UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
ONE CONGRESS STREET, SUITE 1100
BOSTON, MA 02114-2023

MEMORANDUM

DATE: August 29, 2000

SUBJ: Request for a Removal Action
Chase Brass and Copper Site
Waterbury, CT - Action Memorandum

FROM: Janis K. Tsang, P.E., On-Scene Coordinator
Site Evaluation and Response Section I

TO: Patricia L. Meaney, 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 described herein for the Chase Brass and Copper Site, ("Site") in Waterbury, CT. Hazardous substances/pollutants/contaminants present in the soil and drums 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.

II. SITE CONDITIONS AND BACKGROUND

SITE ID #: 018G
CERCLIS ID #: CTD000856708
Category of Removal: Time-critical

A. SITE DESCRIPTION

1. Background

The address for the Chase Brass and Copper (CB&C) Site is listed as 1875 Thomaston Avenue, Waterbury, Connecticut. The Site is a 100.8-acre vacant lot and is physically located in Litchfield County, Watertown which abuts the town line of Waterbury.

From 1868 to 1976, the Site had been used as a waste disposal area for process waste including metal turning waste and construction debris generated by CB&C. The exact manufacturing process and type of waste generated were not documented in previous reports.

In November 1984, the NUS Corporation's Field Investigation Team (NUS/FIT) conducted a Site inspection in which soil, sludge, sediment and surface water samples were collected and analyzed via field screening methodology. The screening results revealed that elevated levels of heavy metals were found in surface soil and sludge samples.

The 1995 Site Prioritization Report prepared by CDM Federal Programs Corporation (CDM) for the EPA Superfund Support Section documented the following Site conditions and sampling results:

- Elevated levels of coal tar pitch volatiles, Aldrin, polychlorinated biphenyls (PCBs) including Aroclor-1260 and heavy metals including chromium, lead, mercury, copper and zinc were detected in surface soil samples.

- Observations including miscellaneous construction debris scattered around the Site and oily substances leaking from drums were noted.

- Above background levels of heavy metals and PCBs were detected in surface water and sediment collected in the Naugatuck River at the Site.

In December 1999, the Site was referred by the Connecticut Department of Environmental Protection (CT DEP) to the EPA Emergency Planning and Response Branch (EPRB) as a potential removal Site.

2. Removal Site Evaluation

In March 2000, On-Scene Coordinator (OSC) Janis Tsang and members of the Roy F. Weston Superfund Technical Assessment and Response Team (Weston-START) conducted a Preliminary Assessment/Site Investigation (PA/SI) at the Site. Observations made during the PA/SI were as follows:

- Two empty above-ground storage tanks (ASTs) were observed outside the chain-link fence at the north side of the substation fence.

- Numerous areas with noticeable and partially buried rusty crushed drums and metal debris were observed along the embankment/ river bank downgradient from the substation.

- Stained soil and stress vegetation were observed along the embankment/riverbank.

- Miscellaneous construction debris and metal turnings were observed disposed of at various locations on-site.

- Several small containers and 55-gallon drums were observed along the embankment/riverbank.

- The City of Waterbury installed a couple of sections of chain-link fence on the access bridge in an attempt to restrict access. However, the fence has been breached and the site is accessible to the public.

- Beer cans and other food and beverage containers were noted on-site.

EPA collected the following samples in the PA/SI:

- 8 bulk samples for asbestos analysis

- 104 surface soil samples to field-screen for PCBs via Gas Chromatograph Electron Capture Detector (GC-ECD), heavy metals via X-Ray Fluorescence (XRF) analyzer and polynuclear aromatic hydrocarbons (PAHs) via Immunoassay Test Kits. Ten percent of the samples were sent to EPA New England Regional Laboratory (NERL) for confirmatory analyses.

- 12 surface soil samples for cyanide analysis

- One surface water sample was analyzed for cyanide, metals, semivolatile organic compounds (SVOCs), pesticides and PCBs.

The results of the above sampling revealed the following:

- Chrysotile asbestos concentrations in the bulk samples ranged from 5 to 80 %.

- The maximum concentration for each heavy metal found in surface soil samples is as follows:
  - copper, Cu (56.6 %)
  - zinc, Zn (8.48 %)
  - lead, Pb (3,160 ppm)

- chromium, Cr (5.34 %)
- nickel, Ni (2.39 %)

- The maximum toxicity characteristics leachate procedure (TCLP) concentration for each heavy metal found in surface soil samples is as follows:
  - Cu (1,460 mg/l)
  - Zn (1,100 mg/l)
  - Pb (16 mg/l - estimated)
  - Cr (13.5 mg/l)
  - Ni (10 mg/l)

- The total PAHs concentrations in surface soil samples ranged from 47.9 ppm to 2818 ppm. Other SVOCs including dibenzofuran and bis(2-ethylhexyl)phthalate were above detection limit.

3. Physical Location and Site Characteristics

The Site covers an approximate 5-acre waste disposal area on a 100.8-acre lot and is located approximately 2.25 miles northwest of the center of Waterbury on the west bank of the Naugatuck River in Watertown, Connecticut. The Naugatuck River flows from north to south and intersects the eastern portion of the Site. The access bridge connecting the disposal area to the east and building and parking area to the west. There is an access bridge with a couple sections of chain-link fence installed by the City of Waterbury. Other Site features include an abandoned electrical substation, a small masonry security shed located at the entrance to the abandoned substation and undeveloped land with distinct vegetated and un-vegetated areas. The former CB&C manufacturing facility located on a different referenced lot in Waterbury and situated east of the Site abutting the parking area is currently occupied by various active businesses and is not considered as part of the Site.

The Site topography slopes downward from west of the property toward the Naugatuck River and upward to the north and south. The Site is bounded by the Naugatuck River to the east and by woods to the south, west, and north. Power lines and Route 8 are located west of the property behind the wooded areas, with residential properties located further to the west. There is a partially paved road leading from the disposal area to the substation. The substation is fenced, but the fence has been breached with multiple large openings. The substation was used to supply electrical power by Connecticut Light and Power to CB&C, but was owned by CB&C until the City of Waterbury took over the ownership in 1979. The substation has been decommissioned. Evidence of vandalism and trespassing including smashed ceramic insulators, wires, metals, and spent ammunition, have been noted throughout the substation. A large rock cliff is located between the substation and the River.

Runoff from Route 8 and other upland locations has caused erosion and washed contamination and debris into the River. Large conduits for collecting stormwater are observed along the River. It appears that both surface drainage and groundwater discharge directly into the River.

The groundwater beneath the Site is classified as GB, which is not suitable for direct human consumption. The surface water for the Naugatuck River in the Site area is classified as B, which is not suitable for a drinking water source. Common eel, brown trout, fall fish, brook trout, dace and clamshells are present. Subsistence and recreational fishing is popular in the area. As a result of the contamination found on-site, the City of Waterbury posted signs to warn the public to keep out and not to consume fish caught in the area.

4. Release or Threatened Release into the Environment of a Hazardous Substance or Pollutant or Contaminant

The Site is contaminated with heavy metals including lead, chromium, copper, zinc and nickel, PAHs and asbestos.

These compounds are hazardous substances/pollutants/contaminants as defined by Section 101(14) of CERCLA. Heavy metals, PAHs and asbestos found in the surface soil and debris could continue to be released into the environment by continued migration of contamination via surface erosion, highway runoff and/or weather conditions.

5. NPL Status

The Site is not currently listed on the National Priorities List (NPL).

B. OTHER ACTIONS TO DATE

1. Previous Actions Conducted by State and Local Officials

On September 4, 1981, CT DEP performed a perimeter survey and observed some leaking drums containing an oily liquid in the substation area and some empty barrels and building debris consisting of refractory bricks, concrete and lumber in the waste disposal area along the Naugatuck River. CT DEP submitted a preliminary assessment report to EPA for the Site.

After learning about the contamination on-site, in October 1999, the City of Waterbury posted warning signs to inform the public of the contamination, installed a chain-link fence and placed a barricade to prohibit the public from driving vehicles across the bridge to the Site.

C. STATE ROLES

In December 1999, CT DEP referred the case to EPA as a potential removal site. To-date, both the State and the City have worked cooperatively with EPA to gather historical, technical and/or regulatory information. Due to limited State resources, CT DEP has requested EPA to take the lead in addressing the Site.

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

The Site is accessible to nearby commercial, industrial and residential areas creating a potential threat for exposure to humans from hazardous substances and pollutants contained in soil through direct contact, inhalation, and ingestion of heavy metals such as lead, chromium, mercury, copper, nickel and zinc and asbestos. PAHs were found on-site including, but are not limited to, pyrene, fluoranthene, benzofluoranthenes, chrysene, benzo(a)anthracene, benzo(a)pyrene. Benzofluoranthene, chrysene, benzo(a)anthracene and benzo(a)pyrene.

Hexavalent chromium compounds are carcinogenic and corrosive on tissue. Prolonged exposure to hexavalent chromium may cause ulcers and dermatitis. Copper is flammable in powder form. Exposure to copper dusts and mists may cause damage to the respiratory system, the skin, the liver, and the kidneys. Nickel dust and fume is a carcinogen and is toxic by inhalation. Nickel dust and fume is also flammable. Exposure to nickel may cause damage to the lungs, the paranasal sinus, and the central nervous system. Exposure to asbestos can cause asbestosis, lung cancer and mesothelioma, a rare cancer of the outer lining of the lung. The above-listed PAHs are identified as possible or potential human carcinogens. Pathways of exposure in humans to these hazardous substances are inhalation, ingestion, absorption and direct contact. Exposure to PAHs followed by exposure to UV light can cause skin erythema, burning and itching.

"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)];

The public could come in contact with hazardous substances/pollutants/contaminants found in surface soil and along the embankment/river bank at the waste disposal area and poses a public health threat due to potential public exposures via trespassing and picnicking.

"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)];

As indicated in Section II.A.2., heavy metals such as chromium and lead found on-Site exceed TCLP limitation and are considered RCRA-hazardous by definition and up to 80 chrysotile asbestos has been found in debris.

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

Seasonal flooding, stormwater and highway runoff and erosion could continue to release hazardous substances/pollutants/contaminants to the environment contaminating the river water and fisheries creating opportunities for public exposure.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances/pollutants/contaminants from this Site, if not addressed by implementing the response actions selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. PROPOSED ACTIONS

1. Proposed action description

Proposed actions include, but are not limited to, the following:

Phase I:

- Provide site security measures (including, but not limited to, repairing existing City-

owned chain-link fence and/or installing a new chain-link fence) to restrict access. If deemed necessary, provide security guard service.

- Conduct topographical (land and aerial) survey to establish base line reference (e.g., elevation) for further removal planning.
- Conduct field survey/evaluation and/or literature research for rock contour plan.
- Conduct structural evaluation/analysis of the access bridge to confirm that the bridge is viable for transporting heavy equipment.
- Evaluate alternatives for equipment access including, but not limited to, feasibility of repairing existing bridge and/or constructing a temporary access bridge.
- Conduct additional sampling including, but not limited to conducting soil gas and mercury vapor survey to further delineate the nature and the extent of contamination on-site and installation of monitoring wells. The result of the sampling will be used to estimate the volume of the waste that needs to be removed or otherwise stabilized/treated. Off-site activities may include sediment and water sampling in the Naugatuck River.
- Remove and dispose of drums.

Phase II:

- Evaluate cleanup methods. Data obtained from sampling soil, water and sediment will be used to determine the appropriate removal cleanup methods. The removal methods to be considered include capping, removing (via excavation, treatment and disposal), or otherwise stabilizing the contaminated soils and/or a combination of all of the above. The method selected will eliminate the threat of direct public contact with contaminated soil and will also reduce the potential for off-site migration.
- Site stabilization/restoration activities will be conducted in accordance with an engineer-designed plan.
- Provide siltation control measures when deemed necessary.
- Perform applicable air monitoring.
- Perform applicable environmental sampling and monitoring including soil and/or water testing during the removal.
- Perform land survey and document the Site conditions with as-built drawings.

EPA will coordinate with CT DEP, the City, United States Army Corp. of Engineers (USACE) and EPA Environmental Response Team (EPA/ERT) throughout the removal.

2. **Community Relations**

Upon the approval of the Action Memorandum, the OSC will coordinate with the EPA Public Relations to prepare and implement the following community relations activities depending upon Agency's resources and/or community preferences:

- draft press release
- conduct public meeting
- draft removal newsletters

The OSC will also be available by appointment to meet with citizens and news reporters or by phone to answer their questions regarding the removal action.

3. Description of alternative technologies

The OSC will review potential alternative technologies (to landfilling) to determine the most cost-effective and environmentally beneficial method to treat/dispose of contaminated soil depending on volume of waste and waste characteristics.

4. Applicable or relevant and appropriate requirements (ARARs)

EPA has request and received potential State ARARs from CT DEP. The OSC will determine which State ARARs are practicable for this removal action.

Federal ARARs tentatively identified at this time are: Floodplains Management (Executive Order 11988) and Protection of Wetlands (Executive Order 11990). RCRA and Department of Transportation (DOT) requirements for the transportation of hazardous waste/materials (manifest requirements, storage, and labeling of waste).

Federal ARARs will be met to the extent practicable according to existing circumstances. The OSC will identify and comply with the applicable health and safety regulations under Occupation Safety and Health Act (OSHA).

5. Project Schedule

The OSC estimates that the removal action will take approximately twelve months to complete. Removal coordination activities will commence upon the approval of this action memorandum.

B. PROPOSED COSTS

- EXTRAMURAL COSTS:		
o Regional Allowance Costs:		
ERRS	$1,350,000	
o Other Extramural Costs:		
START	$ 150,000	
USACE	$ 25,000	
o ERT/REAC	$ 45,000	
o Subtotal, Extramural Cost:	$ 1,570,000	
o 20% Extramural Project Contingency:	$ 314,000	
- TOTAL EXTRAMURAL COSTS AND CONTINGENCY:		$1,884,000
- INTRAMURAL COSTS:		
o Direct and Indirect Costs:	$ 96,000	
o 20% Intramural Contingency :	$ 19,200	
- TOTAL INTRAMURAL COSTS AND CONTINGENCY:		$ 115,200
TOTAL REMOVAL PROJECT CEILING:		$ 1,999,200

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

Delayed action will increase public health risks to nearby public as well as environmental risks to the Naugatuck River. The situation is currently unstable. Any further delays in this action will add to the likelihood of a release through a number of circumstances, i.e., weather conditions.

VII. OUTSTANDING POLICY ISSUES

None

VIII. ENFORCEMENT

ATTACHED HERETO FOR INTERNAL DISTRIBUTION ONLY.

IX. RECOMMENDATION

This decision document represents the selected removal action for the Chase Brass and Copper Site in Waterbury, CT. It was developed in accordance with CERCLA, as amended, and is consistent with the National Contingency Plan (NCP). This decision is based on the administrative record file for the Site.

Conditions at the Chase Brass and Copper Site meet the NCP Section 300.415(b)(2) criteria for a removal action in that there are:

"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)];

"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)]; and,

"Other situations or factors that may pose threats to public health or welfare or the environment" [300.415(b)(2)(viii)].

Therefore, I recommend approval of this removal action. The estimated project ceiling is $1,999,200, of which $1,884,000 is for extramural contractor costs.

Approved: _____ Date 8-29-00

Disapproved: _____ Date _____