



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
5 POST OFFICE SQUARE - SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

CONTAINS ENFORCEMENT-SENSITIVE INFORMATION

MEMORANDUM

DATE: July 29, 2014

SUBJ: Request for a Removal Action at the 31 Water Street Site,
Amesbury, Essex County, Massachusetts - **Action Memorandum**

FROM: Ted Bazen, On-Scene Coordinator
Emergency Response and Removal Section II

THRU: Cosmo Caterino, Acting Chief *CC*
Emergency Response and Removal Section II

Carol Tucker, Chief *at Tucker*
Emergency Planning & Response Branch

TO: James T. Owens III, Director
Office of Site Remediation and Restoration

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of the proposed removal action at the 31 Water Street Site (the Site), which is a 0.56-acre portion of 31 Water Street located in Amesbury, Essex County, Massachusetts. Hazardous substances present in soil at the Site, if not addressed by implementing the response actions selected in this Action Memorandum, will continue to pose a threat to human health and the environment. There are no nationally significant or precedent-setting issues associated with this Site, and there has been no use of the OSC's \$200,000 warrant authority.

II. SITE CONDITIONS AND BACKGROUND

SEMS ID#: MAN000100746
SITE ID#: 01LW
CATEGORY: Time-Critical

A. Site Description

1. Removal site evaluation

The vacant property is currently owned by a municipality, the City of Amesbury, and was formerly occupied by a manufacturing facility. The site area has been historically developed since the late 1800s as a center of commerce and industrial activities in Amesbury's Lower Mill Yard. The general site has been undergoing environmental site investigations since 2000. Historically, levels of semi-volatile 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 the 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.

On May 19, 2014, the EPA OSC and contractor personnel mobilized to the property to initiate a Preliminary Assessment/Site Investigation (PA/SI). After visual inspection of the Site and sample location selection by the OSC, a total of thirty-eight soil samples were collected from nine soil boring locations. In addition, six surface soil samples were collected from soils adjacent to waste pipes associated with the Site. The samples were analyzed at the EPA New England Regional Laboratory in Chelmsford, MA for PCBs and metals.

Analytical results indicated that one PCB (Aroclor-1254) was detected in several surface and subsurface soil samples at levels exceeding the MCP Imminent Hazard Level for PCBs of 10 mg/Kg and the EPA Regional Removal Management Levels (RMLs). Also, five metals (arsenic, barium, chromium, lead, and zinc) were detected at concentrations exceeding MCP S-1 standards in one or more of the samples. The lead and arsenic levels also exceeded the EPA RMLs.

In addition, in all of the shallow soil samples throughout the sample collection area, the PCB Aroclor-1254 was detected at a concentration exceeding the MCP S-1 standard of 1 mg/Kg.

<u>Hazardous Substances or Pollutants or Contaminants</u>	<u>Maximum Concentration</u>	<u>Media</u>
- Aroclor-1254	(740 mg/Kg)	soil
- arsenic	(150ppm)	soil
- barium	(2,300ppm)	soil
- chromium	(650 ppm)	soil
- lead	(1900ppm)	soil
- zinc	(3,300 ppm)	soil

(The PA/SI Report contains the sample location map and the data summary tables.)

Based upon documented Site conditions, a Time Critical Removal Action was recommended to address the release of hazardous substances in the Site Investigation Closure Memorandum July 21, 2014.

2. Physical location

The 31 Water Street Site property 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 property 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. It is also defined on the Amesbury Assessors' Map 53, Lot 103.

3. Site characteristics

The City of Amesbury is undertaking a revitalization effort called the Lower Millyard Project that encompasses the historic Amesbury Wharf Building area. The project involves multiple parcels (25, 27 and 31 Water Street) and includes what is referred to as the Lower Millyard Heritage Park (the "Heritage Park") and the Lower Millyard Riverfront (the "Riverfront"). EPA's removal action will be addressing PCB and lead contamination along the riverbanks in the Riverfront area. The Riverfront is a 0.56-acre portion of 31 Water Street (which consists of an inactive, vacant parcel located along the banks of the Powwow and Back Rivers). The majority of the central portion of the 31 Water Street parcel, further defined on the Amesbury Assessors' Map 53, Lot 103, is level and contains areas with concrete foundation from the former on-site manufacturing building. The parcel 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 steep slope along the eastern side leading to the Back River has been stabilized with crib work and has several pipes protruding out from the bank. The southernmost portion contains a steep slope to the Powwow River. There is a paved, public walkway/bike path along the eastern and southern borders of the property that is used by the general public.



The PA/SI was focused on the area of the Site between the bike path and the crib work, on the banks of the Powwow River and Back River.

Approximately 5,000 people live within one-half mile of the Site, and approximately 10,100 people live within one mile of the Site. Also within one mile of the Site there are three nursing homes, three public schools, two private schools, three day care facilities, and one psychiatric hospital. The Site is not in an environmental justice area.

Environmentally sensitive areas include the adjacent Powwow and Back Rivers, which are tributaries of the Merrimac River. Surface runoff drains from the Site directly to these water bodies.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

Polychlorinated biphenyls (PCBs) such as Aroclor-1254 are hazardous substances as defined in section 101(14) of CERCLA. The presence of Aroclor-1254 at levels up to 740 mg/Kg in soil samples collected by EPA and others indicates that an uncontrolled release of PCBs has occurred at some unknown time in the past at this Site, resulting in contamination to surface and subsurface soils adjacent to the Powwow River and the Back River. The origin, amount and intended use (if any) of Aroclor-1254 at this Site has not been determined, and is likely to remain unknown. Based on the age of the crib work on the riverbank and in records in the town hall, the release likely occurred when the crib walls were maintained in the 1960s, well before 1978, the year in which PCBs became regulated. Although PCBs are practically insoluble in water, they are persistent in the environment, becoming firmly attached to soils and organic materials. As a result, PCBs will migrate via mass transportation of soil particles, such as erosion during rainfall events. Human exposure to PCBs can occur from direct contact with contaminated soils, and from drinking water or eating food that is contaminated with PCBs, especially fish. In the environment, PCBs are ingested by micro- and mega- fauna, and accumulate in fatty tissues. Bio-magnification of PCBs occurs up the food chain. Levels of PCBs in fish may be thousands of times higher than the levels in water or sediments. The Department of Health and Human Services has determined that PCBs may be reasonably anticipated to cause cancer. PCBs are a primary contaminant of concern at the Site.

Lead is a hazardous substance as defined in section 101(14) of CERCLA. It is likely that lead was used as part of the metals manufacturing process at the Site. Elemental lead is fairly soluble, and is monitored very closely in public water systems. Exposure to lead can occur from eating food or drinking water that contains lead. Direct contact with lead contaminated soil at a hazardous waste site may also cause exposure through incidental ingestion and inhalation. Exposure to lead can impact the central nervous system. Lead is a primary contaminant of concern at the Site.

5. NPL status

The site is not currently on the National Priorities List, and has not received a Hazardous Ranking System rating.

B. Other Actions to Date

1. Previous actions

City of Amesbury

As described above, the 31 Water Street Site is a part of a larger scale ongoing revitalization project known as the "Lower Millyard" being undertaken by the City of Amesbury. The City has leveraged various funding sources to support its revitalization project including EPA's Targeted Brownfields Assessment Program, the Massachusetts Brownfields Support Team program, the Massachusetts Office of Energy and the Environment's Parkland Acquisitions and Renovations for Communities program, and the Merrimack Valley Planning Commission's Brownfields Revolving Loan Fund grant through EPA. The EPA Brownfields funds have been fully expended, and the remaining revitalization efforts will be funded by the City using other resources.

The larger site in general has been undergoing environmental investigations since at least the year 2000. Data from the previous work identified elevated levels of volatile organic compounds, total petroleum hydrocarbons, semi-volatile organic compounds and metals. Low levels of PCBs (below 50 mg/Kg) were identified in shallow soils over a large area of the Lower Millyard project and are being addressed by the City with MassDEP regulatory oversight. The removal action area is a small parcel contained on the larger 31 Water Street property which in turn is a segment of the Lower Millyard redevelopment project. The City is referring to the removal action area as the Lower Millyard Riverfront. EPA's removal action is a separate and distinct effort. In addition to EPA's 2014 PA/SI findings, the City's information will serve to help inform the EPA removal action.

2. Current actions

City of Amesbury

To address an area of oil and hazardous impacted fill material on 31 Water Street, in February 2014 Higgins Environmental Associates, Inc. (HEA) submitted an Immediate Response Action Plan (IRA) and Imminent Hazard (IH) Evaluation as required under the MCP on behalf of the City of Amesbury. The IRA plan proposed an excavation and removal of OHM-impacted soil from 0-to-1-foot below grade. The IRA excavation was initiated on May 30 and was completed on June 15, 2014. HEA estimated that approximately 1,600 cubic yards of soil (containing PCBs less than 50 mg/Kg) have been excavated and sent for off-site disposal. The City and HEA are

awaiting results of post-excavation samples before backfilling and re-grading the parcel. When completed, the IRA will have addressed the IH condition on that portion of the property. The OSC is closely coordinating with HEA and the City Planning Office to ensure overall continuity of the site remediation.

C. State and Local Authorities' Roles

1. State and local actions to date

In November of 2013, via email, the Mass DEP requested EPA assistance in evaluating the potential for PCB contamination on the banks of the Powwow River and the Back River, adjacent to 31 Water Street in Amesbury, MA. An OSC was assigned in January of 2014, and after contacting the Mass DEP, initial planning for the PA/SI began. Soil samples were collected on May 19 and May 20, 2014.

Local officials and the MassDEP have been managing the IRA excavation and have participated in several planning meetings and site visits with EPA.

2. Potential for continued State/local response

The State and local governments are expected to remain fully committed to completing the remediation efforts at this Site. The City is expected to assist with in-kind contributions towards utilities services such as disposal of wood chips, water service and post-removal restoration assistance. The Mass DEP will continue to contribute to planning and oversight of the project.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants; [§300.415(b) (2)(i)];

Aroclor-1254, a polychlorinated biphenyl, and lead have been identified in shallow riverbank soils at levels up to 740mg/Kg and 1,900 mg/Kg respectively. The relevant state regulatory standard to be applied to soils is the Massachusetts Contingency Plan (MCP) Reportable Concentration for Soils-1 (RCS-1) for PCBs of 1 mg/Kg and for lead of 200mg/Kg, and the MCP Imminent Hazard level for PCBs of 10 mg/Kg in residential and recreational soils. The relevant federal standards to be applied are the EPA RMLs for PCBs of 3.4 mg/Kg for residential soils and for lead of 400mg/Kg in residential soil. The sample station locations are on public park land, adjacent to and underlying a public bicycle pathway. The soil can migrate via erosion to the Back River, the Powwow River and subsequently the Merrimac River, thus entering the food chain. All three rivers are used for recreational fishing and boating. Contaminated soils can also be contacted directly by the public.

Actual or potential contamination of drinking water supplies or sensitive ecosystems [§300.415(b)(2)(ii)];

Aroclor-1254, a polychlorinated biphenyl, and lead have been identified in shallow riverbank soils at levels up to 740mg/Kg and 1,900 mg/Kg respectively. The soil can migrate via erosion to the Back River, the Powwow River and subsequently the Merrimac River, thus impacting these sensitive tidal estuary ecosystems. No public drinking water supplies are impacted by this Site.

High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate [§300.415(b)(2)(iv)];

Aroclor-1254, a polychlorinated biphenyl, and lead have been identified in shallow riverbank soils at levels up to 740mg/Kg and 1,900 mg/Kg respectively. The relevant regulatory standard to be applied to soils is the Massachusetts Contingency Plan (MCP) Reportable Concentration for Soils-1 (RCS-1) for PCBs of 1 mg/Kg and for lead of 200mg/Kg, and the MCP Imminent Hazard level for PCBs of 10 mg/Kg in residential and recreational soils. The relevant federal standards to be applied are the EPA RMLs for PCBs of 3.4 mg/Kg for residential soils and for lead of 400mg/Kg in residential soil. The sample station locations are on public park land, adjacent to and underlying a public bicycle pathway. The soil can migrate via erosion to the Back River, the Powwow River and subsequently the Merrimac River. Contaminated soils can be contacted directly by the public.

Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released [§300.415(b)(2)(v)];

Heavy precipitation can erode contaminated surface soils from the riverbanks to the Powwow and Back River, which are tributaries of the Merrimac River. The Site is located in the 100 year flood zone, based on mapping by FEMA. Erosion of the soils into the waterways will impact the tidal estuary food chain.

The availability of other appropriate Federal or State response mechanisms to respond to the release [§300.415(b)(2)(vii)];

The Mass DEP and EPA Region 1 Brownfields programs have requested assistance from the Removal Program to remediate the contaminated soils at this Site to facilitate continued re-development as a public park.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances or pollutants or contaminants from this Site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment. In accordance with OSWER Directive 9360.0-34 (August 19, 1993), an

endangerment determination is made based on "appropriate Superfund policy or guidance, or on collaboration with a trained risk assessor. Appropriate sources include, but are not limited to, relevant action level or clean-up standards, Agency for Toxic Substances and Disease Registry documents or personnel, or staff toxicologists."

For relevant state standards, EPA relied on the Massachusetts Contingency Plan's (MCP) cumulative risk approach which compares site-specific information to a Cumulative Cancer Risk Limit (See 310 Code of Massachusetts Regulations (CMR) 40.0000). In addition, Mass DEP has, and is continuing to, evaluate the data collected during this PA/SI to determine whether additional Imminent Hazard and/or Significant Risk conditions, as defined in the MCP, are present at this Site. The relevant state regulatory standards to be applied to these soils are the Massachusetts Contingency Plan (MCP) Reportable Concentration for Soils-1 (RCS-1) and the MCP Imminent Hazard levels in residential and recreational soils (June 2014).

The relevant federal standards to be considered for this site are EPA Removal Management Levels for Chemicals (RMLs) (May 2014).

Hazardous Substance	Maximum Concentration*	EPA RML¹	Mass DEP RCS-1²	Mass DEP IH³
PCBs	740	3.4	1	10
Arsenic	150	67	20	40
Barium	2,300	4,600	1000	-
Chromium (total)	650	-	100	200
Lead	1900	400	200	-
Zinc	3,300	7000	1000	-

***All concentration units are mg/Kg in soil.**

¹ EPA Regional Removal Management Level (May 2014); no RML is defined for total chromium.

² Mass DEP S-1 Reportable Concentration for residential and recreational surface soil from the MCP (June 2014).

³ Mass DEP Imminent Hazard Level in residential and recreational soils from the MCP (June 2014); no IH levels are defined for barium, lead or zinc.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

Specific removal activities will include the following:

- conduct a site walk with the cleanup contractor;
- conduct additional sampling as needed to better define the extent of the contamination;
- install and maintain security fencing;
- provide security guard service, if necessary;
- clear vegetation and debris as needed;
- install sheet piling or similar structure for surface water management in the tidal zone;
- excavate contaminated surface and subsurface soils;
- segregate and stage contaminated soils on-site based on disposal waste stream;
- transport and dispose of contaminated soils and hazardous substances at a EPA - approved off-site facilities and in compliance with the off-site policy as it applies;
- backfill and re-grade excavation areas;
- restore wetlands, if altered; and,
- repair other response related damages.

2. Community relations

A Community Involvement Coordinator (CIC) has been assigned to this Site and will assist the OSC by engaging with the local officials, state leaders and residents to keep them informed and involved in the removal action. The CIC will prepare press releases and manage community meetings.

3. Contribution to remedial performance

The Site is not on the National Priorities List, nor is a listing under consideration. However, the proposed actions will, be consistent with and will not impede any future responses.

4. Description of alternative technologies

Alternative technologies will be considered and incorporated as appropriate throughout the conduct of the removal action

5. Applicable or relevant and appropriate requirements (ARARs)

Federal ARARs:

Resource Conservation and Recovery Act, Subtitle C, 40 CFR Parts 260-262 and 264: Hazardous Waste Identification and Listing Regulations; Generator and Handler Requirements, Closure and Post-Closure.

Clean Air Act, 40 CFR Part 61: standards for controlling dust.

Comprehensive Environmental Response, Compensation and Liability Act, NCP, Part 300.440: procedures for planning and implementing off-site response actions ("Off-Site Rule").

40 CFR Part 761.61: TSCA requirements for cleanup and disposal of PCBs.

40 C.F.R. Section 761.79: TSCA Decontamination of Equipment Used.

Clean Water Act Section 404(b), (40 CFR Parts 230 and 231, 33 CFR Parts 320-323, and 33 CFR Part 332): No activity that adversely affects a wetland shall be permitted if a practicable alternative with lesser impacts is available. Controls discharge of dredged or fill material to protect aquatic ecosystems. Any wetlands altered by the cleanup will be restored as required by regulatory standards.

Clean Water Act Federal Water Quality Criteria, Section 304(a), 40 CFR 131.11: National Recommended Water Quality Criteria for chemicals for both the protection of human health and the protection of aquatic life; to be used as water quality monitoring standards for any work in or adjacent to wetlands or water bodies.

Floodplain Management and Protection of Wetlands, 44 CFR 9 (44 CFR Part 9): Regulations that set forth the policy, procedure and responsibilities to implement and enforce Executive Order 11988 (Floodplain Management) and Executive Order 11990 (Protection of Wetlands).

Fish and Wildlife Coordination (50 CFR Part 297; 16 USC Section 661 et seq.): Any modification of a body of water requires consultation with the U.S. Fish and Wildlife Services and the appropriate state wildlife agency to develop measures to prevent, mitigate or compensate for losses of fish and wildlife. This requirement is addressed under CWA Section 404 requirements.

National Historical Preservation Act (16 U.S.C. 469 et seq.; 36 CFR Part 65): When a federal agency finds, or is notified, that its activities in connection with a federal construction project may cause irreparable loss or destruction of significant scientific, pre-historical, historical, or archeological data, the substantive standards under the Act will be met.

State ARARs:

The OSC will coordinate with State officials to identify additional State ARARs, if any. In accordance with the National Contingency Plan and EPA Guidance Documents, the OSC will determine the applicability and practicability of complying with each ARAR that is identified in a timely manner.

6. Project schedule

The project is estimated to begin in September of 2014, and to be completed by December 15, 2014.

B. Estimated Costs

COST CATEGORY		CEILING
<i>REGIONAL REMOVAL ALLOWANCE COSTS:</i>		
ERRS Contractor		\$500,000.00
Interagency Agreement		\$20,000.00
<i>OTHER EXTRAMURAL COSTS NOT FUNDED FROM THE REGIONAL ALLOWANCE:</i>		
START Contractor		\$100,000.00
Extramural Subtotal		\$620,000.00
Extramural Contingency	10%	\$62,000.00
TOTAL, REMOVAL ACTION CEILING		\$682,000.00

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delayed action will increase public health risks due to the continued potential for direct human exposure and continued migration of the contaminated soils to the Powwow River and the Back River.

VII. OUTSTANDING POLICY ISSUES

There are no precedent-setting policy issues associated with this site.

VIII. ENFORCEMENT ... For Internal Distribution Only

See attached Confidential Enforcement Strategy.

The total EPA costs for this removal action based on full-time accounting practices that will be eligible for cost recovery are estimated to be \$682,000 (extramural costs) + \$ 75,000 (EPA intramural costs) = \$757,000 X 1.3778 (regional indirect rate) = \$1,042,995⁴.

⁴Direct Costs include direct extramural costs \$682,000 and direct intramural costs \$75,000. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site specific costs 37.78% x \$757,000, consistent with the full accounting methodology effective October 1, 2013. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including

IX. RECOMMENDATION

This decision document represents the selected removal action for the 31 Water Street Site in Amesbury, Massachusetts, developed in accordance with CERCLA, as amended, and is not inconsistent with the National Contingency Plan. The basis for this decision will be documented in the administrative record to be established for the Site.

Conditions at the Site meet the NCP Section 300.415 (b) (2) criteria for a removal action due to the following:

Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants [§300.415(b)(2)(i)];

Actual or potential contamination of drinking water supplies or sensitive ecosystems [§300.415(b)(2)(ii)];

High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate [§300.415(b)(2)(iv)];

Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released [§300.415(b)(2)(v)];

The availability of other appropriate Federal or State response mechanisms to respond to the release [§300.415(b)(2)(vii)].

I recommend that you approve the proposed removal action. The total extramural removal action project ceiling if approved will be \$682,000.00.

APPROVAL: _____

DATE: _____

DISAPPROVAL: _____

DATE: _____

Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery.