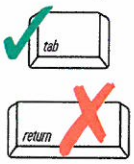
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Emergency Certification Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. Emergency Information

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Issuance From: Amesbury Conservation Commission
Issuing Authority

1. Site Location: 22 Water Street (Assessors map 53/parcel 102)

2 Reason for Emergency:

Removal of PCB contaminated soil as identified in attached document titled: Removal Program Preliminary Assessment for 31 Water Street May 19 and 20. July 2014 prepared for U.S. EPA Region 1

3. Applicant to perform work: City of Amesbury (William Scott/applicant) and Environmental Protection Agency Region 1 (Ted Bazenas/on-scene coordinator)

4. Public agency to perform work or public agency ordering the work to be performed:

City of Amesbury and Environmental Protection Agency

5. Date of Site Visit: 9.2.14 Start Date: 9.16.14 End Date*: 10.16.14

* no later than 30 days from start date or 60 days in the case of an Immediate Response Action approved by DEP to address an oil/hazardous material release.

6. Work to be allowed*:

See attached doeument- 22 Water Street Attachment to Emergency Certificate - Work to be Allowed. See Letter requesting Emergency Certification from William Scott Community Development Director City of Amesbury. See attachment to Emergency Certificate for further details.

* May not include work beyond that necessary to abate the emergency.

B. Signatures

Certified to be an Emergency by this Issuing Authority.

Signatures:

Chairman (or designee) — Date: 9.15.14

A copy of this form must be provided to the appropriate DEP Regional Office.

WPA Emergency Certification Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

C. General Conditions

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Emergency Certification or subject to enforcement action.

2. This Emergency Certification does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of property rights.

3. This Emergency Certification does not relieve the applicant or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.

4. Any work conducted beyond that described above, and any work conducted beyond that necessary to abate the emergency, shall require the filing of a Notice of Intent.

5. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Emergency Certification at reasonable hours to evaluate compliance with this Certification, and may require the submittal of any data deemed necessary by the Conservation Commission or the Department for that evaluation.

6. This Emergency Certification shall apply to any contractor or any other person performing work authorized under this Certification.

7. No work may be authorized beyond 30 days from the date of this certification without written approval of the Department.

D. Special Conditions

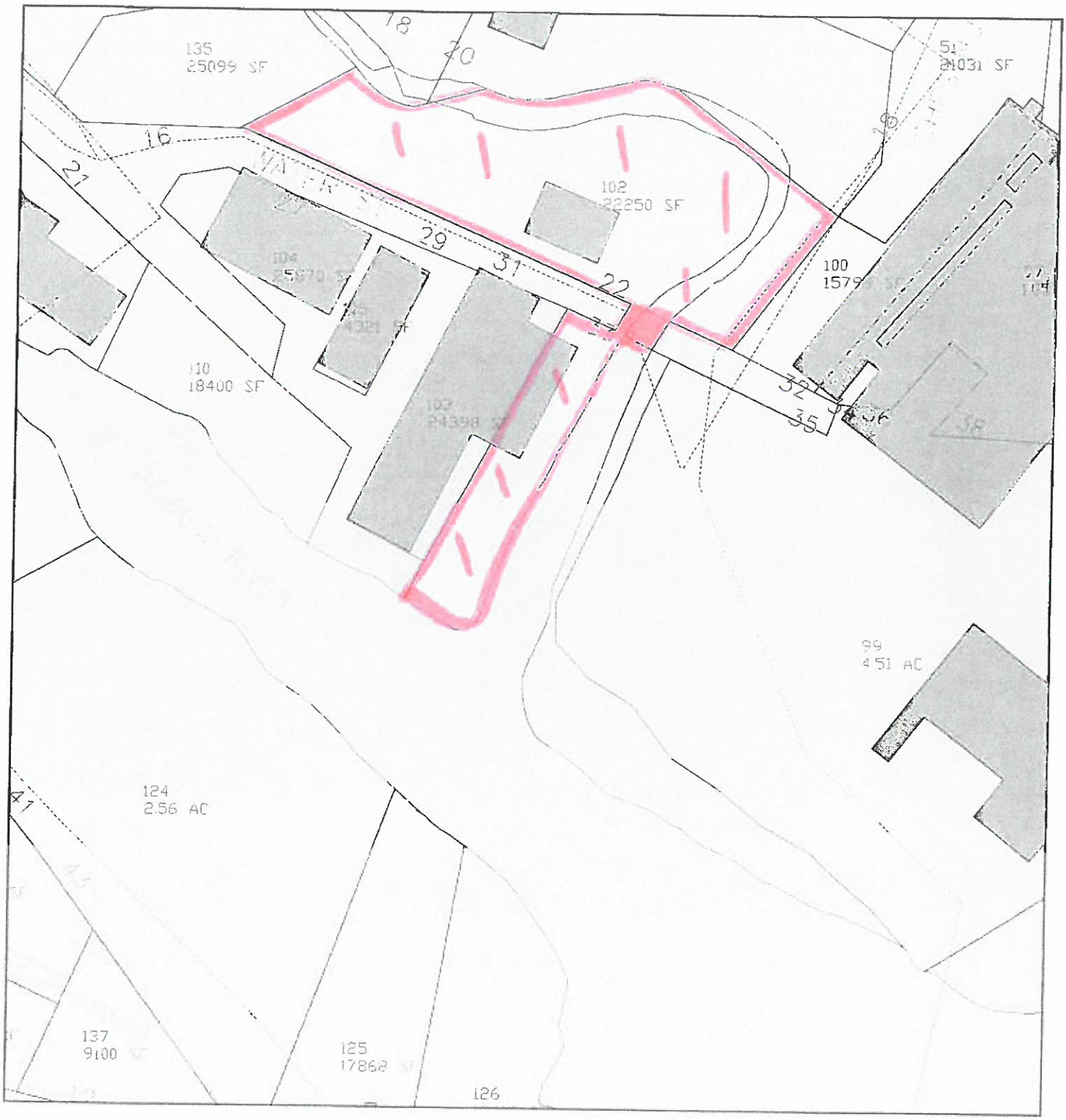
Relvant conditions in Attachment to Order of Conditions including the installation of erosion control to prevent sediment from entering protected resources. Water quality shall not differ from pre-construction conditions. A draft restoration plan with proposal to re-vegetation the riparian bank prior to the end of the 2014 growing season shall be submitted to the Amesbury Conservation Commission for review and approval no later than October 15. Draft re-vegetation plan shall addressed the need to eliminate exposed soils. See Attachment to Order of Conditions for DEP 002-1082 for details.

E. Appeals

The Department may, on its own motion or at the request of any person, review: an emergency certification issued by a conservation commission and any work permitted thereunder; a denial by a conservation commission of a request for emergency certification; or the failure by a conservation commission to act within 24 hours of a request for emergency certification. Such review shall not operate to stay the work permitted by the emergency certification unless the Department specifically so orders. The Department's review shall be conducted within seven days of: issuance by a conservation commission of the emergency certification; denial by a conservation commission of the emergency certification; or failure by a conservation commission to act within 24 hours of a request for emergency certification. If certification was improperly granted, or the work allowed thereunder is excessive or not required to protect the health and safety of citizens of the Commonwealth, the Department may revoke the emergency certification, condition the work permitted thereunder, or take such other action as it deems appropriate.

Attachment to
Emergency Certificate

22 WATER ST



Information on this Map is Compiled and Maintained for Assessing Purposes Only

GEOGRAPHIC INFORMATION SYSTEM
VISION APPRAISAL TECHNOLOGY

City of
Amesbury

William Scott
Director Office of Community Development
City Hall, 62 Friend Street
Amesbury, MA 01913-2884

(978) 388-8110 - 313
scottw@amesburyma.gov

Steven Langlois, Chair
City of Amesbury
Conservation Commission
62 Friend Street – City Hall
Amesbury Massachusetts

Dear Chairman Langlois;

The City of Amesbury has been working with the Environmental Protection Agency and the State Department of Environmental Protection to address contamination of 31 Water Street. As a result of recent analysis it was found that the site along the riverbank is contaminated to the extent that an expeditious response is necessary to remove an imminent health hazard. The attached document cited below indicates a clear presence of contaminants posing an imminent health hazard sufficient to immediate warrant action.

REMOVAL PROGRAM PRELIMINARY ASSESSMENT/ SITE INVESTIGATION REPORT FOR THE 31 WATER ST SITE AMESBURY, ESSEX COUNTY, MASSACHUSETTS 19 AND 20 MAY 2014 (PASI)

Based on the above document the Environmental Protection Agency has determined that it meets their criteria for an imminent health hazard as such they have developed a response under their removal programs and will be conducting work as outlined generally below:

Beginning in mid-late September, the U.S. Environmental Protection Agency (EPA) will mobilize people and equipment to the Site. EPA contractors will prepare the Site for work by removing trees and vegetation from the banks of the Powow and Back Rivers, in advance of digging and removing the PCB and metal contaminated soil. This will include excavations of up to eight feet deep in some areas to remove the contaminated soil. In total, EPA estimates the removal of 800 tons of soil from the site. EPA will stock pile the soil on site under plastic covers and prepare it to be trucked off site to an appropriate hazardous waste disposal facility. It is expected that the soil removal effort will take approximately 2 months, weather permitting. EPA workers will be onsite between the hours of 7am and 5pm daily. These hours may vary depending on the weather and daylight. Workers doing the excavation and stockpiling will be wearing protective suits and respirator masks to prevent physical contact t with contaminated soils. These are measures taken to protect workers, who potentially work with contamination on a regular basis.

This is a request for an Emergency Certification under 301 CMR 10.06: Emergencies. Pursuant to 10.06 the work is necessary; for the protection of the health or safety of the citizens of the Commonwealth. Further the U.S. Environmental Protection Agency will conduct the removal project for the City of Amesbury. The EPA through their response process has ordered the project to be performed.

The work will exceed the 30 day limitation, however the City will work with the State Department of Environmental Protection as outlined in 310 CMR 10.06 to provide an extension as maybe necessary prior to the expiration of 30 days.

I am intending on appearing at the meeting on September 15th, 2014 with Ted Bazenas from the EPA. I have a short presentation on the project.

Sincerely,

William Scott

Attached: PASI

Cc: Ted Bazenas EPA, Joanne Fagan DEP, John Higgins LSP, John Lopez Conservation Agenct

31 Water Street
Attachment to Emergency Certificate
Work to be Allowed

Work to be allowed pursuant to this emergency certificate:
Beginning in mid-late September, the U.S. Environmental Protection Agency (EPA) will mobilize people and equipment to the Site. EPA contractors will prepare the Site for work by removing trees and vegetation from the banks of the Powow and Back Rivers, in advance of digging and removing the PCB and metal contaminated soil. This will include excavations of up to eight feet deep in some areas to remove the contaminated soil. In total, EPA estimates the removal of 800 tons of soil from the site. EPA will stock pile the soil on site under plastic covers and prepare it to be trucked off site to an appropriate hazardous waste disposal facility. It is expected that the soil removal effort will take approximately 2 months, weather permitting. EPA workers will be onsite between the hours of 7am and 5pm daily. These hours may vary depending on the weather and daylight. Workers doing the excavation and stockpiling will be wearing protective suits and respirator masks to prevent physical contact t with contaminated soils. These are measures taken to protect workers, who potentially work with contamination on a regular basis.

Emergency work is pursuant to an Order of Conditions (DEP 002-1082) issued by the Amesbury Conservation Commission under the Massachusetts Wetlands Protection Act (M.G.L. 131 sec. 40) and the Amesbury Wetlands Ordinance on November 6, 2014 for the removal of contaminated soil. Resources where work will take place include Riverfront (Bank) and Land subject to tidal action and land under water body.

301 CMR 10.06: Emergencies
(1) Any person requesting permission to do an emergency project shall specify **why the project is necessary for the protection of the health or safety of the citizens of the Commonwealth and what agency of the Commonwealth or subdivision thereof is to perform the project or has ordered the project to be performed**. If the project is certified to be an emergency by the conservation commission or the Commissioner, the certification shall include a description of the work which is to be allowed and shall not include work beyond that necessary to abate the emergency. A site inspection shall be made prior to certification. **(2) An emergency certification shall be issued only for the protection of public health or safety.**
(3) The time limitation for performance of emergency work shall not exceed 30 days, or 60 days for Immediate Response Actions approved by the Bureau of Waste Site Cleanup (BWSC) of the Department of Environmental Protection in accordance with the provisions of 310 CMR 40.0410, unless written approval of the Commissioner is obtained. (4) A copy of an emergency certification shall be sent to the Department when it is issued by a conservation commission, and to the conservation commission when it is issued by the Department.

REMOVAL PROGRAM
PRELIMINARY ASSESSMENT/
SITE INVESTIGATION REPORT
FOR THE
31 WATER ST SITE
AMESBURY, ESSEX COUNTY, MASSACHUSETTS
19 AND 20 MAY 2014

Prepared For:

U.S. Environmental Protection Agency
Region I
Emergency Planning and Response Branch
5 Post Office Square, Suite 100
Boston, Massachusetts 02109-3912

CONTRACT NO. EP-W-05-042

TDD NO. 01-14-04-0002

TASK NO. 0939

DC NO. R-7708

Submitted By:

Weston Solutions, Inc.
Region I
Superfund Technical Assessment and Response Team (START)
3 Riverside Drive
Andover, MA 01810

July 2014

TABLE OF CONTENTS

I. Preliminary Assessment/Site Investigation Forms

EPA REGION I
REMOVAL PRELIMINARY ASSESSMENT

Site Name and Location

Name: 31 Water St Site **Location:** 31 Water Street
Town: Amesbury **County:** Essex **State:** Massachusetts (MA)

Site Status: ( ) NPL ( ) NON-NPL ( ) RCRA ( ) TSCA
( ) ACTIVE ( ) ABANDONED (X) OTHER - Brownfields

(X) Attached USGS Map of Location **( ) Site I.D. No.:**

Latitude: 42° 51′ 22.1″ North **Longitude:** 70° 55′ 38.5″ West

Referral

( ) Citizen ( ) City/Town (X) State ( ) Preremedial ( ) RCRA
( ) Other:

Name of referring party: Massachusetts Department of Environmental Protection (MassDEP)
Address: 205B Lowell Street, Wilmington, Massachusetts 01887
Telephone: (978) 694-3200

Contacts Identified

1) Joanne Fagan **Telephone:** (978) 694-3390
2) **Telephone:**
3) **Telephone:**

Source of Information

( ) Verbal:
(X) Report: Higgins Environmental Associates, Inc. (HEA). 2014. *Immediate Response Action (IRA) Plan and Imminent Hazard Evaluation, Historical Site Impacts to Urban Fill, 31 Water Street, Amesbury, Massachusetts, RTN 3-31842.* 5 February.
( ) Other:

REMOVAL PRELIMINARY ASSESSMENT

Potential Responsible Parties

Owner: City of Amesbury **Telephone:** (978) 388-8100
Address: 62 Friend Street, Amesbury, MA 01913
Operator: **Telephone:** ( )
Address:

Site Access

Authorizing Person: Joseph W. Fahey, Director of Community and Economic Development, City of Amesbury
Date: 28 February 2014 **(X) Obtained** **( ) Verbal**
Telephone: (978) 388-8110 **( ) Not Obtained** **(X) Written**

Historical Preservation

( ) Site is Historically Significant or Eligible for Historic Preservation

Contacts Identified

1) State Historical Preservation Officer (SHPO)
Name: Brona Simon **Telephone:** (617) 727-8470
2) Tribal Historical Preservation Officer (THPO)
Name: **Telephone:** ( )

Comments:

Physical Site Characterization

Background Information:
The 31 Water St Site (the site) is located at 31 Water Street in Amesbury, Essex County, Massachusetts. The geographic coordinates of the approximate midpoint along the center of 31 Water Street are 42° 51′ 22.1″ north and 70° 55′ 38.5″ west. The approximately 0.56-acre site consists of a vacant lot. The majority of the central portion of the site is level and contains areas with concrete foundation from the former on-site building. The easternmost portion of the site contains a steep slope to the Back River. The southernmost portion of the site contains a steep slope to the Powow River. There is a paved, public walkway/bike path along the eastern and southern border of the site that is used by the general public. The site is bordered to the north by Water Street, to the west by the City of Amesbury Public Works Department building, to the east by the Back River, and to the south by the Powwow River.

The current owner of the 31 Water Street property is the City of Amesbury. The site area has been historically developed since the late 1800s as a center of commerce and industrial activities in Amesbury's Lower Millyard. The general site has been undergoing environmental site

investigations since 2000. Historically, levels of semivolatile organic compounds (SVOCs) and polychlorinated biphenyls (PCBs) have exceeded the Massachusetts Contingency Plan (MCP) Soil Category S-1 Standards. Environmental impacts are believed to be representative of historical site use, largely due to the presence of coal ash, and questionable quality of fill materials used in the 1960s along the edges of the site. Data from previous investigations depicts elevated levels of volatile organic compounds (VOCs), total petroleum hydrocarbons (TPHs), SVOCs, and metals.

In February 2014, Higgins Environmental Associates, Inc. (HEA) submitted an Immediate Response Action Plan (IRA) and Imminent Hazard (IH) Evaluation on behalf of the City of Amesbury for the 31 Water Street site. The IRA and IH evaluation were developed to address an area of oil and hazardous material (OHM)-impacted granular fill material identified on the site. The IRA plan proposed an excavation and removal of OHM-impacted soil from 0-to-1-foot below grade. HEA estimated that approximately 1,600 cubic yards of soil would be excavated for off-site disposal.

The IH evaluation was conducted to evaluate whether there were elevated levels of PCBs detected in surficial soil at the site. To date, a total of 66 soil samples at shallow depths were collected and analyzed for PCBs. Three locations had concentrations of PCBs greater than 10 milligrams per Kilogram (mg/Kg), with a maximum concentration of 36 mg/Kg detected. In no case did a PCB result in soil exceed the EPA Toxic Substance Control Act (TSCA) limit of 50 mg/kg. Based on their findings, HEA determined an IH condition does not exist for current and reasonable future exposures at the site for PCBs in surficial soil. The Hazard Index was less than 1 and the Excess Lifetime Cancer Risk was less than 100,000 for Massachusetts Department of Environmental Protection (MassDEP) prescribed Method 3 Risk Characterization Short Form IH factors for visitors to the site.

Description of Substances Possibly Present, Known or Alleged:
Data from previous investigations depict elevated levels of VOCs, TPHs, SVOCs, PCBs, and metals in soils.

Existing Analytical Data

( ) Real-Time Monitoring Data:

(X) Sampling Data:
U.S. Environmental Protection Agency (US EPA). 2000. Amesbury Wharf Final Brownfields Targeted Site Assessment Report, 1 Water Street, Amesbury (RTN 3-19634). 2 May.

Higgins Environmental Associates, Inc. (HEA). 2001. MCP Phase I Initial Site Investigation, Amesbury Wharf Property, 31 Water Street, Amesbury (RTN 3-19634). 24 October.

Higgins Environmental Associates, Inc. (HEA). 2010. Response Action Outcome Statement and Supporting Information (Class B1 RAO), Former Wharf Building Property, 31 Water Street, Amesbury (RTN 3-19634). 25 June.

REMOVAL PRELIMINARY ASSESSMENT

Higgins Environmental Associates, Inc. (HEA). 2012. ASTM Phase I Environmental Site Assessment, 25 Water Street, Amesbury. 13 November.

Higgins Environmental Associates, Inc. (HEA). 2012. ASTM Phase II Environmental Site Assessment, 27- 31 Water Street, Amesbury. 29 November.

Additional soil sampling and laboratory analysis have taken place since November 2012; results attached to the 2014 IRA Plan.

Potential Threat

Description of potential hazards to environment and/or population-identify any of the criteria for a Removal Action (from NCP) that may be met by the site under 40 CFR 300.415 [b] [2].

i. Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants.

ii. Actual or potential contamination of drinking water supplies or sensitive ecosystems.

iv. High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate.

v. Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

vii. The availability of other appropriate federal or state response mechanisms to respond to the release.

viii. Other situations or factors that may pose threats to public health or welfare or the environment.

Prior Response Activities

( ) PRP **( ) STATE** **( ) FEDERAL** **( ) OTHER**
Brief Description: Prior to 2014, no response actions have been taken at this site.

Priority for Site Investigation

( ) High **(X) Medium** **Low ( )** **None ( )**
Comments:

Report Generation

Originator:	Bonnie Mace	**Date:**	28 May 2014
Affiliation:	Weston Solutions, Inc. (START)	**Telephone:**	(978) 552-2131
TDD No.:	01-14-02-0001	**Task No.:**	0939

EPA REGION I
REMOVAL SITE INVESTIGATION

Inspection Information

Site Name: 31 Water St Site **Address:** 31 Water Street
Town: Amesbury **County:** Essex County **State:** Massachusetts
Date of Inspection: 19 May 2014 **Time of Inspection:** 0800 hours
Weather Conditions: 68° Fahrenheit, Mostly cloudy, on/off light rain
Date of Inspection: 20 May 2014 **Time of Inspection:** 0800 hours
Weather Conditions: 67° Fahrenheit, Mostly sunny

Site Status at Time of Inspection: **( ) ACTIVE (X) INACTIVE**
Comments: The site consists of a vacant lot along the banks of the Powwow and Back Rivers. The site is currently undergoing Brownfields cleanup.

Agencies/Personnel Performing Inspection

	Names	Program
(X) EPA:	Ted Bazenas	U.S. Environmental Protection Agency (EPA) Region I, Emergency Planning and Response Branch (EPRB), On-Scene Coordinator (OSC).
(X) EPA Contractor:	Bonnie Mace Eric Ackerman Chris Dupree Erin Mulholland	Weston Solutions, Inc. (WESTON), Superfund Technical Assessment and Response Team III (START).
(X) State:	Joanne Fagan	Massachusetts Department of Environmental Protection (MassDEP).
(X) Other:	John Higgins	City of Amesbury, Licensed Site Professional (LSP).

Current Owner Based on Field Interview: City of Amesbury, Massachusetts

REMOVAL SITE INVESTIGATION

Physical Site Characteristics

Parameter		Quantities/Extent
( ) Cylinders:		
( ) Drums:		
( ) Lagoons:		
(X) Tanks:	( ) Above:	
	(X) Below:	One underground storage tank (UST) containing fuel oil is located on the northeastern portion of the site and is being managed by the town.
( ) Asbestos:		
( ) Piles:		
( ) Stained Soil:		
( ) Sheens:		
( ) Stressed Vegetation:		
( ) Landfill:		
(X) Population in Vicinity:		The site is located in downtown Amesbury, adjacent to commercial businesses.
(X) Wells:	( ) Drinking:	
	(X) Monitoring:	There are several monitoring wells located throughout the site.
(X) Other:		Several pipes are located on the eastern portion of the site along the banks of the Back River.

Physical Site Observations

The site consists of an approximate 0.56-acre vacant parcel located along the banks of the Powwow and Back Rivers. The majority of the central portion of the site is level and contains areas with concrete foundation from the former on-site building. The eastern-most portion of the site contains a steep slope to the Back River. The slope along the eastern side of the site leading to the Back River has been stabilized with crib work and has several pipes protruding from the bank. The southernmost portion of the site contains a steep slope to the Powwow River. There is a paved, public walkway/bike path along the eastern and southern borders of the site that is used by the general public. The site is bordered to the north by Water Street, to the west by the City of Amesbury Public Works Department building, to the east by the Back River, and to the south by the Powwow River.

Field Sampling and Analysis

Matrix/Analytical	Field Instrumentation				
Parameter	CGI/O_2	RAD	PID	FID	pH
Background Readings:	0/20.9%	10-12	0.0	--	--
Air:	0/20.9%	10-12	0.0	--	--
Soil:	0/20.9%	10-12	0.0	--	--
Tanks:	0/20.9%	10-12	0.0	--	--

Matrix/Analytical Parameter	Field Instrumentation				
	CGI/O_2	RAD	PID	FID	pH
Drums:					

Field Quality Control Procedures

(X) SOP Followed **( ) Deviation From SOP**

Comments: START followed the protocol outlined in the document, entitled *Sampling and Analysis Plan for the 31 Water St Site, Amesbury, Essex County, Massachusetts*, dated May 2014.

Description of Sampling Conducted

On 19 May 2014, START personnel collected 20 subsurface soil samples [maximum depth of 12 feet below ground surface (bgs)], including one field duplicate, from four soil boring locations advanced along the top of slope on the banks of the Back River. On 20 May 2014, START personnel collected 18 subsurface soil samples, including one field duplicate, from five soil boring locations advanced along the bank of the Powwow River. In addition, six surface soil samples (including one field duplicate) were collected from soils surrounding pipes that were protruding from the bank of the Back River along the eastern portion of the site. The soil samples were submitted for polychlorinated biphenyl (PCB) and metals analyses. All of the samples were submitted to the EPA Office of Environmental Measurement and Evaluation (OEME) laboratory located in North Chelmsford, Massachusetts for analysis. In addition, split samples were relinquished to City of Amesbury, Licensed Site Professional (LSP) John Higgins for additional analysis.

Analyses

Analytical Parameter	Media	Laboratory
( ) VOC	( ) AIR	(X) NERL
(X) PCB	( ) WATER	( ) CLP
( ) PESTICIDE	(X) SOIL	( ) PRIVATE
(X) METALS	(X) SOURCE	( ) DAS
( ) CYANIDE	( ) SEDIMENT	( ) SOW
( ) SVOC	( ) SOIL GAS	( ) FIELD
( ) TOXICITY		
( ) DIOXIN		
( ) ASBESTOS		
( ) OTHER:		

Analytical results: [see attached]

Receptors

	Comments
( ) Drinking Water:	**( ) Private:**
	( ) Municipal:
( ) Groundwater:	
(X) Unrestricted Access:	Access to the site is restricted by a temporary high-visibility fence. In addition, a chain-link fence and wooden fence surround the site along the eastern and southern borders at the top of the banks of the adjacent rivers.
(X) Population in Proximity:	The site is located in downtown Amesbury, adjacent to commercial businesses.
(X) Sensitive Ecosystem:	The site is bordered by the Back River to the east and the Powwow River to south.
(X) Other:	There is a bike path running through the site.

Additional Procedures for Site Determination

( ) Biological Evaluation **( ) ATSDR**

To be determined by the On-Scene Coordinator (OSC).

Site Determination

Depending on further information, criteria that may be met by the site include 40 CFR 300.415 [b] [2], parts:

i. Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants.

ii. Actual or potential contamination of drinking water supplies or sensitive ecosystems.

iv. High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate.

v. Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

vii. The availability of other appropriate federal or state response mechanisms to respond to the release.

viii. Other situations or factors that may pose threats to public health or welfare or the environment.

Report Generation			
Originator:	Bonnie Mace	**Date:**	28 May 2014
Affiliation:	Weston Solutions, Inc. (START)	**Telephone:**	(978) 552-2131
TDD No.:	14-02-0001	**Task No.:**	0939

II. Narrative Chronology

Narrative Chronology

Site Description

The 31 Water St Site (the site) is located at 31 Water Street in Amesbury, Essex County, Massachusetts. The geographic coordinates of the approximate midpoint along the center of 31 Water Street are 42° 51′ 22.1″ north and 70° 55′ 38.5″ west (see Appendix A, Figure 1) [1]. The approximately 0.56-acre site consists of a vacant lot. The majority of the central portion of the site is level and contains areas with concrete foundation from the former on-site building. The easternmost portion of the site contains a steep slope to the Back River. The southernmost portion of the site contains a steep slope to the Powwow River. There is a paved, public walkway/bike path along the eastern and southern borders of the site that is used by the general public. The site is bordered to the north by Water Street, to the west by the City of Amesbury Public Works Department building, to the east by the Back River, and to the south by the Powwow River (see Appendix A, Figure 2) [2].

Site Background

The current owner of the 31 Water Street property is the City of Amesbury. The site area has been historically developed since the late 1800s as a center of commerce and industrial activities in Amesbury's Lower Millyard. The general site has been undergoing environmental site investigations since 2000. Historically, levels of semivolatile organic compounds (SVOCs) and polychlorinated biphenyls (PCBs) have exceeded the Massachusetts Contingency Plan (MCP) S-1 Standards. Environmental impacts are believed to be representative of historical site use, largely due to the presence of coal ash, and questionable quality of fill materials used in the 1960s along the edges of the site. Data from previous investigations depicts elevated levels of volatile organic compounds (VOCs), total petroleum hydrocarbons (TPHs), SVOCs, and metals [3].

In February 2014, Higgins Environmental Associates, Inc. (HEA) submitted an Immediate Response Action Plan (IRA) and Imminent Hazard (IH) Evaluation on behalf of the City of Amesbury for the 31 Water Street site. The IRA and IH evaluation were developed to address an area of oil and hazardous material (OHM)-impacted granular fill material identified on the site. The IRA plan proposed an excavation and removal of OHM-impacted soil from 0-to-1-foot below grade. HEA estimated that approximately 1,600 cubic yards of soil would be excavated for off-site disposal [3]. Concrete removal associated with the IRA excavation began on 30 May 2014, and the excavation was completed on 15 June 2014.

The IH evaluation was conducted to evaluate whether there were elevated levels of PCBs detected in surficial soil at the site. To date, a total of 66 soil samples at shallow depths were collected and analyzed for PCBs. Three locations had concentrations of PCBs greater than 10 milligrams per Kilogram (mg/Kg), with a maximum concentration of 36 mg/Kg detected. In no case did a PCB result in soil exceed the EPA Toxic Substance Control Act (TSCA) limit of 50 mg/Kg. Based on their findings, HEA determined an IH condition does not exist for current and reasonable future exposures at the site for PCBs in surficial soil. The Hazard Index was less than 1 and the Excess Lifetime Cancer Risk was less than 100,000 for Massachusetts Department of

Environmental Protection (MassDEP) prescribed Method 3 Risk Characterization Short Form IH factors for visitors to the site [3].

Site Activities

On 19 May 2014, EPA On-Scene Coordinator (OSC) Ted Bazenas, and START members Bonnie Mace, Eric Ackerman, Chris Dupree, and Erin Mulholland mobilized to the site to conduct surface and subsurface soil sampling activities. START member Mace established a support zone and calibrated the air monitoring instrument, a MultiRAE, and a gamma radiation meter (MicroR) [4-5]. MassDEP representative Joanne Fagan, and HEA Licensed Site Professional (LSP) John Higgins were also on site.

Background levels were recorded in the Health and Safety Plan (HASP) as follows: volatile organic compounds (VOCs) = 0.0 parts per million (ppm); lower explosive limit (LEL) = 0%; oxygen (O_2) = 20.9%; and MicroR = 10-12 microRoentgens per hour (µR/hr). START member Mace conducted a safety and operations meeting, and on-site personnel reviewed and signed the site HASP. The HASP was prepared as a separate document, entitled *Weston Solutions, Inc., Region 1 START Site Health and Safety Plan (HASP) for the 31 Water St Site, Amesbury, Massachusetts*, dated May 2014.

START personnel removed sections of wooden and chain-link fencing to provide access to the investigation area that would be between the bike/walking path and the water's edge; decontaminated down-hole boring equipment (Geoprobe and hand augers); and began advancing soil borings beyond the fence line along the eastern portion of the site [6-7]. The soil boring locations were extensions of the sampling transects established by HEA in November 2013. START personnel collected 20 soil samples, including one field duplicate, from four soil boring locations. The four soil borings were advanced to a maximum depth of 12 feet below ground surface (bgs). The soil borings were characterized by START (see Appendix B, Boring Logs). All of the soil samples were collected for PCB and metals analyses at the EPA Office of Environmental Measurement and Evaluation (OEME) laboratory. In addition, split samples were relinquished to HEA LSP Higgins for additional analyses.

On 20 May 2014, START members Mace, Ackerman, Dupree, and Mulholland mobilized to the site to complete soil sampling activities. In addition, MassDEP representative Fagan and HEA LSP Higgins were on site. START member Mace established a support zone and calibrated the air monitoring instrument, a MultiRAE. Background levels were recorded in the HASP as follows: VOCs = 0.0 ppm; LEL = 0%; and O_2 = 20.9%. START member Mace conducted a safety and operations meeting, and on-site personnel reviewed and signed the site HASP.

START personnel began advancing soil borings beyond the fence line along the southern portion of the site. The soil boring locations were extensions of the sampling transects established by HEA in November 2013. START personnel collected 18 soil samples, including one field duplicate, from five soil boring locations. The five soil borings were advanced to a maximum depth of 12 feet bgs. In addition, START collected six surface soil samples, including one field duplicate, from soils surrounding pipes on the eastern portion of the site along the banks of the Back River (see Appendix C, Table 1). Two pipe locations were not sampled because the pipes extended and discharged directly to the water. All of the soil samples were collected for PCB

and metals analyses at the EPA OEME laboratory. In addition, split samples were relinquished to HEA LSP Higgins.

START member Mace utilized the Trimble™ Pathfinder Pro XRS Global Position System (GPS) unit to record sample locations and site features (see Appendix A, Figure 3) and photodocumented sample locations and site features (see Appendix D, Photodocumentation Log) [8].

Following sample collection activities, START personnel completed a Chain-of-Custody (COC) record to document the history of samples from the time of sample collection through transportation and analysis (see Appendix E, Analytical Data and Chain-of-Custody Record). All of the soil samples were sent to EPA OEME laboratory, located in North Chelmsford, Massachusetts, for PCB and metals analyses.

On 19 June 2014, START received the analytical data results from OEME [9-14]. In addition, START received TPH results from HEA LSP Higgins [15]. These data are summarized in Appendix C (see Appendix C, Tables 2, 3, and 4). Complete laboratory data results may be found in Appendix E.

Analytical Data Summaries

A total of one PCB Aroclor was detected in one or more of the surface and subsurface soil samples, and includes the following [maximum concentration in mg/Kg, and sample location in parentheses]: Aroclor-1254 (740 mg/Kg in SB-02B). In addition, the PCB Aroclor-1254 was detected at a concentration exceeding the MCP S-1 standard in one or more of the samples (see Appendix C, Table 2) [9-11].

A total of 18 metals were detected in one or more of the surface and subsurface soil samples, and include the following (maximum concentration in mg/Kg, and sample location in parentheses): aluminum (22,000 mg/Kg in SB-02C); arsenic (150 mg/Kg in SB-02C); barium (2,300 mg/Kg in SB-05A); beryllium (5.8 mg/Kg in SB-02C); calcium (68,000 mg/Kg in SB-02C); cadmium (45 mg/Kg in SB-05A); cobalt (22 mg/Kg in SB-02C); chromium (650 mg/Kg in SB-05A); copper (2,200 mg/Kg in SB-05A); iron (110,000 mg/Kg in SB-03B); magnesium (11,000 mg/Kg in SB-02C); manganese (1,300 mg/Kg in SS-04); nickel (66 mg/Kg in SB-05B); lead (1,900 mg/Kg in SB-05A); antimony (4.4 mg/Kg in SB-02D); selenium (10 mg/Kg in SB-02C); vanadium (140 mg/Kg in SB-07A); and zinc (3,300 mg/Kg in SB-05B). In addition, five metals (arsenic, barium, chromium, lead, and zinc) were detected at concentrations exceeding MCP S-1 standards in one or more of the samples (see Appendix C, Table 3) [12-14].

Analytical results of surface soil samples submitted for TPH analysis via HEA LSP Higgins indicated the presence of TPH in all six of the samples, ranging from 190 mg/Kg in SS-05 to 3,397 mg/Kg in SS-02. In addition, TPH was detected at a concentration exceeding the MCP S-1 standard in two of the samples (SS-02 and SS-03) (see Appendix C, Table 4) [15].

REFERENCES

[1] U.S. Geological Survey (USGS). 1981. Newburyport East, Massachusetts. (7.5-minute series topographic map).

[2] ESRI, i-cubed, USDA FSA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGP. 2011. ArcGIS.com World Imagery Map. 30 March.

[3] Higgins Environmental Associates, Inc. 2014. Immediate Response Action (IRA) Plan and Imminent Hazard Evaluation, Historical Site Impacts to Urban Fill, 31 Water Street, Amesbury, Massachusetts, RTN 3-31842. 5 February.

[4] Weston Solutions, Inc. May 2011. Standard Operating Procedure for PID-MultiRAE (Multi-gas monitor with VOC detection and LEL) RAE Model PGM-50 Multi-gas Monitor (MultiRAE), SOP NO. WSI/S3-018, Superfund Technical Assessment and Response Team III (START), Andover, MA.

[5] Weston Solutions, Inc. May 2011. Standard Operating Procedure for Ludlum Model 19 Micro R Meter, SOP No. WSI/S3-022, Superfund Technical Assessment and Response Team III (START), Andover, MA.

[6] Weston Solutions, Inc. May 2011. Standard Operating Procedure for Surface and Subsurface Soil Sampling, SOP No. WSI/S3-001, Superfund Technical Assessment and Response Team III (START), Andover, MA.

[7] Weston Solutions, Inc. May 2011. Standard Operating Procedure for Geoprobe Systems® Soil Probing Machine, SOP No. WSI/S3-005, Superfund Technical Assessment and Response Team III (START), Andover, MA.

[8] Weston Solutions, Inc. May 2011. Standard Operating Procedure for Trimble™ Geoexplorer® 2008 Series Global Positioning System, SOP No. WSI/S3-020, Superfund Technical Assessment and Response Team III (START), Andover, MA.

[9] U.S. Environmental Protection Agency. 4 June 2014. Office of Environmental Measurement and Evaluation. Laboratory Report. Project No. 14050027. [31 Water Street, Amesbury, MA – PCBs Medium Level in Soils and Sediments].

[10] U.S. Environmental Protection Agency. 5 June 2014. Office of Environmental Measurement and Evaluation. Laboratory Report. Project No. 14050028. [31 Water Street, Amesbury, MA – PCBs Medium Level in Soils and Sediments].

[11] U.S. Environmental Protection Agency. 5 June 2014. Office of Environmental Measurement and Evaluation. Laboratory Report. Project No. 14050029. [31 Water Street, Amesbury, MA – PCBs Medium Level in Soils and Sediments].

[12] U.S. Environmental Protection Agency. 17 June 2014. Office of Environmental Measurement and Evaluation. Laboratory Report. Project No. 14050027. [31 Water Street, Amesbury, MA – Metals in Soil Medium Level by ICP].

[13] U.S. Environmental Protection Agency. 17 June 2014. Office of Environmental Measurement and Evaluation. Laboratory Report. Project No. 14050028. [31 Water Street, Amesbury, MA – Metals in Soil Medium Level by ICP].

[14] U.S. Environmental Protection Agency. 17 June 2014. Office of Environmental Measurement and Evaluation. Laboratory Report. Project No. 14050029. [31 Water Street, Amesbury, MA – Metals in Soil Medium Level by ICP].

[15] New England Testing Laboratory, Inc. (NETLAB). 2 June 2014. Report of Analytical Results, NETLAB Case Number A0523-19.

III. Appendices

Appendix A

Figures

Figure 1 - Site Location Map
Figure 2 - Site Diagram
Figure 3 - Sample Location Map

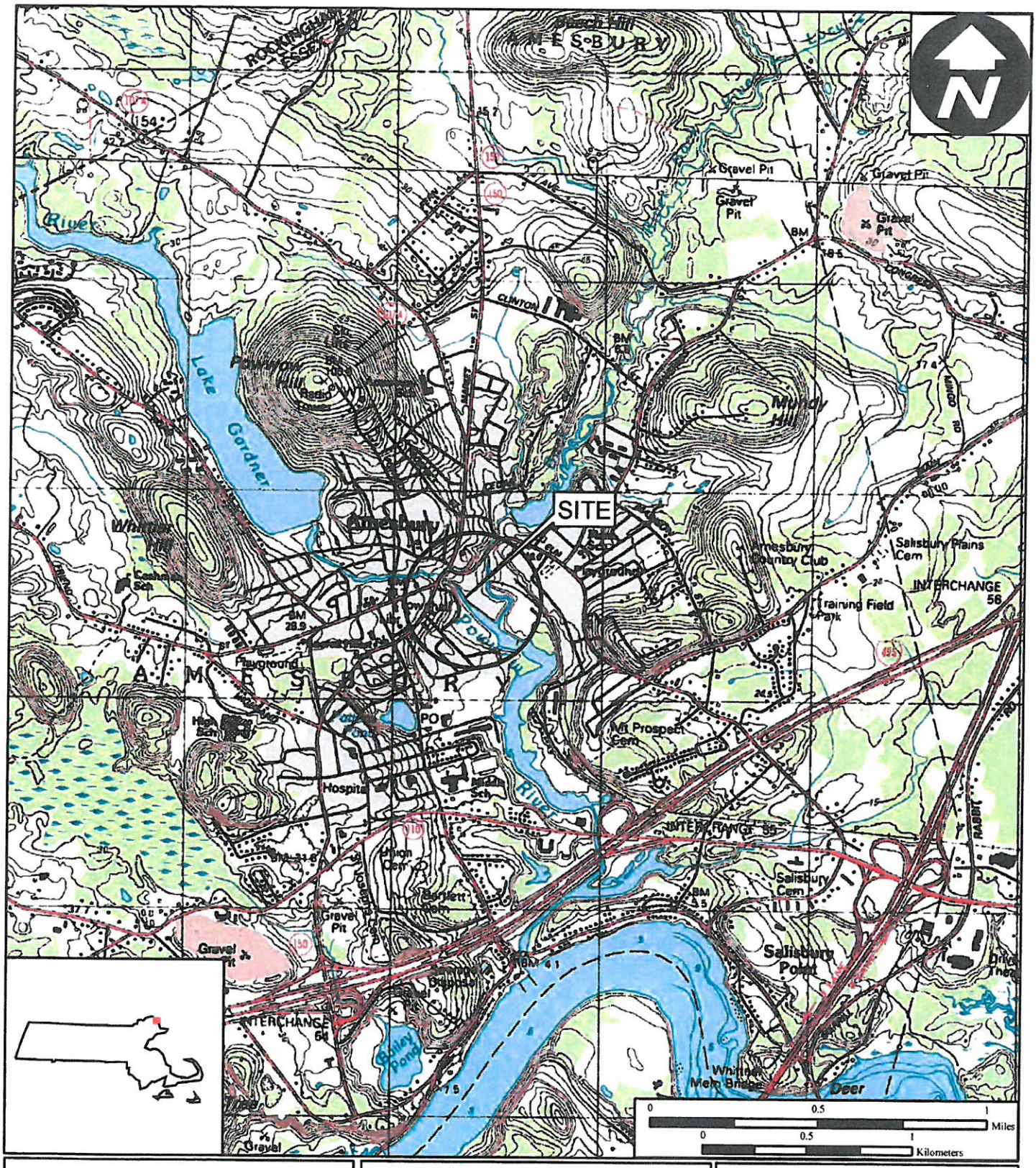


Figure 1

Site Location Map

31 Water St Site
31 Water Street
Amesbury, Massachusetts

EPA Region 1
Superfund Technical Assessment and Response Team (START) III
Contract No. EP-W-05-042

TDD Number:	14-04-0002
Created by:	B. Mace
Created on:	7 May 2014
Modified by:	
Modified on:	

Data Sources:
Topos: MicroPath/USGS
Quadrangle Names: Newburyport - East, MA and Hampton, NH
All other data: START

WESTON SOLUTIONS

Figure 2

Site Diagram

31 Water St Site
31 Water Street
Amesbury, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) III
Contract No. EP-W-05-042

TDD Number:	14-04-0002
Created by:	B. Mace
Created on:	7 May 2014
Modified by:	
Modified on:	

LEGEND

- Property Boundaries
- Site Boundary

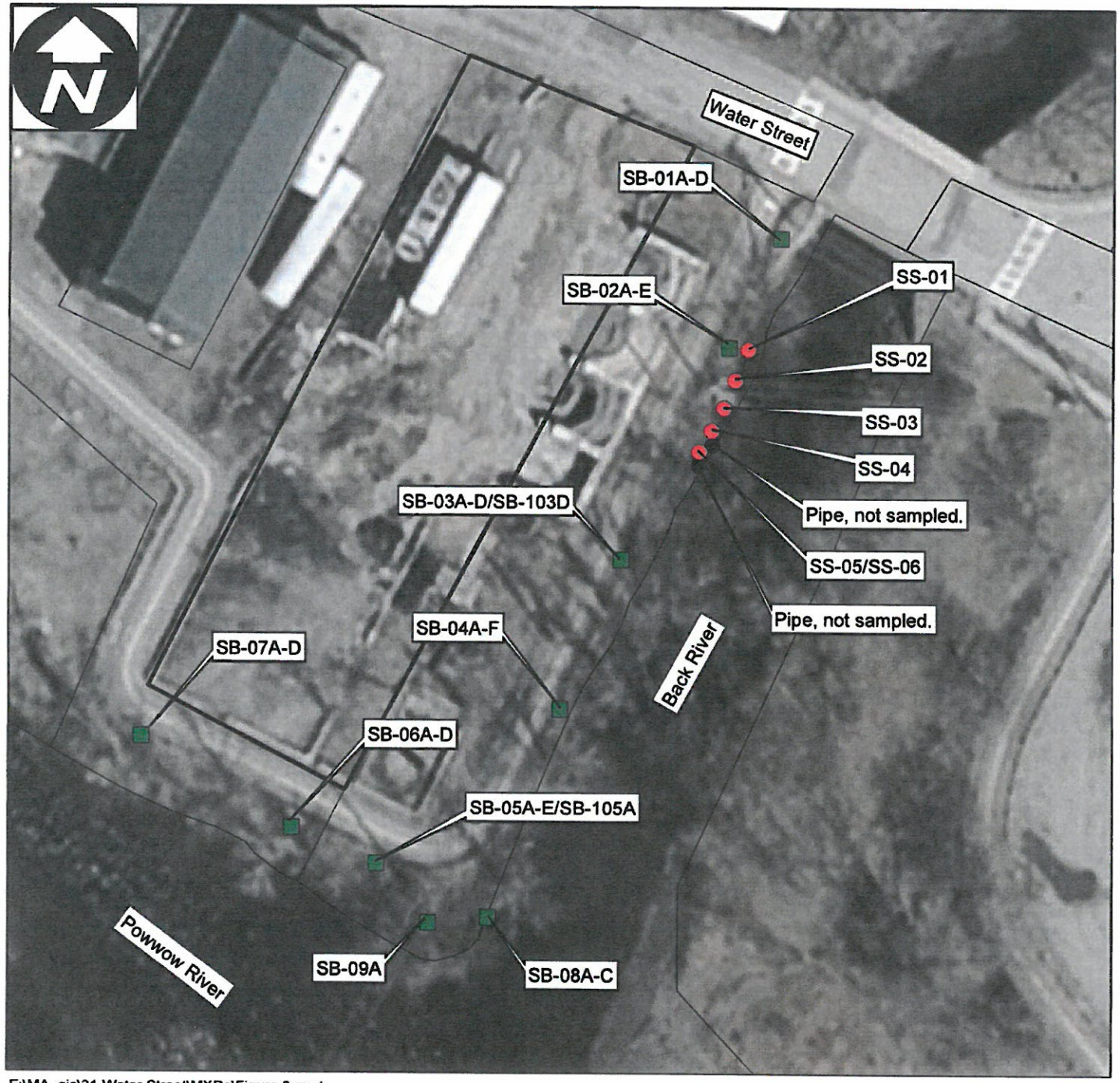
N

0 25 50 100
Feet

Data Sources:
Imagery: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP
Topos: MicroPath
All other data: START

WESTON SOLUTIONS

E:\MA_gis\31 Water Street\MXDs\Figure 2.mxd



E:\MA_gis\31 Water Street\MXDs\Figure 3.mxd

Figure 3

Sample Location Map

31 Water St Site
31 Water Street
Amesbury, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) III
Contract No. EP-W-05-042

TDD Number:	14-04-0002
Created by:	B. Mace
Created on:	7 May 2014
Modified by:	B. Mace
Modified on:	19 June 2014

LEGEND

- Property Boundaries
- Site Boundary
- Soil Boring Samples
- Surface Soil Samples (Pipe)
- Pipe

A = 0-1 feet
B = 1-2 feet
C = 2-4 feet
D = 4-8 feet
E = 8-10 feet
F = 10-12 feet

0 25 50
Feet

Data Sources:
Imagery: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP
Topos: MicroPath
All other data: START

WESTON SOLUTIONS

Appendix B

Boring Logs

WESTON SOLUTIONS, INC.		SOIL BORING LOG			
Project	31 Water St Site	**Boring ID**	SB-01	**Groundwater Levels**	
Location	SB-01	**Well ID**	NA	**Date**	**Depth**
Date Drilled	May 19, 2014	**Drilling Method**	Direct Push	NA	NA
Drilling Company	Weston Solutions, Inc.	**Sampling Method**	4-ft. Macrocore		
Operator	E. Ackerman	**Completion Depth**	8 feet		
Drill Rig	40 pound Drop Weight	**Surface Elevation**	NA		
Logged by	Chris Dupree - Weston, Superfund Technical Assessment and Response Team (START)				

Depth (ft bgs)	Macrocore Number	Recovery (inches)	Soil Description (Burmister System)	PID† Screen (ppm)
1_ 2_ 3_ 4_	1	19*	0 - 3" Dark brown, fine-to-coarse SAND, little leaves and roots 3 - 5" Dark brown, fine-to-coarse SAND, trace roots and gravel (glass, plastic) 5-10" Dark brown, fine-to-coarse SAND, trace fine-to-medium gravel and roots. 10-19" Orange-brown, fine-to-coarse SAND, trace roots and fine-to-medium gravel (rock fragments, ash, clinkers)	Top = 0 Bottom = 0 Length = 0
5_ 6_ 7_ 8_	2	12	0-12" Orange-brown, fine-to-coarse SAND, some medium-to-coarse gravel, trace rootlets **-End of Boring at 8 feet-**	Top = 0 Bottom = 0 Length = 0

Notes:

bgs = below ground surface
ft = feet
ppm = parts per million
NA = Not Applicable
PID = Photoionization Detector

† MultiRAE Plus Systems multi-gas photoionization detector calibrated to 100 ppm isobutylene, 50 ppm carbon monoxide, 25 ppm hydrogen sulfide, 20.9% oxygen, and 50% methane.

* Several cores were advanced (co-located) in the 0-4 foot interval to obtain sufficient volume for sampling. Recovery varied between 16-19 inches.

Soil sample SB-01A collected from 0-5" interval of the 0-4 foot core.
Soil sample SB-01B collected from 5-10" interval of the 0-4 foot core.
Soil sample SB-01C collected from 10-19" interval of the 0-4 foot core.
Soil sample SB-01D collected from 0-9" interval of the 4-8 foot core.

PROPORTIONS USED (BY DRY WEIGHT)
0 to 10% = Trace
>10 to 20% = Little
>20 to 35% = Some
>35 to 50% = And
> 50% = Major

WESTON SOLUTIONS, INC.		SOIL BORING LOG			
Project	31 Water St Site	**Boring ID**	SB-02	**Groundwater Levels**	
Location	SB-02	**Well ID**	NA	**Date**	**Depth**
Date Drilled	May 19, 2014	**Drilling Method**	Direct Push	NA	NA
Drilling Company	Weston Solutions, Inc.	**Sampling Method**	4-ft. Macrocore		
Operator	E. Ackerman / Erin Mulholland	**Completion Depth**	8 feet		
Drill Rig	Geoprobe - 5400	**Surface Elevation**	NA		
Logged by	Chris Dupree - Weston, Superfund Technical Assessment and Response Team (START)				

Depth (ft bgs)	Macrocore Number	Recovery (inches)	Soil Description (Burmister System)	PID† Screen (ppm)
1_ 2_ 3_ 4_	1	17*	0-3" Dark brown/black, SAND, little silt, trace roots and gravel 3-7" Gray and black, ASH and GRAVEL (brick, glass, clinkers, slag) 7-13" Red-brown, SAND and SILT, trace roots, ash, and gravel (rock fragments, clinkers, brick) 13-15" Black, ASH and GRAVEL (brick, clinkers, slag, glass) 15-17" Light brown/gray, SAND, little fine gravel, some red/orange streaking	Top = 0 Bottom = 0 Length = 0
5_ 6_ 7_ 8_	2	19.5	0-2" Dark brown/black, SAND, trace roots, gravel (rock fragments, slag, ash) 2-4" Light brown, SAND and SILT, trace fine-to-medium gravel and roots 4-7" Black, ASH, some clay, little fine-to-medium gravel 7-8" Gray CLAY, some ash, trace roots and fine gravel 8-11" Light brown and orange CLAY, trace sand, silt, roots, and gravel (glass, brick) 11-19.5" Light brown/gray, fine SAND, some clay with orange streaks **-End of Boring at 8 feet-**	Top = 0 Bottom = 0 Length = 0

Notes:

bgs = below ground surface
ft = feet
ppm = parts per million
NA = Not Applicable
PID = Photoionization Detector

† MultiRAE Plus Systems multi-gas photoionization detector calibrated to 100 ppm isobutylene, 50 ppm carbon monoxide, 25 ppm hydrogen sulfide, 20.9% oxygen, and 50% methane.

* Several cores were advanced (co-located) in the 0-4 foot interval to obtain sufficient volume for sampling. Recovery varied between 14-17 inches.

Soil sample SB-02A collected from 0-5" interval of the 0-4 foot core.
Soil sample SB-02B collected from 5-10" interval of the 0-4 foot core.
Soil sample SB-02C collected from 10-17" interval of the 0-4 foot core.
Soil sample SB-02D collected from 0-8" interval of the 4-8 foot core.
Soil sample SB-02E collected from 8-19.5" interval of the 4-8 foot core.

PROPORTIONS USED (BY DRY WEIGHT)
0 to 10% = Trace
>10 to 20% = Little
>20 to 35% = Some
>35 to 50% = And
> 50% = Major

WESTON SOLUTIONS, INC.		SOIL BORING LOG			
Project	31 Water St Site	**Boring ID**	SB-03	**Groundwater Levels**	
Location	SB-03	**Well ID**	NA	**Date**	**Depth**
Date Drilled	May 19, 2014	**Drilling Method**	Direct Push	NA	NA
Drilling Company	Weston Solutions, Inc.	**Sampling Method**	4-ft. Macrocore		
Operator	E. Ackerman / Erin Mulholland	**Completion Depth**	8 feet		
Drill Rig	Geoprobe - 5400	**Surface Elevation**	NA		
Logged by	Chris Dupree - Weston, Superfund Technical Assessment and Response Team (START)				

Depth (ft bgs)	Macrocore Number	Recovery (inches)	Soil Description (Burmister System)	PID† Screen (ppm)
1_ 2_ 3_ 4_	1	22*	0-3" Dark brown, SAND and GRAVEL, trace roots 3-7" Brown, SAND, little fine-to-medium gravel and roots 7-9" Light brown, SAND, some silt, trace roots and gravel 9-10" Red and brown, SAND and SILT, little gravel, trace roots 10-17" Black, ash and gravel (clinkers, glass, brick, rock fragments) trace roots 17-22" Light brown/gray, SAND, trace fine-to-medium gravel and roots	Top = 0 Bottom = 0 Length = 0
5_ 6_ 7_ 8_	2	38	0-4" (Slough) Dark brown/black, SAND and ASH, trace roots 4-5" Red and brown, SILT and fine SAND, trace roots 5-10" Brown, SAND, trace roots and gravel clinkers, brick, rock fragments 10-22" Light brown and gray, fine SAND and SILT, some red/black streaks, trace roots, moist 22-24" Dark brown/black, SAND, little gravel, wet 24-38" Gray, SAND and SILT, trace roots **-End of Boring at 8 feet-**	Top = 0 Bottom = 0 Length = 0

Notes:

bgs = below ground surface
ft = feet
ppm = parts per million
NA = Not Applicable
PID = Photoionization Detector

† MultiRAE Plus Systems multi-gas photoionization detector calibrated to 100 ppm isobutylene, 50 ppm carbon monoxide, 25 ppm hydrogen sulfide, 20.9% oxygen, and 50% methane.

* Several cores were advanced (co-located) in the 0-4 foot interval to obtain sufficient volume for sampling. Recovery varied between 16-22 inches.

Soil sample SB-03A collected from 0-7" interval of the 0-4 foot core.
Soil sample SB-03B collected from 7-13" interval of the 0-4 foot core.
Soil sample SB-03C collected from 13-17" interval of the 0-4 foot core.
Soil sample SB-03D collected from 4-35" interval of the 4-8 foot core.

PROPORTIONS USED (BY DRY WEIGHT)
0 to 10% = Trace
>10 to 20% = Little
>20 to 35% = Some
>35 to 50% = And
> 50% = Major

WESTON SOLUTIONS, INC.		SOIL BORING LOG			
Project	31 Water St Site	**Boring ID**	SB-04	**Groundwater Levels**	
Location	SB-04	**Well ID**	NA	**Date**	**Depth**
Date Drilled	May 19, 2014	**Drilling Method**	Direct Push	NA	NA
Drilling Company	Weston Solutions, Inc.	**Sampling Method**	4-ft. Macrocore		
Operator	E. Ackerman / Erin Mulholland	**Completion Depth**	12 feet		
Drill Rig	Geoprobe - 5400	**Surface Elevation**	NA		
Logged by	Chris Dupree - Weston, Superfund Technical Assessment and Response Team (START)				

Depth (ft bgs)	Macrocore Number	Recovery (inches)	Soil Description (Burmister System)	PID† Screen (ppm)
1_ 2_ 3_ 4_	1	27*	0-4" Dark brown/black, SAND, some gravel (rock fragments, plastic), trace roots 4-10" Dark brown/black, SILT and SAND, trace roots, gravel, and ash 10-27" Gray and orange, fine SAND and SILT, trace roots and gravel, moist	Top = 0 Bottom = 0 Length = 0
5_ 6_ 7_ 8_	2	24	0-6" Gray, fine SAND and SILT, trace roots, wet 6-22" Light brown/gray, fine SAND and SILT, trace clay and roots, moist 22-24" Gray, coarse SAND, trace gravel, wet	Top = 0 Bottom = 0 Length = 0
9_ 10_ 11_ 12_	3	44	0-10" Light brown/gray, fine SAND and SILT, trace fine-to-medium gravel and roots, wet 10-26" Gray, coarse SAND, trace medium gravel, wet 26-39" Light brown/gray, fine SAND and SILT, trace coarse sand, fine gravel, and roots 39-42" Gray, SAND, little silt, trace fine gravel 42-44" Gray, SAND and fine-to-medium gravel **-End of Boring at 12 feet-**	Top = 0 Bottom = 0 Length = 0

Notes:
bgs = below ground surface
ft = feet
ppm = parts per million
NA = Not Applicable
PID = Photoionization Detector

PROPORTIONS USED (BY DRY WEIGHT)
0 to 10% = Trace
>10 to 20% = Little
>20 to 35% = Some
>35 to 50% = And
> 50% = Major

† MultiRAE Plus Systems multi-gas photoionization detector calibrated to 100 ppm isobutylene, 50 ppm carbon monoxide, 25 ppm hydrogen sulfide, 20.9% oxygen, and 50% methane.

* Several cores were advanced (co-located) in the 0-4 foot interval to obtain sufficient volume for sampling. Recovery varied between 15-27 inches.

Soil sample SB-04A collected from 0-7" interval of the 0-4 foot core.
Soil sample SB-04B collected from 7-14" interval of the 0-4 foot core.
Soil sample SB-04C collected from 14-27" interval of the 0-4 foot core.
Soil sample SB-04D collected from 0-24" interval of the 4-8 foot core.
Soil sample SB-04E collected from 10-26" interval of the 8-12 foot core.
Soil sample SB-04F collected from 26-42" interval of the 8-12 foot core.

WESTON SOLUTIONS, INC.		SOIL BORING LOG			
Project	31 Water St Site	**Boring ID**	SB-05	**Groundwater Levels**	
Location	SB-05	**Well ID**	NA	**Date**	**Depth**
Date Drilled	May 20, 2014	**Drilling Method**	Direct Push	NA	NA
Drilling Company	Weston Solutions, Inc.	**Sampling Method**	4-ft. Macrocore		
Operator	E. Ackerman / Erin Mulholland	**Completion Depth**	12 feet		
Drill Rig	Geoprobe - 5400	**Surface Elevation**	NA		
Logged by	Chris Dupree - Weston, Superfund Technical Assessment and Response Team (START)				

Depth (ft bgs)	Macrocore Number	Recovery (inches)	Soil Description (Burmister System)	PID† Screen (ppm)
1_ 2_ 3_ 4_	1	34*	0-6" Dark brown/black, SAND, some silt and gravel, trace roots and leaves 6-9" Dark brown, SILT and fine SAND, little roots, trace gravel and sand 9-11" Gray/white/black, ASH, trace gravel (rock fragments, plastic, slag) 11-12" Dark brown, SILT and fine SAND, trace fine gravel and coarse sand 12-24" Light brown/gray, fine SAND and SILT, trace fine gravel 24-34" Light brown/gray, fine SAND and SILT, trace fine gravel, wet	Top = 0 Bottom = 0 Length = 0
5_ 6_ 7_ 8_	2	39	0-6" Light brown/gray, fine SAND and SILT, some clay, trace fine gravel, wet 6-37" Light brown/gray, fine SAND and SILT, trace fine gravel, moist/wet 37-39" Gray, coarse SAND, trace fine gravel, wet	Top = 0 Bottom = 0 Length = 0
9_ 10_ 11_ 12_	3	37	0-11" Light brown/gray, fine SAND and SILT, little clay, trace fine-to-medium gravel, trace medium-to-coarse sand 11-24" Gray, coarse SAND, trace gravel (rock fragments, asphalt) 24-30" Brown and gray, SAND, some silt, little roots, trace fine gravel, moist 30-37" Striated light brown to gray fine and coarse SAND, some silt, little roots, trace fine-to-medium gravel, moist **-End of Boring at 12 feet-**	Top = 0 Bottom = 0 Length = 0

Notes:

bgs = below ground surface
ft = feet
ppm = parts per million
NA = Not Applicable
PID = Photoionization Detector
† MultiRAE Plus Systems multi-gas photoionization detector calibrated to 100 ppm isobutylene, 50 ppm carbon monoxide, 25 ppm hydrogen sulfide, 20.9% oxygen, and 50% methane.
* Several cores were advanced (co-located) in the 0-4 foot interval to obtain sufficient volume for sampling. Recovery varied between 33-34 inches.
Soil sample SB-05A collected from 0-9" interval of the 0-4 foot core.
Soil sample SB-05B collected from 9-18" interval of the 0-4 foot core.
Soil sample SB-05C collected from 18-34" interval of the 0-4 foot core.
Soil sample SB-05D collected from 0-37" interval of the 4-8 foot core.
Soil sample SB-05E collected from 0-11" interval of the 8-12 foot core.

PROPORTIONS USED (BY DRY WEIGHT)
0 to 10% = Trace
>10 to 20% = Little
>20 to 35% = Some
>35 to 50% = And
> 50% = Major

WESTON SOLUTIONS, INC.		SOIL BORING LOG			
Project	31 Water St Site	**Boring ID**	SB-06	**Groundwater Levels**	
Location	SB-06	**Well ID**	NA	**Date**	**Depth**
Date Drilled	May 20, 2014	**Drilling Method**	Direct Push	NA	NA
Drilling Company	Weston Solutions, Inc.	**Sampling Method**	4-ft. Macrocore		
Operator	E. Ackerman / Erin Mulholland	**Completion Depth**	8 feet		
Drill Rig	Geoprobe - 5400	**Surface Elevation**	NA		
Logged by	Chris Dupree - Weston, Superfund Technical Assessment and Response Team (START)				

Depth (ft bgs)	Macrocore Number	Recovery (inches)	Soil Description (Burmister System)	PID† Screen (ppm)
1_ 2_ 3_ 4_	1	31	0-3" Dark brown, SAND and SILT and fine-to-medium GRAVEL, trace roots 3-4" Orange-brown, SAND and fine GRAVEL, trace roots 4-8" Dark brown/black, SILT and SAND, some gravel, trace roots 8-10" Gray, coarse SAND, little gravel (rock fragments, slag), trace roots 10-18" Dark brown/black, SAND and SILT, trace gravel and roots 18-27" Black and orange, SAND and SILT and ASH, some gravel (slag, brick, plastic), trace roots 27-31" Gray, fine SAND and SILT, trace fine gravel	Top = 0 Bottom = 0 Length = 0
5_ 6_ 7_ 8_	2	48	0-7" Gray with orange streaking, fine SAND and SILT, trace fine gravel, wet 7-43" Gray, fine SAND and SILT, trace fine-to-medium gravel and roots, wet 43-48" Gray, coarse SAND, trace gravel, wet **-End of Boring at 8 feet-**	Top = 0 Bottom = 0 Length = 0

Notes:

bgs = below ground surface
ft = feet
ppm = parts per million
NA = Not Applicable
PID = Photoionization Detector

† MultiRAE Plus Systems multi-gas photoionization detector calibrated to 100 ppm isobutylene, 50 ppm carbon monoxide, 25 ppm hydrogen sulfide, 20.9% oxygen, and 50% methane.

Soil sample SB-06A collected from 0-8" interval of the 0-4 foot core.
Soil sample SB-06B collected from 8-16" interval of the 0-4 foot core.
Soil sample SB-06C collected from 16-27" interval of the 0-4 foot core.
Soil sample SB-06D collected from 7-43" interval of the 4-8 foot core.

PROPORTIONS USED (BY DRY WEIGHT)
0 to 10% = Trace
>10 to 20% = Little
>20 to 35% = Some
>35 to 50% = And
> 50% = Major

WESTON SOLUTIONS, INC.		SOIL BORING LOG			
Project	31 Water St Site	**Boring ID**	SB-07	**Groundwater Levels**	
Location	SB-07	**Well ID**	NA	**Date**	**Depth**
Date Drilled	May 20, 2014	**Drilling Method**	Direct Push	NA	NA
Drilling Company	Weston Solutions, Inc.	**Sampling Method**	4-ft. Macrocore		
Operator	E. Ackerman / Erin Mulholland	**Completion Depth**	8 feet		
Drill Rig	Geoprobe - 5400	**Surface Elevation**	NA		
Logged by	Chris Dupree - Weston, Superfund Technical Assessment and Response Team (START)				

Depth (ft bgs)	Macrocore Number	Recovery (inches)	Soil Description (Burmister System)	PID† Screen (ppm)
1_ 2_ 3_ 4_	1	29	0-4" Dark brown, SAND and SILT, little gravel (rock fragments, slag, clinkers, asphalt) and roots 4-7" Light brown, fine SAND and SILT, little rock fragments, trace roots 7-12" Brown, SAND, little rock fragments and gravel, trace roots 12-13" Dark gray to black, SILT and SAND, trace gravel (rock fragments, slag) 13-14" Light brown, SILT and SAND, trace rock fragments 14-23" Black/gray, SAND and ASH, trace roots and gravel (rock fragments, slag) 23-29" Light brown/gray, SILT and fine SAND, trace roots	Top = 2.4 Bottom = 0 Length = 0
5_ 6_ 7_ 8_	2	24	0-4" Slough 4-16" Light brown/gray, SAND and SILT, little clay, trace gravel, moist 16-24" Gray, GRAVEL (rock and rock fragments), some sand and silt **-End of Boring at 8 feet-**	Top = 0 Bottom = 0 Length = 0

Notes:
bgs = below ground surface
ft = feet
ppm = parts per million
NA = Not Applicable
PID = Photoionization Detector
† MultiRAE Plus Systems multi-gas photoionization detector calibrated to 100 ppm isobutylene, 50 ppm carbon monoxide, 25 ppm hydrogen sulfide, 20.9% oxygen, and 50% methane.
Soil sample SB-07A collected from 0-14" interval of the 0-4 foot core.
Soil sample SB-07B collected from 14-23" interval of the 0-4 foot core.
Soil sample SB-07C collected from 23-29" interval of the 0-4 foot core.
Soil sample SB-07D collected from 4-24" interval of the 4-8 foot core.

PROPORTIONS USED (BY DRY WEIGHT)
0 to 10% = Trace
>10 to 20% = Little
>20 to 35% = Some
>35 to 50% = And
> 50% = Major

WESTON SOLUTIONS, INC.		SOIL BORING LOG			
Project	31 Water St Site	**Boring ID**	SB-08	**Groundwater Levels**	
Location	SB-08	**Well ID**	NA	**Date**	**Depth**
Date Drilled	May 20, 2014	**Drilling Method**	Hand Auger	NA	NA
Drilling Company	Weston Solutions, Inc.	**Sampling Method**	Hand Auger		
Operator	E. Ackerman	**Completion Depth**	3.5 feet		
Drill Rig	Hand Auger	**Surface Elevation**	NA		
Logged by	Chris Dupree - Weston, Superfund Technical Assessment and Response Team (START)				

Depth (ft bgs)	Macrocore Number	Recovery (inches)	Soil Description (Burmister System)	PID† Screen (ppm)
1_ 2_ 3_ 4_	1	42	0 - 12" Dark brown, SAND and SILT, some leaves and roots, trace fine-to-medium gravel 12-24" Light brown/gray fine SAND and SILT, some dark brown, sand and silt, little roots, trace gravel. 24-42" Light brown/gray (orange streaks), fine SAND and SILT, trace roots. **-End of Boring at 3.5 feet-**	0

Notes:
bgs = below ground surface
ft = feet
ppm = parts per million
NA = Not Applicable
PID = Photoionization Detector
† MultiRAE Plus Systems multi-gas photoionization detector calibrated to 100 ppm isobutylene, 50 ppm carbon monoxide, 25 ppm hydrogen sulfide, 20.9% oxygen, and 50% methane.
Soil sample SB-08A collected from 0-12" interval.
Soil sample SB-08B collected from 12-24" interval.
Soil sample SB-08C collected from 24-42" interval.

PROPORTIONS USED (BY DRY WEIGHT)
0 to 10% = Trace
>10 to 20% = Little
>20 to 35% = Some
>35 to 50% = And
> 50% = Major

WESTON SOLUTIONS, INC.		SOIL BORING LOG			
Project	31 Water St Site	**Boring ID**	SB-09	**Groundwater Levels**	
Location	SB-09	**Well ID**	NA	**Date**	**Depth**
Date Drilled	May 20, 2014	**Drilling Method**	Hand Auger	NA	NA
Drilling Company	Weston Solutions, Inc.	**Sampling Method**	Hand Auger		
Operator	E. Mulholland	**Completion Depth**	1 feet		
Drill Rig	Hand Auger	**Surface Elevation**	NA		
Logged by	Chris Dupree - Weston, Superfund Technical Assessment and Response Team (START)				

Depth (ft bgs)	Macrocore Number	Recovery (inches)	Soil Description (Burmister System)	PID† Screen (ppm)
1_ 2_	1	12	0 - 12" Dark brown, SAND and SILT, some leaves and roots, trace fine-to-medium gravel **-End of Boring at 1 feet-**	0

Notes:
bgs = below ground surface
ft = feet
ppm = parts per million
NA = Not Applicable
PID = Photoionization Detector
† MultiRAE Plus Systems multi-gas photoionization detector calibrated to 100 ppm isobutylene, 50 ppm carbon monoxide, 25 ppm hydrogen sulfide, 20.9% oxygen, and 50% methane.
Soil sample SB-09A collected from 0-12" interval.

PROPORTIONS USED (BY DRY WEIGHT)
0 to 10% = Trace
>10 to 20% = Little
>20 to 35% = Some
>35 to 50% = And
> 50% = Major

Appendix C

Tables and Spreadsheets

Table 1 – Surface Soil Sample Descriptions
Table 2 – Summary of Polychlorinated Biphenyl Results, Surface and Subsurface Soil Samples
Table 3 – Summary of Metals Results, Surface and Subsurface Soil Samples
Table 4 – Summary of Total Petroleum Hydrocarbon Results, Surface Soil Samples

TABLE 1

SURFACE SOIL SAMPLE DESCRIPTIONS
31 WATER ST SITE
AMESBURY, MASSACHUSETTS

Sample Location	Sample Number	Sample Depth	Collection Date	Sample Type	Sample Description	Comments
SS-01	R01-140519TB-0036	0 - 6 in.	20-May-14	Composite	Dark brown fine SAND and SILT, some organics.	3 in. pipe, approximately 18 in. above crib work.
SS-02	R01-140519TB-0037	0 - 6 in.	20-May-14	Composite	Dark brown fine-to-medium SAND, little organics, trace medium gravel.	12 in. pipe, at ground surface
SS-03	R01-140519TB-0038	0 - 6 in.	20-May-14	Composite	Dark brown SAND and SILT, trace organics, trace fine-to-medium gravel, trace debris (brick). Wet.	2 in. pipe approximately 6 in. above crib work.
SS-04	R01-140519TB-0039	0 - 6 in.	20-May-14	Composite	Dark Brown SAND and SILT, trace fine-to-coarse gravel, trace debris (brick). Wet.	8 in. pipe at crib height, some soil inside pipe.
NS	NS	NA	NA	NA	NA	5 in. pipe, approximately 24 in. above crib work. Pipe extend/discharges over water.
SS-05	R01-140519TB-0040	0 - 6 in.	20-May-14	Composite	Dark brown SAND and SILT, trace organics, trace fine-to-medium gravel. Wet.	3 in. broken pipe, approximately 16 in. above crib work.
SS-06	R01-140519TB-0041	0 - 6 in.	20-May-14	Composite	Dark brown SAND and SILT, trace organics, trace fine-to-medium gravel. Wet.	Field duplicate of SS-05.
NS	NS	NA	NA	NA	NA	6 in. pipe, approximately 6 in. above crib work. Pipe discharges over crib work.

NOTES:

in. = Inches.
SS = Surface Soil Sample.
NS = Not sampled.
NA = Not applicable.

TABLE 2

SUMMARY OF POLYCHLORINATED BIPHENYL RESULTS
SURFACE AND SUBSURFACE SOIL SAMPLES
31 WATER ST SITE
AMESBURY, MASSACHUSETTS

SAMPLE LOCATION SAMPLE NUMBER LABORATORY NUMBER SAMPLE DEPTH DATE SAMPLED	SB-01A R01-140519TB-0001 AB48390 0-1 ft. 5/19/2014	SB-01B R01-140519TB-0002 AB48391 1-2 ft. 5/19/2014	SB-01C R01-140519TB-0003 AB48392 2-4 ft. 5/19/2014	SB-01D R01-140519TB-0004 AB48393 4-8 ft. 5/19/2014	SB-02A R01-140519TB-0005 AB48394 0-1 ft. 5/19/2014	SB-02B R01-140519TB-0006 AB48395 1-2 ft. 5/19/2014	MassDEP Method 1 MCP S-1 Standard
COMPOUND							
Aroclor-1016	ND	ND	ND	ND	ND	ND	1
Aroclor-1221	ND	ND	ND	ND	ND	ND	1
Aroclor-1232	ND	ND	ND	ND	ND	ND	1
Aroclor-1242	ND	ND	ND	ND	ND	ND	1
Aroclor-1248	ND	ND	ND	ND	ND	ND	1
Aroclor-1254	0.22	0.15	ND	ND	**290**	**740**	1
Aroclor-1260	ND	ND	ND	ND	ND	ND	1
Aroclor-1262	ND	ND	ND	ND	ND	ND	1
Aroclor-1268	ND	ND	ND	ND	ND	ND	1

NOTES:

1) Samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-PESTSOIL3.SOP, PCBs Medium Level in Soil and Sediments.
2) All Results in milligrams per Kilogram (mg/Kg).
3) MassDEP Method I MCP S-1 Standards = Massachusetts Department of Environmental Protection Massachusetts Contingency Plan Soil Category 1 Standards. Units in milligrams per Kilogram (mg/Kg).
4) Bolded and shaded results exceed MassDEP MCP S-1 Standards.
5) ND = Not Detected.
6) ft. = Feet.
7) in. = Inches.

TABLE 2

SUMMARY OF POLYCHLORINATED BIPHENYL RESULTS
SURFACE AND SUBSURFACE SOIL SAMPLES
31 WATER ST SITE
AMESBURY, MASSACHUSETTS

SAMPLE LOCATION SAMPLE NUMBER LABORATORY NUMBER SAMPLE DEPTH DATE SAMPLED	SB-02C R01-140519TB-0007 AB48396 2-4 ft. 5/19/2014	SB-02D R01-140519TB-0008 AB48397 4-6 ft. 5/19/2014	SB-02E R01-140519TB-0009 AB48398 6-8 ft. 5/19/2014	SB-03A R01-140519TB-0010 AB48399 0-1 ft. 5/19/2014	SB-03B R01-140519TB-0011 AB48400 1-2 ft. 5/19/2014	SB-03C R01-140519TB-0012 AB48401 2-4 ft. 5/19/2014	MassDEP Method 1 MCP S-1 Standard
COMPOUND							
Aroclor-1016	ND	ND	ND	ND	ND	ND	1
Aroclor-1221	ND	ND	ND	ND	ND	ND	1
Aroclor-1232	ND	ND	ND	ND	ND	ND	1
Aroclor-1242	ND	ND	ND	ND	ND	ND	1
Aroclor-1248	ND	ND	ND	ND	ND	ND	1
Aroclor-1254	**120**	**210**	**1.4**	**8.1**	0.62	ND	1
Aroclor-1260	ND	ND	ND	ND	ND	ND	1
Aroclor-1262	ND	ND	ND	ND	ND	ND	1
Aroclor-1268	ND	ND	ND	ND	ND	ND	1

NOTES:

1) Samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-PESTSOIL3.SOP, PCBs Medium Level in Soil and Sediments.
2) All Results in milligrams per Kilogram (mg/Kg).
3) MassDEP Method I MCP S-1 Standards = Massachusetts Department of Environmental Protection Massachusetts Contingency Plan Soil Category 1 Standards. Units in milligrams per Kilogram (mg/Kg).
4) Bolded and shaded results exceed MassDEP MCP S-1 Standards.
5) ND = Not Detected.
6) ft. = Feet.
7) in. = Inches.

TABLE 2

SUMMARY OF POLYCHLORINATED BIPHENYL RESULTS
SURFACE AND SUBSURFACE SOIL SAMPLES
31 WATER ST SITE
AMESBURY, MASSACHUSETTS

SAMPLE LOCATION SAMPLE NUMBER LABORATORY NUMBER SAMPLE DEPTH DATE SAMPLED	SB-03D R01-140519TB-0013 AB48402 4-8 ft. 5/19/2014	SB-103D R01-140519TB-0014 AB48403 4-8 ft. 5/19/2014	SB-04A R01-140519TB-0015 AB48404 0-1 ft. 5/19/2014	SB-04B R01-140519TB-0016 AB48405 1-2 ft. 5/19/2014	SB-04C R01-140519TB-0017 AB48406 2-4 ft. 5/19/2014	SB-04D R01-140519TB-0018 AB48407 4-8 ft. 5/19/2014	MassDEP Method 1 MCP S-1 Standard
COMPOUND							
Aroclor-1016	ND	ND	ND	ND	ND	ND	1
Aroclor-1221	ND	ND	ND	ND	ND	ND	1
Aroclor-1232	ND	ND	ND	ND	ND	ND	1
Aroclor-1242	ND	ND	ND	ND	ND	ND	1
Aroclor-1248	ND	ND	ND	ND	ND	ND	1
Aroclor-1254	ND	ND	**14**	0.2	ND	ND	1
Aroclor-1260	ND	ND	ND	ND	ND	ND	1
Aroclor-1262	ND	ND	ND	ND	ND	ND	1
Aroclor-1268	ND	ND	ND	ND	ND	ND	1

NOTES:

1) Samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-PESTSOIL3.SOP, PCBs Medium Level in Soil and Sediments.
2) All Results in milligrams per Kilogram (mg/Kg).
3) MassDEP Method I MCP S-1 Standards = Massachusetts Department of Environmental Protection Massachusetts Contingency Plan Soil Category 1 Standards. Units in milligrams per Kilogram (mg/Kg).
4) Bolded and shaded results exceed MassDEP MCP S-1 Standards.
5) ND = Not Detected.
6) ft. = Feet.
7) in. = Inches.

TABLE 2

SUMMARY OF POLYCHLORINATED BIPHENYL RESULTS
SURFACE AND SUBSURFACE SOIL SAMPLES
31 WATER ST SITE
AMESBURY, MASSACHUSETTS

SAMPLE LOCATION SAMPLE NUMBER LABORATORY NUMBER SAMPLE DEPTH DATE SAMPLED	SB-04E R01-140519TB-0019 AB48408 9-10 ft. 5/19/2014	SB-04F R01-140519TB-0020 AB48409 10-12 ft. 5/19/2014	SB-05A R01-140519TB-0022 AB48410 0-1 ft. 5/20/2014	SB-105A R01-140519TB-0023 AB48411 0-1 ft. 5/20/2014	SB-05B R01-140519TB-0024 AB48412 1-2 ft. 5/20/2014	SB-05C R01-140519TB-0025 AB48413 2-4 ft. 5/20/2014	MassDEP Method 1 MCP S-1 Standard
COMPOUND							
Aroclor-1016	ND	ND	ND	ND	ND	ND	1
Aroclor-1221	ND	ND	ND	ND	ND	ND	1
Aroclor-1232	ND	ND	ND	ND	ND	ND	1
Aroclor-1242	ND	ND	ND	ND	ND	ND	1
Aroclor-1248	ND	ND	ND	ND	ND	ND	1
Aroclor-1254	ND	ND	**10**	**8.1**	0.41	ND	1
Aroclor-1260	ND	ND	ND	ND	ND	ND	1
Aroclor-1262	ND	ND	ND	ND	ND	ND	1
Aroclor-1268	ND	ND	ND	ND	ND	ND	1

NOTES:

1) Samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-PESTSOIL3.SOP, PCBs Medium Level in Soil and Sediments.
2) All Results in milligrams per Kilogram (mg/Kg).
3) MassDEP Method I MCP S-1 Standards = Massachusetts Department of Environmental Protection Massachusetts Contingency Plan Soil Category 1 Standards. Units in milligrams per Kilogram (mg/Kg).
4) Bolded and shaded results exceed MassDEP MCP S-1 Standards.
5) ND = Not Detected.
6) ft. = Feet.
7) in. = Inches.

TABLE 2

SUMMARY OF POLYCHLORINATED BIPHENYL RESULTS
SURFACE AND SUBSURFACE SOIL SAMPLES
31 WATER ST SITE
AMESBURY, MASSACHUSETTS

SAMPLE LOCATION SAMPLE NUMBER LABORATORY NUMBER SAMPLE DEPTH DATE SAMPLED	SB-05D R01-140519TB-0026 AB48414 4-8 ft. 5/20/2014	SB-05E R01-140519TB-0027 AB48415 8-9 ft. 5/20/2014	SB-06A R01-140519TB-0028 AB48416 0-1 ft. 5/20/2014	SB-06B R01-140519TB-0029 AB48417 1-2 ft. 5/20/2014	SB-06C R01-140519TB-0030 AB48418 2-4 ft. 5/20/2014	SB-06D R01-140519TB-0031 AB48419 4-8 ft. 5/20/2014	MassDEP Method 1 MCP S-1 Standard
COMPOUND							
Aroclor-1016	ND	ND	ND	ND	ND	ND	1
Aroclor-1221	ND	ND	ND	ND	ND	ND	1
Aroclor-1232	ND	ND	ND	ND	ND	ND	1
Aroclor-1242	ND	ND	ND	ND	ND	ND	1
Aroclor-1248	ND	ND	ND	ND	ND	ND	1
Aroclor-1254	ND	0.21	**1.3**	ND	ND	ND	1
Aroclor-1260	ND	ND	ND	ND	ND	ND	1
Aroclor-1262	ND	ND	ND	ND	ND	ND	1
Aroclor-1268	ND	ND	ND	ND	ND	ND	1

NOTES:

1) Samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-PESTSOIL3.SOP, PCBs Medium Level in Soil and Sediments.
2) All Results in milligrams per Kilogram (mg/Kg).
3) MassDEP Method I MCP S-1 Standards = Massachusetts Department of Environmental Protection Massachusetts Contingency Plan Soil Category 1 Standards. Units in milligrams per Kilogram (mg/Kg).
4) Bolded and shaded results exceed MassDEP MCP S-1 Standards.
5) ND = Not Detected.
6) ft. = Feet.
7) in. = Inches.

TABLE 2

SUMMARY OF POLYCHLORINATED BIPHENYL RESULTS
SURFACE AND SUBSURFACE SOIL SAMPLES
31 WATER ST SITE
AMESBURY, MASSACHUSETTS

SAMPLE LOCATION SAMPLE NUMBER LABORATORY NUMBER SAMPLE DEPTH DATE SAMPLED	SB-07A R01-140519TB-0032 AB48420 0-1 ft. 5/20/2014	SB-07B R01-140519TB-0033 AB48421 1-2 ft. 5/20/2014	SB-07C R01-140519TB-0034 AB48422 2-4 ft. 5/20/2014	SB-07D R01-140519TB-0035 AB48423 4-8 ft. 5/20/2014	SS-01 R01-140519TB-0036 AB48424 0-6 in. 5/20/2014	SS-02 R01-140519TB-0037 AB48425 0-6 in. 5/20/2014	MassDEP Method 1 MCP S-1 Standard
COMPOUND							
Aroclor-1016	ND	ND	ND	ND	ND	ND	1
Aroclor-1221	ND	ND	ND	ND	ND	ND	1
Aroclor-1232	ND	ND	ND	ND	ND	ND	1
Aroclor-1242	ND	ND	ND	ND	ND	ND	1
Aroclor-1248	ND	ND	ND	ND	ND	ND	1
Aroclor-1254	**5.2**	ND	ND	ND	0.58	**77**	1
Aroclor-1260	ND	ND	ND	ND	ND	ND	1
Aroclor-1262	ND	ND	ND	ND	ND	ND	1
Aroclor-1268	ND	ND	ND	ND	ND	ND	1

NOTES:

1) Samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-PESTSOIL3.SOP, PCBs Medium Level in Soil and Sediments.
2) All Results in milligrams per Kilogram (mg/Kg).
3) MassDEP Method I MCP S-1 Standards = Massachusetts Department of Environmental Protection Massachusetts Contingency Plan Soil Category 1 Standards. Units in milligrams per Kilogram (mg/Kg).
4) Bolded and shaded results exceed MassDEP MCP S-1 Standards.
5) ND = Not Detected.
6) ft. = Feet.
7) in. = Inches.

TABLE 2

SUMMARY OF POLYCHLORINATED BIPHENYL RESULTS
SURFACE AND SUBSURFACE SOIL SAMPLES
31 WATER ST SITE
AMESBURY, MASSACHUSETTS

SAMPLE LOCATION SAMPLE NUMBER LABORATORY NUMBER SAMPLE DEPTH DATE SAMPLED	SS-03 R01-140519TB-0038 AB48426 0-6 in. 5/20/2014	SS-04 R01-140519TB-0039 AB48427 0-6 in. 5/20/2014	SS-05 R01-140519TB-0040 AB48428 0-6 in. 5/20/2014	SS-06 R01-140519TB-0041 AB48429 0-6 in. 5/20/2014	SB-08A R01-140519TB-0042 AB48430 0-1 ft. 5/20/2014	SB-08B R01-140519TB-0043 AB48431 1-2 ft. 5/20/2014	MassDEP Method 1 MCP S-1 Standard
COMPOUND							
Aroclor-1016	ND	ND	ND	ND	ND	ND	1
Aroclor-1221	ND	ND	ND	ND	ND	ND	1
Aroclor-1232	ND	ND	ND	ND	ND	ND	1
Aroclor-1242	ND	ND	ND	ND	ND	ND	1
Aroclor-1248	ND	ND	ND	ND	ND	ND	1
Aroclor-1254	**330**	**13**	**2.8**	**3.3**	**23**	**2.3**	1
Aroclor-1260	ND	ND	ND	ND	ND	ND	1
Aroclor-1262	ND	ND	ND	ND	ND	ND	1
Aroclor-1268	ND	ND	ND	ND	ND	ND	1

NOTES:

1) Samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-PESTSOIL3.SOP, PCBs Medium Level in Soil and Sediments.
2) All Results in milligrams per Kilogram (mg/Kg).
3) MassDEP Method I MCP S-1 Standards = Massachusetts Department of Environmental Protection Massachusetts Contingency Plan Soil Category 1 Standards. Units in milligrams per Kilogram (mg/Kg).
4) Bolded and shaded results exceed MassDEP MCP S-1 Standards.
5) ND = Not Detected.
6) ft. = Feet.
7) in. = Inches.

TABLE 2

SUMMARY OF POLYCHLORINATED BIPHENYL RESULTS
SURFACE AND SUBSURFACE SOIL SAMPLES
31 WATER ST SITE
AMESBURY, MASSACHUSETTS

SAMPLE LOCATION SAMPLE NUMBER LABORATORY NUMBER SAMPLE DEPTH DATE SAMPLED	SB-08C R01-140519TB-0044 AB48432 2-3.5 ft. 5/20/2014	SB-09A R01-140519TB-0045 AB48433 0-1 ft. 5/20/2014					MassDEP Method 1 MCP S-1 Standard
COMPOUND							
Aroclor-1016	ND	ND					1
Aroclor-1221	ND	ND					1
Aroclor-1232	ND	ND					1
Aroclor-1242	ND	ND					1
Aroclor-1248	ND	ND					1
Aroclor-1254	0.39	**68**					1
Aroclor-1260	ND	ND					1
Aroclor-1262	ND	ND					1
Aroclor-1268	ND	ND					1

NOTES:

1) Samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-PESTSOIL3.SOP, PCBs Medium Level in Soil and Sediments.
2) All Results in milligrams per Kilogram (mg/Kg).
3) MassDEP Method I MCP S-1 Standards = Massachusetts Department of Environmental Protection Massachusetts Contingency Plan Soil Category 1 Standards. Units in milligrams per Kilogram (mg/Kg).
4) Bolded and shaded results exceed MassDEP MCP S-1 Standards.
5) ND = Not Detected.
6) ft. = Feet.
7) in. = Inches.

TABLE 3

SUMMARY OF METALS RESULTS
SURFACE AND SUBSURFACE SOIL SAMPLES
31 WATER ST SITE
AMESBURY, MASSACHUSETTS

SAMPLE LOCATION SAMPLE NUMBER LABORATORY NUMBER SAMPLE DEPTH DATE SAMPLED	SB-01A R-01-140519TB-0001 AB48390 0-1 ft. 5/19/2014	SB-01B R-01-140519TB-0002 AB48391 1-2 ft. 5/19/2014	SB-01C R-01-140519TB-0003 AB48392 2-4 ft. 5/19/2014	SB-01D R-01-140519TB-0004 AB48393 4-8 ft. 5/19/2014	SB-02A R-01-140519TB-0005 AB48394 0-1 ft. 5/19/2014	SB-02B R-01-140519TB-0006 AB48395 1-2 ft. 5/19/2014	MassDEP Method 1 MCP S-1 Standards
PARAMETER							
Silver	ND	ND	ND	ND	ND	ND	100
Aluminum	10,000	12,000	15,000	14,000	8,100	12,000	NL
Arsenic	15	**20**	**28**	**24**	**22**	**62**	20
Barium	37	31	38	37	330	590	1,000
Beryllium	ND	ND	ND	ND	ND	2.2	90
Calcium	2,100	1,100	950	1,100	24,000	47,000	NL
Cadmium	ND	ND	ND	ND	2.6	1.3	70
Cobalt	5.4	6.6	7.8	7.6	4.8	9.8	NL
Chromium	28	28	37	37	81	84	100
Copper	26	14	15	15	110	280	NL
Iron	15,000	15,000	18,000	19,000	14,000	17,000	NL
Magnesium	3,700	4,400	5,300	5,200	3,800	6,100	NL
Manganese	300 J	280	290	280	560	520	NL
Nickel	18	22	27	26	18	26	600
Lead	59	15	13	14	**1,600**	**400**	200
Antimony	ND J	ND	ND	ND	ND	ND	20
Selenium	ND	ND	ND	ND	4.7	6.9	400
Thallium	ND	ND	ND	ND	ND	ND	8
Vanadium	23	23	28	26	28	43	400
Zinc	91	40	39	40	670	170	1,000

NOTES:

1) Metals samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-OPTIMAS0, Metals in Soil Medium Level by ICP.
2) All results in milligrams per Kilogram (mg/Kg).
3) MassDEP Method I MCP S-1 Standards = Massachusetts Department of Environmental Protection Massachusetts Contingency Plan Soil Category 1 Standards. Units in milligrams per Kilogram (mg/Kg).
4 Bolded and shaded results exceed Mass DEP MCP S-1 Standards.
5) ND = Not Detected.
6) NL = Not Listed.
7) J = Estimated Value.

TABLE 3

SUMMARY OF METALS RESULTS
SURFACE AND SUBSURFACE SOIL SAMPLES
31 WATER ST SITE
AMESBURY, MASSACHUSETTS

SAMPLE LOCATION SAMPLE NUMBER LABORATORY NUMBER SAMPLE DEPTH DATE SAMPLED	SB-02C R-01-140519TB-0007 AB48396 2-4 ft. 5/19/2014	SB-02D R-01-140519TB-0008 AB48397 4-6 ft. 5/19/2014	SB-02E R-01-140519TB-0009 AB48398 6-8 ft. 5/19/2014	SB-03A R-01-140519TB-0010 AB48399 0-1 ft. 5/19/2014	SB-03B R-01-140519TB-0011 AB48400 1-2 ft. 5/19/2014	SB-03C R-01-140519TB-0012 AB48401 2-4 ft. 5/19/2014	MassDEP Method 1 MCP S-1 Standards
PARAMETER							
Silver	ND	ND	ND	ND	ND	ND	100
Aluminum	22,000	12,000	14,000	13,000	8,800	5,700	NL
Arsenic	**150**	**53**	14	**95**	**110**	**35**	20
Barium	**1,600**	400	76	430	410	220	1,000
Beryllium	5.8	1.5	ND	2.3	ND	ND	90
Calcium	68,000	19,000	2,200	5,500	4,400	3,200	NL
Cadmium	2.6	1.3	ND	ND	ND	ND	70
Cobalt	22	10	6.1	16	13	9.5	NL
Chromium	40	47	56	47	39	44	100
Copper	790	250	50	240	240	230	NL
Iron	28,000	22,000	18,000	25,000	110,000	97,000	NL
Magnesium	11,000	4,300	4,500	4,300	2,600	1,700	NL
Manganese	1,200	530	210	330	510	260	NL
Nickel	52	29	23	51	37	19	600
Lead	**490**	**620**	130	170	**470**	**1,100**	200
Antimony	ND	4.4	ND	ND	ND	ND	20
Selenium	10	ND	ND	ND	ND	ND	400
Thallium	ND	ND	ND	ND	ND	ND	8
Vanadium	82	36	30	59	41	21	400
Zinc	420	240	110	250	100	73	1,000

NOTES:

1) Metals samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-OPTIMAS0, Metals in Soil Medium Level by ICP.
2) All results in milligrams per Kilogram (mg/Kg).
3) MassDEP Method I MCP S-1 Standards = Massachusetts Department of Environmental Protection Massachusetts Contingency Plan Soil Category 1 Standards. Units in milligrams per Kilogram (mg/Kg).
4 Bolded and shaded results exceed Mass DEP MCP S-1 Standards.
5) ND = Not Detected.
6) NL = Not Listed.
7) J = Estimated Value.

TABLE 3

SUMMARY OF METALS RESULTS
SURFACE AND SUBSURFACE SOIL SAMPLES
31 WATER ST SITE
AMESBURY, MASSACHUSETTS

SAMPLE LOCATION SAMPLE NUMBER LABORATORY NUMBER SAMPLE DEPTH DATE SAMPLED	SB-03D R-01-140519TB-0013 AB48402 4-8 ft. 5/19/2014	SB-103D R-01-140519TB-0014 AB48403 4-8 ft. 5/19/2014	SB-04A R-01-140519TB-0015 AB48404 0-1 ft. 5/19/2014	SB-04B R-01-140519TB-0016 AB48405 1-2 ft. 5/19/2014	SB-04C R-01-140519TB-0017 AB48406 2-4 ft. 5/19/2014	SB-04D R-01-140519TB-0018 AB48407 4-8 ft. 5/19/2014	MassDEP Method 1 MCP S-1 Standards
PARAMETER							
Silver	ND	ND	ND	ND	ND	ND	100
Aluminum	9,500	9,300	6,800	7,200	8,500	10,000	NL
Arsenic	11	11	**28**	**22**	12	11	20
Barium	43	43	120	87	40	47	1,000
Beryllium	ND	ND	ND	ND	ND	ND	90
Calcium	1,700	1,700	2,900	1,400	1,200	1,400	NL
Cadmium	ND	ND	ND	ND	ND	ND	70
Cobalt	6	5.9	6.7	2.9	2.6	5.2	NL
Chromium	36	36	46	45	51	45	100
Copper	63	63	96	60	39	62	NL
Iron	15,000	14,000	22,000	21,000	14,000	12,000	NL
Magnesium	3,300	3,300	3,500	2,600	3,100	3,400	NL
Manganese	130	130	170	100	110	120	NL
Nickel	16	16	26	10	8.9	13	600
Lead	140	130	**450**	160	73	68	200
Antimony	ND	ND	ND	ND J	ND	ND	20
Selenium	ND	ND	ND	ND	ND	ND	400
Thallium	ND	ND	ND	ND	ND	ND	8
Vanadium	21	21	38	22	21	22	400
Zinc	81	81	130	49	41	110	1,000

NOTES:

1) Metals samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-OPTIMAS0, Metals in Soil Medium Level by ICP.
2) All results in milligrams per Kilogram (mg/Kg).
3) MassDEP Method I MCP S-1 Standards = Massachusetts Department of Environmental Protection Massachusetts Contingency Plan Soil Category 1 Standards. Units in milligrams per Kilogram (mg/Kg).
4 Bolded and shaded results exceed Mass DEP MCP S-1 Standards.
5) ND = Not Detected.
6) NL = Not Listed.
7) J = Estimated Value.

TABLE 3

SUMMARY OF METALS RESULTS
SURFACE AND SUBSURFACE SOIL SAMPLES
31 WATER ST SITE
AMESBURY, MASSACHUSETTS

SAMPLE LOCATION SAMPLE NUMBER LABORATORY NUMBER SAMPLE DEPTH DATE SAMPLED	SB-04E R-01-140519TB-0019 AB48408 9-10 ft. 5/19/2014	SB-04F R-01-140519TB-0020 AB48409 10-12 ft. 5/19/2014	SB-05A R-01-140519TB-0022 AB48410 0-1 ft. 5/20/2014	SB-105A R-01-140519TB-0023 AB48411 0-1 ft. 5/20/2014	SB-05B R-01-140519TB-0024 AB48412 1-2 ft. 5/20/2014	SB-05C R-01-140519TB-0025 AB48413 2-4 ft. 5/20/2014	MassDEP Method 1 MCP S-1 Standards
PARAMETER							
Silver	ND	ND	ND	ND	ND	ND	100
Aluminum	6,500	5,900	9,400	9,400	11,000	11,000	NL
Arsenic	5.9	7.1	15	15	11	11	20
Barium	25	23	**2,300**	**2,000**	**1,200**	47	1,000
Beryllium	ND	ND	ND	ND	ND	ND	90
Calcium	990	1,000	2,900	2,700	2,100	1,900	NL
Cadmium	ND	ND	45	33	38	ND	70
Cobalt	2.7	3.7	8.4	8.2	4.8	3.7	NL
Chromium	26	14	**650**	**550**	**230**	37	100
Copper	20	5.2	2,200	1,600	1,700	49	NL
Iron	9,700	7,100	30,000	30,000	20,000	12,000	NL
Magnesium	3,700	2,200	2,800	3,100	3,000	3,600	NL
Manganese	85	74	280	270	170	140	NL
Nickel	14	9	56	49	66	15	600
Lead	**270**	34	**1,900**	**1,500**	**810**	36	200
Antimony	ND	ND	ND	ND	ND	ND	20
Selenium	ND	ND	ND	ND	ND	ND	400
Thallium	ND	ND	ND	ND	ND	ND	8
Vanadium	14	11	35	40	22	24	400
Zinc	39	55	**3,100**	**2,500**	**3,300**	420	1,000

NOTES:

1) Metals samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-OPTIMAS0, Metals in Soil Medium Level by ICP.
2) All results in milligrams per Kilogram (mg/Kg).
3) MassDEP Method I MCP S-1 Standards = Massachusetts Department of Environmental Protection Massachusetts Contingency Plan Soil Category 1 Standards. Units in milligrams per Kilogram (mg/Kg).
4 Bolded and shaded results exceed Mass DEP MCP S-1 Standards.
5) ND = Not Detected.
6) NL = Not Listed.
7) J = Estimated Value.

TABLE 3

SUMMARY OF METALS RESULTS
SURFACE AND SUBSURFACE SOIL SAMPLES
31 WATER ST SITE
AMESBURY, MASSACHUSETTS

SAMPLE LOCATION SAMPLE NUMBER LABORATORY NUMBER SAMPLE DEPTH DATE SAMPLED	SB-05D R-01-140519TB-0026 AB48414 4-8 ft. 5/20/2014	SB-05E R-01-140519TB-0027 AB48415 8-9 ft. 5/20/2014	SB-06A R-01-140519TB-0028 AB48416 0-1 ft. 5/20/2014	SB-06B R-01-140519TB-0029 AB48417 1-2 ft. 5/20/2014	SB-06C R-01-140519TB-0030 AB48418 2-4 ft. 5/20/2014	SB-06D R-01-140519TB-0031 AB48419 4-8 ft. 5/20/2014	MassDEP Method 1 MCP S-1 Standards
PARAMETER							
Silver	ND	ND	ND	ND	ND	ND	100
Aluminum	10,000	9,700	9,000	6,400	6,600	9,700	NL
Arsenic	13	13	18	9.7	**42**	9.8	20
Barium	38	58	76	120	250	49	1,000
Beryllium	ND	ND	ND	ND	ND	ND	90
Calcium	1,600	1,700	2,200	1,800	5,100	1,800	NL
Cadmium	1.1	1.8	ND	3.1	6.1	ND	70
Cobalt	10	8.4	6.9	3.7	13	5.5	NL
Chromium	29	43	42	21	29	40	100
Copper	25	100	470	1,300	240	25	NL
Iron	11,000	12,000	17,000	12,000	82,000	13,000	NL
Magnesium	3,200	3,100	4,400	1,900	1,200	3,400	NL
Manganese	120	120	280	75	490	150	NL
Nickel	42	34	29	26	42	12	600
Lead	29	140	**250**	**270**	**540**	35	200
Antimony	ND	ND	ND	ND	ND	ND	20
Selenium	ND	ND	ND	ND	ND	ND	400
Thallium	ND	ND	ND	ND	ND	ND	8
Vanadium	20	22	32	19	28	22	400
Zinc	400	440	230	440	920	53	1,000

NOTES:

1) Metals samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-OPTIMAS0, Metals in Soil Medium Level by ICP.
2) All results in milligrams per Kilogram (mg/Kg).
3) MassDEP Method I MCP S-1 Standards = Massachusetts Department of Environmental Protection Massachusetts Contingency Plan Soil Category 1 Standards. Units in milligrams per Kilogram (mg/Kg).
4 Bolded and shaded results exceed Mass DEP MCP S-1 Standards.
5) ND = Not Detected.
6) NL = Not Listed.
7) J = Estimated Value.

TABLE 3

SUMMARY OF METALS RESULTS
SURFACE AND SUBSURFACE SOIL SAMPLES
31 WATER ST SITE
AMESBURY, MASSACHUSETTS

SAMPLE LOCATION SAMPLE NUMBER LABORATORY NUMBER SAMPLE DEPTH DATE SAMPLED	SB-07A R-01-140519TB-0032 AB48420 0-1 ft. 5/20/2014	SB-07B R-01-140519TB-0033 AB48421 1-2 ft. 5/20/2014	SB-07C R-01-140519TB-0034 AB48422 2-4 ft. 5/20/2014	SB-07D R-01-140519TB-0035 AB48423 4-8 ft. 5/20/2014	SS-01 R-01-140519TB-0036 AB48424 0-6 in. 5/20/2014	SS-02 R-01-140519TB-0037 AB48425 0-6 in. 5/20/2014	MassDEP Method 1 MCP S-1 Standards
PARAMETER							
Silver	ND	ND	ND	ND	ND	ND	100
Aluminum	9,800	6,800	9,800	11,000	11,000	9,900	NL
Arsenic	**31**	19	6.5	13	19	15	20
Barium	320 J	130	53	38	99	120	1,000
Beryllium	ND	ND	ND	ND	ND	ND	90
Calcium	2,500	1,900	1,600	1,600	2,800	4,000	NL
Cadmium	1.4	1.6	ND	ND	ND	2.5	70
Cobalt	7.4	6.7	3.2	3.5	6.3	6.3	NL
Chromium	**120**	22	34	37	38	96	100
Copper	500	560	17	21	100	180	NL
Iron	21,000	31,000	11,000	12,000	22,000	18,000	NL
Magnesium	4,100	1,700	3,200	3,500	3,300	3,600	NL
Manganese	390	150	120	130	440	330	NL
Nickel	50	34	18	14	21	23	600
Lead	**540**	**280**	30	39	**460**	**770**	200
Antimony	ND J	ND	ND	ND	ND	2	20
Selenium	ND	ND	ND	ND	ND	ND	400
Thallium	ND	ND	ND	ND	ND	ND	8
Vanadium	140	23	20	22	27	30	400
Zinc	520	390	150	69	130	470	1,000

NOTES:

1) Metals samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-OPTIMAS0, Metals in Soil Medium Level by ICP.
2) All results in milligrams per Kilogram (mg/Kg).
3) MassDEP Method I MCP S-1 Standards = Massachusetts Department of Environmental Protection Massachusetts Contingency Plan Soil Category 1 Standards. Units in milligrams per Kilogram (mg/Kg).
4 Bolded and shaded results exceed Mass DEP MCP S-1 Standards.
5) ND = Not Detected.
6) NL = Not Listed.
7) J = Estimated Value.

TABLE 3

SUMMARY OF METALS RESULTS
SURFACE AND SUBSURFACE SOIL SAMPLES
31 WATER ST SITE
AMESBURY, MASSACHUSETTS

SAMPLE LOCATION SAMPLE NUMBER LABORATORY NUMBER SAMPLE DEPTH DATE SAMPLED	SS-03 R-01-140519TB-0038 AB48426 0-6 in. 5/20/2014	SS-04 R-01-140519TB-0039 AB48427 0-6 in. 5/20/2014	SS-05 R-01-140519TB-0040 AB48428 0-6 in. 5/20/2014	SS-06 R-01-140519TB-0041 AB48429 0-6 in. 5/20/2014	SB-08A R-01-140519TB-0042 AB48430 0-1 ft. 5/20/2014	SB-08B R-01-140519TB-0043 AB48431 1-2 ft. 5/20/2014	MassDEP Method 1 MCP S-1 Standards
PARAMETER							
Silver	ND	ND	ND	ND	ND	ND	100
Aluminum	10,000	12,000	11,000	10,000	7,900	10,000	NL
Arsenic	**28**	**28**	**52**	**39**	18	13	20
Barium	120	95	130	110	70	49	1,000
Beryllium	ND	0.91	1.1	0.93	ND	ND	90
Calcium	3,900	3,100	3,800	3,400	1,500	1,700	NL
Cadmium	1.3	1.1	ND	ND	ND	ND	70
Cobalt	7.7	8.7	9.6	8.3	4.4	3.6	NL
Chromium	64	49	49	44	79	41	100
Copper	170	130	150	120	190	100	NL
Iron	35,000	21,000	39,000	37,000	17,000	14,000	NL
Magnesium	3,400	3,800	3,200	3,000	3,200	3,500	NL
Manganese	660	1,300	930	790	180	150	NL
Nickel	26	27	26	23	17	11	600
Lead	**570**	**280**	**520**	**430**	**350**	82	200
Antimony	ND	ND	ND	ND	ND	ND	20
Selenium	ND	ND	ND	ND	ND	ND	400
Thallium	ND	ND	ND	ND	ND	ND	8
Vanadium	31	38	39	34	40	26	400
Zinc	330	290	200	190	130	69	1,000

NOTES:

1) Metals samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-OPTIMAS0, Metals in Soil Medium Level by ICP.
2) All results in milligrams per Kilogram (mg/Kg).
3) MassDEP Method I MCP S-1 Standards = Massachusetts Department of Environmental Protection Massachusetts Contingency Plan Soil Category 1 Standards. Units in milligrams per Kilogram (mg/Kg).
4 Bolded and shaded results exceed Mass DEP MCP S-1 Standards.
5) ND = Not Detected.
6) NL = Not Listed.
7) J = Estimated Value.

TABLE 3

SUMMARY OF METALS RESULTS
SURFACE AND SUBSURFACE SOIL SAMPLES
31 WATER ST SITE
AMESBURY, MASSACHUSETTS

SAMPLE LOCATION SAMPLE NUMBER LABORATORY NUMBER SAMPLE DEPTH DATE SAMPLED	SB-08C R-01-140519TB-0044 AB48432 2-3.5 ft. 5/20/2014	SB-09A R-01-140519TB-0045 AB48433 0-1 ft. 5/20/2014					MassDEP Method 1 MCP S-1 Standards
PARAMETER							
Silver	ND	ND					100
Aluminum	11,000	8,000					NL
Arsenic	16	**28**					20
Barium	38	120					1,000
Beryllium	ND	ND					90
Calcium	1,500	1,900					NL
Cadmium	ND	1.3					70
Cobalt	3.7	5					NL
Chromium	65	**110**					100
Copper	38	210					NL
Iron	15,000	24,000					NL
Magnesium	3,700	2,900					NL
Manganese	150	200					NL
Nickel	12	17					600
Lead	74	**480**					200
Antimony	ND	ND					20
Selenium	ND	ND					400
Thallium	ND	ND					8
Vanadium	25	52					400
Zinc	58	170					1,000

NOTES:

1) Metals samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-OPTIMAS0, Metals in Soil Medium Level by ICP.
2) All results in milligrams per Kilogram (mg/Kg).
3) MassDEP Method I MCP S-1 Standards = Massachusetts Department of Environmental Protection Massachusetts Contingency Plan Soil Category 1 Standards. Units in milligrams per Kilogram (mg/Kg).
4 Bolded and shaded results exceed Mass DEP MCP S-1 Standards.
5) ND = Not Detected.
6) NL = Not Listed.
7) J = Estimated Value.

TABLE 4

SUMMARY OF TOTAL PETROLEUM HYDROCARBONS RESULTS
SURFACE SOIL SAMPLES
31 WATER ST SITE
AMESBURY, MASSACHUSETTS

SAMPLE LOCATION	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	MassDEP Method 1 MCP S-1 Standards
CASE NUMBER	A0523-19	A0523-19	A0523-19	A0523-19	A0523-19	A0523-19	
SAMPLE DEPTH	0 - 3 in.	0 - 3 in.	0 - 3 in.	0 - 3 in.	0 - 3 in.	0 - 3 in.	
COMPOUND							
Total Petroleum Hydrocarbons	197	**3,397**	**1,163**	456	190	237	1,000

NOTES:

1) Samples analyzed by New England Testing Laboratory, Inc. for Total Petroleum Hydrocarbons (TPH) utilizing method 8100 M, TPH.
2) All Results in Milligrams per Kilogram (mg/Kg).
3) Mass DEP Method I MCP S-1 Standards = Massachusetts Department of Environmental Protection Massachusetts Contingency Plan Soil Category 1 Standards. Units in milligrams per Kilogram (mg/Kg).
4) Bolded and shaded results exceed MassDEP MCP S-1 Standards

Appendix D

Photodocumentation Log

PHOTODOCUMENTATION LOG
31 Water St Site • Amesbury, Massachusetts

SCENE: View of soil boring location SB-01. Photograph taken facing southeast.

DATE: 19 May 2014
PHOTOGRAPHER: B. Mace

TIME: 1219 hours
CAMERA: iPhone 4S

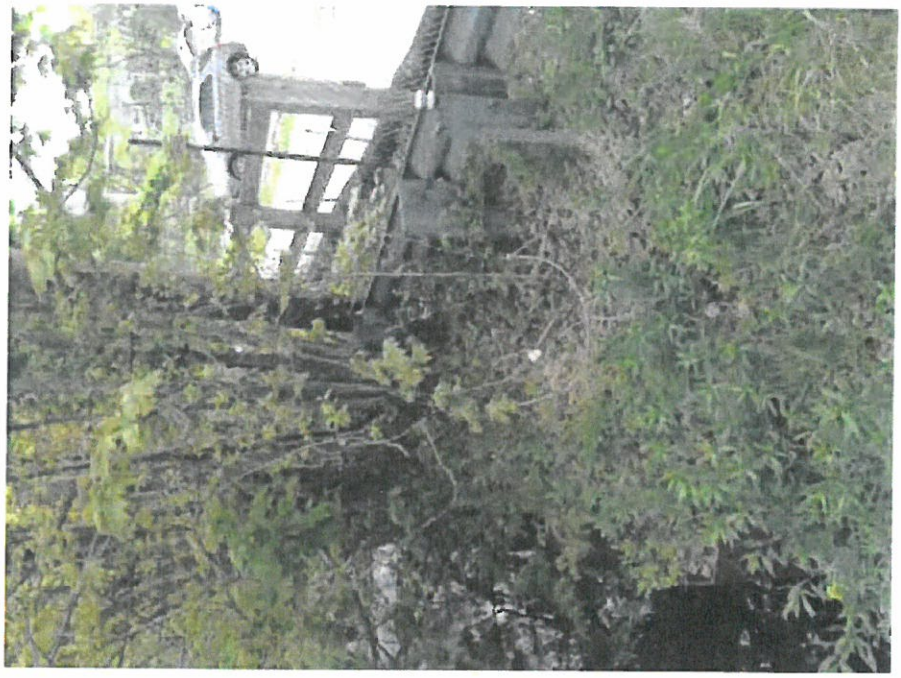
SCENE: View of soil boring location SB-02. Photograph taken facing southeast.

DATE: 19 May 2014
PHOTOGRAPHER: B. Mace

TIME: 1220 hours
CAMERA: iPhone 4S

PHOTODOCUMENTATION LOG
31 Water St Site • Amesbury, Massachusetts

TOP



SCENE: View of soil boring location SB-01. Photograph taken facing southwest.

DATE: 19 May 2014
PHOTOGRAPHER: B. Mace

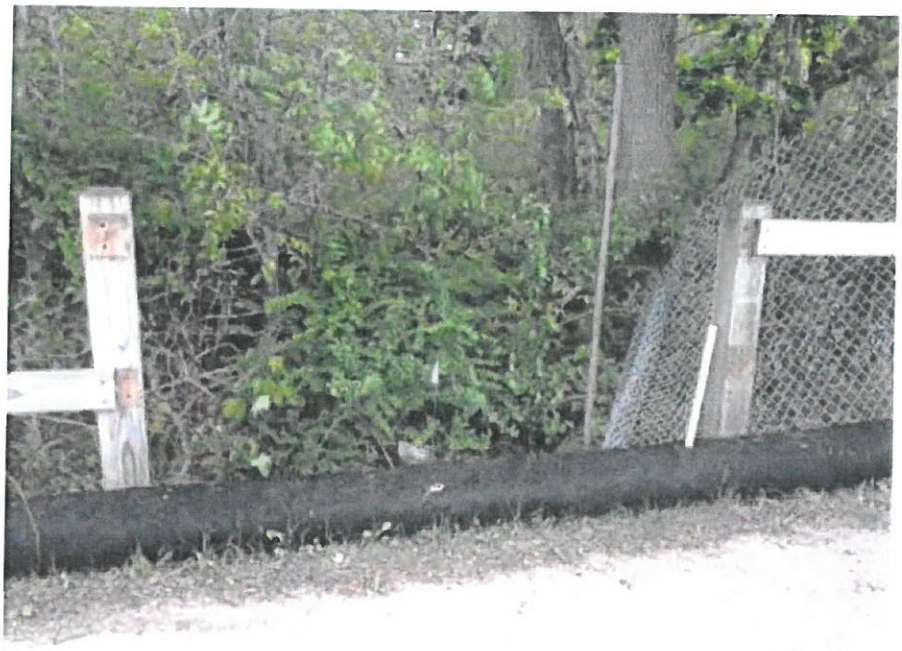
TIME: 1517 hours
CAMERA: iPhone 4S

SCENE: View of soil boring location SB-02. Photograph taken facing southeast.

DATE: 19 May 2014
PHOTOGRAPHER: B. Mace

TIME: 1518 hours
CAMERA: iPhone 4S

PHOTODOCUMENTATION LOG
31 Water St Site • Amesbury, Massachusetts



SCENE: View of soil boring location SB-03. Photograph taken facing southeast.

DATE: 19 May 2014
PHOTOGRAPHER: B. Mace

TIME: 1519 hours
CAMERA: iPhone 4S

SCENE: View of soil boring location SB-03. Photograph taken facing southeast

DATE: 19 May 2014
PHOTOGRAPHER: B. Mace

TIME: 1707 hours
CAMERA: iPhone 4S

SCENE: Overview of the eastern portion of the site from Water Street. Photograph taken facing southeast.
DATE: 20 May 2014 **TIME:** 0957 hours
PHOTOGRAPHER: B. Mace **CAMERA:** iPhone 4S

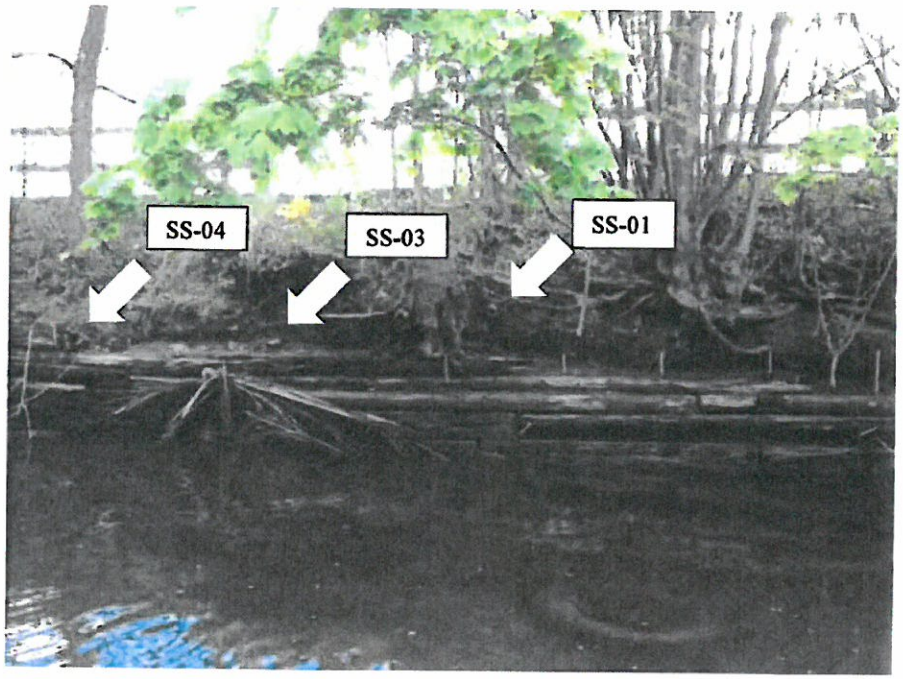
SCENE: Overview of the western portion of the site from Water Street. Photograph taken facing south.
DATE: 20 May 2014 **TIME:** 0957 hours
PHOTOGRAPHER: B. Mace **CAMERA:** iPhone 4S

PHOTODOCUMENTATION LOG
31 Water St Site • Amesbury, Massachusetts

SCENE: View of the bike path along the eastern portion of the site. Photograph taken facing south.

DATE: 20 May 2014
PHOTOGRAPHER: B. Mace

TIME: 0958 hours
CAMERA: iPhone 4S



SCENE: View of the bank of the Back River and surface soil sample locations SS-01, SS-03, and SS-04, collected from soils in and around the indicated pipes. Photograph taken facing southwest.
DATE: 20 May 2014
PHOTOGRAPHER: C. Dupree

TIME: 1214 hours
CAMERA: iPhone 4S

SCENE: Close-up view of surface soil sample location SS-03. Photograph taken facing northwest.

DATE: 20 May 2014
PHOTOGRAPHER: C. Dupree

TIME: 1214 hours
CAMERA: iPhone 4S

SCENE: View of START personnel collecting surface soil sample SS-05. Photograph taken facing southwest.

DATE: 20 May 2014
PHOTOGRAPHER: C. Dupree

TIME: 1219 hours
CAMERA: iPhone 4S

SCENE: View of the bank of the Back River with additional pipes that were not sampled. Photograph taken facing west.

DATE: 20 May 2014
PHOTOGRAPHER: C. Dupree

TIME: 1223 hours
CAMERA: iPhone 4S

SCENE: View of soil boring location SB-05. Photograph taken facing south.

DATE: 20 May 2014
PHOTOGRAPHER: B. Mace

TIME: 1343 hours
CAMERA: iPhone 4S

PHOTODOCUMENTATION LOG
31 Water St Site • Amesbury, Massachusetts

SCENE: View of the bike path and the Geoprobe unit sampling soil boring location SB-07. Photograph taken facing west.
DATE: 20 May 2014 **TIME:** 1343 hours
PHOTOGRAPHER: B. Mace **CAMERA:** iPhone 4S

SCENE: View of soil boring location SB-06. Photograph taken facing south.

DATE: 20 May 2014 **TIME:** 1344 hours
PHOTOGRAPHER: B. Mace **CAMERA:** iPhone 4S

PHOTODOCUMENTATION LOG
31 Water St Site • Amesbury, Massachusetts

TOP

SCENE: View of soil boring location SB-07. Photograph taken facing southwest.

DATE: 20 May 2014
PHOTOGRAPHER: B. Mace

TIME: 1345 hours
CAMERA: iPhone 4S

SCENE: View of the peninsula on the southeastern portion of the site with soil boring locations SB-08 and SB-09. Photograph taken facing south.
DATE: 20 May 2014
PHOTOGRAPHER: B. Mace

TIME: 1647 hours
CAMERA: iPhone 4S