UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7
11201 Renner Boulevard
Lenexa, Kansas 66219

AUG 0 6 2015

ACTION MEMORANDUM

SUBJECT: Request for a Time-Critical Removal Action and Consistency Exemption from the 12-Month and $2 Million Statutory Limits at the Former United Zinc and Associated Smelters Site
Iola, Allen County, Kansas

FROM: Randy Schademann, On-Scene Coordinator
Planning and Preparedness North Section

THRU: Dave Williams, Chief
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TO: Mary P. Peterson, Director
Superfund Division

Site ID#:	A78Q
CERCLIS ID:	KSN000705026
CERCLIS Sequence #:	RV003
Category of Removal:	Time-critical
Nationally Significant/Precedent Setting:	No

I. PURPOSE

The purpose of this Action Memorandum (Memorandum) is to request funding and document approval of the proposed removal action and consistency exemption from the 12-month and $2 million statutory limits described herein for the Former United Zinc and Associated Smelters Site (Site), located in Iola, Allen County, Kansas. This action satisfies the criteria for removal actions under Section 300.415 (b)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

The EPA previously completed excavation of 129 lead-contaminated properties that exceeded the removal action criteria under the original Action Memorandum, dated August 4, 2006. In June 2007, the EPA issued a Finding of Imminent and Substantial Endangerment to conduct a second time-critical removal action at the McKinley Elementary School after soil disturbance work on the school grounds resulted in the spreading of lead-contaminated soils throughout the school playground. This second removal action began on June 21, 2007, and was completed the following day on June 22, 2007.

The removal action under this Memorandum (removal action #3) will consist of removal and proper disposal of soil and/or waste containing lead concentrations greater than 400 milligrams per kilogram (mg/kg) from properties meeting the following criteria: residential properties where a composite sample exceeds a concentration of 800 mg/kg, high child impact areas such as schools and

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daycare facilities where a composite sample exceeds a concentration of 400 mg/kg, and residential properties where a child with a blood lead level of 10 micrograms per deciliter (µg/dl) or greater resides and soil contains lead concentrations over 400 mg/kg. Currently, approximately 350 properties have been identified that meet these criteria. Soil samples will be tested using Toxicity Characteristics Leaching Procedure (TCLP), established by the Resource Conservation and Recovery Act (RCRA), to determine the maximum lead concentration in excavated soils that would be acceptable for disposal. Excavated soil will be transported to a RCRA Subtitle D landfill and used as daily cover. Any soil that exceeds the TCLP will be treated to below the TCLP standards for lead of 5 milligrams per liter (mg/L) prior to transport to the landfill or disposed at a RCRA Subtitle C disposal facility.

Removal actions are anticipated to begin in the fall of 2015 and take more than a year to complete. The primary objective of this action is to eliminate or reduce the potential ingestion exposure due to the presence of lead and other heavy metals in the soil.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

1. Removal Site Evaluation

The Site is located in and around the city of Iola, Allen County, Kansas. The main Former United Zinc property is located on the east side of Iola within a mixture of residential and commercial properties. The facility was one of several zinc and lead smelting operations in the area between 1902 and 1925. Residential and non-residential properties were contaminated with elevated levels of lead.

The Kansas Department of Health and Environment (KDHE) began investigations at the Site in December 2003. Elevated levels of lead were found in residential and commercial properties throughout the community of Iola. On September 29, 2005, KDHE referred the Site to the EPA Superfund Removal Program for assessment and completion of a removal action.

In late April 2006, the EPA began sampling properties in the Iola community utilizing an x-ray fluorescence (XRF) screening instrument and confirmatory laboratory analysis. Approximately 260 homes, daycare facilities, schools, and commercial areas were screened at locations throughout the city to identify trends or potential pathways of contamination. Results showed elevated lead concentrations throughout the city, with higher concentrations prevailing in older neighborhoods. The highest concentration of lead was found south of Highway 54 and east of Kentucky Street, with some concentrations greater than 1,000 mg/kg. Lead was found at levels up to 2,290 mg/kg in residential properties and 6,433 mg/kg in commercial properties. Anecdotal information from long-time residents indicated slag material from the smelter was a source of fill material in home foundations, sidewalks, driveways, etc.

From 2007 to 2014, the EPA Remedial Program conducted additional site assessment activities. As a result of this effort along with data from the 2006 removal action, approximately 700 properties were identified as containing soil with lead concentrations between 400 and 800 mg/kg. These properties will be addressed through the EPA Remedial Program. Additionally, approximately 350 residential properties were identified as exceeding the action criteria in this Memorandum and will be addressed by this removal action. Approximately 200 properties have not been screened because the

residents denied access or were unable to be contacted. The EPA will continue efforts to assess these properties.

2. Physical Location

The Site is located in and around the city of Iola, Allen County, Kansas. The main Former United Zinc property is located on the east side of Iola within a mixture of residential and commercial properties. Rock Creek flows northeast/southwest into Elm Creek and is located approximately 2,200 feet southeast of the property. Elm Creek, a tributary of the Neosho River, is located approximately 4,200 feet southwest of the property. The Neosho River is located approximately 2.3 miles southwest of the property. An intermittent tributary is also located approximately 1,000 feet east of the property. The United Zinc facility was one of several zinc and lead smelting operations in the area between 1902 and 1925.

Iola has a population of 5,704 and has a mix of residential and commercial properties. The city of Iola receives its water supply from the Neosho River. The City of Iola Water Works Plant is located west of the city and approximately two miles from the Site.

3. Site Characteristics

The discovery and use of natural gas in the early 1900s led to the development of zinc and lead smelting operations in southeast Kansas. The main Former United Zinc property is located on the east side of Iola and was first operated by William Lanyon from 1901 to 1902. The facility was then sold to United Zinc, operated until approximately 1912, and owned by United Zinc from 1902 to 1925. Historical records indicate that the facility originally housed machinery and buildings for the lead smelting operations. All on-site smelter facilities have been removed, and the property has been graded, leveled, and developed since the 1920s. The Former United Zinc facility was one of several zinc and lead smelting operations in the area between 1902 and 1925.

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

Lead, a hazardous substance as defined by Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, has been released into the soil at the Site. The term "release," as defined in CERCLA Section 101 (22), means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment.

The primary contaminants of concern at this Site are lead and lead compounds. The EPA evaluated the potential bioavailability of six surface soil samples from across the Site in June 2006. More specifically, an in vitro bioaccessibility assay (IVBA) was performed to characterize the relative bioavailability (RBA) of lead in surface soil. The reported bioaccessibility results range from 67% to 86%, with an arithmetic average of 77%. These results indicate that the lead-contaminated soil from across the Site may be more bioavailable than the default RBA value of 60% used in the EPA's Integrated Exposure Uptake Biokinetic Model for Lead in Children. A removal response for residential properties exceeding 800 mg/kg is necessary due to the likely elevated bioavailability of lead in surface soil which presents an imminent and substantial endangerment to children residing at or frequenting residential properties. This level is consistent with the guidance discussed in the EPA's Office of Solid

Waste and Emergency Response (OSWER) "Superfund Lead-Contaminated Residential Sites Handbook," dated August 2003.

The EPA has currently identified approximately 350 residential properties which exceed the action levels and will be included in the removal action. A residential property is defined in the "Superfund Lead Contaminated Residential Sites Handbook" OSWER 9285.7-50, page 19 (August 2003), as any area with high accessibility to sensitive populations, and includes properties containing single- and multi-family dwellings, apartment complexes, vacant lots in residential areas, schools, daycare centers, community centers, playgrounds, parks, green ways, and any other areas where children may be exposed to site-related contamination media. The Handbook defines sensitive populations as young children (those under the age of seven, who are most vulnerable to lead poisoning) and pregnant women.

5. NPL Status

The Site was listed on the National Priorities List (NPL) on May 21, 2013.

B. Other Actions to Date

In December 2003, KDHE completed a Phase I Focused Former Smelter Assessment (FFSA) that identified the Site as a potential source of heavy metals. In December 2004, KDHE completed a Phase II FFSA that identified lead, cadmium, arsenic and zinc on the former United Zinc and Chemical Company site. Lead was detected in sample results at levels as high as 49,000 mg/kg. In June 2005, KDHE screened right-of-ways at 50 residential properties which identified lead-contaminated soils exceeding 400 mg/kg at 36 percent of the properties.

A contractor for the EPA conducted the Removal Site Evaluation (RSE) in 2006. During the RSE, 260 properties were screened, including 234 residential properties, 15 daycare facilities, five public schoolyards, two churches, and four commercial properties. A total of 69 (27 percent) of the properties analyzed exceeded the EPA's screening level of 400 mg/kg. Lead levels in soil exceeded 400 mg/kg at two schools, eight daycare facilities, and one residence where a child with blood lead levels of 10 µg/dl or greater resided.

The original Action Memorandum, dated August 4, 2006, proposed that the EPA conduct removal and proper disposal of soil with lead concentrations at levels as follows: residential property where the soil contains lead concentrations equal to or greater than 800 mg/kg, high child impact areas such as schools and daycare facilities where the soil contains lead concentrations over 400 mg/kg, residences where a child resides with a blood lead level of 10 µg/dl or greater and the soil contains lead concentrations over 400 mg/kg, and industrial properties where the soil contains lead concentrations equal to or greater than 1,000 mg/kg.

The EPA completed excavation in June 2007 of 129 properties (two elementary schools and 127 residential properties) that exceeded the action criteria under the original Action Memorandum. Of those 129 properties, 20 were considered high child impact areas. The EPA screened approximately 1,686 properties during the course of the removal action.

In June 2007, the EPA issued a Finding of Imminent and Substantial Endangerment to conduct a second time-critical removal action at the McKinley Elementary School. Based on the original sampling effort in April 2006, the McKinley Elementary School was found to have lead levels exceeding

400 mg/kg. Designated areas of the grounds were excavated on August 19, 2006. During the months of April and June 2007, the School District Maintenance Department completed soil disturbance work on the school grounds, resulting in the spreading of lead-contaminated soils throughout the school playground. As a result, the EPA sampled those areas and found lead concentrations at levels of up to 5,500 mg/kg. The EPA determined that a hazard was present warranting a removal action. This separate action began on June 21, 2007, and was completed the following day on June 22, 2007.

Due to subsequent flooding and severe weather conditions in Iola, the EPA amended the original Action Memorandum to request additional funding for re-vegetation of certain excavated properties. On October 15, 2007, the EPA began this effort. All properties excavated under this action were reseeded, and those that required additional work (i.e., minimal dirt work and power-raking) were completed on October 31, 2007.

To date, the EPA has completed the removal of approximately 74 acres of lead-contaminated soils (based on 5 acres per school and .5 acres per residential property). The following shows the total amount of excavated soil, clean backfill soil, and gravel used during the course of these removal actions:

- 20,159.08 tons of excavated soil removed
- 21,168.00 cubic yards of clean soil backfilled
- 528.5 tons of gravel backfilled.

Since this Site is on the NPL, the EPA Remedial Program initiated a Remedial Investigation/ Feasibility Study (RI/FS) and has conducted additional site assessment activities, concluding in 2014. As a result of this effort, along with data from the previous removal assessment and actions, approximately 700 properties were identified as containing soil with lead concentrations between 400 and 800 mg/kg. These properties will be addressed through the EPA Remedial Program. Additionally, approximately 350 residential properties were identified as exceeding the action criteria of this Memorandum and will be addressed through this removal action. Approximately 200 properties have not been screened because the residents denied access or could not be contacted.

C. State and Local Authorities' Roles

The EPA is closely coordinating with KDHE and the Southeast Kansas Multi-County Health Department - Allen County location in Iola, Kansas. These agencies, the EPA, and the Agency for Toxic Substances and Disease Registry (ATSDR) are communicating regularly on issues concerning the Site. Assessments performed by KDHE are summarized in subparagraph B, above.

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

A. Threats to Public Health or Welfare

Section 300.415(b) of the NCP provides that the EPA may conduct a removal action when it determines that there is a threat to human health or welfare or the environment based on one or more of the eight factors listed in 40 CFR § 300.415(b)(2). The factors that justify a removal action at the Site are outlined as follows:

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

Elevated concentrations of lead have been found throughout the Site. Children playing in and around the contaminated areas have the highest potential to be exposed. The EPA has currently identified soil and/or waste with lead concentrations greater than 400 mg/kg from approximately 350 properties which meet the following criteria: residential properties where a composite sample exceeds a concentration of 800 mg/kg, high child impact areas such as schools and daycare facilities where a composite sample exceeds a concentration of 400 mg/kg, and residential properties where a child with a blood lead level of 10 µg/dl or greater resides and soil contains lead concentrations over 400 mg/kg.

Lead is a metal and has been listed as a hazardous waste (D008) in the regulations for RCRA. Lead is classified by the EPA as a probable human carcinogen and is a cumulative toxicant. The early effects of lead poisoning are nonspecific and difficult to distinguish from the symptoms of minor seasonal illnesses. Lead poisoning causes decreased physical fitness, fatigue, sleep disturbance, headache, aching bones and muscles, digestive symptoms (particularly constipation), abdominal cramping, nausea, vomiting, and decreased appetite. With increased exposure, symptoms include anemia, pallor, a "lead line" on the gums, and decreased handgrip strength. Alcohol and physical exertion may exacerbate these symptoms. The radial nerve is affected most severely causing weakness in the hands and wrists. Central nervous system effects include severe headaches, convulsions, coma, delirium, and possibly death. The kidneys can also be damaged after long periods of exposure to lead, with loss of kidney function and progressive azotemia. Reproductive effects in women include decreased fertility, increased rates of miscarriage and stillbirth, decreased birth weight, premature rupture of membrane, and/or pre-term delivery. Reproductive effects in men include erectile dysfunction, decreased sperm count, abnormal sperm shape and size, and reduced semen volume. Lead exposure is associated with increases in blood pressure and left ventricular hypertrophy. A significant amount of lead that enters the body is stored in the bone for many years and can be considered an irreversible health effect.

Children are more vulnerable to lead poisoning than adults. For children, lead can damage the central nervous system, kidneys and reproductive system. At higher levels, it can cause coma, convulsions and death. Even low levels of lead are harmful and are associated with decreased intelligence, impaired neurobehavioral development, decreased stature and growth, impaired hearing acuity, and possibly high blood pressure. Additional exposure effects are discussed in ATSDR ToxFAQS Lead Fact sheet CAS # 7439-92-1, dated June 1999.

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

Lead has been detected in surface soils above the proposed removal action level of 800 mg/kg for residential properties. Lead-contaminated soils may migrate via airborne dusts, surface runoff, percolation into groundwater, construction activity, by children transporting soils/dusts into their homes after playing in the affected areas, and tracked in by foot.

300.415(b)(2)(v) – Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

There is a significant threat of release caused by wind blowing surface soils containing lead and other metals at the Site, resulting in a risk of exposure to children and adults who reside at the Site or attend church and school at the site.

300.415(b)(2)(vii) – The availability of other appropriate federal or state response mechanisms to respond to the release.

The EPA has explored other mechanisms to respond to this release of hazardous substances at the Site and none have been identified.

B. Threats to the Environment

Section III.A of this Memorandum provides the known contaminants of concern found at the Site and some discussion of their effects on environmental receptors. Current site conditions represent a significant threat of contamination from lead and other metals to the drainage way to the north of the Site, a monitoring well within a quarter mile of the Site, an agricultural pond approximately 1,800 feet southeast of the Site, and Rock Creek. Rock Creek flows northeast/southwest and flows into Elm Creek, a tributary to the Neosho River. Threats are posed because of the potential for continued release from this Site via airborne dusts, surface runoff, percolation into groundwater, construction activity, by children transporting soil/dust into their homes after playing in the affected areas, and by tracking in by foot.

IV. ENDANGERMENT DETERMINAITON

The actual release of a hazardous substance at the Site, if not addressed by implementing the response action selected in this Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. EXEMPTION FROM STATUTORY LIMITS

Although excavation and replacement of soils can occur quickly, restoration activities at similar NPL lead smelting sites have taken longer than 12 months to complete. Approximately 350 properties have been identified that meet the removal action criteria of this Memorandum. Based upon cost accounting at other lead smelting sites and the number of properties exceeding the action criteria at this Site, the total cost is expected to exceed $2 million.

Continued response actions are otherwise appropriate and consistent with the removal action to be taken. As previously described, this action will consist of removal of soil and/or waste containing lead concentrations greater than 400 mg/kg from properties meeting the following criteria: residential properties where a composite sample exceeds a concentration of 800 mg/kg, high child impact areas such as schools and daycare facilities where a composite sample exceeds a concentration of 400 mg/kg, and residential properties where a child with a blood lead level of 10 µg/dl or greater resides and soil contains lead concentrations over 400 mg/kg. These properties represent the highest risk to the residents of Iola, Kansas. Following the completion of the RI/FS and Record of Decision, it is anticipated that the Remedial Program will initiate remediation of soil and/or waste containing lead concentrations greater

than 400 mg/kg at residential properties where a composite sample exceeds a concentration of 400 mg/kg. Therefore, this removal action is consistent with the planned remedial action and will not interfere with likely remedial alternatives for addressing lead-contaminated soil.

Continued response actions are also necessary to avoid a foreseeable threat to the residents of Iola, Kansas. Without continued response activities by the EPA, residents in the Iola, Kansas area would risk exposure to high lead concentrations that could lead to the adverse health effects described in this Memorandum. Assistance will not otherwise be provided on a timely basis. Neither the state of Kansas, the county, nor local governments have the response authority and/or resources to implement the described actions.

The above conditions satisfy the consistency exemption criteria for a combined 12-month and $2 million exemption from statutory removal action limits and should be granted to provide time-critical response actions.

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed Action Description

The proposed action involves excavation and removal of lead-contaminated soil, backfilling the excavated area to original grade with clean topsoil, and restoring a grass lawn at the properties. Removal and proper disposal of contaminated soil which exceeds the action level is necessary due to the likely elevated bioavailability of lead in surface soil which presents an imminent and substantial endangerment to children residing at or frequenting residential properties. This level is consistent with the guidance discussed in the EPA's OSWER "Superfund Lead-Contaminated Residential Sites Handbook," OSWER 9285.7-50 (August 2003). The EPA has currently identified approximately 350 residential properties with soil containing lead concentrations greater than 800 mg/kg.

In order to avoid unnecessary mobilization, demobilization, and intrusion on the residents, the EPA will excavate all soil exceeding 400 mg/kg in yards where at least one quadrant, cell, or zone exceeds 800 mg/kg, including drip zones. Any sample area with soils and/or waste exceeding the response criteria described above will be excavated to a maximum depth of 24 inches. Excavation will stop if lead levels are less than 400 mg/kg in the top 12 inches. Excavation will stop if lead levels are less than 1,200 mg/kg at an excavation depth of 12 inches or deeper. Should it be determined that lead levels below 1,200 mg/kg cannot be reached at an excavation depth of 24 inches, excavation will cease and a warning barrier will be placed to alert the property owner of the existence of high levels of lead. Creation of raised-bed gardens may be considered as an option for remediation of garden areas where removal of contaminated soil to achieve cleanup criteria is not practicable.

Soil samples will be tested using TCLP to gain a representative value (mg/kg) of all excavated soils acceptable for disposal. Excavated soil will be transported to a RCRA Subtitle D landfill and used as cover. Any soils that exceed the TCLP-determined upper limit soil concentration will be treated prior to transport to the landfill or disposed at a RCRA Subtitle C disposal facility. Transportation, treatment, storage, and disposal of the excavated material shall be in accordance with all applicable local, state, or federal requirements, including the EPA's Off-Site Rule.

After confirmation sampling has verified that cleanup goals have been achieved, excavated areas will be backfilled with non-contaminated clean soil to original grade and re-vegetated. Clean soil must contain lead concentrations below 100 mg/kg and all other hazardous substances, pollutants, or contaminants at concentrations below residential soil-screening levels determined by the EPA, or by referring to the Region 9 Preliminary Remediation Goal tables found at: http://www.epa.gov/Region9/waste/sfund/prg/index.htm.

Soil sampling performed to guide response decisions will be done in accordance with procedures described in the "Superfund Lead-Contaminated Residential Sites Handbook," OSWER # 9285.7-50 (August 2003). Residential yards will be divided into a number of sections and one multi-aliquot composite sample will be collected from each section. Soil samples will generally be analyzed for lead content using XRF spectroscopy. A representative number of samples will be sent off site for laboratory confirmation analysis in accordance with quality assurance/quality control plans. Sample results will be compared to appropriate soil action levels.

2. Contribution to Remedial Performance

The actions proposed in this Memorandum should not impede any future remedial plans or other response. This removal action will, to the extent practicable, contribute to the efficient performance of any long-term remedial action. A remedial action is planned for approximately 700 residential properties where soil sample results show lead at concentrations exceeding 400 mg/kg but below 800 mg/kg. This proposed removal action is consistent with any long-term remedy that may be proposed for residential properties, schools and daycare facilities with lead contamination in soils between 400 and 800 mg/kg or above. Additionally, this removal action abates the threat to children with an elevated blood-level of 10 µg/dl or higher by establishing a clean-up level of 400 mg/kg.

3. Action/Cleanup Level

The removal action will consist of removal and proper disposal of soil and/or waste containing lead concentrations greater than 400 mg/kg from properties meeting the following criteria: residential properties where a composite sample exceeds a concentration of 800 mg/kg, high child impact areas such as schools and daycare facilities where a composite sample exceeds a concentration of 400 mg/kg, and residential properties where a child with a blood lead level of 10 µg/dl or greater resides and soil contains lead concentrations over 400 mg/kg. All site-sampling activities for comparison to the action levels will be conducted in accordance with the approved Quality Assurance Project Plan.

4. Applicable or Relevant and Appropriate Requirements (ARARs)

Section 300.415(j) of the NCP provides that fund-financed removal actions under Section 104 and removal actions pursuant to CERCLA Section 106, shall, to the extent practicable considering the exigencies of the situation, attain ARARs under federal or state environmental facility citing laws. The following specific ARARs have been identified for this action:

Federal

- Subtitle D of RCRA, Section 1008, and Section 4001, et seq.; 42 U.S.C. § 6941, et seq.; State or Regional Solid Waste Plans and implementing federal and state regulations.

- Occupational Safety and Health Act, 29 C.F.R. Part 1910, will be applicable to all actions.

- Subtitle C of RCRA, 42 U.S.C. § 6901, et seq.; 40 C.F.R. Part 260, et seq.; and implementing federal and state regulations for contaminated soil that exhibit the characteristic of toxicity and are considered RCRA hazardous waste.

- Subtitle C of RCRA is potentially applicable for the removal of soil contaminated with heavy metals from releases as a result of smelter operations at the facility or from surrounding smelter operations, particularly if this soil exceeds the TCLP regulatory threshold.

- 40 C.F.R. Parts 50.6 and 50.12, Clean Air Act, National Ambient Air Quality Standards, are the national ambient air quality standards for air quality pertaining to particulate matter and lead. Engineering controls will be used at this Site to achieve those standards.

- Department of Transportation (DOT) regulations, 49 C.F.R. §§ 107, 171-177. DOT hazardous material transportation regulations may be relevant and appropriate for transportation of the contaminated soils to the disposal facility.

State

In a letter dated June 24, 2015, the EPA requested potential state ARARs from KDHE. Any identified potential ARARs will be evaluated and complied with to the extent practicable.

5. Project Schedule

The removal action is anticipated to begin in the fall of 2015 and take more than a year to complete.

C. Estimated Costs

The costs associated with this removal action are estimated as follows:

Extramural Costs	$7,200,000
Contingency	1,400,000
Removal Ceiling	$8,600,000

EPA direct and indirect costs, although cost recoverable, do not count toward the Removal Ceiling for this removal action. Refer to the enforcement section for a breakout of these costs.

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

Delayed action will result in a continued threat to public health or welfare and the environment.

VIII. ENFORCEMENT

See the Confidential Enforcement Addendum for this Site. For NCP consistency purposes, it is not a part of this Action Memorandum.

The total EPA costs for this removal action based on full-cost accounting practices are estimated to be:

Direct Extramural Costs	$8,600,000
Direct Intramural Costs	150,000
EPA Indirect (50.21 percent)	4,393,375
Total Costs	$13,143,375

Direct costs include direct extramural and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost-accounting methodology effective October 2, 2000. These estimates do not include prejudgment 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.

IX. RECOMMENDATION

This decision document represents the selected removal action for addressing the hazardous substances, pollutants or contaminants present at the Site. The removal action was developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based on the Administrative Record for the Site.

The conditions at the Site meet NCP Section 300.415(b) criteria for a removal action. I recommend your approval of the proposed removal action and consistency exemptions from statutory limits on review. The removal action ceiling will be $8,600,000. These funds will come from the Regional Removal Advice of Allowance.

Approved:

Mary P. Peterson
Mary P. Peterson, Director
Superfund Division

8/6/2015
Date