3E-08	
	Incidential Ingestion of Dust from Surfaces (Floor, Equipment, Walls <8ft, Window Paint)	Subtotal:	NA	8E-04		7E-09	
	Dermal Contact and Incidential Ingestion (Window Surfaces, Caulking)	Subtotal:	2E-02	8E-02		6E-07	
	Dermal Contact and Incidential Ingestion (Walls Bulk Samples)	Subtotal:	9E-04	3E-03		2E-08	
		Total:	**2E-02**	**9E-02**		**6E-07**	
		Target HI of 1.0 or Target ELCR of 1E-4	1E+00	1E+00	NO	1E-04	NO
		Target ELCR of 1E-5				1E-05	NO
		Target ELCR of 1E-6				1E-06	NO
Maintenance Workers	Dermal Contact with Surfaces (Ceiling, Floor, Equipment, Walls <8ft, Walls >8ft, Window Paint)	Subtotal:	NA	8E-03		5E-07	
	Incidential Ingestion of Dust from Surfaces (Ceiling, Floor, Equipment, Walls <8ft, Walls >8ft, Window Paint)	Subtotal:	NA	1E-02		1E-07	
	Dermal Contact and Incidential Ingestion (Window Surfaces, Caulking)	Subtotal:	NA	1E-01		2E-06	
	Dermal Contact and Incidential Ingestion (Walls Bulk Samples)	Subtotal:	NA	5E-03		8E-08	
		Total:	**NA**	**2E-01**		**3E-06**	
		Target HI of 1.0 or Target ELCR of 1E-4	1E+00	1E+00	NO	1E-04	NO
		Target ELCR of 1E-5				1E-05	NO
		Target ELCR of 1E-6				1E-06	YES PCBs
Construction/Utility Line Workers (using MADEP Shortform)	Dermal Contact and Incidental Ingestion of Soil/Concrete Using MADEP Default Exposure Values	Subtotal:	3E+00	NA		3E-06	
		Total:	**3E+00**	**NA**		**3E-06**	
		Target HI of 1.0 or Target ELCR of 1E-4	1E+00	1E+00	YES	1E-04	NO
		Cause of Exceedance:	**PCBs**				
		Target ELCR of 1E-5				1E-05	NO
		Target ELCR of 1E-6				1E-06	YES
		Cause of Exceedance:				**PCBs**	
Construction/Utility Line Workers	Dermal Contact and Incidental Ingestion of Soil/Concrete Central Tendency	Subtotal:	8E-01	NA		1E-06	
		Total:	**8E-01**	**NA**		**1E-06**	
		Target HI of 1.0 or Target ELCR of 1E-4	1E+00	1E+00	NO	1E-04	NO
		Target ELCR of 1E-5				1E-05	NO
		Target ELCR of 1E-6				1E-06	NO
						(equivalent to but does not exceed)	

1. NA = Not Applicable, NC = Not Calculated, ELCR = Excess Lifetime Cancer Risk.
Blue shading indicates risks were modified since previous risk assessment.

Table F.5
Summary of Total Hazard Indices and Risk Estimates - Resonable Maximum Exposure Case
Former Building 105
Charlestown, Massachusetts

Potential Receptor	Exposure Media/Route		Noncarcinogenic Hazard Index		Exceeds Target HI?	ELCR	
			Subchronic	Chronic			
Museum/Hotel/Restaurant Visitors	Dermal Contact with Surfaces (Floor, Equipment, Walls <8ft, Window Paint)	Subtotal:	NA	6E-02		3E-06	
	Incidential Ingestion of Dust from Surfaces (Floor, Equipment, Walls <8ft, Window Paint)	Subtotal:	NA	3E-02		5E-07	
	Dermal Contact and Incidential Ingestion (Window Surfaces, Caulking)	Subtotal:	8E-02	2E-01		1E-06	
	Dermal Contact and Incidential Ingestion (Walls Bulk Samples)	Subtotal:	3E-03	7E-03		4E-08	
		Total:	**8E-02**	**3E-01**		**5E-06**	
		Target HI of 1.0 or Target ELCR of 1E-4	1E+00	1E+00	NO	1E-04	NO
		Target ELCR of 1E-5				1E-05	NO
		Target ELCR of 1E-6				1E-06	YES
		Cause of Exceedance:				PCBs, arsenic	
Maintenance Workers	Dermal Contact with Surfaces (Ceiling, Floor, Equipment, Walls <8ft, Walls >8ft, Window Paint)	Subtotal:	NA	5E-01		6E-05	
	Incidential Ingestion of Dust from Surfaces (Ceiling, Floor, Equipment, Walls <8ft, Walls >8ft, Window Paint)	Subtotal:	NA	3E-01		1E-05	
	Dermal Contact and Incidential Ingestion (Window Surfaces, Caulking)	Subtotal:	NA	5E-01		7E-06	
	Dermal Contact and Incidential Ingestion (Walls Bulk Samples)	Subtotal:	NA	2E-02		3E-07	
		Total:	**NA**	**1E+00**		**8E-05**	
		Target HI of 1.0 or Target ELCR of 1E-4	1E+00	1E+00	NO	1E-04	NO
				(equivalent but does not exceed)			
		Target ELCR of 1E-5				1E-05	YES
		Cause of Exceedance:				Arsenic, 2,3,7,8-TCDD TEQ	
		Target ELCR of 1E-6				1E-06	YES
		Cause of Exceedance:				Arsenic, 2,3,7,8-TCDD TEQ, PCBs	
Construction/Utility Line Workers	Dermal Contact and Incidental Ingestion of Soil/Concrete Reasonable Maximum Exposure	Subtotal:	5E+00	NA		1E-05	
		Total:	**5E+00**	**NA**		**1E-05**	
		Target HI of 1.0 or Target ELCR of 1E-4	1E+00	1E+00	YES	1E-04	NO
		Cause of Exceedance:	**PCBs**				
		Target ELCR of 1E-5				1E-05	NO
						(equivalent to but does not exceed)	
		Target ELCR of 1E-6				1E-06	YES
		Cause of Exceedance:				**PCBs**	

1. NA = Not Applicable, NC = Not Calculated, ELCR = Excess Lifetime Cancer Risk.
Blue shading indicates risks were modified since previous risk assessment.

Table F.6
Comparison of Soil Concentrations (Recent) to Upper Concentration Limits (UCLs)
Former Building 105
Charlestown, Massachusetts

Constituent	Arithmetic Mean Concentration (mg/kg)	95th Percentile on the Mean (mg/kg)	Maximum Concentration (mg/kg)	Upper Concentration Limits (mg/kg)
Extractable Petroleum Hydrocarbons				
C9-C18 Aliphatics	2229	3694	16000	20,000
C19-C36 Aliphatics	2517	4660	21000	20,000
C11-C22 Aromatics	1226	2047	8900	10,000
Target Polycyclic Aromatic Hydrocarbons				
Acenaphthene	0.66	1.3	7	10,000
Acenaphthylene	0.86	1.8	10	10,000
Anthracene	0.12	0.18	0.7	10,000
Benzo(a)anthracene	0.10	0.14	1.4	3,000
Benzo(a)pyrene	0.08	0.11	1.4	300
Benzo(b)fluoranthene	0.12	0.16	2	3,000
Benzo(g,h,i)perylene	0.08	0.11	0.8	10,000
Benzo(k)fluoranthene	0.08	0.11	0.7	10,000
Chrysene	0.11	0.15	2	10,000
Dibenz(a,h)anthracene	0.07	0.09	0.2	300
Fluoranthene	1	0.9	4	10,000
Fluorene	2	3	10	10,000
Indeno(1,2,3-cd)pyrene	0.08	0.11	0.9	3,000
2-Methylnaphthalene	4	6	23	5,000
Naphthalene	1	1.8	7	10,000
Phenanthrene	1	1.1	4	10,000
Pyrene	0.27	0.4	3	10,000
Volatile Petroleum Hydrocarbons				
C9-C10 Aromatics	138	198	430	5,000
Target Volatile Organic Compound				
Ethylbenzene	0.05	0.003	0.003	10,000
Toluene	0.05	0.001	0.001	10,000
Trichloroethylene	0.001	0.001	0.001	600
Xylenes, total	0.09	0.03	0.03	10,000
Polychlorinated Biphenyls	2.6	3.4	72	100
Metals				
Arsenic	6	8	23	500
Barium	60	70	180	10,000
Cadmium	9	9	120	600
Chromium	57	69	220	2,000
Lead	195	261	1500	6,000
Mercury	0.17	0.20	1	300
Silver	0.36	0.37	1	2,000
2,3,7,8-TCDD TEQ	1.9E-05	too small sample size	2.9E-05	5.0E-04

Notes:

1. UCLs obtained from MADEP, Risk-Based Levels for Soil and Groundwater MCP Standards Development, 2013.

2. Highlight indicates the concentration exceeds the soil UCL.

Table F.7
Comparison of Soil/Concrete (Historic) Concentrations to Upper Concentration Limits (UCLs)
Former Building 105
Charlestown, Massachusetts

Constituent	95th Percentile on the Mean (mg/kg)	Upper Concentration Limits (mg/kg)
Target Polycyclic Aromatic Hydrocarbons		
Acenaphthylene	9	10,000
Anthracene	10	10,000
Benzo(a)anthracene	10	3,000
Benzo(a)pyrene	10	300
Benzo(b)fluoranthene	10	3,000
Benzo(g,h,i)perylene	10	10,000
Benzo(k)fluoranthene	10	10,000
Chrysene	9	10,000
Dibenz(a,h)anthracene	10	300
Fluoranthene	13	10,000
Indeno(1,2,3-cd)pyrene	10	3,000
Naphthalene	9	10,000
Phenanthrene	1	10,000
Pyrene	10	10,000
Polychlorinated Biphenyls	65	100
Metals		
Antimony	35	300
Arsenic	10	500
Barium	74	10,000
Beryllium	0.4	2,000
Cadmium	2	600
Lead	240	6,000
Nickel	510	10,000
Silver	0.4	2,000
2,3,7,8-TCDD TEQ	1.3E-06	5.0E-04

Notes:

1. UCLs obtained from MADEP, Risk-Based Levels for Soil and Groundwater MCP Standards Development, 2013.

2. Highlight indicates the concentration exceeds the soil UCL.

Table F.8
Summary of Analytical Data for Groundwater Samples
Former Building 105
Charlestown, Massachusetts

Constituent	Arithmetic Mean Concentration (ug/L)	Maximum Concentration (ug/L)	Upper Concentration Limit (ug/L)
Extractable Petroleum Hydrocarbons			
C9-C18 Aliphatics	117	210	100,000
C11-C22 Aromatics	180	300	100,000
Polycyclic Aromatic Hydrocarbons			
2-Methylnaphthalene	1	4	100,000
Volatile Petroleum Hydrocarbons			
C9-C12 Aliphatics	63	140	100,000
Volatile Organic Compounds			
Acetone	20	55	100,000
Dissolved Metals			
Arsenic	0.01	0.02	9,000
Barium	0.17	0.25	100,000
Polychlorinated Biphenyls	0.26	0.26	100

Notes:

1. UCLs obtained from MADEP, Risk-Based Levels for Soil and Groundwater MCP Standards Development, 2013.
2. No concentrations exceed groundwater UCLs.

Method 3 Risk Assessment for Chemicals in Soil - Construction Worker Shortform 2012 (sf12cw)

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EPCs	Table CW-1: Select chemicals and enter Exposure Point Concentrations (EPCs). Estimated risks are shown to the right.
C Eq	Table CW-2: Equations to calculate cancer risks
NC Eq	Table CW-3: Equations to calculate noncancer risks
Exp	Table CW-4: Definitions and exposure factors
Chem	Table CW-5: Chemical-specific data
	Table CW-6: Cyanide Calculations

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Construction Worker - Soil: Table CW-1A
Exposure Point Concentration (EPC) and Risk
Based on Construction Worker 18-25 years of age

ShortForm Version 10-12

Vlookup Version v1012

ELCR (all chemicals) = 1E-06

HI (all chemicals) = 8E-01

****Do not insert or delete any rows****

Click on empty cell below and select OHM using arrow.

Oil or Hazardous Material (OHM)	EPC (mg/kg)	ELCR ingestion	ELCR dermal	ELCR inhalation GI	ELCR inhalation pulmonary	$ELCR_{total}$	Subchronic HQ_{ing}	Subchronic HQ_{derm}	Subchronic HQ_{inh-GI}	Subchronic HQ_{inh}	HQ_{total}
ALIPHATICS C9 to C18	3.7E+03						1.1E-03	2.3E-03	4.4E-05	8.5E-05	3.5E-03
ALIPHATICS C19 to C36	4.7E+03						2.4E-04	4.8E-04	9.2E-06		7.2E-04
AROMATICS C11 to C22	2.0E+03						6.2E-04	2.1E-03	2.4E-05	5.6E-05	2.8E-03
ACENAPHTHENE	7.2E+00						3.3E-06	1.1E-05	1.3E-07	2.0E-07	1.5E-05
ACENAPHTHYLENE	6.9E+00						2.1E-06	7.0E-06	8.1E-08	1.9E-07	9.4E-06
ANTHRACENE	6.7E+00						6.1E-07	2.1E-06	2.4E-08	1.8E-07	2.9E-06
BENZO(a)ANTHRACENE	6.8E+00	6.4E-09	4.3E-09	2.5E-10	2.8E-10	1.1E-08	2.1E-06	1.4E-06	8.0E-08	1.9E-07	3.7E-06
BENZO(a)PYRENE	6.5E+00	6.2E-08	4.2E-08	2.4E-09	2.7E-09	1.1E-07	2.0E-06	1.3E-06	7.7E-08	1.8E-07	3.6E-06
BENZO(b)FLUORANTHENE	6.8E+00	6.4E-09	4.3E-09	2.5E-10	2.8E-10	1.1E-08	2.1E-06	1.4E-06	8.0E-08	1.9E-07	3.7E-06
BENZO(g,h,i)PERYLENE	6.4E+00						1.9E-06	6.5E-06	7.6E-08	1.8E-07	8.7E-06
BENZO(k)FLUORANTHENE	6.5E+00	6.2E-10	4.2E-10	2.4E-11	2.7E-11	1.1E-09	2.0E-06	1.3E-06	7.7E-08	1.8E-07	3.6E-06
CHRYSENE	6.4E+00	6.0E-10	4.1E-10	2.3E-11	2.6E-11	1.1E-09	1.9E-06	1.3E-06	7.5E-08	1.8E-07	3.5E-06
DIBENZO(a,h)ANTHRACENE	6.4E+00	6.1E-08	4.1E-08	2.4E-09	2.6E-09	1.1E-07	1.9E-06	1.3E-06	7.6E-08	1.8E-07	3.5E-06
FLUORANTHENE	9.0E+00						2.1E-06	6.9E-06	8.0E-08	2.5E-07	9.3E-06
FLUORENE	3.2E+00						7.3E-07	2.5E-06	2.8E-08	8.9E-08	3.3E-06
INDENO(1,2,3-cd)PYRENE	6.5E+00	6.2E-09	4.2E-09	2.4E-10	2.7E-10	1.1E-08	2.0E-06	1.3E-06	7.7E-08	1.8E-07	3.6E-06
METHYLNAPHTHALENE, 2-	6.2E+00						1.4E-04	4.7E-04	5.5E-06	1.7E-07	6.2E-04
NAPHTHALENE	6.6E+00						3.0E-06	1.0E-05	1.2E-07	3.0E-05	4.4E-05
PHENANTHRENE	1.3E+00						3.8E-07	1.3E-06	1.5E-08	3.4E-08	1.7E-06
PYRENE	6.8E+00						2.1E-06	7.0E-06	8.1E-08	1.9E-07	9.3E-06
AROMATICS C9 to C10	2.0E+02						2.0E-04	4.0E-04	7.8E-06	5.5E-06	6.2E-04
ETHYLBENZENE	2.8E-03						1.7E-08	5.1E-09	6.6E-10	4.3E-12	2.3E-08
TOLUENE	1.4E-03						5.3E-10	1.6E-10	2.1E-11	3.9E-12	7.2E-10
TRICHLOROETHYLENE	1.3E-03	2.7E-13	8.3E-14	1.1E-14	1.0E-15	3.7E-13	7.7E-07	2.3E-07	3.0E-08	8.7E-09	1.0E-06
XYLENES (Mixed Isomers)	2.5E-02						1.9E-08	5.8E-09	7.5E-10	8.7E-10	2.7E-08
POLYCHLORINATED BIPHENYLS (PCBs)	5.1E+01	4.4E-07	4.5E-07	1.7E-08	1.0E-09	9.1E-07	3.1E-01	3.1E-01	1.2E-02	3.5E-02	6.7E-01
ANTIMONY	3.5E+01						2.7E-02	2.7E-02	1.0E-03	4.8E-05	5.4E-02
ARSENIC	9.4E+00	3.1E-08	1.9E-08	1.2E-09	5.6E-09	5.6E-08	4.8E-03	2.9E-03	1.9E-04	6.5E-03	1.4E-02
BARIUM	7.3E+01						3.2E-04	3.2E-04	1.2E-05	2.0E-04	8.5E-04
CADMIUM	3.9E-01				1.4E-10	1.4E-10	2.4E-04	2.4E-05	9.2E-06	2.7E-04	5.4E-04

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Construction Worker - Soil: Table CW-1A
Exposure Point Concentration (EPC) and Risk

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CHROMIUM (TOTAL)	3.8E+00				9.0E-09	9.0E-09	5.8E-05	5.8E-05	2.3E-06	1.8E-04	2.9E-04
LEAD	6.9E+01						1.4E-02	1.7E-03	5.4E-04	9.5E-04	1.7E-02
NICKEL	5.1E+02				4.8E-08	4.8E-08	7.7E-03	1.6E-02	3.0E-04	7.0E-03	3.1E-02
SILVER	3.8E-01						2.3E-05	6.9E-05	8.9E-07	3.7E-05	1.3E-04
TCDD, 2,3,7,8- (equivalents)	1.8E-06	1.2E-09	1.2E-09	4.6E-11	1.2E-11	2.4E-09	7.8E-04	7.9E-04	3.0E-05	1.2E-05	1.6E-03

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Construction Worker - Soil: Table CW-2

Equations to Calculate Cancer Risk for Construction Worker

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Cancer Risk from Ingestion

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

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

Cancer Risk from Dermal Absorption

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

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

Cancer Risk from Particulate Inhalation - Gastrointestinal Absorption

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

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

Cancer Risk from Particulate Inhalation - Pulmonary Absorption

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

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

Parameter	Value	Units
CSF	OHM-specific	$(mg/kg\text{-}day)^{-1}$
LADD	age/OHM-specific	mg/kg-day
EPC	OHM-specific	mg/kg
IR	100	mg/day
$RAF_{c\text{-}ing}$	OHM-specific	dimensionless
$RAF_{c\text{-}derm}$	OHM-specific	dimensionless
$RAF_{c\text{-}inh}$	OHM-specific	dimensionless
EF	0.429	event/day
$ED_{ing\ \&\ derm}$	1	day/event
ED_{inh}	0.500	day/event
EP	150	days
C1	1.0E-06	kg/mg
C2	1.0E-09	kg/µg
C3	1440	min/days
C4	1.0E-03	m^3/L
BW	58.0	kg
$AP_{(lifetime)}$	25,550	days
VR_{work}	60	L/min
AF	0.29	mg/cm^2
SA	3473	cm^2/day
$RCAF_{inh\text{-}gi}$	1.5	dimensionless
$RCAF_{inh}$	0.5	dimensionless
PM_{10}	60	$\mu g/m^3$

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Construction Worker - Soil: Table CW-3

Equations to Calculate Noncancer Risk for Construction Worker

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Noncancer Risk from Ingestion

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

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

Noncancer Risk from Dermal Absorption

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

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

Noncancer Risk from Particulate Inhalation - Gastrointestinal Absorption

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

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

Noncancer Risk from Particulate Inhalation - Pulmonary Absorption

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

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

Parameter	Value	Units
RfD	OHM-specific	mg/kg-day
ADD	OHM-specific	mg/kg-day
EPC	OHM-specific	mg/kg
IR	100	mg/day
$RAF_{nc\text{-}ing}$	OHM-specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM-specific	dimensionless
$RAF_{nc\text{-}inh}$	OHM-specific	dimensionless
EF	0.429	event/day
$ED_{ing\ \&\ derm}$	1	day/event
ED_{inh}	0.500	day/event
EP	150	days
C1	1.0E-06	kg/mg
C2	1.0E-09	kg/µg
C3	1440	min/days
C4	1.0E-03	m^3/L
BW	58.0	kg
$AP_{noncancer}$	365	days
VR_{work}	60	L/min
AF	0.29	mg/cm^2
SA	3473	cm^2/day
$RCAF_{inh\text{-}gi}$	1.5	dimensionless
$RCAF_{inh}$	0.5	dimensionless
PM10	60	$µg/m^3$

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

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Parameter	Value	Units	Notes
ELCR - Excess Lifetime Cancer Risk	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
HI - Hazard Index	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
CSF - Cancer Slope Factor	chemical specific	$(mg/kg\text{-}day)^{-1}$	see Table CW-5.
RfD - Reference Dose	chemical specific	mg/kg-day	see Table CW-5.
LADD - Lifetime Average Daily Dose	chemical specific	mg/kg-day	Pathway specific. See Table CW-2.
ADD - Average Daily Dose	chemical specific	mg/kg-day	Pathway specific. See Table CW-3.
EPC - Exposure Point Concentration	chemical specific	mg/kg	see Table CW-1.
IR - Soil Ingestion Rate	100	mg/day	EPA, Exposure Factor Handbook, 2011.
RAF_c - Relative Absorption Factor for Cancer Effects	chemical specific	dimensionless	Pathway specific - see Table CW-5.
RAF_{nc} - Relative Absorption Factor for Noncancer Effects	chemical specific	dimensionless	Pathway specific - see Table CW-5.
EF - Exposure Frequency	0.429	event/day	3 events (days) / 7 events (days) in a week
$ED_{ing,derm}$ - Exposure Duration for ingestion or dermal exposure	1	day/event	
ED_{inh} - Exposure Duration for inhalation exposure	0.500	day/event	Represents 12 hours / event.
EP - Exposure Period	150	days	3 days per week over a year
BW - Body Weight	58.0	kg	U.S. EPA. 1997. Exposure Factors Handbook. Table 7-7, Females, ages 18 - 25.
$AP_{(lifetime)}$ - Averaging Period for lifetime	25,550	days	Represents 70 years
$AP_{(noncancer)}$ - Averaging Period for noncancer	365	days	1 year
AF - Adherence Factor	0.29	mg/cm^2	MA DEP. 2002 Technical Update: Weighted Skin-Soil Adherence Factors. (http://www.mass.gov/dep/ors/orspubs.htm)
VR_{work} - Ventilation Rate during work (heavy exertion)	60	L/min	Table B-4 MADEP 1995 Guidance for Disposal Site Risk Characterization. Same as presented in EPA, Exposure Factors Handbook, 2011.
SA - Surface Area	3473	cm^2/day	MADEP. 1995. Guidance for Disposal Site Risk Characterization. 50th percentile for females. Appendix Table B-2.
$IFAF_{inh\text{-}gi}$ - Ingestion Fraction Adjustment Factor, gastrointestinal	1.5	dimensionless	MADEP 2007. Characterization of Risks Due to Inhalation of Particulates by Construction Workers
$IFAF_{inh}$ - Inhalation Fraction Adjustment Factor, inhalation	0.5	dimensionless	MADEP 2002. Characterization of Risks Due to Inhalation of Particulates by Construction Workers
PM10 - Concentration of PM_{10}	60	$\mu g/m^3$	MADEP 1995 Guidance for Disposal Site Risk Characterization pg B-11

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

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Oil or Hazardous Material	Oral CSF $(mg/kg\text{-}day)^{-1}$	$RAF_{c\text{-}ing}$	$RAF_{c\text{-}derm}$	$RAF_{c\text{-}inh}$	Inhalation CSF $(mg/kg\text{-}day)^{-1}$	Subchronic Oral RfD mg/kg-day	Subchronic $RAF_{nc\text{-}ing}$	Subchronic $RAF_{nc\text{-}derm}$	Subchronic $RAF_{nc\text{-}inh}$	Subchronic Inhalation RfD
ALIPHATICS C9 to C18						1.0E+00	1	0.2	1	1.7E-01
ALIPHATICS C19 to C36						6.0E+00	1	0.2		
AROMATICS C11 to C22						3.0E-01	0.3	0.1	1	1.4E-01
ACENAPHTHENE						2.0E-01	0.3	0.1	1	1.4E-01
ACENAPHTHYLENE						3.0E-01	0.3	0.1	1	1.4E-01
ANTHRACENE						1.0E+00	0.3	0.1	1	1.4E-01
BENZO(a)ANTHRACENE	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
BENZO(a)PYRENE	7.3E+00	0.3	0.02	1	7.3E+00	3.0E-01	0.3	0.02	1	1.4E-01
BENZO(b)FLUORANTHENE	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
BENZO(g,h,i)PERYLENE						3.0E-01	0.3	0.1	1	1.4E-01
BENZO(k)FLUORANTHENE	7.3E-02	0.3	0.02	1	7.3E-02	3.0E-01	0.3	0.02	1	1.4E-01
CHRYSENE	7.3E-02	0.3	0.02	1	7.3E-02	3.0E-01	0.3	0.02	1	1.4E-01
DIBENZO(a,h)ANTHRACENE	7.3E+00	0.3	0.02	1	7.3E+00	3.0E-01	0.3	0.02	1	1.4E-01
FLUORANTHENE						4.0E-01	0.3	0.1	1	1.4E-01
FLUORENE						4.0E-01	0.3	0.1	1	1.4E-01
INDENO(1,2,3-cd)PYRENE	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
METHYLNAPHTHALENE, 2-						4.0E-03	0.3	0.1	1	1.4E-01
NAPHTHALENE						2.0E-01	0.3	0.1	1	8.6E-04
PHENANTHRENE						3.0E-01	0.3	0.1	1	1.4E-01
PYRENE						3.0E-01	0.3	0.1	1	1.4E-01
AROMATICS C9 to C10						3.0E-01	1	0.2	1	1.4E-01
ETHYLBENZENE						5.0E-02	1	0.03	1	2.6E+00
TOLUENE						8.0E-01	1	0.03	1	1.4E+00
TRICHLOROETHYLENE	5.0E-02	1	0.03	1	1.4E-02	5.0E-04	1	0.03	1	5.7E-04
XYLENES (Mixed Isomers)						4.0E-01	1	0.03	1	1.1E-01
POLYCHLORINATED BIPHENYLS (PCBs)	2.0E+00	1	0.1	1	3.5E-01	5.0E-05	1	0.1	1	5.7E-06
ANTIMONY						4.0E-04	1	0.1	1	2.9E-03
ARSENIC	1.5E+00	0.5	0.03	1	1.1E+01	3.0E-04	0.5	0.03	1	5.7E-06
BARIUM						7.0E-02	1	0.1	1	1.4E-03
CADMIUM					6.3E+00	5.0E-04	1	0.01	1	5.7E-06
CHROMIUM (TOTAL)					4.2E+01	2.0E-02	1	0.1	1	8.6E-05
LEAD						7.5E-04	0.5	0.006	1	2.9E-04
NICKEL					1.7E+00	2.0E-02	1	0.2	1	2.9E-04

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

Vlookup Version v1012

Oil or Hazardous Material	Oral CSF $(mg/kg\text{-}day)^{-1}$	$RAF_{c\text{-}ing}$	$RAF_{c\text{-}derm}$	$RAF_{c\text{-}inh}$	Inhalation CSF $(mg/kg\text{-}day)^{-1}$	Subchronic Oral RfD mg/kg-day	Subchronic $RAF_{nc\text{-}ing}$	Subchronic $RAF_{nc\text{-}derm}$	Subchronic $RAF_{nc\text{-}inh}$	Subchronic Inhalation RfD
SILVER						5.0E-03	1	0.3	1	4.0E-05
TCDD, 2,3,7,8- (equivalents)	1.5E+05	1	0.1	1	1.2E+05	7.0E-10	1	0.1	1	5.7E-10

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Construction Worker - Soil: Table CW-6
Cyanide Calculations

The acute concentration of *available* cyanide in soil is the level *at or below which* adverse human health effects would not be expected following an acute exposure. For construction workers, the subchronic concentrations calculated in the EPCs tab are more conservative than the acute concentrations. The acute calculation is below.

Acute Concentration Calculation for Cyanide

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

Parameter	Value	Units
HQ (Hazard Quotient)	1	(unitless)
Acute Dose Limit	0.01	mg CN/ kg BW
BW (Body Weight) $_{11\text{-}12}$	58	kg
IR $_{(1\text{-time reasonable max})}$	100	mg
Conversion Factor	1.0E-06	kg soil / mg soil

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

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Method 3 Risk Assessment for Chemicals in Soil - Construction Worker Shortform 2012 (sf12cw)

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NC Eq	Table CW-3: Equations to calculate noncancer risks
Exp	Table CW-4: Definitions and exposure factors
Chem	Table CW-5: Chemical-specific data

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Construction Worker - Soil: Table CW-1A
Exposure Point Concentration (EPC) and Risk
Based on Construction Worker 18-25 years of age

ShortForm Version 10-12
Vlookup Version v1012

ELCR (all chemicals) = 1E-05
HI (all chemicals) = 5E+00

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

Oil or Hazardous Material (OHM)	EPC (mg/kg)	ELCR ingestion	ELCR dermal	ELCR inhalation GI	ELCR inhalation pulmonary	$ELCR_{total}$	Subchronic HQ_{ing}	Subchronic HQ_{derm}	Subchronic HQ_{inh-GI}	Subchronic HQ_{inh}	HQ_{total}	
ALIPHATICS C9 to C18	3.7E+03						8.7E-03	8.8E-03	1.7E-04	3.3E-04	1.8E-02	
ALIPHATICS C19 to C36	4.7E+03						1.8E-03	1.8E-03	3.6E-05		3.7E-03	
AROMATICS C11 to C22	2.0E+03						4.8E-03	8.1E-03	9.4E-05	2.2E-04	1.3E-02	
ACENAPHTHENE	7.2E+00						2.6E-05	4.3E-05	5.0E-07	7.7E-07	7.0E-05	
ACENAPHTHYLENE	6.9E+00						1.6E-05	2.7E-05	3.2E-07	7.4E-07	4.5E-05	
ANTHRACENE	6.7E+00						4.8E-06	8.0E-06	9.2E-08	7.2E-07	1.4E-05	
BENZO(a)ANTHRACENE	6.8E+00	1.0E-07	3.4E-08	1.9E-09	2.2E-09	1.4E-07	1.6E-05	5.4E-06	3.1E-07	7.2E-07	2.2E-05	
BENZO(a)PYRENE	6.5E+00	9.7E-07	3.2E-07	1.9E-08	2.1E-08	1.3E-06	1.5E-05	5.2E-06	3.0E-07	7.0E-07	2.2E-05	
BENZO(b)FLUORANTHENE	6.8E+00	1.0E-07	3.4E-08	1.9E-09	2.2E-09	1.4E-07	1.6E-05	5.4E-06	3.1E-07	7.2E-07	2.2E-05	
BENZO(g,h,i)PERYLENE	6.4E+00						1.5E-05	2.5E-05	2.9E-07	6.9E-07	4.2E-05	
BENZO(k)FLUORANTHENE	6.5E+00	9.7E-09	3.2E-09	1.9E-10	2.1E-10	1.3E-08	1.5E-05	5.2E-06	3.0E-07	7.0E-07	2.2E-05	
CHRYSENE	6.4E+00	9.4E-09	3.2E-09	1.8E-10	2.0E-10	1.3E-08	1.5E-05	5.0E-06	2.9E-07	6.8E-07	2.1E-05	
DIBENZO(a,h)ANTHRACENE	6.4E+00	9.5E-07	3.2E-07	1.8E-08	2.0E-08	1.3E-06	1.5E-05	5.1E-06	2.9E-07	6.9E-07	2.1E-05	
FLUORANTHENE	9.0E+00						1.6E-05	2.7E-05	3.1E-07	9.7E-07	4.4E-05	
FLUORENE	3.2E+00						5.7E-06	9.6E-06	1.1E-07	3.4E-07	1.6E-05	
INDENO(1,2,3-cd)PYRENE	6.5E+00	9.7E-08	3.2E-08	1.9E-09	2.1E-09	1.3E-07	1.5E-05	5.2E-06	3.0E-07	7.0E-07	2.2E-05	
METHYLNAPHTHALENE, 2-	6.2E+00						1.1E-03	1.8E-03	2.1E-05	6.6E-07	3.0E-03	
NAPHTHALENE	6.6E+00						2.4E-05	3.9E-05	4.6E-07	1.2E-04	1.8E-04	
PHENANTHRENE	1.3E+00						3.0E-06	5.0E-06	5.7E-08	1.3E-07	8.1E-06	
PYRENE	6.8E+00						1.6E-05	2.7E-05	3.1E-07	7.3E-07	4.4E-05	
AROMATICS C9 to C10	2.0E+02						1.6E-03	1.6E-03	3.0E-05	2.1E-05	3.2E-03	
ETHYLBENZENE	2.8E-03						1.3E-07	2.0E-08	2.6E-09	1.7E-11	1.5E-07	
TOLUENE	1.4E-03						4.1E-09	6.2E-10	8.0E-11	1.5E-11	4.9E-09	
TRICHLOROETHYLENE	1.3E-03	4.3E-12	6.4E-13	8.3E-14	7.7E-15	5.0E-12	6.0E-06	9.0E-07	1.2E-07	3.4E-08	7.0E-06	
XYLENES (Mixed Isomers)	2.5E-02						1.5E-07	2.3E-08	2.9E-09	3.4E-09	1.8E-07	
POLYCHLORINATED BIPHENYLS (PCBs)	5.1E+01	6.9E-06	3.5E-06	1.3E-07	7.8E-09	1.1E-05	2.4E+00	1.2E+00	4.7E-02	1.4E-01	3.8E+00	
ANTIMONY	3.5E+01						2.1E-01	1.0E-01	4.0E-03	1.9E-04	3.1E-01	
ARSENIC	9.4E+00	4.8E-07	1.4E-07	9.3E-09	4.3E-08	6.7E-07	3.7E-02	1.1E-02	7.2E-04	2.5E-02	7.4E-02	
BARIUM	7.3E+01						2.5E-03	1.2E-03	4.8E-05	7.8E-04	4.5E-03	
CADMIUM	3.9E-01				1.1E-09	1.1E-09	1.8E-03	9.3E-05	3.6E-05	1.0E-03	3.0E-03	
CHROMIUM (TOTAL)	3.8E+00				7.0E-08	7.0E-08	4.5E-04	2.3E-04	8.8E-06	6.8E-04	1.4E-03	**Note! Cr(VI) limit is 200 mg/kg due to contact dermititis.**
LEAD	6.9E+01						1.1E-01	6.6E-03	2.1E-03	3.7E-03	1.2E-01	
NICKEL	5.1E+02				3.7E-07	3.7E-07	6.0E-02	6.1E-02	1.2E-03	2.7E-02	1.5E-01	
SILVER	3.8E-01						1.8E-04	2.7E-04	3.5E-06	1.4E-04	5.9E-04	
TCDD, 2,3,7,8- (equivalents)	1.8E-06	1.8E-08	9.2E-09	3.5E-10	9.1E-11	2.8E-08	6.1E-03	3.1E-03	1.2E-04	4.8E-05	9.3E-03	

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Construction Worker - Soil: Table CW-2

Equations to Calculate Cancer Risk for Construction Worker

Vlookup Version v1012

Cancer Risk from Ingestion

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

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

Cancer Risk from Dermal Absorption

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

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

Cancer Risk from Particulate Inhalation - Gastrointestinal Absorption

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

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

Cancer Risk from Particulate Inhalation - Pulmonary Absorption

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

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

Parameter	Value	Units
CSF	OHM-specific	$(mg/kg\text{-}day)^{-1}$
LADD	age/OHM-specific	mg/kg-day
EPC	OHM-specific	mg/kg
IR	200	mg/day
$RAF_{c\text{-}ing}$	OHM-specific	dimensionless
$RAF_{c\text{-}derm}$	OHM-specific	dimensionless
$RAF_{c\text{-}inh}$	OHM-specific	dimensionless
EF	0.714	event/day
$ED_{ing\ \&\ derm}$	1	day/event
ED_{inh}	0.500	day/event
EP	700	days
C1	1.0E-06	kg/mg
C2	1.0E-09	kg/µg
C3	1440	min/days
C4	1.0E-03	m^3/L
BW	58.0	kg
$AP_{(lifetime)}$	25,550	days
VR_{work}	60	L/min
AF	0.29	mg/cm^2
SA	3473	cm^2/day
$RCAF_{inh\text{-}gi}$	1.5	dimensionless
$RCAF_{inh}$	0.5	dimensionless
PM_{10}	60	$\mu g/m^3$

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Construction Worker - Soil: Table CW-3

Equations to Calculate Noncancer Risk for Construction Worker

Vlookup Version v1012

Noncancer Risk from Ingestion

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

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

Noncancer Risk from Dermal Absorption

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

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

Noncancer Risk from Particulate Inhalation - Gastrointestinal Absorption

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

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

Noncancer Risk from Particulate Inhalation - Pulmonary Absorption

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

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

Parameter	Value	Units
RfD	OHM-specific	mg/kg-day
ADD	OHM-specific	mg/kg-day
EPC	OHM-specific	mg/kg
IR	200	mg/day
$RAF_{nc\text{-}ing}$	OHM-specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM-specific	dimensionless
$RAF_{nc\text{-}inh}$	OHM-specific	dimensionless
EF	0.714	event/day
$ED_{ing\ \&\ derm}$	1	day/event
ED_{inh}	0.500	day/event
EP	700	days
C1	1.0E-06	kg/mg
C2	1.0E-09	kg/µg
C3	1440	min/days
C4	1.0E-03	m^3/L
BW	58.0	kg
$AP_{noncancer}$	730	days
VR_{work}	60	L/min
AF	0.29	mg/cm^2
SA	3473	cm^2/day
$RCAF_{inh\text{-}gi}$	1.5	dimensionless
$RCAF_{inh}$	0.5	dimensionless
PM10	60	$\mu g/m^3$

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

Vlookup Version v1012

Parameter	Value	Units	Notes
ELCR - Excess Lifetime Cancer Risk	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
HI - Hazard Index	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
CSF - Cancer Slope Factor	chemical specific	$(mg/kg\text{-}day)^{-1}$	see Table CW-5.
RfD - Reference Dose	chemical specific	mg/kg-day	see Table CW-5.
LADD - Lifetime Average Daily Dose	chemical specific	mg/kg-day	Pathway specific. See Table CW-2.
ADD - Average Daily Dose	chemical specific	mg/kg-day	Pathway specific. See Table CW-3.
EPC - Exposure Point Concentration	chemical specific	mg/kg	see Table CW-1.
IR - Soil Ingestion Rate	200	mg/day	EPA, Exposure Factor Handbook, 2011.
RAF_c - Relative Absorption Factor for Cancer Effects	chemical specific	dimensionless	Pathway specific - see Table CW-5.
RAF_{nc} - Relative Absorption Factor for Noncancer Effects	chemical specific	dimensionless	Pathway specific - see Table CW-5.
EF - Exposure Frequency	0.714	event/day	5 events (days) / 7 events (days) in a week; MADEP 1995 Guidance for Disposal Site Risk Characterization pg B-38.
$ED_{ing,derm}$ - Exposure Duration for ingestion or dermal exposure	1	day/event	
ED_{inh} - Exposure Duration for inhalation exposure	0.500	day/event	Represents 12 hours / event.
EP - Exposure Period	700	days	2 years; professional judgement. 5 days per week, 50 weeks per year. professional judgement
BW - Body Weight	58.0	kg	U.S. EPA. 2011. Exposure Factors Handbook.
$AP_{(lifetime)}$ - Averaging Period for lifetime	25,550	days	Represents 70 years
$AP_{(noncancer)}$ - Averaging Period for noncancer	730	days	2 years; professional judgement.
AF - Adherence Factor	0.29	mg/cm^2	MA DEP. 2002 Technical Update: Weighted Skin-Soil Adherence Factors. (http://www.mass.gov/dep/ors/orspubs.htm)
VR_{work} - Ventilation Rate during work (heavy exertion)	60	L/min	Table B-4 MADEP 1995 Guidance for Disposal Site Risk Characterization.
SA - Surface Area	3473	cm^2/day	MADEP. 1995. Guidance for Disposal Site Risk Characterization. 50th percentile for females. Appendix Table B-2.
$IFAF_{inh\text{-}gi}$ - Ingestion Fraction Adjustment Factor, gastrointestinal	1.5	dimensionless	MADEP 2007. Characterization of Risks Due to Inhalation of Particulates by Construction Workers
$IFAF_{inh}$ - Inhalation Fraction Adjustment Factor, inhalation	0.5	dimensionless	MADEP 2002. Characterization of Risks Due to Inhalation of Particulates by Construction Workers
PM10 - Concentration of PM_{10}	60	$\mu g/m^3$	MADEP 1995 Guidance for Disposal Site Risk Characterization pg B-11

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

Vlookup Version v1012

Oil or Hazardous Material	Oral CSF $(mg/kg\text{-}day)^{-1}$	$RAF_{c\text{-}ing}$	$RAF_{c\text{-}derm}$	$RAF_{c\text{-}inh}$	Inhalation CSF $(mg/kg\text{-}day)^{-1}$	Subchronic Oral RfD mg/kg-day	Subchronic $RAF_{nc\text{-}ing}$	Subchronic $RAF_{nc\text{-}derm}$	Subchronic $RAF_{nc\text{-}inh}$	Subchronic Inhalation RfD
ALIPHATICS C9 to C18						1.0E+00	1	0.2	1	1.7E-01
ALIPHATICS C19 to C36						6.0E+00	1	0.2		
AROMATICS C11 to C22						3.0E-01	0.3	0.1	1	1.4E-01
ACENAPHTHENE						2.0E-01	0.3	0.1	1	1.4E-01
ACENAPHTHYLENE						3.0E-01	0.3	0.1	1	1.4E-01
ANTHRACENE						1.0E+00	0.3	0.1	1	1.4E-01
BENZO(a)ANTHRACENE	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
BENZO(a)PYRENE	7.3E+00	0.3	0.02	1	7.3E+00	3.0E-01	0.3	0.02	1	1.4E-01
BENZO(b)FLUORANTHENE	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
BENZO(g,h,i)PERYLENE						3.0E-01	0.3	0.1	1	1.4E-01
BENZO(k)FLUORANTHENE	7.3E-02	0.3	0.02	1	7.3E-02	3.0E-01	0.3	0.02	1	1.4E-01
CHRYSENE	7.3E-02	0.3	0.02	1	7.3E-02	3.0E-01	0.3	0.02	1	1.4E-01
DIBENZO(a,h)ANTHRACENE	7.3E+00	0.3	0.02	1	7.3E+00	3.0E-01	0.3	0.02	1	1.4E-01
FLUORANTHENE						4.0E-01	0.3	0.1	1	1.4E-01
FLUORENE						4.0E-01	0.3	0.1	1	1.4E-01
INDENO(1,2,3-cd)PYRENE	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
METHYLNAPHTHALENE, 2-						4.0E-03	0.3	0.1	1	1.4E-01
NAPHTHALENE						2.0E-01	0.3	0.1	1	8.6E-04
PHENANTHRENE						3.0E-01	0.3	0.1	1	1.4E-01
PYRENE						3.0E-01	0.3	0.1	1	1.4E-01
AROMATICS C9 to C10						3.0E-01	1	0.2	1	1.4E-01
ETHYLBENZENE						5.0E-02	1	0.03	1	2.6E+00
TOLUENE						8.0E-01	1	0.03	1	1.4E+00
TRICHLOROETHYLENE	5.0E-02	1	0.03	1	1.4E-02	5.0E-04	1	0.03	1	5.7E-04
XYLENES (Mixed Isomers)						4.0E-01	1	0.03	1	1.1E-01
POLYCHLORINATED BIPHENYLS (PCBs)	2.0E+00	1	0.1	1	3.5E-01	5.0E-05	1	0.1	1	5.7E-06
ANTIMONY						4.0E-04	1	0.1	1	2.9E-03
ARSENIC	1.5E+00	0.5	0.03	1	1.1E+01	3.0E-04	0.5	0.03	1	5.7E-06
BARIUM						7.0E-02	1	0.1	1	1.4E-03
CADMIUM					6.3E+00	5.0E-04	1	0.01	1	5.7E-06
CHROMIUM (TOTAL)					4.2E+01	2.0E-02	1	0.1	1	8.6E-05
LEAD						7.5E-04	0.5	0.006	1	2.9E-04
NICKEL					1.7E+00	2.0E-02	1	0.2	1	2.9E-04

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

Vlookup Version v1012

Oil or Hazardous Material	Oral CSF $(mg/kg\text{-}day)^{-1}$	$RAF_{c\text{-}ing}$	$RAF_{c\text{-}derm}$	$RAF_{c\text{-}inh}$	Inhalation CSF $(mg/kg\text{-}day)^{-1}$	Subchronic Oral RfD mg/kg-day	Subchronic $RAF_{nc\text{-}ing}$	Subchronic $RAF_{nc\text{-}derm}$	Subchronic $RAF_{nc\text{-}inh}$	Subchronic Inhalation RfD
SILVER						5.0E-03	1	0.3	1	4.0E-05
TCDD, 2,3,7,8- (equivalents)	1.5E+05	1	0.1	1	1.2E+05	7.0E-10	1	0.1	1	5.7E-10

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Method 3 Risk Assessment for Chemicals in Soil - Construction Worker Shortform 2012 (sf12cw)

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Construction Worker - Soil: Table CW-1A
Exposure Point Concentration (EPC) and Risk
Based on Construction Worker 18-25 years of age

ShortForm Version 10-12
Vlookup Version v1012

ELCR (all chemicals) = 3E-06
HI (all chemicals) = 3E+00

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

Oil or Hazardous Material (OHM)	EPC (mg/kg)	ELCR ingestion	ELCR dermal	ELCR inhalation GI	ELCR inhalation pulmonary	$ELCR_{total}$	Subchronic HQ_{ing}	Subchronic HQ_{derm}	Subchronic HQ_{inh-GI}	Subchronic HQ_{inh}	HQ_{total}
ALIPHATICS C9 to C18	3.7E+03						4.5E-03	9.2E-03	1.2E-04	2.3E-04	1.4E-02
ALIPHATICS C19 to C36	4.7E+03						9.6E-04	1.9E-03	2.5E-05		2.9E-03
AROMATICS C11 to C22	2.0E+03						2.5E-03	8.5E-03	6.5E-05	1.5E-04	1.1E-02
ACENAPHTHENE	7.2E+00						1.3E-05	4.5E-05	3.4E-07	5.4E-07	5.9E-05
ACENAPHTHYLENE	6.9E+00						8.5E-06	2.9E-05	2.2E-07	5.1E-07	3.8E-05
ANTHRACENE	6.7E+00						2.5E-06	8.3E-06	6.4E-08	5.0E-07	1.1E-05
BENZO(a)ANTHRACENE	6.8E+00	1.3E-08	8.7E-09	3.4E-10	3.7E-10	2.2E-08	8.3E-06	5.6E-06	2.2E-07	5.0E-07	1.5E-05
BENZO(a)PYRENE	6.5E+00	1.3E-07	8.4E-08	3.3E-09	3.6E-09	2.2E-07	8.1E-06	5.4E-06	2.1E-07	4.9E-07	1.4E-05
BENZO(b)FLUORANTHENE	6.8E+00	1.3E-08	8.7E-09	3.4E-10	3.7E-10	2.2E-08	8.3E-06	5.6E-06	2.2E-07	5.0E-07	1.5E-05
BENZO(g,h,i)PERYLENE	6.4E+00						7.9E-06	2.7E-05	2.0E-07	4.8E-07	3.5E-05
BENZO(k)FLUORANTHENE	6.5E+00	1.3E-09	8.4E-10	3.3E-11	3.6E-11	2.2E-09	8.1E-06	5.4E-06	2.1E-07	4.9E-07	1.4E-05
CHRYSENE	6.4E+00	1.2E-09	8.2E-10	3.2E-11	3.5E-11	2.1E-09	7.8E-06	5.3E-06	2.0E-07	4.7E-07	1.4E-05
DIBENZO(a,h)ANTHRACENE	6.4E+00	1.2E-07	8.3E-08	3.2E-09	3.5E-09	2.1E-07	7.9E-06	5.3E-06	2.0E-07	4.8E-07	1.4E-05
FLUORANTHENE	9.0E+00						8.3E-06	2.8E-05	2.2E-07	6.7E-07	3.7E-05
FLUORENE	3.2E+00						3.0E-06	1.0E-05	7.7E-08	2.4E-07	1.3E-05
INDENO(1,2,3-cd)PYRENE	6.5E+00	1.3E-08	8.4E-09	3.3E-10	3.6E-10	2.2E-08	8.1E-06	5.4E-06	2.1E-07	4.9E-07	1.4E-05
METHYLNAPHTHALENE, 2-	6.2E+00						5.7E-04	1.9E-03	1.5E-05	4.6E-07	2.5E-03
NAPHTHALENE	6.6E+00						1.2E-05	4.1E-05	3.2E-07	8.2E-05	1.4E-04
PHENANTHRENE	1.3E+00						1.5E-06	5.2E-06	4.0E-08	9.3E-08	6.8E-06
PYRENE	6.8E+00						8.4E-06	2.8E-05	2.2E-07	5.1E-07	3.7E-05
AROMATICS C9 to C10	2.0E+02						8.1E-04	1.6E-03	2.1E-05	1.5E-05	2.5E-03
ETHYLBENZENE	2.8E-03						6.9E-08	2.1E-08	1.8E-09	1.2E-11	9.2E-08
TOLUENE	1.4E-03						2.2E-09	6.5E-10	5.6E-11	1.0E-11	2.9E-09
TRICHLOROETHYLENE	1.3E-03	5.5E-13	1.7E-13	1.4E-14	1.3E-15	7.4E-13	3.1E-06	9.4E-07	8.1E-08	2.4E-08	4.2E-06
XYLENES (Mixed Isomers)	2.5E-02						7.8E-08	2.4E-08	2.0E-09	2.4E-09	1.1E-07
POLYCHLORINATED BIPHENYLS (PCBs)	5.1E+01	9.0E-07	9.0E-07	2.3E-08	1.4E-09	1.8E-06	1.3E+00	1.3E+00	3.3E-02	9.5E-02	2.7E+00
ANTIMONY	3.5E+01						1.1E-01	1.1E-01	2.8E-03	1.3E-04	2.2E-01
ARSENIC	9.4E+00	6.2E-08	3.7E-08	1.6E-09	7.5E-09	1.1E-07	1.9E-02	1.2E-02	5.0E-04	1.8E-02	4.9E-02
BARIUM	7.3E+01						1.3E-03	1.3E-03	3.3E-05	5.4E-04	3.2E-03
CADMIUM	3.9E-01				1.9E-10	1.9E-10	9.6E-04	9.7E-05	2.5E-05	7.3E-04	1.8E-03
CHROMIUM (TOTAL)	3.8E+00				1.2E-08	1.2E-08	2.4E-04	2.4E-04	6.1E-06	4.7E-04	9.5E-04
LEAD	6.9E+01						5.7E-02	6.9E-03	1.5E-03	2.6E-03	6.8E-02
NICKEL	5.1E+02				6.5E-08	6.5E-08	3.1E-02	6.3E-02	8.1E-04	1.9E-02	1.1E-01
SILVER	3.8E-01						9.3E-05	2.8E-04	2.4E-06	1.0E-04	4.8E-04
TCDD, 2,3,7,8- (equivalents)	1.8E-06	2.4E-09	2.4E-09	6.1E-11	1.6E-11	4.8E-09	3.2E-03	3.2E-03	8.2E-05	3.4E-05	6.5E-03

Note! Cr(VI) limit is 200 mg/kg due to contact dermititis.

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Construction Worker - Soil: Table CW-2

Equations to Calculate Cancer Risk for Construction Worker

Vlookup Version v1012

Cancer Risk from Ingestion

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

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

Cancer Risk from Dermal Absorption

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

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

Cancer Risk from Particulate Inhalation - Gastrointestinal Absorption

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

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

Cancer Risk from Particulate Inhalation - Pulmonary Absorption

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

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

Parameter	Value	Units
CSF	OHM-specific	$(mg/kg\text{-}day)^{-1}$
LADD	age/OHM-specific	mg/kg-day
EPC	OHM-specific	mg/kg
IR	100	mg/day
$RAF_{c\text{-}ing}$	OHM-specific	dimensionless
$RAF_{c\text{-}derm}$	OHM-specific	dimensionless
$RAF_{c\text{-}inh}$	OHM-specific	dimensionless
EF	0.714	event/day
$ED_{ing\ \&\ derm}$	1	day/event
ED_{inh}	0.333	day/event
EP	182	days
C1	1.0E-06	kg/mg
C2	1.0E-09	kg/µg
C3	1440	min/days
C4	1.0E-03	m^3/L
BW	58.0	kg
$AP_{(lifetime)}$	25,550	days
VR_{work}	60	L/min
AF	0.29	mg/cm^2
SA	3473	cm^2/day
$RCAF_{inh\text{-}gi}$	1.5	dimensionless
$RCAF_{inh}$	0.5	dimensionless
PM_{10}	60	$\mu g/m^3$

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Construction Worker - Soil: Table CW-3

Equations to Calculate Noncancer Risk for Construction Worker

Vlookup Version v1012

Noncancer Risk from Ingestion

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

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

Noncancer Risk from Dermal Absorption

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

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

Noncancer Risk from Particulate Inhalation - Gastrointestinal Absorption

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

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

Noncancer Risk from Particulate Inhalation - Pulmonary Absorption

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

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

Parameter	Value	Units
RfD	OHM-specific	mg/kg-day
ADD	OHM-specific	mg/kg-day
EPC	OHM-specific	mg/kg
IR	100	mg/day
$RAF_{nc\text{-}ing}$	OHM-specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM-specific	dimensionless
$RAF_{nc\text{-}inh}$	OHM-specific	dimensionless
EF	0.714	event/day
$ED_{ing\ \&\ derm}$	1	day/event
ED_{inh}	0.333	day/event
EP	182	days
C1	1.0E-06	kg/mg
C2	1.0E-09	kg/µg
C3	1440	min/days
C4	1.0E-03	m^3/L
BW	58.0	kg
$AP_{noncancer}$	182	days
VR_{work}	60	L/min
AF	0.29	mg/cm^2
SA	3473	cm^2/day
$RCAF_{inh\text{-}gi}$	1.5	dimensionless
$RCAF_{inh}$	0.5	dimensionless
PM10	60	$\mu g/m^3$

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

Vlookup Version v1012

Parameter	Value	Units	Notes
ELCR - Excess Lifetime Cancer Risk	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
HI - Hazard Index	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
CSF - Cancer Slope Factor	chemical specific	$(mg/kg\text{-}day)^{-1}$	see Table CW-5.
RfD - Reference Dose	chemical specific	mg/kg-day	see Table CW-5.
LADD - Lifetime Average Daily Dose	chemical specific	mg/kg-day	Pathway specific. See Table CW-2.
ADD - Average Daily Dose	chemical specific	mg/kg-day	Pathway specific. See Table CW-3.
EPC - Exposure Point Concentration	chemical specific	mg/kg	see Table CW-1.
IR - Soil Ingestion Rate	100	mg/day	MADEP. 2002. Technical Update: Calculation of an Enhanced Soil Ingestion Rate. (http://www.mass.gov/dep/ors/orspubs.htm).
RAF_c - Relative Absorption Factor for Cancer Effects	chemical specific	dimensionless	Pathway specific - see Table CW-5.
RAF_{nc} - Relative Absorption Factor for Noncancer Effects	chemical specific	dimensionless	Pathway specific - see Table CW-5.
EF - Exposure Frequency	0.714	event/day	5 events (days) / 7 events (days) in a week; MADEP 1995 Guidance for Disposal Site Risk Characterization pg B-38.
$ED_{ing,derm}$ - Exposure Duration for ingestion or dermal exposure	1	day/event	
ED_{inh} - Exposure Duration for inhalation exposure	0.333	day/event	Represents 8 hours / event.
EP - Exposure Period	182	days	6 months; MADEP 1995 Guidance for Disposal Site Risk Characterization.
BW - Body Weight	58.0	kg	U.S. EPA. 1997. Exposure Factors Handbook. Table 7-7, Females, ages 18 - 25.
$AP_{(lifetime)}$ - Averaging Period for lifetime	25,550	days	Represents 70 years
$AP_{(noncancer)}$ - Averaging Period for noncancer	182	days	6 months; MADEP 1995 Guidance for Disposal Site Risk Characterization.
AF - Adherence Factor	0.29	mg/cm^2	MA DEP. 2002 Technical Update: Weighted Skin-Soil Adherence Factors. (http://www.mass.gov/dep/ors/orspubs.htm)
VR_{work} - Ventilation Rate during work (heavy exertion)	60	L/min	Table B-4 MADEP 1995 Guidance for Disposal Site Risk Characterization.
SA - Surface Area	3473	cm^2/day	MADEP. 1995. Guidance for Disposal Site Risk Characterization. 50th percentile for females. Appendix Table B-2.
$IFAF_{inh\text{-}gi}$ - Ingestion Fraction Adjustment Factor, gastrointestinal	1.5	dimensionless	MADEP 2007. Characterization of Risks Due to Inhalation of Particulates by Construction Workers
$IFAF_{inh}$ - Inhalation Fraction Adjustment Factor, inhalation	0.5	dimensionless	MADEP 2002. Characterization of Risks Due to Inhalation of Particulates by Construction Workers
PM10 - Concentration of PM_{10}	60	$\mu g/m^3$	MADEP 1995 Guidance for Disposal Site Risk Characterization pg B-11

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

Vlookup Version v1012

Oil or Hazardous Material	Oral CSF $(mg/kg\text{-}day)^{-1}$	$RAF_{c\text{-}ing}$	$RAF_{c\text{-}derm}$	$RAF_{c\text{-}inh}$	Inhalation CSF $(mg/kg\text{-}day)^{-1}$	Subchronic Oral RfD mg/kg-day	Subchronic $RAF_{nc\text{-}ing}$	Subchronic $RAF_{nc\text{-}derm}$	Subchronic $RAF_{nc\text{-}inh}$	Subchronic Inhalation RfD
ALIPHATICS C9 to C18						1.0E+00	1	0.2	1	1.7E-01
ALIPHATICS C19 to C36						6.0E+00	1	0.2		
AROMATICS C11 to C22						3.0E-01	0.3	0.1	1	1.4E-01
ACENAPHTHENE						2.0E-01	0.3	0.1	1	1.4E-01
ACENAPHTHYLENE						3.0E-01	0.3	0.1	1	1.4E-01
ANTHRACENE						1.0E+00	0.3	0.1	1	1.4E-01
BENZO(a)ANTHRACENE	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
BENZO(a)PYRENE	7.3E+00	0.3	0.02	1	7.3E+00	3.0E-01	0.3	0.02	1	1.4E-01
BENZO(b)FLUORANTHENE	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
BENZO(g,h,i)PERYLENE						3.0E-01	0.3	0.1	1	1.4E-01
BENZO(k)FLUORANTHENE	7.3E-02	0.3	0.02	1	7.3E-02	3.0E-01	0.3	0.02	1	1.4E-01
CHRYSENE	7.3E-02	0.3	0.02	1	7.3E-02	3.0E-01	0.3	0.02	1	1.4E-01
DIBENZO(a,h)ANTHRACENE	7.3E+00	0.3	0.02	1	7.3E+00	3.0E-01	0.3	0.02	1	1.4E-01
FLUORANTHENE						4.0E-01	0.3	0.1	1	1.4E-01
FLUORENE						4.0E-01	0.3	0.1	1	1.4E-01
INDENO(1,2,3-cd)PYRENE	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
METHYLNAPHTHALENE, 2-						4.0E-03	0.3	0.1	1	1.4E-01
NAPHTHALENE						2.0E-01	0.3	0.1	1	8.6E-04
PHENANTHRENE						3.0E-01	0.3	0.1	1	1.4E-01
PYRENE						3.0E-01	0.3	0.1	1	1.4E-01
AROMATICS C9 to C10						3.0E-01	1	0.2	1	1.4E-01
ETHYLBENZENE						5.0E-02	1	0.03	1	2.6E+00
TOLUENE						8.0E-01	1	0.03	1	1.4E+00
TRICHLOROETHYLENE	5.0E-02	1	0.03	1	1.4E-02	5.0E-04	1	0.03	1	5.7E-04
XYLENES (Mixed Isomers)						4.0E-01	1	0.03	1	1.1E-01
POLYCHLORINATED BIPHENYLS (PCBs)	2.0E+00	1	0.1	1	3.5E-01	5.0E-05	1	0.1	1	5.7E-06
ANTIMONY						4.0E-04	1	0.1	1	2.9E-03
ARSENIC	1.5E+00	0.5	0.03	1	1.1E+01	3.0E-04	0.5	0.03	1	5.7E-06
BARIUM						7.0E-02	1	0.1	1	1.4E-03
CADMIUM					6.3E+00	5.0E-04	1	0.01	1	5.7E-06
CHROMIUM (TOTAL)					4.2E+01	2.0E-02	1	0.1	1	8.6E-05
LEAD						7.5E-04	0.5	0.006	1	2.9E-04
NICKEL					1.7E+00	2.0E-02	1	0.2	1	2.9E-04

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

Vlookup Version v1012

Oil or Hazardous Material	Oral CSF $(mg/kg\text{-}day)^{-1}$	$RAF_{c\text{-}ing}$	$RAF_{c\text{-}derm}$	$RAF_{c\text{-}inh}$	Inhalation CSF $(mg/kg\text{-}day)^{-1}$	Subchronic Oral RfD mg/kg-day	Subchronic $RAF_{nc\text{-}ing}$	Subchronic $RAF_{nc\text{-}derm}$	Subchronic $RAF_{nc\text{-}inh}$	Subchronic Inhalation RfD
SILVER						5.0E-03	1	0.3	1	4.0E-05
TCDD, 2,3,7,8- (equivalents)	1.5E+05	1	0.1	1	1.2E+05	7.0E-10	1	0.1	1	5.7E-10

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Method 3 Risk Assessment for Museum Visitor Exposed to Chemicals in Walls - Shortform 2012 (sf12ps)

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Museum Visitor - Walls: Table PS-1 - Central Tendency
Exposure Point Concentration (EPC)
Based on Visitor Ages 1-31 (Cancer), 1-8 (Chronic Noncancer), and 1-2 (Subchronic Noncancer)

ShortForm Version 10-12

Vlookup Version v0114

ELCR (all chemicals) = 2.2E-08

Chronic HI (all chemicals) = 3.3E-03

Subchronic HI (all chemicals) = 8.9E-04

****Do not insert or delete any rows****

Click on empty cell below and select OHM using arrow.

Oil or Hazardous Material	EPC (mg/kg)	$ELCR_{ingestion}$	$ELCR_{dermal}$	$ELCR_{total}$	Chronic HQ_{ing}	Chronic HQ_{derm}	Chronic HQ_{total}	Subchronic HQ_{ing}	Subchronic HQ_{derm}	Subchronic HQ_{total}
POLYCHLORINATED BIPHENYLS (PCBs)	3.2E-01	1.1E-08	1.1E-08	2.2E-08	1.8E-03	1.5E-03	3.3E-03	5.6E-04	3.3E-04	8.9E-04

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Museum Visitor - Walls: Table PS-2

Equations to Calculate Cancer Risk for Visitor (Age 1-31 years)

Cancer Risk from Ingestion

$$ELCR_{ing} = LADD_{ing(1\text{-}31)} * CSF$$

$$LADD_{ing\ (1\text{-}31)} = LADD_{ing\ (1\text{-}8)} + LADD_{ing\ (8\text{-}15)} + LADD_{ing\ (15\text{-}31)}$$

$$LADD_{ing\ (age\ group\ x)} = \frac{[OHM]_{soil} * IR_x * RAF_{c\text{-}ing} * EF_{ing} * ED * EP_x * C}{BW_x * AP_{lifetime}}$$

Cancer Risk from Dermal Absorption

$$ELCR_{derm} = LADD_{derm} * CSF$$

$$LADD_{derm\ (1\text{-}31)} = LADD_{derm\ (1\text{-}8)} + LADD_{derm\ (8\text{-}15)} + LADD_{derm\ (15\text{-}31)}$$

$$LADD_{derm(age\ group\ x)} = \frac{[OHM]_{soil} * SA_x * RAF_{c\text{-}derm} * SAF_x * EF_{derm} * ED * EP_x * C}{BW_x * AP_{lifetime}}$$

Vlookup Version v0114

Parameter	Value	Units
CSF	OHM specific	$(mg/kg\text{-}day)^{-1}$
LADD	age/OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
$IR_{(1\text{-}8)}$	100	mg/day
$IR_{(8\text{-}15)}$	50	mg/day
$IR_{(15\text{-}31)}$	50	mg/day
$RAF_{c\text{-}ing}$	OHM specific	dimensionless
$RAF_{c\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.019178082	event/day
ED	1	day/event
$EP_{(1\text{-}8)}$	7	years
$EP_{(8\text{-}15)}$	7	years
$EP_{(15\text{-}31)}$	16	years
C	0.000001	kg/mg
$BW_{(1\text{-}8)}$	17.0	kg
$BW_{(8\text{-}15)}$	39.9	kg
$BW_{(15\text{-}31)}$	58.7	kg
$AP_{(lifetime)}$	70	years
$SA_{(1\text{-}8)}$	2431	cm^2/day
$SA_{(8\text{-}15)}$	4427	cm^2/day
$SA_{(15\text{-}31)}$	5653	cm^2/day
$SAF_{(1\text{-}8)}$	0.35	mg/cm^2
$SAF_{(8\text{-}15)}$	0.14	mg/cm^2
$SAF_{(15\text{-}31)}$	0.13	mg/cm^2

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Museum Visitor - Walls: Table PS-3
Equations to Calculate Chronic Noncancer Risk for Visitor (Age 1-8 years)

Vlookup Version v0114

Chronic Noncancer Risk from Ingestion

$$HQ_{ing} = \frac{ADD_{ing}}{RfD}$$

$$ADD_{ing} = \frac{[OHM]_{soil} * IR * RAF_{nc\text{-}ing} * EF_{ing} * ED * EP * C}{BW * AP}$$

Chronic Noncancer Risk from Dermal Absorption

$$HQ_{derm} = \frac{ADD_{ing,derm}}{RfD}$$

$$ADD_{derm} = \frac{[OHM]_{soil} * SA * RAF_{nc\text{-}derm} * SAF * EF_{derm} * ED * EP * C}{BW * AP}$$

Parameter	Value	Units
RfD	OHM specific	mg/kg-day
ADD	OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
IR	100	mg/day
$RAF_{nc\text{-}ing}$	OHM specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.019178082	event/day
ED	1	day/event
EP	7	years
C	0.000001	kg/mg
BW	17.0	kg
AP	7	year
SA	2431	cm^2/day
SAF	0.35	mg/cm^2

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Museum Visitor - Walls: Table PS-4
Equations to Calculate Subchronic Noncancer Risk for Visitor (Age 1-2 years)

Vlookup Version v0114

Subchronic Noncancer Risk from Ingestion

$$HQ_{ing} = \frac{ADD_{ing}}{RfD_{subchronic}}$$

$$ADD_{ing} = \frac{[OHM]_{soil} * IR * RAF_{nc\text{-}ing} * EF_{ing} * ED * EP * C}{BW * AP}$$

Subchronic Noncancer Risk from Dermal Absorption

$$HQ_{derm} = \frac{ADD_{derm}}{RfD_{subchronic}}$$

$$ADD_{derm} = \frac{[OHM]_{soil} * SA * RAF_{nc\text{-}derm} * SAF * EF_{derm} * ED * EP * C}{BW * AP}$$

Parameter	Value	Units
RfD	OHM specific	mg/kg-day
ADD	OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
IR	100	mg/day
$RAF_{nc\text{-}ing}$	OHM specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.00952381	event/day
ED	1	day/event
EP	0.577	years
C	0.000001	kg/mg
BW	10.7	kg
AP	0.577	year
SA	1670	cm^2/day
SAF	0.35	mg/cm^2

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Museum Visitor - Walls: Table PS-5 - Central Tendency Definitions and Exposure Factors

Vlookup Version v0114

Parameter	Value	Units	Notes
ELCR - Excess Lifetime Cancer Risk	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal)
CSF - Cancer Slope Factor	chemical specific	$(mg/kg\text{-}day)^{-1}$	see Table PS-6
LADD - Lifetime Average Daily Dose	chemical specific	mg/kg-day	Pathway specific
HQ - Hazard Quotient	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal)
RfD - Reference Dose	chemical specific	mg/kg-day	see Table PS-6
ADD - Average Daily Dose	chemical specific	mg/kg-day	Pathway specific
EPC - Exposure Point Concentration	chemical specific	mg/kg	
$IR_{(1-2)}$ - Soil Ingestion Rate for age group 1-2	100	mg/day	MADEP. 1995. Guidance for Disposal Site Risk Characterization. Appendix Table B-3.
$IR_{(1-8)}$ - Soil Ingestion Rate for age group 1-8	100	mg/day	Ibid
$IR_{(8-15)}$ - Soil Ingestion Rate for age group 8-15	50	mg/day	Ibid
$IR_{(15-31)}$ - Soil Ingestion Rate for age group 15-31	50	mg/day	Ibid
RAF_c - Relative Absorption Factor for Cancer Effects	chemical specific	dimensionless	Adjusts estimated dose to conform to the revelant CSF. See Table PS-6
RAF_{NC} - Relative Absorption Factor for non-Cancer Effects	chemical specific	dimensionless	Adjusts estimated dose to conform to the revelant RfD. See Table PS-6
$EF_{subchronic}$ - Exposure Frequency for subchronic exposure	0.01	event/day	2 events/30 weeks
$EF_{chronic,lifetime}$ - Exposure Frequency for chronic or lifetime exposure	0.02	event/day	7 events/year
ED - Exposure Duration	1	day/event	
$EP_{(1-2)}$ - Exposure Period for age group 1-2	0.577	years	30 weeks
$EP_{(1-8)}$ - Exposure Period for age group 1-8	7	years	
$EP_{(8-15)}$ - Exposure Period for age group 8-15	7	years	
$EP_{(15-31)}$ - Exposure Period for age group 15-31	16	years	
$BW_{(1-2)}$ - Body Weight for age group 1-2, subchronic	10.7	kg	U.S. EPA. 1997. Exposure Factors Handbook. Table 7-7, females.
$BW_{(1-8)}$ - Body Weight for age group 1-8	17.0	kg	Ibid
$BW_{(8-15)}$ - Body Weight for age group 8-15	39.9	kg	Ibid
$BW_{(15-31)}$ - Body Weight for age group 15-31	58.7	kg	Ibid
$AP_{subchronic}$ - Averaging Period for subchronic noncancer	0.577	years	30 weeks
$AP_{chronic}$ - Averaging Period for chronic noncancer	7	years	
$AP_{lifetime}$ - Averaging Period for cancer/lifetime	70	years	
$SA_{(1-2)}$ - Surface Area for age group 1-2	1670	cm^2/day	50th percentile of face (1/3 head), forearms, hands, lower legs, and feet for females. MADEP 1995 Guidance for Disposal Site Risk Characterization, Appendix Table B-2.
$SA_{(1-8)}$ - Surface Area for age group 1-8	2431	cm^2 / day	Ibid
$SA_{(8-15)}$ - Surface Area for age group 8-15	4427	cm^2 / day	Ibid
$SA_{(15-31)}$ - Surface Area for age group 15-31	5653	cm^2 / day	Ibid
$SAF_{(1-2)}$ - Surface Adherence Factor for age group 1-2	0.35	mg_{soil} / cm^2	All SAFs developed for ShortForm according to procedure outlined in MADEP Technical
$SAF_{(1-8)}$ - Surface Adherence Factor for age group 1-8	0.35	mg_{soil} / cm^2	Update: Weighted Skin-Soil Adherence Factors, April 2002
$SAF_{(8-15)}$ - Surface Adherence Factor for age group 8-15	0.14	mg_{soil} / cm^2	
$SAF_{(15-31)}$ - Surface Adherence Factor for age group 15-31	0.13	mg_{soil} / cm^2	

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Museum Visitor - Walls: Table PS-6
Chemical-Specific Data

Vlookup Version v0114

Oil or Hazardous Material	CSF $(mg/kg\text{-}day)^{-1}$	$RAF_{c\text{-}ing}$	$RAF_{c\text{-}derm}$	Chronic RfD mg/kg-day	Subchronic RfD mg/kg-day	Chronic $RAF_{nc\text{-}ing}$	Chronic $RAF_{nc\text{-}derm}$	Subchronic $RAF_{nc\text{-}ing}$	Subchronic $RAF_{nc\text{-}derm}$
POLYCHLORINATED BIF	2.0E+00	1	0.1	2.0E-05	5.0E-05	1	0.1	1	0.1

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Method 3 Risk Assessment for Museum Visitor Exposed to Chemicals in Window/Caulking

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Museum Visitor - Window/Caulking: Table PS-1 - Central Tendency Exposure Point Concentration (EPC)

Based on Visitor Ages 1-31 (Cancer), 1-8 (Chronic Noncancer), and 1-2 (Subchronic Noncancer)

ShortForm Version 10-12

Vlookup Version v0114

ELCR (all chemicals) = 5.8E-07

Chronic HI (all chemicals) = 8.5E-02

Subchronic HI (all chemicals) = 2.3E-02

****Do not insert or delete any rows****

Click on empty cell below and select OHM using arrow.

Oil or Hazardous Material	EPC (mg/kg)	$ELCR_{ingestion}$	$ELCR_{dermal}$	$ELCR_{total}$	Chronic HQ_{ing}	Chronic HQ_{derm}	Chronic HQ_{total}	Subchronic HQ_{ing}	Subchronic HQ_{derm}	Subchronic HQ_{total}
POLYCHLORINATED BIPHENYLS (PCBs)	8.1E+00	2.8E-07	2.9E-07	5.8E-07	4.6E-02	3.9E-02	8.5E-02	1.4E-02	8.5E-03	2.3E-02

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Museum Visitor - Window/Caulking: Table PS-2

Equations to Calculate Cancer Risk for Visitor (Age 1-31 years)

Cancer Risk from Ingestion

$$ELCR_{ing} = LADD_{ing(1\text{-}31)} * CSF$$

$$LADD_{ing\ (1\text{-}31)} = LADD_{ing\ (1\text{-}8)} + LADD_{ing\ (8\text{-}15)} + LADD_{ing\ (15\text{-}31)}$$

$$LADD_{ing\ (age\ group\ x)} = \frac{[OHM]_{soil} * IR_x * RAF_{c\text{-}ing} * EF_{ing} * ED * EP_x * C}{BW_x * AP_{lifetime}}$$

Cancer Risk from Dermal Absorption

$$ELCR_{derm} = LADD_{derm} * CSF$$

$$LADD_{derm\ (1\text{-}31)} = LADD_{derm\ (1\text{-}8)} + LADD_{derm\ (8\text{-}15)} + LADD_{derm\ (15\text{-}31)}$$

$$LADD_{derm(age\ group\ x)} = \frac{[OHM]_{soil} * SA_x * RAF_{c\text{-}derm} * SAF_x * EF_{derm} * ED * EP_x * C}{BW_x * AP_{lifetime}}$$

Vlookup Version v0114

Parameter	Value	Units
CSF	OHM specific	$(mg/kg\text{-}day)^{-1}$
LADD	age/OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
$IR_{(1\text{-}8)}$	100	mg/day
$IR_{(8\text{-}15)}$	50	mg/day
$IR_{(15\text{-}31)}$	50	mg/day
$RAF_{c\text{-}ing}$	OHM specific	dimensionless
$RAF_{c\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.019178082	event/day
ED	1	day/event
$EP_{(1\text{-}8)}$	7	years
$EP_{(8\text{-}15)}$	7	years
$EP_{(15\text{-}31)}$	16	years
C	0.000001	kg/mg
$BW_{(1\text{-}8)}$	17.0	kg
$BW_{(8\text{-}15)}$	39.9	kg
$BW_{(15\text{-}31)}$	58.7	kg
$AP_{(lifetime)}$	70	years
$SA_{(1\text{-}8)}$	2431	cm^2/day
$SA_{(8\text{-}15)}$	4427	cm^2/day
$SA_{(15\text{-}31)}$	5653	cm^2/day
$SAF_{(1\text{-}8)}$	0.35	mg/cm^2
$SAF_{(8\text{-}15)}$	0.14	mg/cm^2
$SAF_{(15\text{-}31)}$	0.13	mg/cm^2

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Museum Visitor - Window/Caulking: Table PS-3
Equations to Calculate Chronic Noncancer Risk for Visitor (Age 1-8 years)

Vlookup Version v0114

Chronic Noncancer Risk from Ingestion

$$HQ_{ing} = \frac{ADD_{ing}}{RfD}$$

$$ADD_{ing} = \frac{[OHM]_{soil} * IR * RAF_{nc\text{-}ing} * EF_{ing} * ED * EP * C}{BW * AP}$$

Chronic Noncancer Risk from Dermal Absorption

$$HQ_{derm} = \frac{ADD_{ing,derm}}{RfD}$$

$$ADD_{derm} = \frac{[OHM]_{soil} * SA * RAF_{nc\text{-}derm} * SAF * EF_{derm} * ED * EP * C}{BW * AP}$$

Parameter	Value	Units
RfD	OHM specific	mg/kg-day
ADD	OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
IR	100	mg/day
$RAF_{nc\text{-}ing}$	OHM specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.019178082	event/day
ED	1	day/event
EP	7	years
C	0.000001	kg/mg
BW	17.0	kg
AP	7	year
SA	2431	cm^2/day
SAF	0.35	mg/cm^2

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Museum Visitor - Window/Caulking: Table PS-4
Equations to Calculate Subchronic Noncancer Risk for Visitor (Age 1-2 years)

Vlookup Version v0114

Subchronic Noncancer Risk from Ingestion

$$HQ_{ing} = \frac{ADD_{ing}}{RfD_{subchronic}}$$

$$ADD_{ing} = \frac{[OHM]_{soil} * IR * RAF_{nc\text{-}ing} * EF_{ing} * ED * EP * C}{BW * AP}$$

Subchronic Noncancer Risk from Dermal Absorption

$$HQ_{derm} = \frac{ADD_{derm}}{RfD_{subchronic}}$$

$$ADD_{derm} = \frac{[OHM]_{soil} * SA * RAF_{nc\text{-}derm} * SAF * EF_{derm} * ED * EP * C}{BW * AP}$$

Parameter	Value	Units
RfD	OHM specific	mg/kg-day
ADD	OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
IR	100	mg/day
$RAF_{nc\text{-}ing}$	OHM specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.00952381	event/day
ED	1	day/event
EP	0.577	years
C	0.000001	kg/mg
BW	10.7	kg
AP	0.577	year
SA	1670	cm^2/day
SAF	0.35	mg/cm^2

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Museum Visitor - Window/Caulking: Table PS-5 - Central Tendency Definitions and Exposure Factors

Vlookup Version v0114

Parameter	Value	Units	Notes
ELCR - Excess Lifetime Cancer Risk	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal)
CSF - Cancer Slope Factor	chemical specific	$(mg/kg\text{-}day)^{-1}$	see Table PS-6
LADD - Lifetime Average Daily Dose	chemical specific	mg/kg-day	Pathway specific
HQ - Hazard Quotient	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal)
RfD - Reference Dose	chemical specific	mg/kg-day	see Table PS-6
ADD - Average Daily Dose	chemical specific	mg/kg-day	Pathway specific
EPC - Exposure Point Concentration	chemical specific	mg/kg	
$IR_{(1-2)}$ - Soil Ingestion Rate for age group 1-2	100	mg/day	MADEP. 1995. Guidance for Disposal Site Risk Characterization. Appendix Table B-3.
$IR_{(1-8)}$ - Soil Ingestion Rate for age group 1-8	100	mg/day	Ibid
$IR_{(8-15)}$ - Soil Ingestion Rate for age group 8-15	50	mg/day	Ibid
$IR_{(15-31)}$ - Soil Ingestion Rate for age group 15-31	50	mg/day	Ibid
RAF_c - Relative Absorption Factor for Cancer Effects	chemical specific	dimensionless	Adjusts estimated dose to conform to the revelant CSF. See Table PS-6
RAF_{NC} - Relative Absorption Factor for non-Cancer Effects	chemical specific	dimensionless	Adjusts estimated dose to conform to the revelant RfD. See Table PS-6
$EF_{subchronic}$ - Exposure Frequency for subchronic exposure	0.01	event/day	2 events/30 weeks
$EF_{chronic,lifetime}$ - Exposure Frequency for chronic or lifetime exposure	0.02	event/day	7 events/year
ED - Exposure Duration	1	day/event	
$EP_{(1-2)}$ - Exposure Period for age group 1-2	0.577	years	30 weeks
$EP_{(1-8)}$ - Exposure Period for age group 1-8	7	years	
$EP_{(8-15)}$ - Exposure Period for age group 8-15	7	years	
$EP_{(15-31)}$ - Exposure Period for age group 15-31	16	years	
$BW_{(1-2)}$ - Body Weight for age group 1-2, subchronic	10.7	kg	U.S. EPA. 1997. Exposure Factors Handbook. Table 7-7, females.
$BW_{(1-8)}$ - Body Weight for age group 1-8	17.0	kg	Ibid
$BW_{(8-15)}$ - Body Weight for age group 8-15	39.9	kg	Ibid
$BW_{(15-31)}$ - Body Weight for age group 15-31	58.7	kg	Ibid
$AP_{subchronic}$ - Averaging Period for subchronic noncancer	0.577	years	30 weeks
$AP_{chronic}$ - Averaging Period for chronic noncancer	7	years	
$AP_{lifetime}$ - Averaging Period for cancer/lifetime	70	years	
$SA_{(1-2)}$ - Surface Area for age group 1-2	1670	cm^2/day	50th percentile of face (1/3 head), forearms, hands, lower legs, and feet for females. MADEP 1995 Guidance for Disposal Site Risk Characterization, Appendix Table B-2.
$SA_{(1-8)}$ - Surface Area for age group 1-8	2431	cm^2 / day	Ibid
$SA_{(8-15)}$ - Surface Area for age group 8-15	4427	cm^2 / day	Ibid
$SA_{(15-31)}$ - Surface Area for age group 15-31	5653	cm^2 / day	Ibid
$SAF_{(1-2)}$ - Surface Adherence Factor for age group 1-2	0.35	mg_{soil} / cm^2	All SAFs developed for ShortForm according to procedure outlined in MADEP Technical
$SAF_{(1-8)}$ - Surface Adherence Factor for age group 1-8	0.35	mg_{soil} / cm^2	Update: Weighted Skin-Soil Adherence Factors, April 2002
$SAF_{(8-15)}$ - Surface Adherence Factor for age group 8-15	0.14	mg_{soil} / cm^2	
$SAF_{(15-31)}$ - Surface Adherence Factor for age group 15-31	0.13	mg_{soil} / cm^2	

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Museum Visitor - Window/Caulking: Table PS-6
Chemical-Specific Data

Vlookup Version v0114

Oil or Hazardous Material	CSF $(mg/kg\text{-}day)^{-1}$	$RAF_{c\text{-}ing}$	$RAF_{c\text{-}derm}$	Chronic RfD mg/kg-day	Subchronic RfD mg/kg-day	Chronic $RAF_{nc\text{-}ing}$	Chronic $RAF_{nc\text{-}derm}$	Subchronic $RAF_{nc\text{-}ing}$	Subchronic $RAF_{nc\text{-}derm}$
POLYCHLORINATED BIF	2.0E+00	1	0.1	2.0E-05	5.0E-05	1	0.1	1	0.1

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Method 3 Risk Assessment for Museum Visitor Exposed to Chemicals in Walls

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Museum Visitor - Walls: Table PS-1 RME
Exposure Point Concentration (EPC)
Based on Visitor Ages 1-31 (Cancer), 1-8 (Chronic Noncancer), and 1-2 (Subchronic Noncancer)

ShortForm Version 10-12

Vlookup Version v0114

ELCR (all chemicals) = 4.5E-08

Chronic HI (all chemicals) = 6.6E-03

Subchronic HI (all chemicals) = 3.1E-03

****Do not insert or delete any rows****

Click on empty cell below and select OHM using arrow.

Oil or Hazardous Material	EPC (mg/kg)	$ELCR_{ingestion}$	$ELCR_{dermal}$	$ELCR_{total}$	Chronic HQ_{ing}	Chronic HQ_{derm}	Chronic HQ_{total}	Subchronic HQ_{ing}	Subchronic HQ_{derm}	Subchronic HQ_{total}
POLYCHLORINATED BIPHENYLS (PCBs)	3.2E-01	2.2E-08	2.3E-08	4.5E-08	3.6E-03	3.0E-03	6.6E-03	2.0E-03	1.2E-03	3.1E-03

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Museum Visitor - Walls: Table PS-2

Equations to Calculate Cancer Risk for Visitor (Age 1-31 years)

Cancer Risk from Ingestion

$$ELCR_{ing} = LADD_{ing(1\text{-}31)} * CSF$$

$$LADD_{ing\ (1\text{-}31)} = LADD_{ing\ (1\text{-}8)} + LADD_{ing\ (8\text{-}15)} + LADD_{ing\ (15\text{-}31)}$$

$$LADD_{ing\ (age\ group\ x)} = \frac{[OHM]_{soil} * IR_x * RAF_{c\text{-}ing} * EF_{ing} * ED * EP_x * C}{BW_x * AP_{lifetime}}$$

Cancer Risk from Dermal Absorption

$$ELCR_{derm} = LADD_{derm} * CSF$$

$$LADD_{derm\ (1\text{-}31)} = LADD_{derm\ (1\text{-}8)} + LADD_{derm\ (8\text{-}15)} + LADD_{derm\ (15\text{-}31)}$$

$$LADD_{derm(age\ group\ x)} = \frac{[OHM]_{soil} * SA_x * RAF_{c\text{-}derm} * SAF_x * EF_{derm} * ED * EP_x * C}{BW_x * AP_{lifetime}}$$

Vlookup Version v0114

Parameter	Value	Units
CSF	OHM specific	$(mg/kg\text{-}day)^{-1}$
LADD	age/OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
$IR_{(1\text{-}8)}$	100	mg/day
$IR_{(8\text{-}15)}$	50	mg/day
$IR_{(15\text{-}31)}$	50	mg/day
$RAF_{c\text{-}ing}$	OHM specific	dimensionless
$RAF_{c\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.038356164	event/day
ED	1	day/event
$EP_{(1\text{-}8)}$	7	years
$EP_{(8\text{-}15)}$	7	years
$EP_{(15\text{-}31)}$	16	years
C	0.000001	kg/mg
$BW_{(1\text{-}8)}$	17.0	kg
$BW_{(8\text{-}15)}$	39.9	kg
$BW_{(15\text{-}31)}$	58.7	kg
$AP_{(lifetime)}$	70	years
$SA_{(1\text{-}8)}$	2431	cm^2/day
$SA_{(8\text{-}15)}$	4427	cm^2/day
$SA_{(15\text{-}31)}$	5653	cm^2/day
$SAF_{(1\text{-}8)}$	0.35	mg/cm^2
$SAF_{(8\text{-}15)}$	0.14	mg/cm^2
$SAF_{(15\text{-}31)}$	0.13	mg/cm^2

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Museum Visitor - Walls: Table PS-3
Equations to Calculate Chronic Noncancer Risk for Visitor (Age 1-8 years)

Vlookup Version v0114

Chronic Noncancer Risk from Ingestion

$$HQ_{ing} = \frac{ADD_{ing}}{RfD}$$

$$ADD_{ing} = \frac{[OHM]_{soil} * IR * RAF_{nc\text{-}ing} * EF_{ing} * ED * EP * C}{BW * AP}$$

Chronic Noncancer Risk from Dermal Absorption

$$HQ_{derm} = \frac{ADD_{ing,derm}}{RfD}$$

$$ADD_{derm} = \frac{[OHM]_{soil} * SA * RAF_{nc\text{-}derm} * SAF * EF_{derm} * ED * EP * C}{BW * AP}$$

Parameter	Value	Units
RfD	OHM specific	mg/kg-day
ADD	OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
IR	100	mg/day
$RAF_{nc\text{-}ing}$	OHM specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.038356164	event/day
ED	1	day/event
EP	7	years
C	0.000001	kg/mg
BW	17.0	kg
AP	7	year
SA	2431	cm^2/day
SAF	0.35	mg/cm^2

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Museum Visitor - Walls: Table PS-4
Equations to Calculate Subchronic Noncancer Risk for Visitor (Age 1-2 years)

Vlookup Version v0114

Subchronic Noncancer Risk from Ingestion

$$HQ_{ing} = \frac{ADD_{ing}}{RfD_{subchronic}}$$

$$ADD_{ing} = \frac{[OHM]_{soil} * IR * RAF_{nc\text{-}ing} * EF_{ing} * ED * EP * C}{BW * AP}$$

Subchronic Noncancer Risk from Dermal Absorption

$$HQ_{derm} = \frac{ADD_{derm}}{RfD_{subchronic}}$$

$$ADD_{derm} = \frac{[OHM]_{soil} * SA * RAF_{nc\text{-}derm} * SAF * EF_{derm} * ED * EP * C}{BW * AP}$$

Parameter	Value	Units
RfD	OHM specific	mg/kg-day
ADD	OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
IR	100	mg/day
$RAF_{nc\text{-}ing}$	OHM specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.033333333	event/day
ED	1	day/event
EP	0.577	years
C	0.000001	kg/mg
BW	10.7	kg
AP	0.577	year
SA	1670	cm^2/day
SAF	0.35	mg/cm^2

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Museum Visitor - Walls: Table PS-5 - RME
Definitions and Exposure Factors

Vlookup Version v0114

Parameter	Value	Units	Notes
ELCR - Excess Lifetime Cancer Risk	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal)
CSF - Cancer Slope Factor	chemical specific	$(mg/kg\text{-}day)^{-1}$	see Table PS-6
LADD - Lifetime Average Daily Dose	chemical specific	mg/kg-day	Pathway specific
HQ - Hazard Quotient	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal)
RfD - Reference Dose	chemical specific	mg/kg-day	see Table PS-6
ADD - Average Daily Dose	chemical specific	mg/kg-day	Pathway specific
EPC - Exposure Point Concentration	chemical specific	mg/kg	
$IR_{(1-2)}$ - Soil Ingestion Rate for age group 1-2	100	mg/day	MADEP. 1995. Guidance for Disposal Site Risk Characterization. Appendix Table B-3.
$IR_{(1-8)}$ - Soil Ingestion Rate for age group 1-8	100	mg/day	Ibid
$IR_{(8-15)}$ - Soil Ingestion Rate for age group 8-15	50	mg/day	Ibid
$IR_{(15-31)}$ - Soil Ingestion Rate for age group 15-31	50	mg/day	Ibid
RAF_c - Relative Absorption Factor for Cancer Effects	chemical specific	dimensionless	Adjusts estimated dose to conform to the revelant CSF. See Table PS-6
RAF_{NC} - Relative Absorption Factor for non-Cancer Effects	chemical specific	dimensionless	Adjusts estimated dose to conform to the revelant RfD. See Table PS-6
$EF_{subchronic}$ - Exposure Frequency for subchronic exposure	0.03	event/day	7 events/30 weeks
$EF_{chronic,lifetime}$ - Exposure Frequency for chronic or lifetime exposure	0.04	event/day	14 events/year
ED - Exposure Duration	1	day/event	
$EP_{(1-2)}$ - Exposure Period for age group 1-2	0.577	years	30 weeks
$EP_{(1-8)}$ - Exposure Period for age group 1-8	7	years	
$EP_{(8-15)}$ - Exposure Period for age group 8-15	7	years	
$EP_{(15-31)}$ - Exposure Period for age group 15-31	16	years	
$BW_{(1-2)}$ - Body Weight for age group 1-2, subchronic	10.7	kg	U.S. EPA. 1997. Exposure Factors Handbook. Table 7-7, females.
$BW_{(1-8)}$ - Body Weight for age group 1-8	17.0	kg	Ibid
$BW_{(8-15)}$ - Body Weight for age group 8-15	39.9	kg	Ibid
$BW_{(15-31)}$ - Body Weight for age group 15-31	58.7	kg	Ibid
$AP_{subchronic}$ - Averaging Period for subchronic noncancer	0.577	years	30 weeks
$AP_{chronic}$ - Averaging Period for chronic noncancer	7	years	
$AP_{lifetime}$ - Averaging Period for cancer/lifetime	70	years	
$SA_{(1-2)}$ - Surface Area for age group 1-2	1670	cm^2/day	50th percentile of face (1/3 head), forearms, hands, lower legs, and feet for females. MADEP 1995 Guidance for Disposal Site Risk Characterization, Appendix Table B-2.
$SA_{(1-8)}$ - Surface Area for age group 1-8	2431	cm^2 / day	Ibid
$SA_{(8-15)}$ - Surface Area for age group 8-15	4427	cm^2 / day	Ibid
$SA_{(15-31)}$ - Surface Area for age group 15-31	5653	cm^2 / day	Ibid
$SAF_{(1-2)}$ - Surface Adherence Factor for age group 1-2	0.35	mg_{soil} / cm^2	All SAFs developed for ShortForm according to procedure outlined in MADEP Technical
$SAF_{(1-8)}$ - Surface Adherence Factor for age group 1-8	0.35	mg_{soil} / cm^2	Update: Weighted Skin-Soil Adherence Factors, April 2002
$SAF_{(8-15)}$ - Surface Adherence Factor for age group 8-15	0.14	mg_{soil} / cm^2	
$SAF_{(15-31)}$ - Surface Adherence Factor for age group 15-31	0.13	mg_{soil} / cm^2	

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Museum Visitor - Walls: Table PS-6
Chemical-Specific Data

Vlookup Version v0114

Oil or Hazardous Material	CSF $(mg/kg\text{-}day)^{-1}$	$RAF_{c\text{-}ing}$	$RAF_{c\text{-}derm}$	Chronic RfD mg/kg-day	Subchronic RfD mg/kg-day	Chronic $RAF_{nc\text{-}ing}$	Chronic $RAF_{nc\text{-}derm}$	Subchronic $RAF_{nc\text{-}ing}$	Subchronic $RAF_{nc\text{-}derm}$
POLYCHLORINATED BIF	2.0E+00	1	0.1	2.0E-05	5.0E-05	1	0.1	1	0.1

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Method 3 Risk Assessment for Museum Visitor Exposed to Chemicals in Window/Caulking - Shortform 2012 (sf12ps)

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Museum Visitor - Window/Caulking: Table PS-1 RME
Exposure Point Concentration (EPC)
Based on Visitor Ages 1-31 (Cancer), 1-8 (Chronic Noncancer), and 1-2 (Subchronic Noncancer)

ShortForm Version 10-12

Vlookup Version v0114

ELCR (all chemicals) = 1.2E-06

Chronic HI (all chemicals) = 1.7E-01

Subchronic HI (all chemicals) = 8.0E-02

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Click on empty cell below and select OHM using arrow.

Oil or Hazardous Material	EPC (mg/kg)	$ELCR_{ingestion}$	$ELCR_{dermal}$	$ELCR_{total}$	Chronic HQ_{ing}	Chronic HQ_{derm}	Chronic HQ_{total}	Subchronic HQ_{ing}	Subchronic HQ_{derm}	Subchronic HQ_{total}
POLYCHLORINATED BIPHENYLS (PCBs)	8.1E+00	5.7E-07	5.9E-07	1.2E-06	9.2E-02	7.8E-02	1.7E-01	5.1E-02	3.0E-02	8.0E-02

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Museum Visitor - Window/Caulking: Table PS-2

Equations to Calculate Cancer Risk for Visitor (Age 1-31 years)

Cancer Risk from Ingestion

$$ELCR_{ing} = LADD_{ing(1\text{-}31)} * CSF$$

$$LADD_{ing\ (1\text{-}31)} = LADD_{ing\ (1\text{-}8)} + LADD_{ing\ (8\text{-}15)} + LADD_{ing\ (15\text{-}31)}$$

$$LADD_{ing\ (age\ group\ x)} = \frac{[OHM]_{soil} * IR_x * RAF_{c\text{-}ing} * EF_{ing} * ED * EP_x * C}{BW_x * AP_{lifetime}}$$

Cancer Risk from Dermal Absorption

$$ELCR_{derm} = LADD_{derm} * CSF$$

$$LADD_{derm\ (1\text{-}31)} = LADD_{derm\ (1\text{-}8)} + LADD_{derm\ (8\text{-}15)} + LADD_{derm\ (15\text{-}31)}$$

$$LADD_{derm(age\ group\ x)} = \frac{[OHM]_{soil} * SA_x * RAF_{c\text{-}derm} * SAF_x * EF_{derm} * ED * EP_x * C}{BW_x * AP_{lifetime}}$$

Vlookup Version v0114

Parameter	Value	Units
CSF	OHM specific	$(mg/kg\text{-}day)^{-1}$
LADD	age/OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
$IR_{(1\text{-}8)}$	100	mg/day
$IR_{(8\text{-}15)}$	50	mg/day
$IR_{(15\text{-}31)}$	50	mg/day
$RAF_{c\text{-}ing}$	OHM specific	dimensionless
$RAF_{c\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.038356164	event/day
ED	1	day/event
$EP_{(1\text{-}8)}$	7	years
$EP_{(8\text{-}15)}$	7	years
$EP_{(15\text{-}31)}$	16	years
C	0.000001	kg/mg
$BW_{(1\text{-}8)}$	17.0	kg
$BW_{(8\text{-}15)}$	39.9	kg
$BW_{(15\text{-}31)}$	58.7	kg
$AP_{(lifetime)}$	70	years
$SA_{(1\text{-}8)}$	2431	cm^2/day
$SA_{(8\text{-}15)}$	4427	cm^2/day
$SA_{(15\text{-}31)}$	5653	cm^2/day
$SAF_{(1\text{-}8)}$	0.35	mg/cm^2
$SAF_{(8\text{-}15)}$	0.14	mg/cm^2
$SAF_{(15\text{-}31)}$	0.13	mg/cm^2

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Museum Visitor - Window/Caulking: Table PS-3
Equations to Calculate Chronic Noncancer Risk for Visitor (Age 1-8 years)

Vlookup Version v0114

Chronic Noncancer Risk from Ingestion

$$HQ_{ing} = \frac{ADD_{ing}}{RfD}$$

$$ADD_{ing} = \frac{[OHM]_{soil} * IR * RAF_{nc\text{-}ing} * EF_{ing} * ED * EP * C}{BW * AP}$$

Chronic Noncancer Risk from Dermal Absorption

$$HQ_{derm} = \frac{ADD_{ing,derm}}{RfD}$$

$$ADD_{derm} = \frac{[OHM]_{soil} * SA * RAF_{nc\text{-}derm} * SAF * EF_{derm} * ED * EP * C}{BW * AP}$$

Parameter	Value	Units
RfD	OHM specific	mg/kg-day
ADD	OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
IR	100	mg/day
$RAF_{nc\text{-}ing}$	OHM specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.038356164	event/day
ED	1	day/event
EP	7	years
C	0.000001	kg/mg
BW	17.0	kg
AP	7	year
SA	2431	cm^2/day
SAF	0.35	mg/cm^2

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Museum Visitor - Window/Caulking: Table PS-4
Equations to Calculate Subchronic Noncancer Risk for Visitor (Age 1-2 years)

Vlookup Version v0114

Subchronic Noncancer Risk from Ingestion

$$HQ_{ing} = \frac{ADD_{ing}}{RfD_{subchronic}}$$

$$ADD_{ing} = \frac{[OHM]_{soil} * IR * RAF_{nc\text{-}ing} * EF_{ing} * ED * EP * C}{BW * AP}$$

Subchronic Noncancer Risk from Dermal Absorption

$$HQ_{derm} = \frac{ADD_{derm}}{RfD_{subchronic}}$$

$$ADD_{derm} = \frac{[OHM]_{soil} * SA * RAF_{nc\text{-}derm} * SAF * EF_{derm} * ED * EP * C}{BW * AP}$$

Parameter	Value	Units
RfD	OHM specific	mg/kg-day
ADD	OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
IR	100	mg/day
$RAF_{nc\text{-}ing}$	OHM specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.033333333	event/day
ED	1	day/event
EP	0.577	years
C	0.000001	kg/mg
BW	10.7	kg
AP	0.577	year
SA	1670	cm^2/day
SAF	0.35	mg/cm^2

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Museum Visitor - Window/Caulking: Table PS-5 - RME Definitions and Exposure Factors

Vlookup Version v0114

Parameter	Value	Units	Notes
ELCR - Excess Lifetime Cancer Risk	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal)
CSF - Cancer Slope Factor	chemical specific	$(mg/kg\text{-}day)^{-1}$	see Table PS-6
LADD - Lifetime Average Daily Dose	chemical specific	mg/kg-day	Pathway specific
HQ - Hazard Quotient	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal)
RfD - Reference Dose	chemical specific	mg/kg-day	see Table PS-6
ADD - Average Daily Dose	chemical specific	mg/kg-day	Pathway specific
EPC - Exposure Point Concentration	chemical specific	mg/kg	
$IR_{(1-2)}$ - Soil Ingestion Rate for age group 1-2	100	mg/day	MADEP. 1995. Guidance for Disposal Site Risk Characterization. Appendix Table B-3.
$IR_{(1-8)}$ - Soil Ingestion Rate for age group 1-8	100	mg/day	Ibid
$IR_{(8-15)}$ - Soil Ingestion Rate for age group 8-15	50	mg/day	Ibid
$IR_{(15-31)}$ - Soil Ingestion Rate for age group 15-31	50	mg/day	Ibid
RAF_c - Relative Absorption Factor for Cancer Effects	chemical specific	dimensionless	Adjusts estimated dose to conform to the revelant CSF. See Table PS-6
RAF_{NC} - Relative Absorption Factor for non-Cancer Effects	chemical specific	dimensionless	Adjusts estimated dose to conform to the revelant RfD. See Table PS-6
$EF_{subchronic}$ - Exposure Frequency for subchronic exposure	0.03	event/day	7 events/30 weeks
$EF_{chronic,lifetime}$ - Exposure Frequency for chronic or lifetime exposure	0.04	event/day	14 events/year
ED - Exposure Duration	1	day/event	
$EP_{(1-2)}$ - Exposure Period for age group 1-2	0.577	years	30 weeks
$EP_{(1-8)}$ - Exposure Period for age group 1-8	7	years	
$EP_{(8-15)}$ - Exposure Period for age group 8-15	7	years	
$EP_{(15-31)}$ - Exposure Period for age group 15-31	16	years	
$BW_{(1-2)}$ - Body Weight for age group 1-2, subchronic	10.7	kg	U.S. EPA. 1997. Exposure Factors Handbook. Table 7-7, females.
$BW_{(1-8)}$ - Body Weight for age group 1-8	17.0	kg	Ibid
$BW_{(8-15)}$ - Body Weight for age group 8-15	39.9	kg	Ibid
$BW_{(15-31)}$ - Body Weight for age group 15-31	58.7	kg	Ibid
$AP_{subchronic}$ - Averaging Period for subchronic noncancer	0.577	years	30 weeks
$AP_{chronic}$ - Averaging Period for chronic noncancer	7	years	
$AP_{lifetime}$ - Averaging Period for cancer/lifetime	70	years	
$SA_{(1-2)}$ - Surface Area for age group 1-2	1670	cm^2/day	50th percentile of face (1/3 head), forearms, hands, lower legs, and feet for females. MADEP 1995 Guidance for Disposal Site Risk Characterization, Appendix Table B-2.
$SA_{(1-8)}$ - Surface Area for age group 1-8	2431	cm^2 / day	Ibid
$SA_{(8-15)}$ - Surface Area for age group 8-15	4427	cm^2 / day	Ibid
$SA_{(15-31)}$ - Surface Area for age group 15-31	5653	cm^2 / day	Ibid
$SAF_{(1-2)}$ - Surface Adherence Factor for age group 1-2	0.35	mg_{soil} / cm^2	All SAFs developed for ShortForm according to procedure outlined in MADEP Technical
$SAF_{(1-8)}$ - Surface Adherence Factor for age group 1-8	0.35	mg_{soil} / cm^2	Update: Weighted Skin-Soil Adherence Factors, April 2002
$SAF_{(8-15)}$ - Surface Adherence Factor for age group 8-15	0.14	mg_{soil} / cm^2	
$SAF_{(15-31)}$ - Surface Adherence Factor for age group 15-31	0.13	mg_{soil} / cm^2	

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Museum Visitor - Window/Caulking: Table PS-6
Chemical-Specific Data

Vlookup Version v0114

Oil or Hazardous Material	CSF $(mg/kg\text{-}day)^{-1}$	$RAF_{c\text{-}ing}$	$RAF_{c\text{-}derm}$	Chronic RfD mg/kg-day	Subchronic RfD mg/kg-day	Chronic $RAF_{nc\text{-}ing}$	Chronic $RAF_{nc\text{-}derm}$	Subchronic $RAF_{nc\text{-}ing}$	Subchronic $RAF_{nc\text{-}derm}$
POLYCHLORINATED BIF	2.0E+00	1	0.1	2.0E-05	5.0E-05	1	0.1	1	0.1

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Method 3 Risk Assessment for Maintenance Worker Exposed to Chemicals in Walls - Shortform 2012 (sf12em)

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Exp	Table EM-4: Definitions and exposure factors
Chem	Table EM-5: Chemical-specific data

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Maintenance Worker - Walls: Table EM-1 - Central Tendency
Exposure Point Concentration (EPC)
Based on Employee

ELCR (all chemicals) = 8E-08
Chronic HI (all chemicals) = 5E-03

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

Oil or Hazardous Material	EPC (mg/kg)	$ELCR_{ingestion}$	$ELCR_{dermal}$	Derm & Ing $ELCR_{total}$	Chronic HQ_{ing}	Chronic HQ_{derm}	Derm & Ing HQ_{total}
POLYCHLORINATED BIPHENYLS (PCBs)	3.2E-01	7.6E-08	1.7E-09	7.8E-08	5.3E-03	1.2E-04	5.4E-03

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Maintenance Worker - Walls: Table EM-2

Equations to Calculate Cancer Risk for Employee

Vlookup Version v1012

Parameter	Value	Units
CSF	OHM specific	$(mg/kg\text{-}day)^{-1}$
LADD	OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
IR	50	mg/day
$RAF_{c\text{-}ing}$	OHM specific	dimensionless
$RAF_{c\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.41	event/day
ED	1	day/event
EP	25	years
C	0.000001	kg/mg
BW	61.1	kg
$AP_{(lifetime)}$	70	years
SA	2850	cm^2 / day
SAF	0.004	mg/cm^2

Cancer Risk from Ingestion

$$ELCR_{ing} = LADD_{ing} * CSF$$

$$LADD_{ing} = \frac{[OHM]_{soil} * IR * RAF_{c\text{-}ing} * EF_{ing} * ED * EP * C}{BW * AP_{lifetime}}$$

Cancer Risk from Dermal Absorption

$$ELCR_{derm} = LADD_{derm} * CSF$$

$$LADD_{derm} = \frac{[OHM]_{soil} * SA * RAF_{c\text{-}derm} * SAF * EF_{derm} * ED * EP * C}{BW * AP_{lifetime}}$$

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Maintenance Worker - Walls: Table EM-3
Equations to Calculate Chronic Noncancer Risk for Employee

Vlookup Version v1012

Chronic Noncancer Risk from Ingestion

$$HQ_{ing} = \frac{ADD_{ing}}{RfD}$$

$$ADD_{ing} = \frac{[OHM]_{soil} * IR * RAF_{nc\text{-}ing} * EF_{ing} * ED * EP * C}{BW * AP}$$

Chronic Noncancer Risk from Dermal Absorption

$$HQ_{derm} = \frac{ADD_{ing,derm}}{RfD}$$

$$ADD_{derm} = \frac{[OHM]_{soil} * SA * RAF_{nc\text{-}derm} * SAF * EF_{derm} * ED * EP * C}{BW * AP}$$

Parameter	Value	Units
RfD	OHM specific	mg/kg-day
ADD	OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
IR	50	mg/day
$RAF_{nc\text{-}ing}$	OHM specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.41	event/day
ED	1	day/event
EP	25	years
C	0.000001	kg/mg
BW	61.1	kg
AP	25	year
SA	2850	cm^2 / day
SAF	0.004	mg/cm^2

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Maintenance Worker - Walls: Table EM-4 - Central Tendency Definitions and Exposure Factors

Vlookup Version v1012

Parameter	Value	Units	Notes
ELCR - Excess Lifetime Cancer Risk	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
CSF - Cancer Slope Factor	chemical specific	$(mg/kg\text{-}day)^{-1}$	see Table EM-5
LADD - Lifetime Average Daily Dose	chemical specific	mg/kg-day	Pathway specific
LADE - Lifetime Average Daily Exposure	chemical specific	$\mu g/m^3$	
HQ - Hazard Quotient	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
RfD - Reference Dose	chemical specific	mg/kg-day	see Table EM-5
ADD - Average Daily Dose	chemical specific	mg/kg-day	Pathway specific
ADE - Average Daily Exposure	chemical specific	mg/m^3	
EPC - Exposure Point Concentration	chemical specific	mg/kg	
IR - Soil Ingestion Rate	50	mg/day	MADEP. 2002. Technical Update: Calculation of an Enhanced Soil Ingestion Rate.
RAF_c - Relative Absorption Factor for Cancer Effects	chemical specific	dimensionless	(http://www.mass.gov/dep/ors/orspubs.htm)
$EF_{chronic}$ - Exposure Frequency for chronic ingestion or dermal exposure	0.41	event/day	150 days per year
EF_{cancer} - Exposure Frequency for cancer, ingestion or dermal exposure	0.41	event/day	150 days per year
ED - Exposure Duration	1	day/event	
EP - Exposure Period	25	years	
BW - Body Weight	61.1	kg	U.S. EPA. 1997. Exposure Factors Handbook. Table 7-7
$AP_{chronic}$ - Averaging Period for chronic noncancer	25	years	
AP_{cancer} - Averaging Period for lifetime	70	years	
SA - Surface Area	2850	cm^2 / day	50th percentile of arms and hands for females.
SAF - Surface Adherence Factor	0.004	mg/cm^2	MADEP 1995 Guidance for Disposal Site Risk Characterization, Table B-2. SAF developed according to procedure outlined in MA DEP Technical Update:

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Maintenance Worker - Walls: Table EM-5
Chemical-Specific Data

Vlookup Version v1012

Oil or Hazardous Material	CSF $(mg/kg\text{-}day)^{-1}$	$RAF_{c\text{-}ing}$	$RAF_{c\text{-}derm}$	$RAF_{c\text{-}prod}$	Chronic RfD mg/kg-day	Subchronic RfD mg/kg-day	Chronic $RAF_{nc\text{-}ing}$	Chronic $RAF_{nc\text{-}derm}$	Subchronic $RAF_{nc\text{-}ing}$	Subchronic $RAF_{nc\text{-}derm}$	$RAF_{nc\text{-}prod}$	PUF
POLYCHLORINATED BI	2.0E+00	1.00	0.10	1.00	2.0E-05	5.0E-05	1	0.1	1	0.1	1	0.84

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Method 3 Risk Assessment for Maintenance Worker Exposed to Chemicals in Window/Caulking- Shortform 2012 (sf12em)

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cNC Eq	Table EM-3: Equations to calculate chronic noncancer risks
Exp	Table EM-4: Definitions and exposure factors
Chem	Table EM-5: Chemical-specific data

Spreadsheets designed by Andrew Friedmann, MassDEP
Modified for employee receptor.

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Maintenance Worker - Window/Caulking: Table EM-1 - Central Tendency Exposure Point Concentration (EPC)

Based on Employee

ShortForm Version 10-12

Vlookup Version v1012

ELCR (all chemicals) = 2E-06

Chronic HI (all chemicals) = 1E-01

Do not insert or delete any rows

Click on empty cell below and select OHM using arrow.

Oil or Hazardous Material	EPC (mg/kg)	$ELCR_{ingestion}$	$ELCR_{dermal}$	Derm & Ing $ELCR_{total}$	Chronic HQ_{ing}	Chronic HQ_{derm}	Derm & Ing HQ_{total}
POLYCHLORINATED BIPHENYLS (PCBs)	8.1E+00	2.0E-06	4.5E-08	2.0E-06	1.4E-01	3.1E-03	1.4E-01

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Maintenance Worker - Window/Caulking: Table EM-2

Equations to Calculate Cancer Risk for Employee

Vlookup Version v1012

Parameter	Value	Units
CSF	OHM specific	$(mg/kg\text{-}day)^{-1}$
LADD	OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
IR	50	mg/day
$RAF_{c\text{-}ing}$	OHM specific	dimensionless
$RAF_{c\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.41	event/day
ED	1	day/event
EP	25	years
C	0.000001	kg/mg
BW	61.1	kg
$AP_{(lifetime)}$	70	years
SA	2850	cm^2 / day
SAF	0.004	mg/cm^2

Cancer Risk from Ingestion

$$ELCR_{ing} = LADD_{ing} * CSF$$

$$LADD_{ing} = \frac{[OHM]_{soil} * IR * RAF_{c\text{-}ing} * EF_{ing} * ED * EP * C}{BW * AP_{lifetime}}$$

Cancer Risk from Dermal Absorption

$$ELCR_{derm} = LADD_{derm} * CSF$$

$$LADD_{derm} = \frac{[OHM]_{soil} * SA * RAF_{c\text{-}derm} * SAF * EF_{derm} * ED * EP * C}{BW * AP_{lifetime}}$$

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Maintenance Worker - Window/Caulking: Table EM-3
Equations to Calculate Chronic Noncancer Risk for Employee

Vlookup Version v1012

Chronic Noncancer Risk from Ingestion

$$HQ_{ing} = \frac{ADD_{ing}}{RfD}$$

$$ADD_{ing} = \frac{[OHM]_{soil} * IR * RAF_{nc\text{-}ing} * EF_{ing} * ED * EP * C}{BW * AP}$$

Chronic Noncancer Risk from Dermal Absorption

$$HQ_{derm} = \frac{ADD_{ing,derm}}{RfD}$$

$$ADD_{derm} = \frac{[OHM]_{soil} * SA * RAF_{nc\text{-}derm} * SAF * EF_{derm} * ED * EP * C}{BW * AP}$$

Parameter	Value	Units
RfD	OHM specific	mg/kg-day
ADD	OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
IR	50	mg/day
$RAF_{nc\text{-}ing}$	OHM specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.41	event/day
ED	1	day/event
EP	25	years
C	0.000001	kg/mg
BW	61.1	kg
AP	25	year
SA	2850	cm^2 / day
SAF	0.004	mg/cm^2

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Maintenance Worker - Window/Caulking: Table EM-4 - Central Tendency Definitions and Exposure Factors

Vlookup Version v1012

Parameter	Value	Units	Notes
ELCR - Excess Lifetime Cancer Risk	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
CSF - Cancer Slope Factor	chemical specific	$(mg/kg\text{-}day)^{-1}$	see Table EM-5
LADD - Lifetime Average Daily Dose	chemical specific	mg/kg-day	Pathway specific
LADE - Lifetime Average Daily Exposure	chemical specific	$\mu g/m^3$	
HQ - Hazard Quotient	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
RfD - Reference Dose	chemical specific	mg/kg-day	see Table EM-5
ADD - Average Daily Dose	chemical specific	mg/kg-day	Pathway specific
ADE - Average Daily Exposure	chemical specific	mg/m^3	
EPC - Exposure Point Concentration	chemical specific	mg/kg	
IR - Soil Ingestion Rate	50	mg/day	MADEP. 2002. Technical Update: Calculation of an Enhanced Soil Ingestion Rate.
RAF_c - Relative Absorption Factor for Cancer Effects	chemical specific	dimensionless	(http://www.mass.gov/dep/ors/orspubs.htm)
$EF_{chronic}$ - Exposure Frequency for chronic ingestion or dermal exposure	0.41	event/day	150 days per year
EF_{cancer} - Exposure Frequency for cancer, ingestion or dermal exposure	0.41	event/day	150 days per year
ED - Exposure Duration	1	day/event	
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BW - Body Weight	61.1	kg	U.S. EPA. 1997. Exposure Factors Handbook. Table 7-7
$AP_{chronic}$ - Averaging Period for chronic noncancer	25	years	
AP_{cancer} - Averaging Period for lifetime	70	years	
SA - Surface Area	2850	cm^2 / day	50th percentile of arms and hands for females.
SAF - Surface Adherence Factor	0.004	mg/cm^2	MADEP 1995 Guidance for Disposal Site Risk Characterization, Table B-2. SAF developed according to procedure outlined in MA DEP Technical Update:

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Maintenance Worker - Window/Caulking: Table EM-5
Chemical-Specific Data

Vlookup Version v1012

Oil or Hazardous Material	CSF $(mg/kg\text{-}day)^{-1}$	$RAF_{c\text{-}ing}$	$RAF_{c\text{-}derm}$	$RAF_{c\text{-}prod}$	Chronic RfD mg/kg-day	Subchronic RfD mg/kg-day	Chronic $RAF_{nc\text{-}ing}$	Chronic $RAF_{nc\text{-}derm}$	Subchronic $RAF_{nc\text{-}ing}$	Subchronic $RAF_{nc\text{-}derm}$	$RAF_{nc\text{-}prod}$	PUF
POLYCHLORINATED BIPHENYLS (PCBs)	2.0E+00	1.00	0.10	1.00	2.0E-05	5.0E-05	1	0.1	1	0.1	1	0.84

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