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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

ACTION MEMORANDUM

SUBJECT: Request for a Removal Action at the Westside Lead Site, Atlanta, Fulton County, Georgia

FROM: Charles L. Berry, On-Scene Coordinator
Emergency Response, Removal, Prevention, and Preparedness Branch

THRU: James W. Webster, Chief
Emergency Response, Removal, Prevention, and Preparedness Branch 11/4/2019

TO: Franklin E. Hill, Director
Superfund and Emergency Management Division

I. PURPOSE

The purpose of this Action Memorandum is to request and document the approval of a time-critical removal action described herein for the Westside Lead Site (the Site) in Atlanta, Fulton County, Georgia. The release of a hazardous substance at the Site poses a threat to public health and the environment pursuant to Section 104 (a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) that meets the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) Section 300.415(b)(2) criteria for removal actions.

Immediate removal actions conducted pursuant to Section 104 of CERCLA are necessary to protect human health and the environment. The total project ceiling for this time-critical removal action, if approved, will be **$1,814,869**

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID: GAN000407160
Site ID Number: C482
Removal Category: Time-Critical Removal

A. Site Description

The Westside Lead Site is an area of residential soil contamination in Atlanta's English Avenue neighborhood. Slag, an industrial waste from various metal-smelting processes, was used as fill material during property development across portions of the neighborhood. Atlanta's westside neighborhoods were developed during the first half of the 20th Century, and prior to the implementation of the Resource Conservation and Recovery Act (RCRA), there were no prohibitions against using industrial waste products as fill material.

1. Site Investigations

In 2018, an Emory University student collected data on heavy metal concentrations in Atlanta-area garden soil as part of dissertation research. Samples were collected at locations throughout western Atlanta and surrounding suburban areas, focusing on community gardens.

Elevated lead levels were found at several locations in west Atlanta. This finding was not unexpected as many urban areas exhibit lead concentrations higher than natural background due to a variety of factors, most commonly lead-based paint and historical use of leaded gasoline. Urban lead contamination is a well-researched issue, and the presence of lead above natural background would not normally result in a Superfund investigation. However, discussions with one of the community members resulted in the identification of industrial slag on residential lots near one of the gardens in the English Avenue neighborhood. The surrounding soil was found to have lead concentrations greater than 4,000 milligrams per kilogram (mg/kg), 10 times the U.S. Environmental Protection Agency's Removal Management Level (RML) of 400 mg/kg[1]. It was believed at the time that the slag was confined to a series of piles dumped on a single vacant lot on Elm Street. The industrial source of the slag is unknown. However, there were foundries located in Atlanta going back to the late 1800s, several located near the English Avenue area. Two of the foundries have documented evidence of lead-contaminated slag on-site and required post-closure remedial actions after the facilities shut down.[2]

One of the student's instructors, also an EPA Region 4 toxicologist, reported the finding to the EPA and the Georgia Department of Natural Resources' Environmental Protection Division (GA EPD). On November 15, 2018, GA EPD requested that the EPA perform a Removal Site Evaluation (RSE) on the property.

A site reconnaissance was performed in December 2018 (see Section 2.1). At that time, the On-Scene Coordinator (OSC) noted slag visible in lawns at several properties along Elm Street and along both sides of the street. Combined with the elevated lead data Emory collected from other properties along Elm Street, this observation indicated a potentially more widespread extent of contamination. The OSC initiated an RSE to determine whether contamination on Elm Street was confined to the soil piles at the single vacant lot, as previously thought, or was more widespread. To define a manageable investigation area, the OSC selected, as a starting point, the two city blocks surrounding 395 Elm Street which encompassed 60 tax parcels.

2. Removal Site Evaluation

The goals of the RSE, as outlined in the RSE Memorandum approved by Emergency Response, Removal, Prevention, and Preparedness Branch (ERRPPB) Management, were to determine:

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[1] This value is the default concentration derived using standard exposure and bioavailability values. Actual cleanup concentrations can be higher or lower depending on site-specific bioavailability data.

[2] Specifically, the Seitzinger Lead Smelter (EPD Hazardous Site Inventory No. 10138, 1994), and the Atlantic Steel facility, which was remediated under a GA EPD RCRA closure permit beginning in the late 1990s.

- If there are concentrations of lead above the EPA Region 4 RML for Residential soils of 400 parts per million in particles less than 150 micrometers (μm) in diameter in the uppermost six inches of soil at the Site.
- If there are concentrations of arsenic above the EPA Region 4 RML for Residential soils of 68 parts per million in particles less than 150 micrometers (μm) in diameter in the uppermost six inches of soil at the Site.
- If there are sensitive populations living and residing at locations meeting either of the criteria in #1 and/or #2 above.
- If Site conditions that meet any of the removal criteria provided in the NCP at 40 CFR 300.415(b).

2.1 Sampling Methods

At the direction of the OSC, the Superfund Technical Assessment and Response Team (START) developed a Quality Assurance Project Plan that incorporated the Region 4 X-Ray Fluorescence (XRF) Field Operation Guide (FOG) and the Incremental Sampling Methodology. For lots without improved structures, the entire lot was considered a single Decision Unit (DU). For properties with houses, independent front and backyard samples were collected. Additional samples for gardens, side-yards and play areas were taken as necessary. Sampling protocol included methods to prevent impacts from lead-based paint, such as maintaining a 5-foot distance from any structures when collecting the sample.

Upon collection, each sample was dried, disaggregated and then analyzed with an XRF to determine the bulk lead value. The sample was then sieved with an 850μ mesh to remove most organics. The sieved fraction was then disaggregated again and sieved with a 250μ mesh, disaggregated again and sieved with a 150μ mesh[3]. The 150μ fraction was retained for analysis. The sieved fractions were then analyzed with an XRF prior to being packaged for laboratory analysis. The seived samples were then sent to the EPA Region 4 laboratory in Athens, Georgia, for metals analysis. Once analyzed, the OSC selected 20 samples from the dataset representing a spectrum of lead concentrations for bioavailability analysis.

2.2 Sampling Results

There were difficulties in obtaining access to the lots, as most of the property in English Avenue is not owner-occupied but owned by absentee landlords. The EPA was successful in obtaining access to only 23 properties in the study area during the first round of sampling.

The data below were derived using the laboratory analyses as definitive data. XRF data, while collected, was not used for the RSE. However, there was excellent correlation between XRF and laboratory lead results ($r^2 = 0.9975$) and very good correlation between sieved laboratory data and unsieved XRF results ($r^2 = 0.8775$), and XRF lead data may be usable as definitive data in any future investigations.

[3] Sieving was performed to provide a more accurate assessment of the soil fractions most likely to be ingested by persons coming in physical contact with the soil.

The Superfund Scientific Support (SSS) Section reviewed the bioavailability data for the Site. Bioavailability testing attempts to gauge the portion of the lead in the soil that is absorbed by the human body after ingestion. The minerology of the lead in the soil affects its acid solubility and, thus, alters the amount of lead that can be absorbed into the body. Standard RMLs assume a bioavailability of 33% for lead. The results of the bioavailability sampling indicate the lead in the Westside soil is less available for absorption than the reference standard, with only 30% availability. SSS provided blood-lead equivalencies for various reference doses at this bioavailability. The OSC has selected a target blood lead level of 7 micrograms per deciliter of blood as the goal for the project. This results in a site-specific health-based remedial goal (SSRGs) of 400 mg/kg of lead in Site soil.

Laboratory arsenic values ranged from 0.77 mg/kg to 18 mg/kg. No samples exceeded the arsenic RML of 68 mg/kg. Thus, arsenic is not a contaminant of concern for this RSE. There was no discernable correlation between XRF and laboratory data for arsenic.

Lead values ranged from 57 mg/kg to 3,400 mg/kg. On a per-parcel basis, 15 of the 23 parcels (65%) sampled had at least 1 DU above the SSRG for lead of 400 mg/kg. Three parcels showed at least 1 DU equal to or above 1,200 mg/kg. The average over-SSRG concentration was 830 mg/kg.

Based on a spatial analysis of the data, the total area of impacted soil across the 15 properties is approximately 52,000 square feet. This represents about 47% of the total area sampled across all 23 lots. This area was used as the basis for computing the costs to complete the described response action.

2.3 Slag Observations

Throughout the RSE, the OSC and START contractors made notation of observed slag throughout the neighborhood to determine locations on properties likely to contain slag and if the contamination extends beyond the original 60-parcel area of investigation.

Slag was observed universally in areas where the property topography sloped down away from the roadway. Slag was found on these downslopes in decreasing abundance as one slopes away from the roadway. Given the uniformity of this finding, this trend is likely related to the original method of construction for the neighborhood *en masse* and not a property-specific characteristic.

On properties where slag was observed, it was generally just under a thin layer of topsoil. In places where the topsoil was completely eroded, large pieces of slag were exposed. Slag pieces ranged from sand-sized particles to large cobbles.

Slag was observed at properties up to 1/3 of a mile distant from the original location on Elm Street.

3. Physical Location

After the RSE was completed, the OSC expanded the Site boundaries to encompass an area bounded by Joseph E. Boone Boulevard NW, James P. Brawley Drive NW, Cameron Madison Alexander Boulevard NW and the former CSX rail lines running just west of Northside Drive. This area consists of 366 residential properties. Due to inconsistencies in the county tax registry, the exact number of residential properties is unknown. Some lots are zoned "Industrial" despite having a residential house on it, and others are zoned "Residential" despite having a commercial business located on it. For the purposes of this Action Memorandum, the Site location will be designated as 395 Elm Street, Atlanta, Fulton County, Georgia. The coordinates are latitude 33.7654320, longitude -84.4087470.

4. Site Characteristics

The English Avenue neighborhood is located on the west side of Atlanta and has existed since the late 1800s. The neighborhood was historically residential but directly abuts a major rail corridor through the central city. Large numbers of industrial properties were located along the corridor, including a coal-fired power plant, an iron foundry, a municipal incinerator, a recycling center and a manufactured gas plant. By the mid-1900s most of these facilities were shutting down, and by the mid-1970s nearly all of the industrial properties were converted over to municipal use or abandoned.

English Avenue went through an economic downturn in the second half of the 20th Century. Known colloquially as "the Bluff", the neighborhood is today a low-income and majority-minority area. The neighborhood is considered an environmental justice community under the definition in Executive Order 12898. Neighborhood organization has recently begun to take hold, and, today, the neighborhood is beginning to revitalize. Notably, in 2013 the Urban Waters Federal Partnership designated Proctor Creek, which drains most of west Atlanta, as a priority location. The EPA developed an extensive network of relationships with community leaders, and the resultant workgroup, the Proctor Creek Stewardship Counsel, earned a Samuel J. Heyman Service to America Award in 2018.

Within the investigation area, there are 366 residential parcels spread over 52 acres. Most parcels are small, less than 8,000 square feet. Approximately 1/3 of the parcels are unimproved, empty lots without residential structures; a visual count from the most recent aerial image showed approximately 130 empty lots within the 366-parcel area. Of the lots with standing structures, nearly one quarter are uninhabited. Current Census data estimates 1,333 total residents in the residential area, of which 1,254 are minorities. An estimated 99 children reside in the investigation area along with 74 elderly residents. An estimated 1,000 additional residents live in commercial apartment buildings within or adjacent to the investigation area.

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

The presence of lead in the soil at the Site constitutes a release of hazardous substances as defined by CERCLA 101 (14) and 101(22). Lead is a hazardous substance listed in CFR Title 40 Section 302.4.

6. National Priorities List (NPL) Status

The Site is not on the NPL but is currently undergoing a Preliminary Assessment to determine if an expanded investigation to list the Site under the NPL is warranted.

7. Maps, pictures, and other graphic representations

Maps and figures are attached to this Action Memorandum.

B. Other Actions to Date

1. Previous Actions

Other than the activities mentioned above, no other government or private actions have been taken to investigate or mitigate the threats posed by the Site.

2. Current Actions

There are currently no on-going activities at the Site.

C. State and Local Authorities' Role

1. State and Local Actions to Date

GA EPD has been involved with all activities at the Site. ERRPPB has coordinated all investigatory and response activities with EPD and the City of Atlanta. The City is assisting with Community Involvement activities.

2. Potential for Continued State and Local Response

GA EPD will continue to be involved with the response but is unable to commit funding to perform the necessary cleanup. The City of Atlanta has committed to assisting the EPA with Community Involvement activities.

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

A. Threats to Public Health or Welfare

Lead is a hazardous substance as defined by Section 101(14) of the CERCLA and RCRA characteristic definitions. CERCLA contaminants, if released from the Site, have the capability of presenting a hazard to the public. The threats come primarily from human exposure (i.e. residents) to these hazardous substances in the soil. Direct contact, ingestion and inhalation of lead-contaminated soil are the primary pathways of exposure. The lead in surface soils on-site pose the following threats to public health or welfare as listed in Section 300.415 (b)(2) of the NCP:

Section 300.415 (b)(2)(i) ***Actual or potential exposure to nearby human populations, or the food chain from hazardous substances pollutants or contaminants***; Based on bioavailability analysis of the Site soil, the EPA Region 4 SSS recommends an SSRG of 400 mg/kg in residential exposure scenarios to Site soils. Fifteen (15) of the 23 sampled properties contain lead levels in surface soil exceeding the SSRG. Residents, especially small children, have potential direct contact exposure to the lead, through either transference to their digestive tract via their hands or through inhalation of airborne dust.

Section 300.415 (b)(2)(iv) ***High levels of hazardous substances or pollutants or contaminants in the soils largely at or near the surface, that may migrate***; Elevated lead in surface soils may migrate through land erosion or physical movement by owners and tenants. Lead levels in the soil have been observed as high as 3,400 mg/kg. These levels are in the first six inches of Site soil. Further, the thin topsoil is underlain in many areas by slag. This topsoil is fully eroded in some areas, exposing slag at the surface of the property. The slag will weather and break down, distributing additional lead into the neighboring soil. For at least one property with lead levels at 3,400 mg/kg, physical disturbance by the property owner planting trees along the roadside was evident, and slag was distributed along the surface of the ground. Residents may accelerate the distribution by unearthing slag during normal gardening practices, increasing the likelihood of direct exposure conditions addressed under Section 300.415 (b)(2)(i).

Section 300.415 (b)(2)(v) ***Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released***; Lead dust mobilized by wind may be inhaled by children and other residents. Airborne dust is also carried across property lines, so that children living on a property with low levels of lead may be exposed to lead dust emanating from a neighboring property with high levels. This dust can then be inhaled directly or carried or blown into the residence. While the inhalation pathway was not quantified during this RSE, the Superfund Lead-Contaminated Residential Sites Handbook, August 2003, notes that it can be a significant source of total body load for lead and that remediation of external sources is required to permanently remove this threat.

Section 300.415 (b)(2)(vii) ***The availability of other appropriate federal or state response mechanisms to respond to the release***; There are no other federal agencies available to respond. The State of Georgia has requested the EPA's assistance with the removal action at the Site and has indicated it lacks the resources necessary to deal with the threat.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances 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, welfare or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. <u>Proposed Actions</u>

1. Proposed action description

Lead levels in surficial soil have been documented to be as high as 3,400 mg/kg. Based on bioavailability sampling data, the Region 4 SSS Section has provided a SSRG for lead of 400 mg/kg.

The EPA's proposed actions include the following:

a. Construct a staging area within the neighborhood for equipment storage, office space, and soil stockpiles. A contiguous group of residential parcels within the Site boundary are already identified and access is granted. Sampling of the parcels is scheduled but cannot be performed until the lots are cleared of substantial vegetative overgrowth. This funding request includes the cost of remediating the entirety of these lots to a 2-foot maximum depth.

b. Survey properties to verify current property boundaries, if not apparent;

c. Develop a Community Involvement Plan and implement the plan to ensure continued participation of affected residents and community leaders in the removal action;

d. Construct a staging area for Site activities such as soil stockpiling, equipment storage and office trailer locating;

e. Inventory existing plants, grasses, utilities and outbuildings on each property;

f. Remove impediments, as allowed, to provide for an appropriate excavation effort;

g. Excavate contaminated surficial soils at the Site until:

    i. the lead concentration in exposed soil as determined by ex-situ XRF screening is less than the SSRG of 400 mg/kg, or

    ii. 12 inches of soil is excavated, unless visible slag source material is present, at which excavation will continue until either:

        i. the lead concentration in exposed soil falls below the SSRG of 400 mg/kg as determined by ex-situ XRF screening, or;

        ii. 24 inches of soil has been excavated.

    iii. If contamination at any exposed depth remains after excavation is complete, a geotextile fabric will be placed over the contaminated soil to warn against further intrusion past the barrier.

h. Backfill with clean soil, shape to original contours and lightly compact;

i. Replace or repair any EPA-damaged concrete, piping, fencing, outbuildings, etc;

j. Conduct ex-situ screening and/or collect samples for laboratory analysis as necessary;

k. Restore areas which are disturbed by the removal action to their pre-removal state to the maximum extent practicable;

l. Monitor ambient dust levels generated by the response actions to ensure no off-site impacts to nearby populations or property;

m. Perform on-site treatment of characteristically hazardous waste, if appropriate;

n. Arrange for off-site transportation and disposal/treatment of contaminated soil according to applicable regulations, including the CERCLA off-site rule;

o. Maintain Site security and limit access during implementation of the removal action;

p. Conduct all removal actions pursuant to an EPA-approved Health and Safety Plan;

q. Temporarily relocate residents, if necessary, during excavation activity; and,

r. Re-establish vegetation.

2. Contribution to remedial performance

The proposed removal action is warranted to address the threats discussed in Section III, which meet the NCP Section 300.415 (b) (2) removal criteria. The Site is currently undergoing a Preliminary Assessment under the Remedial Process. The removal action contemplated in this Action Memorandum will be consistent with any remedial action.

3. Engineering Evaluation/Cost Analysis (EE/CA)

This proposed action is time-critical and does not require an EE/CA.

4. Applicable or Relevant and Appropriate Requirements (ARARs)

In accordance with the NCP at 40 C.F.R. § 300.415(j), on-site removal actions conducted under CERCLA are required to attain ARARs to the extent practicable, considering the exigencies of the situation, or provide grounds for invoking a CERCLA waiver under Section 121(d)(4). Off-site removal activities need only comply with all applicable federal and state laws, unless there is an emergency. This cleanup is being conducted as a time-critical removal action.

A letter to the State of Georgia requesting identification of State ARARs was sent on August 1, 2019. A response from the State was not received prior to submission of this Action Memo.

Under CERCLA Section 121(e)(1), federal, state or local permits are not required for the portion of any removal or remedial action conducted entirely on-site as defined in 40 C.F.R. § 300.5. See also 40 C.F.R. §§ 300.400(e)(1) & (2). On-site means the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action. On-site response actions must comply, to the extent practicable, with substantive but not administrative requirements of ARARs. Off-site activities such as transportation and disposal of wastes are required to comply with all applicable requirements, including the administrative portions.

Depending upon results of further investigation of the Site, additional ARARs may be applicable. The EPA OSC is in communication with the State to develop an approach consistent with all ARARs as practicable.

As provided in CERCLA Section 121(d)(3) and the Off-site Rule at 40 C.F.R. 300.440 *et seq.*, the off-site transfer of any hazardous substance, pollutant or contaminant generated during the response action will be sent to a treatment, storage or disposal facility that is in compliance with applicable federal and state laws and has been approved by the EPA for acceptance of CERCLA waste.

5. Project schedule

Removal activities are anticipated to begin within two months of approval of this Action Memorandum. It is anticipated that once activities begin, this removal action will take approximately 4 months to complete.

B. Estimated Costs

Extramural Costs:	***Proposed Ceiling***
Regional Allowance Costs:	
ERRS	$ 1,516,520
START	$ 133,361
Subtotal, Extramural Costs:	$ 1,649,881
10% Contingency	$ 164,988
TOTAL EXTRAMURAL COSTS:	$ **1,814,869**

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

If this response action is significantly delayed or not taken, ongoing exposure of the public will continue.

VII. OUTSTANDING POLICY ISSUES

No outstanding policy issues have been determined at this time.

VIII. ENFORCEMENT

Enforcement activities have been initiated and are ongoing. See Attachment, "Enforcement Sensitive," for more detailed information.

The total EPA costs for this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be **$3,160,354** using the following formula[4]:

[4] Direct costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific directs costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including 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.

Direct Costs	Total Extramural Costs	$	1,814,869
	+ Total Intramural Costs	$	31,240
	Total Direct Costs	$	1,846,109
+ Indirect Costs	+ 71.19%	$	1,314,245
	Total EPA Costs	**$**	**3,160,354**

IX. RECOMMENDATION

This decision document represents the selected removal action for the Westside Lead Site in Atlanta, Fulton County, Georgia, developed in accordance with CERCLA as amended, and not inconsistent with the NCP. The document is based on the administrative record for the Site.

Conditions at the Site meet the NCP Section 300.415 (b)(2) criteria for a time-critical removal action. This time-critical removal action is anticipated to be fund-lead with a total project ceiling of **$1,814,869** funded through the Regional Removal Allowance.

APPROVED: _____ DATE: Nov 4, 2019
Franklin E. Hill, Director
Superfund and Emergency Management Division

DISAPPROVED: _____ DATE: _____
Franklin E. Hill, Director
Superfund and Emergency Management Division

Attachments

(b) (7)(A)

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