UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5

IN THE MATTER OF: U.S. Smelter and Lead Refinery, Inc. Site in East Chicago, Lake County, Indiana Atlantic Richfield Company, The Chemours Company FC, LLC, E. I. du Pont de Nemours and Company, Mueller Industries, Inc., United States Metals Refining Company, and U.S.S. Lead Refinery, Inc., Respondents. Proceeding under Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. § 9606(a).	CERCLA Docket No V-W-18-C-006 **UNILATERAL ADMINISTRATIVE ORDER FOR INTERIOR REMOVAL ACTIONS IN ZONE 2 AND ZONE 3 OF OPERABLE UNIT 1 OF THE U.S. SMELTER AND LEAD REFINERY, INC. SUPERFUND SITE**

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I. JURISDICTION AND GENERAL PROVISIONS

1. This Administrative Order ("Z2&3 Interior UAO") is issued under the authority vested in the President of the United States by Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act, (CERCLA), 42 U.S.C. § 9606(a). This authority was delegated to the Administrator of the United States Environmental Protection Agency ("EPA") by Executive Order No. 12580, 52 Fed. Reg. 2923 (Jan. 23, 1987), and further delegated to the Regional Administrators by EPA Delegation Nos. 14-14A and 14-14B. On May 11, 1994, this authority was further redelegated by the Regional Administrator of EPA Region 5 to the Superfund Division Director of Region 5 by EPA Regional Delegation No. 14-14B.

2. This Z2&3 Interior UAO pertains to property located at the U.S. Smelter and Lead Refinery Inc., Site in East Chicago, Lake County, Indiana (the "USS Lead Site" or the "Site"). This Z2&3 Interior UAO requires Respondents to conduct removal actions (specifically, "Z2&3 Interior Sampling and Cleaning Work") to abate an imminent and substantial endangerment to the public health or welfare or the environment that may be presented by the actual or threatened release of hazardous substances at or from the Site.

3. EPA has notified the State of Indiana (the "State") of this action pursuant to Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

II. PARTIES BOUND

4. This Z2&3 Interior UAO applies to and is binding upon Respondents and their successors and assigns. Any change in ownership or control of the Site or change in the corporate or partnership status of a Respondent, including, but not limited to, any transfer of assets or real or personal property, shall not alter Respondents' responsibilities under this Z2&3 Interior UAO.

5. Respondents are jointly and severally liable for implementing all activities required by this Z2&3 Interior UAO. Compliance or noncompliance by any Respondent with any provision of this Z2&3 Interior UAO shall not excuse or justify noncompliance by any other Respondents. No Respondent shall interfere in any way with performance of the Z2&3 Interior Work in accordance with this Z2&3 Interior UAO by any other Respondent. In the event of the insolvency or other failure of any Respondent to implement the requirements of this Z2&3 Interior UAO, the remaining Respondents shall complete all such requirements.

6. Respondents shall provide a copy of this Z2&3 Interior UAO to each contractor hired to perform the Z2&3 Interior Work required by this Z2&3 Interior UAO and to each person representing any Respondents with respect to the Site or the Z2&3 Interior Work, and shall condition all contracts entered into hereunder upon performance of the Z2&3 Interior Work in conformity with the terms of this Z2&3 Interior UAO. Respondents or their contractors shall provide written notice of the Z2&3 Interior UAO to all subcontractors hired to perform any portion of the Z2&3 Interior Work required by this Z2&3 Interior UAO. Respondents shall nonetheless be responsible for ensuring that their contractors and subcontractors perform the Z2&3 Interior Work in accordance with the terms of this Z2&3 Interior UAO.

III. DEFINITIONS

7. Unless otherwise expressly provided in this Z2&3 Interior UAO, terms used in this Z2&3 Interior UAO that are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Z2&3 Interior UAO or in appendices to or documents incorporated by reference into this Z2&3 Interior UAO, the following definitions shall apply:

a. "Action Memorandum–4th Amendment" or "Fourth Amendment" shall mean the document titled "Action Memorandum–4th Amendment" transmitted by EPA Region 5 to EPA Headquarters on October 24, 2016, and signed by the Assistant Administrator of the Office of Land and Emergency Management of the U.S. Environmental Protection Agency on October 28, 2016. The Fourth Amendment is attached as Appendix D.

b. "Action Memorandum–5th Amendment" or "Fifth Amendment" shall mean the document titled "Action Memorandum–5th Amendment" transmitted by EPA Region 5 to EPA Headquarters on February 28, 2017, and signed by the Acting Assistant Administrator of the Office of Land and Emergency Management of the U.S. Environmental Protection Agency on March 14, 2017. The Fifth Amendment is attached as Appendix E.

c. "Affected Property" shall mean all real property at the Site and any other real property where EPA determines, at any time, that access is needed to implement the Z2&3 Interior Sampling and Cleaning Work.

d. "ARC" or "Atlantic Richfield" shall mean Atlantic Richfield Company.

e. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601-9675.

f. "Chemours" shall mean The Chemours Company FC, LLC.

g. "Day" or "day" shall mean a calendar day. In computing any period of time under this Z2&3 Interior UAO, where the last day would fall on a Saturday, Sunday, or federal or State holiday, the period shall run until the close of business of the next working day.

h. "DuPont" shall mean E. I. du Pont de Nemours and Company.

i. "Effective Date" shall mean the effective date of this Z2&3 Interior UAO as provided in Section VIII.

j. "Efficacy Sampling" shall mean sampling performed after each indoor cleaning and re-cleaning to ensure that those cleanings are effective.

k. "EPA" shall mean the United States Environmental Protection Agency and its successor departments, agencies, or instrumentalities.

l. “EPA Hazardous Substance Superfund” shall mean the Hazardous Substance Superfund established by the Internal Revenue Code, 26 U.S.C. § 9507.

m. “IDEM” shall mean the Indiana Department of Environmental Management and any successor departments or agencies of the State.

n. “Interest” shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually on October 1 of each year, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year. Rates are available online at https://www.epa.gov/superfund/superfund-interest-rates.

o. “Interior Screening Level” shall mean 316 milligrams per kilogram (mg/kg) for lead and 26 mg/kg for arsenic.

p. “Mueller” shall mean Mueller Industries, Inc.

q. “NCP” or “National Contingency Plan” shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

r. “Original Z2&3 Interior UAO” shall mean the Unilateral Administrative Order for Removal Actions in Zone 2 and Zone 3 of Operable Unit 1 of the U.S. Smelter and Lead Refinery, Inc. Superfund Site signed on December 14, 2017, by the Acting Director of the Superfund Division, EPA Region 5, or his/her delegate, and all attachments thereto. The Original Z2&3 Interior UAO, without its appendices, is attached as Appendix P. A copy of the Original Z2&3 Interior UAO, including appendices, is included as part of the administrative record for the Site.

s. “OU1” or “Operable Unit 1” shall mean the surface and subsurface soil of the area located inside the red highlighted boundaries on Appendix B. OU1 is generally bounded on the north by East Chicago Avenue; on the east by Parrish Avenue; on the south by East 151st Street/149th Place; and on the west by the Indiana Harbor Canal.

t. “OU2” or “Operable Unit 2” shall mean groundwater associated with the Site as well as the surface soil, subsurface soil, and sediments located inside the blue highlighted boundaries on Appendix A. The area within the blue highlighted boundaries on Appendix B consists of approximately 79 acres, is commonly known as 5300 Kennedy Avenue, and is generally bounded on the north by the Indiana Harbor Belt Railroad; on the east by Kennedy Avenue; on the south and west by the Grand Calumet River; and on the northwest by the Indiana Harbor Canal.

u. “Owner” shall mean a person who owns the Affected Property that a residence is located on.

v. “Paragraph” or “¶” shall mean a portion of this Z2&3 Interior UAO identified by an Arabic numeral and/or an upper or lower case letter.

w. "Parties" shall mean EPA and Respondents.

x. "Personally Identifiable Information" or "PII" means "Personally Identifiable Information" as defined in 2 C.F.R. § 200.79 and EPA's Privacy Policy, and generally includes information that can be used to distinguish, trace, or identify an individual's identity, including personal information which is linked or linkable to an individual. Personally Identifiable Information includes but is not limited to names, addresses, GPS coordinates, telephone numbers, fax numbers, email addresses, social security numbers, or labels (including, e.g., character strings linked with real estate depicted in maps or assigned to sampling data) or other personal information that can be linked to an individual. EPA's Privacy Policy is available at https://www.epa.gov/privacy/epa-policy-21510-privacy-policy.

y. "RCRA" shall mean the Resource Conservation and Recovery Act, also known as the Solid Waste Disposal Act, 42 U.S.C. §§ 6901-6992.

z. "Record of Decision" or "ROD" shall mean the EPA Record of Decision relating to Operable Unit 1 at the Site signed on November 30, 2012, by the Director of the Superfund Division, EPA Region 5, or his/her delegate, and all attachments thereto.

aa. "Resident" shall mean a person who resides in a residence located on Affected Property. A "Resident" can be either an Owner or a Resident Lessee.

bb. "Resident Lessee" shall mean a person who resides in a residence located on Affected Property, does not own the Affected Property, but, along with the Owner of the Affected Property, has the authority to grant access to the interior of the residence.

cc. "Respondents" shall mean Atlantic Richfield Company, The Chemours Company FC, LLC, E. I. du Pont de Nemours and Company, Mueller Industries, Inc., United States Metals Refining Company, and U.S.S. Lead Refinery, Inc.

dd. "Section" shall mean a portion of this Z2&3 Interior UAO identified by a Roman numeral.

ee. "Site" or "USS Lead Site" shall mean the U.S. Smelter and Lead Refinery, Inc. Superfund Site in East Chicago, Lake County, Indiana, and depicted generally on the map included with Appendix B. The Site includes both OU1 and OU2.

ff. "State" shall mean the State of Indiana.

gg. "Supervising Contractor" shall mean the principal contractor retained by Respondents to supervise and direct the implementation of the Z2&3 Interior Sampling and Cleaning Work under this Z2&3 Interior UAO.

hh. "Transfer" shall mean to sell, assign, convey, lease, mortgage, or grant a security interest in, or where used as a noun, a sale, assignment, conveyance, or other disposition of any interest by operation of law or otherwise.

ii. "United States" shall mean the United States of America and each department, agency, and instrumentality of the United States, including EPA.

jj. "USMR" shall mean United States Metals Refining Company.

kk. "USS Lead" shall mean U.S.S. Lead Refinery, Inc.

ll. "Waste Material" shall mean: (a) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (b) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); (c) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27), or under Indiana Code § 13-11-2-205; (d), any "hazardous material" under Indiana Code § 13-11-2-96(b); and (e) any "hazardous waste" under Indiana Code § 13-11-2-99(c).

mm. "Z1" or "Zone 1" shall mean the surface and subsurface soil found in an area located inside the yellow highlighted boundaries on Appendix C and labeled as "Zone 1." Zone 1 is generally bounded: (1) on the north by the northern boundary of the Carrie Gosch Elementary School and a line extending eastward from that boundary to the eastern edge of a north/south utility right of way that runs parallel to McCook Avenue north of East 149th Place; (2) on the east by: (i) the eastern-most edge of a north/south utility right of way that runs parallel to McCook Avenue until East 149th Place, and (ii) McCook Avenue between East 149th Place and 151st Street; (3) on the south by East 151st Street; and (4) on the west by the Indiana Harbor Canal.

nn. "Z2" or "Zone 2" shall mean the surface and subsurface soil found in an area located inside the yellow highlighted boundaries on Appendix C and labeled as "Zone 2." Zone 2 is generally bounded: (1) on the north by Chicago Avenue; (2) on the east, by the eastern edge of the railroad right of way that runs principally north and south and is labeled on Appendix C as "Elgin Joliet and Eastern Rlwy"; (3) on the south by East 151st Street; and (4) on the west by: (i) the Indiana Harbor Canal between Chicago Avenue and the northern boundary of the Carrie Gosch Elementary School; (ii) the eastern-most edge of a north/south utility right of way that runs parallel to McCook Avenue until East 149th Place, and (iii) McCook Avenue between East 149th Place and 151st Street.

oo. "Z3" or "Zone 3" shall mean the surface and subsurface soil found in an area located inside the yellow highlighted boundaries on Appendix C and labeled as "Zone 3." Zone 3 is generally bounded: (1) on the north by Chicago Avenue; (2) on the east by Parrish Avenue; (3) on the south by the northern edge of the railroad right of way located generally to the south of East 149th Place and labeled on Appendix C as "Elgin Joliet and Eastern Rlwy"; and (4) on the west by the eastern edge of the railroad right of way that runs principally north and south and is labeled on Appendix C as "Elgin Joliet and Eastern Rlwy." The triangular plot of land bounded by several railroad spurs in the southeastern portion of the area labeled Zone 3 on Appendix C is a part of Zone 3.

pp. "Z2&3 Interior Data Management" shall mean those activities undertaken by Respondents to develop, manage, and implement proper data management for the data generated in implementing this Z2&3 Interior UAO.

qq. "Z2&3 Interior Excluded Residences" shall mean the residences on the final list that EPA develops and provides to Respondents pursuant to Paragraph 4.14(a)(2) of the Z2&3 Interior SOW.

rr. "Z2&3 Interior Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States incurs after the Effective Date of this Z2&3 Interior UAO in monitoring and supervising Respondents' performance of the Z2&3 Interior Work to determine whether such performance is consistent with the requirements of this Z2&3 Interior UAO, including costs incurred in reviewing deliverables submitted pursuant to this Z2&3 Interior UAO, as well as costs incurred in overseeing implementation of this Z2&3 Interior UAO, including, but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, and Department of Justice costs.

ss. "Z2&3 Interior Cleaning Residence" shall mean a residence in Zone 2 or Zone 3 where:

(1) The interior of the residence has not previously been cleaned; and

(2) The results of Z2&3 Interior Sampling Work in one or more areas of the residence reveal lead contamination in indoor dust in excess of 316 ppm and/or arsenic contamination in indoor dust in excess of 26 ppm.

Provided, however, that a residence that satisfies the definition of "Z2&3 Interior Cleaning Residence" may later become a "Z2&3 Interior Excluded Residence" if access for cleaning cannot be secured.

tt. "Z2&3 Interior Cleaning Work" shall mean all activities undertaken by Respondents pursuant to this Z2&3 Interior UAO to develop and implement one or more plans for the purpose of cleaning the interior of residences in Zones 2 and/or 3.

uu. "Z2&3 Interior Sampling and Cleaning Work" shall mean the Z2&3 Interior Sampling Work and the Z2&3 Interior Cleaning Work.

vv. "Z2&3 Interior Sampling Residence" shall mean a residence in Zone 2 or 3 where:

(1) The interior of the residence has not previously been sampled;

(2) Soil in one or more of the yards associated with the residence had lead and/or arsenic in concentrations that qualified the yard(s) for remediation and restoration and all such remediation and restoration (excluding the 30-day maintenance period) has been completed; and

(3) The residence is habitable.

A residence that satisfies the definition of "Z2&3 Interior Sampling Residence" may later become a "Z2&3 Interior Excluded Residence" if access for sampling cannot be secured. A

residence may satisfy the definition of "Z2&3 Interior Sampling Residence" even it is uninhabited.

ww. "Z2&3 Interior Sampling Work" shall mean all activities undertaken by Respondents pursuant to this Z2&3 Interior UAO to develop and implement one or more plans for the purpose of sampling and screening the interior of residences in Zones 2 and/or 3. The sampling shall include: (i) sampling dust in the interior of a residence for lead and arsenic contamination; (ii) screening the interior of a residence for the presence of lead-based paint; and (iii) Efficacy Sampling to ensure that cleanings are effective.

xx. "Z2&3 Interior SOW" or "Z2&3 Interior Statement of Work" shall mean the document describing the activities Respondents must perform to implement the Z2&3 Interior Sampling and Cleaning Work pursuant to this Z2&3 Interior UAO, as set forth in Appendix A, and any modifications made thereto in accordance with this Z2&3 Interior UAO.

yy. "Z2&3 Interior UAO" or "Z2&3 Interior Unilateral Administrative Order" shall mean this Unilateral Administrative Order and all appendices attached hereto. In the event of conflict between this Z2&3 Interior UAO and any appendix, this Z2&3 Interior UAO shall control.

zz. "Z2&3 Interior Work" shall mean all activities and obligations Respondents are required to perform under this Z2&3 Interior UAO, except those required by Section XIV (Retention of Records). "Z2&3 Interior Work" encompasses the definition of "Z2&3 Interior Sampling and Cleaning Work" but also includes all other requirements of this Z2 Interior UAO (*e.g.*, Access to Information) except for Retention of Records.

IV. FINDINGS OF FACT

8. EPA hereby makes the following findings of fact:

a. Pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, EPA placed the Site on the National Priorities List (NPL), set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on April 9, 2009, 74 Fed. Reg. 16,126–34.

b. The Site consists of two Operable Units: OU1 and OU2, both defined above. OU1 has been further divided into three zones: Zone 1 (Z1), Zone 2 (Z2), and Zone 3 (Z3), also defined above.

c. In response to a release or a substantial threat of a release of hazardous substances at or from OU1 of the Site, EPA commenced, in June 2009, a Remedial Investigation and Feasibility Study (RI/FS) of OU1 of the Site pursuant to 40 C.F.R. § 300.430.

d. EPA completed a Remedial Investigation (RI) Report and a Feasibility Study ("FS") Report of OU1 in June 2012.

e. Pursuant to Section 117 of CERCLA, 42 U.S.C. § 9617, EPA published notice of the completion of the FS for OU1 and of the proposed plan for remedial action for OU1 on July 12, 2012, in a major local newspaper of general circulation. EPA provided an

opportunity for written and oral comments from the public on the proposed plan for remedial action. A copy of the transcript of the public meeting is available to the public as part of the administrative record upon which the Director of the Superfund Division, EPA Region 5, based the selection of the response action for OU1.

f. The decision by EPA on the remedial action to be implemented at OU1 of the Site is embodied in a final Record of Decision (ROD), executed on November 30, 2012, on which the State has given its concurrence. The ROD includes a responsiveness summary to the public comments. Notice of the final plan was published in accordance with Section 117(b) of CERCLA, 42 U.S.C. § 9617(b).

g. By Consent Decree entered on October 28, 2014, EPA and certain of the Respondents reached an agreement regarding remedial design and remedial action (RD/RA) in Zones 1 and 3 of OU1 of the Site. RD/RA work under the 2014 Consent Decree commenced in November 2014. In the summer of 2016, EPA suspended RD/RA work in Zone 1 because of a possible change in the intended future use of the properties in Zone 1. EPA is undertaking an Addendum to the FS as it applies to Zone 1. EPA continues RD/RA work in Zone 3 pursuant to the 2014 Consent Decree.

h. Data results from indoor dust sampling that took place in Zone 1 in the summer and fall of 2016 revealed that 110 out of 269 residences within that Zone exceeded EPA's 316 mg/kg screening level for lead for indoor living spaces.

i. On October 28, 2016, EPA issued Action Memorandum–4th Amendment for the Site. On March 14, 2017, EPA issued Action Memorandum–5th Amendment for the Site. The Fourth and Fifth Amendments authorized, *inter alia*, certain interior removal actions in residences in Zones 2 and 3, including (i) sampling indoor dust for lead and arsenic (ii) screening indoor paint for lead, and (iii) interior cleanings to remove dust with lead above 316 mg/kg and arsenic above 26 mg/kg. In the fall of 2016, EPA undertook indoor dust sampling in Zones 2 and 3.

j. On March 16, 2017, EPA and certain of the Respondents entered into an Administrative Settlement Agreement and Order on Consent ("Z2&3 ASAOC") regarding, *inter alia*, interior removal actions at properties in Zones 2 and 3 where remediation work consistent with the ROD is substantially complete. EPA's practice is to sample and, if necessary, clean residences at a property only after any necessary remediation consistent with the ROD has been performed at that property, to ensure that if any recontamination of the interiors is identified after the cleaning, it cannot be attributed to soil contamination at the property.

k. EPA has performed interior sampling both independent of and pursuant to the Z2&3 ASAOC. As of December 8, 2017, the interior of 67 out of 118 residences sampled in Zones 2, and 60 out of 104 residences sampled in Zone 3 had results above the screening level of 316 mg/kg for lead and 26 mg/kg for arsenic.

l. As of December 1, 2017, EPA has cleaned the interior of 54 residences in Zone 2 and 36 residences in Zone 3.

m. Lead is a hazardous substance, as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14). The Agency for Toxic Substances and Disease Registry (ATSDR) has determined that exposure to lead presents human health risks. Lead exposure via inhalation and/or ingestion can have detrimental effects on almost every organ and system in the human body. Exposure may occur from direct ingestion of soil in yards, soil tracked indoors (house dust), and inhalation of fugitive dust. Lead can cause a variety of health problems to people who are exposed to it. Potential human receptors include residents, with a particular concern for children six years of age and under and pregnant or nursing women. Children are at greatest risk from the toxic effects of lead. Initially, lead travels in the blood to the soft tissues (heart, liver, kidney, brain, etc.). Then, it gradually redistributes to the bones and teeth where it tends to remain. Children exposed to high levels of lead have exhibited nerve damage, liver damage, colic, anemia, brain damage, and death. The most serious effects associated with markedly elevated blood lead levels include neurotoxic effects such as irreversible brain damage.

n. Arsenic is a hazardous substance, as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14). ATSDR has determined that exposure to arsenic presents human health risks. Ingesting very high levels of arsenic can result in death. Exposure to lower levels can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, damage to blood vessels, and a sensation of "pins and needles" in hands and feet. Ingesting or breathing low levels of inorganic arsenic for a long time can cause a darkening of the skin and the appearance of small "corns" or "warts" on the palms, soles, and torso. Skin contact with inorganic arsenic may cause redness and swelling. Several studies have shown that ingestion of inorganic arsenic can increase the risk of skin cancer and cancer in the liver, bladder, and lungs. Inhalation of inorganic arsenic can cause increased risk of lung cancer. The Department of Health and Human Services (DHHS) and the EPA have determined that inorganic arsenic is a known human carcinogen (ATSDR, Chemical Abstract Services [CAS] #7440-38-2, August 2007).

o. A facility that formerly operated in Zone 1 of the Site (the "Former Anaconda Facility") operated three inter-related processes. Specifically, in 1912, a lead refinery was built on the site and used a pyrometallurgical process to refine lead bullion that was shipped from Tooele, Utah, to East Chicago. Then, in 1919, a white lead plant was constructed to produce white lead for use as an ingredient in lead paint. Finally, in 1922, a zinc oxide plant was added to the facility.

p. The Former Anaconda Facility also operated numerous secondary metal treatment processes. Byproducts of the operations included slag, lead waste, and arsenic. Among other sources of contamination, arsenic was burned off and was supposed to be recovered in flues and a baghouse. In addition, lead and arsenic particulate was disposed of into the environment in the same manner as with the Former USS Lead Facility (*see infra* ¶ 8.z). Operation of the white lead process generated additional releases.

q. Significant quantities of lead were refined from 1912 until 1946, when refining operations at the Former Anaconda Facility ceased. However, secondary smelting and white lead production continued into the 1950s. The Former Anaconda Facility was demolished over the course of the 1960s and early 1970s. In approximately 1972, the West Calumet Housing Complex was constructed on the footprint of the Former Anaconda Facility.

r. Lead and arsenic from the Former Anaconda Facility came to be deposited in Operable Unit 1 of the Site, including in Zones 2 and 3. Wind was one manner by which lead and arsenic was disbursed throughout the neighborhood.

s. The Former Anaconda Facility was owned and operated between 1912 and approximately 1946 by subsidiaries of the Anaconda Copper and Mining Company. Respondent Atlantic Richfield is a successor to the liabilities of one or more companies that owned and operated the Former Anaconda Facility.

t. On January 10, 2018, Atlantic Richfield, with three other Respondents to this UAO, provided consolidated written comments on the Original Z2 Soil UAO and the Original Z2&3 Interior UAO. A copy of those consolidated comments is included in the Administrative Record.

u. A facility that formerly operated at 5215 Kennedy Avenue, East Chicago, Indiana, (the "Former DuPont Facility") began operations in 1892 to manufacture various organic and inorganic chemicals. Over the course of its operations, the Former DuPont Facility produced over one hundred different chemicals, including lead arsenic and calcium arsenate (1910–1949) and zinc chloride (1900–1969). Among other sources of contamination, lead and arsenic particulate generated from these operations was disposed of into the environment as stack emissions, precipitator dust, and dust from exposed waste piles stored on the grounds of the site. General operations at the Former DuPont Facility contracted significantly during the 1980s and 1990s. The Former DuPont Facility is undergoing corrective action under federal RCRA authorities.

v. Lead and arsenic from the Former DuPont Facility came to be deposited in Operable Unit 1 of the Site, including in Zones 2 and 3. Wind was one manner in which lead and arsenic was dispersed into the neighborhood.

w. The Former DuPont Facility was owned and operated by the Grasselli Chemical Company from 1891 until 1928, when it was acquired by DuPont. The Former DuPont Facility was then owned and operated by DuPont or its subsidiaries from 1928 to 2015. In 2015, Respondent Chemours assumed the liabilities of Respondent DuPont related to the USS Lead Site. Respondent DuPont, however, still remains liable.

x. On January 10, 2018, DuPont and Chemours, with two other Respondents to this UAO, provided consolidated written comments on the Original Z2 Soil UAO and the Original Z2&3 Interior UAO. A copy of those consolidated comments is included in the Administrative Record.

y. The facility that formerly operated at 5300 Kennedy Ave., East Chicago, Indiana (the "Former USS Lead Facility"), and that encompasses one aspect of Operable Unit 2 of the Site, was first constructed in 1906 and used an electrolytic process (the Betts process) to refine lead bullion that was shipped first from Midvale, Utah, and then Tooele, Utah, to East Chicago. Because lead refining produces a number of byproducts, the Former USS Lead Facility also included various secondary metal treatment operations—such as secondary lead smelting—and operated a weed killer (lead arsenate) plant. In addition, throughout its history, the Former

USS Lead Facility accepted scrap lead from a variety of sources for treatment in its secondary lead smelting operations involving a blast furnace. In approximately 1972, the Former USS Lead Facility stopped refining lead bullion and instead increased its blast furnace capacity to treat more scrap lead material. Operations at the USS Lead facility ceased in 1985.

z. Among other sources of contamination from the Former USS Lead Facility, slag from the blast furnace was routinely placed in piles on the ground and left exposed to the elements. Lead and arsenic particulate was disposed of into the environment as fumes from operations, as dust from the baghouses, and as dust from lead waste piles (*e.g.*, slag and baghouse dust) stored on the grounds.

aa. Lead and arsenic from the Former USS Lead Facility came to be located in Operable Unit 1 of the Site, including in Zones 2 and 3. Wind was one manner by which lead and arsenic was dispersed into the neighborhood.

bb. The Former USS Lead Facility was owned and operated by Respondent United States Metals Refining Company from 1906 to 1919.

cc. On January 10, 2018, United States Metals Refining Company, with three other Respondents to this UAO, provided consolidated written comments on the Original Z2 Soil UAO and the Original Z2&3 Interior UAO. A copy of those consolidated comments is included in the Administrative Record.

dd. The Former USS Lead Facility was owned and operated by United States Smelting Refining and Mining Company ("USSRAM") from 1919 to 1920. USSRAM no longer exists.

ee. The Former USS Lead Facility was owned by USS Lead from 1920 to the present.

ff. From 1920 to 1979, USS Lead was a subsidiary of USSRAM, which, in 1972, changed its name to UV Industries, Inc. ("UV") (collectively "UV/USSRAM"). UV/USSRAM no longer exists.

gg. From 1979 to the late 1980s, USS Lead was a subsidiary of Sharon Steel Corporation ("Sharon Steel").

hh. In the mid-1980s through the end of the 1980s, Sharon Steel went through bankruptcy. As a result of the bankruptcy, Sharon Steel was reorganized and emerged from the bankruptcy as Respondent Mueller Industries, Inc. ("Mueller").

ii. Since the reorganization of Sharon Steel, USS Lead has been a subsidiary of Mining Remedial Recovery Company ("MRRC"); MRRC has been a subsidiary of Arava Natural Resources, Inc. ("Arava"); and Arava has been a subsidiary of Mueller.

jj. On December 26, 2017, and December 29, 2017, USS Lead and Mueller, respectively, provided written comments on the Original Z2 Soil UAO and the Original Z2&3 Interior UAO. A copy of those comments is attached in the Administrative Record.

kk. Well in advance of the issuance of the Original Z2 Soil UAO:

(1) EPA provided Mueller with the specific factual bases supporting EPA's claim that Mueller succeeded to the liabilities of UV/USSRAM;

(2) Mueller conceded that it succeeded to the liabilities of Sharon Steel; and

(3) EPA advised Mueller that it had found sufficient factual evidence—in documents specifically within Mueller's control—to support findings that Mueller's predecessors, UV/USSRAM and Sharon Steel, were liable at the USS Lead Site under either a *United States v. Bestfoods*, 524 U.S. 51 (1998), direct theory of liability or under an indirect corporate veil piercing theory of liability for the acts of their subsidiary, USS Lead. At all times, Mueller's access to the documentary evidence, witnesses, and other facts establishing this liability has been and continues to be greater than EPA's.

ll. Notice and Factual Bases of Mueller's Succession to the Liabilities of UV/USSRAM.

(1) Mueller has been on notice since its 1989–1990 creation as the reorganized Sharon Steel of the factual bases of its succession to the liabilities of UV/USSRAM. At all times since its creation, Mueller has had control over documents, witnesses, and evidence establishing the factual basis for its succession to UV/USSRAM's liabilities.

(2) Mueller has been on notice since at least April 19, 2010, of the factual and legal bases of EPA's claim that Mueller succeeded to the liability of UV/USSRAM. On April 19, 2010, the United States, on behalf of EPA, sent Mueller a detailed letter providing the facts and law supporting EPA's claim that Mueller succeeded to the CERCLA liabilities of UV/USSRAM. That letter is attached as Appendix G. EPA incorporates herein as if fully set forth the April 19, 2010 letter. While the April 19, 2010 letter involved a Superfund site different from the USS Lead, the relevant facts that underlay Mueller's succession to UV/USSRAM's liability were the same as those involved in this matter.

(3) On April 7, 2017, the United States, on behalf of EPA, sent Mueller another letter further articulating the factual and legal basis for Mueller's succession to the liability of UV/USSRAM. That letter, without its attachments, is attached as Appendix H. A complete copy of the letter, with its attachments, is available in the Administrative Record for this Site.[1] EPA incorporates herein as

[1] Attachments to the April 7, 2017 letter in Appendix H, as well as to the United States' October 4, 2017 letter cited in Paragraph 8.ll.(4), and to Mueller's letters to the United States cited in Paragraph 8.ll.(5) have not been included in the Appendices because of their size. However, the full bodies of these letters have been included.

if fully set forth the complete April 7, 2017 letter, including attachments. The April 7, 2017 letter specifically involves the USS Lead Site.

(4) On October 4, 2017, the United States, on behalf of EPA, sent Mueller yet another detailed letter further elaborating on the factual and legal basis for Mueller's succession to the liability of UV/USSRAM. That letter, without its attachments, is attached as Appendix I. A complete copy of the letter, with its attachments, is available in the Administrative Record for this Site. EPA incorporates herein as if fully set forth the complete October 4, 2017 letter, including attachments.

(5) Mueller has disputed its liability as a successor to UV/USSRAM in a series of letters dated February 18, 2010, April 1, 2010, December 29, 2016, and November 6, 2017. The bodies of these letters, without their attachments, are set forth in Appendices J, K, L, and M, respectively. Complete copies of these letters, with attachments, are available in the Administrative Record for this Site.

(6) EPA disagrees with Mueller's claim that it is not liable as a successor to UV/USSRAM.

mm. Notice and Factual Bases of UV/USSRAM's and Sharon Steel's Direct and Indirect Liability for the 1920 to 1985 Time Period.

(1) Since its 1989–1990 creation as the reorganized Sharon Steel, Mueller has been in control of the documents, and has had access to witnesses and evidence, that provide the factual bases for UV/USSRAM's and Sharon Steel's direct and indirect liability for the operations of their subsidiary, USS Lead, for some or all the period between 1920 through 1985. At all times, Mueller's access to and/or control over this evidence has been and continues to be greater than EPA's.

(2) Documents related to the operations of the Former USS Lead Facility are located in a warehouse in Redding, California ("Redding Warehouse") that is under the custody of two of Mueller's subsidiaries, USS Lead and MRRC. At all times, Mueller has had full access to all documents in the Redding Warehouse.

(3) On May 25, 2017, EPA issued a request to USS Lead, pursuant to Section 104(e) of CERCLA, 42 U.S.C. § 9604(e), for access to documents in the Redding Warehouse. That request is attached as Appendix N. Mueller was made aware of EPA's May 25, 2017 Section 104(e) request shortly after it was issued.

(4) In July 2017, EPA and the Department of Justice (DOJ) reviewed the boxes of documents that were provided in response to EPA's May 25, 2017 104(e) request and marked a subset of the total documents for copying. EPA and DOJ, possibly earlier than the start of the review but in no event later July 25, 2017, specifically advised Mueller of the purpose of the document review: to look

for evidence of direct and/or indirect liability of UV/USSRAM and/or Sharon Steel.

(5) By no later than October 6, 2017, EPA and DOJ advised Mueller that, as a result of the 2017 Redding Warehouse document review, it had found evidence supporting the direct and/or indirect liability of UV/USSRAM and/or Sharon Steel. In advance of the issuance of this Z2 Soil UAO, DOJ, on behalf of EPA, provided to Mueller a copy of the complete set of documents that EPA had copied from its 2017 review, notwithstanding the fact that, at all times, Mueller has had access to all of the documents.

(6) Earlier, on March 3, 2015, EPA had issued a request to USS Lead, pursuant to Section 104(e) of CERCLA, 42 U.S.C. § 9604(e), for access to documents in the Redding Warehouse for a purpose different from the 2017 Section 104(e) request. That request is attached as Appendix O. A team from EPA and its contractor subsequently reviewed the documents that were provided in response to EPA's March 3, 2015 104(e) request and marked a subset of the total documents for copying. EPA provided a copy of the complete set to USS Lead by letter dated October 27, 2016. At no time did EPA suggest to USS Lead that it was prohibited from providing a copy of these documents to its parent.

(7) Additional documents potentially relevant to the issue of the direct and/or indirect liability of UV/USSRAM and Sharon Steel are also within the control of Mueller. Specifically, Mueller's subsidiary, MRRC, maintains physical custody of all known, existing documents of UV/USSRAM at the Redding Warehouse.

nn. EPA has not made any formal findings under Section 122(g) of CERCLA, 42 U.S.C. § 9622(g), that any potentially responsible party at this Site is or is not a *de minimis* party. Likewise, EPA has not made any informal findings to that effect.

V. CONCLUSIONS OF LAW AND DETERMINATIONS

9. Based on the Findings of Fact set forth above, and the administrative record, EPA has determined that:

a. The U.S. Smelter and Lead Refinery, Inc. Superfund Site is a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

b. The Former USS Lead Facility is a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. § 9601(9). The Former USS Lead Facility is a part of the Site.

c. The Former DuPont Facility, historically located at 5215 Kennedy Avenue in East Chicago, Indiana, previously owned and/or operated by Respondent E. I. du Pont de Nemours and Company ("Former DuPont Facility") and currently owned and/or operated by Respondent The Chemours Company FC, LLC, is a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

d. The Former Anaconda Facility previously located in Zone 1 of OU1 of the Site and previously owned and/or operated by predecessors of Respondent Atlantic Richfield Company is a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. § 9601(9). The Former Anaconda Facility is a part of the Site.

e. Each Respondent is a "person" as defined by Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

f. Each Respondent is a liable party under one or more provisions of Section 107(a) of CERCLA, 42 U.S.C. § 9607(a).

(1) From 1920 to the present, Respondent U.S.S. Lead Refinery, Inc. ("USS Lead") has been an "owner" and/or "operator"—as defined by Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and within the meaning of Sections 107(a)(1) and (a)(2) of CERCLA, 42 U.S.C. § 9607(a)(1), (a)(2)—of the Former USS Lead Facility at which hazardous substances were disposed of and from which there were releases of hazardous substances.

(2) Respondent Mueller Industries, Inc. is liable as a successor to two companies: (i) United States Smelting Refining and Mining Company, which later changed its name to UV Industries, Inc.; and (ii) Sharon Steel Corporation.

i. UV/USSRAM was one or more of the following:

a. From 1919 to 1920, a person who, at the time of disposal of hazardous substances, "owned" and/or "operated"—within the meaning of Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2)—the Former USS Lead Facility at which hazardous substances were disposed of and from which there were releases of hazardous substances.

b. For some or all of the time between 1920 and 1979, a person who "operated"—within the meaning of Section 101(20) of CERCLA, 42 U.S.C. §§ 9601(20), and Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2)—the Former USS Lead Facility at which hazardous substances were disposed of and from which there were releases of hazardous substances.

c. A parent company who, for some or all of the time between 1920 and 1979, is indirectly liable, under a corporate veil piercing theory, for the acts of its subsidiary, USS Lead (which is liable as described in Paragraph 9.f(1) above).

d. For some or all of the time between 1920 and 1979, a person who arranged with USS Lead for the disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances at the Former USS Lead Facility, within the meaning of Section 107(a)(3) of CERCLA, 42 U.S.C. § 9607(a)(3).

ii. Sharon Steel, for some or all of the time between 1979 and 1985, was a person who "operated"—within the meaning of Section 101(20) of CERCLA, 42 U.S.C. §§ 9601(20), and Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2)—the Former USS Lead Facility at which hazardous substances were disposed of and from which there were releases of hazardous substances.

(3) Respondent Atlantic Richfield Company is liable as a successor to: (i) one or more persons, including Anaconda Lead Products Company, International Lead Refining Company, and International Smelting and Refining Company, who, at the time of disposal of hazardous substances, "owned" and/or "operated"—within the meaning of Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2)—the Former Anaconda Facility at which hazardous substances were disposed of and from which there were releases of hazardous substances; and/or (ii) one or more persons, including Anaconda Lead Products Company, International Lead Refining Company, and International Smelting and Refining Company, who arranged with USS Lead for the disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances at the Former USS Lead Facility, within the meaning of Section 107(a)(3) of CERCLA, 42 U.S.C. § 9607(a)(3).

(4) Respondent E. I. du Pont de Nemours and Company is a person who: (i) at the time of disposal of hazardous substances, "owned" and/or "operated"—within the meaning of Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2)—the Former DuPont Facility at which hazardous substances were disposed of and from which there were releases of hazardous substances to the Site; and/or (ii) arranged with USS Lead for the disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances at the Former USS Lead Facility, within the meaning of Section 107(a)(3) of CERCLA, 42 U.S.C. § 9607(a)(3).

(5) Respondent The Chemours Chemical Company FC, LLC, is liable as a successor to E. I. du Pont de Nemours and Company (which is liable as described in Paragraph 9.f(4) above).

(6) Respondent United States Metals Refining Company is a person who at the time of disposal of hazardous substances, "owned" and/or "operated"—within the meaning of Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2)—the Former USS Lead Facility at which hazardous substances were disposed of and from which there were releases of hazardous substances.

g. The lead and arsenic contamination found in the interior of residences in Zones 2 and 3, as identified in the Findings of Fact above, includes "hazardous substances" as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), and also includes "pollutants or contaminants" that may present an imminent and substantial danger to public health or welfare under Section 104(a)(1) of CERCLA, 42 U.S.C. § 9604(a)(1).

h. The conditions described in Paragraph 8.k of the Findings of Fact above constitute an actual or threatened "release" of a hazardous substance from the facility as defined by Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

i. The conditions at the Site may constitute a threat to public health or welfare or the environment, based on the factors set forth in Section 300.415(b)(2) of the NCP. These factors include, but are not limited to, actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances; this factor is present at the Site due to the existence of lead and arsenic in the interior of residences at levels above the Interior Screening Level.

j. EPA determined in the Fourth and Fifth Amendments that the conditions described in Paragraph 8.k of the Findings of Fact may constitute an imminent and substantial endangerment to the public health or welfare or the environment because of an actual or threatened release of a hazardous substance from the facility within the meaning of Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

k. The removal actions required by this Z2&3 Interior UAO are necessary to protect the public health, welfare, or the environment.

VI. Z2&3 INTERIOR WORK ORDER

10. Based upon the Findings of Fact, Conclusions of Law and Determinations set forth above, and the administrative record, Respondents are hereby ordered to comply with all provisions of this Z2&3 Interior UAO and any modifications to this Z2&3 Interior UAO, including all appendices to this Z2&3 Interior UAO and all documents incorporated by reference into this Z2&3 Interior UAO.

VII. OPPORTUNITY TO CONFER

11. Respondents were given the opportunity to confer and provide written comments on the Original Z2 Soil UAO. Respondents Atlantic Richfield, Chemours, DuPont, and US Metals Refining requested a conference with EPA, which was held on January 5, 2018. Those Respondents provided consolidated written comments on the Original Z2 Soil UAO on January 10, 2018. Neither USS Lead nor Mueller asked for an opportunity to confer. On

December 26, 2017, and December 29, 2017, USS Lead and Mueller, respectively, provided written comments on the Original Z2 Soil UAO. All Respondents' comments on the Original Z2 Soil UAO are attached in Appendices Q through S.

12. No later than 5 days after this Z2 Soil UAO is signed by the Regional Administrator or his/her delegates, Respondents may submit written comments or a statement of position on so much of this Z2 Soil UAO as is different from the Original Z2 Soil UAO. Any written comments or statements should be submitted to:

Steven Kaiser
Office of Regional Counsel
Region 5, US EPA
77 West Jackson Blvd. (C-14J)
Chicago, IL 60604-3590
kaiser.steven@epa.gov
(312) 353-3804

Leonardo Chingcuanco
Office of Regional Counsel
Region 5, US EPA
77 West Jackson Blvd. (C-14J)
Chicago, IL 60604-3590
chingcuanco.leonardo@epa.gov
(312) 886-7236

VIII. EFFECTIVE DATE

13. This Z2 Soil UAO shall be effective on January 19, 2018, unless EPA determines that this Z2 Soil UAO should be modified based on written materials received in accordance with Paragraph 12. In such event, EPA shall notify Respondents on January 18, 2018, that EPA intends to modify this Z2 Soil UAO. The modified Z2 Soil UAO shall be effective 5 days after it is signed by the Regional Administrator or his/her delegatee.

IX. NOTICE OF INTENT TO COMPLY

14. On or before the Effective Date, each Respondent shall notify EPA in writing of Respondent's irrevocable intent to comply with this Z2&3 Interior UAO. Such written notice shall be sent to EPA as provided in Paragraph 12. Each Respondent's written notice shall describe, using facts that exist on or prior to the Effective Date, any "sufficient cause" defense asserted by such Respondent under Sections 106(b) and 107(c)(3) of CERCLA, 42 U.S.C. §§ 9606(b) and 9607(c)(3). The absence of a response by EPA to the notice required by this Paragraph shall not be deemed to be acceptance of any Respondent's assertions. Failure of any Respondent to provide such notice of intent to comply within this time period shall, as of the Effective Date, be treated as a violation of this Z2&3 Interior UAO by such Respondent.

X. DESIGNATION OF PROJECT COORDINATOR, ON-SCENE COORDINATOR, AND SUPERVISING CONTRACTOR

15. **Coordination and Supervision**

a. **Project Coordinators and On-Scene Coordinators.**

(1) Respondents' Project Coordinator and Alternate Project Coordinator must have sufficient technical expertise to coordinate the Z2&3 Interior Sampling and Cleaning Work. Respondents' Project Coordinator and Alternate Project Coordinator may not be an attorney representing any Respondent in this matter and may not act as the Supervising Contractor. Respondents' Project Coordinator and Alternate Project Coordinator may assign other representatives, including other contractors, to assist in coordinating the Z2&3 Interior Sampling and Cleaning Work.

(2) EPA has designated Jacob Hassan, Daniel Haag, Timothy Drexler, and Sarah Rolfes of the Region 5 Superfund Division as its On-Scene Coordinators (OSCs). EPA will notify Respondents of a change of its designated OSCs. Communications between Respondents and EPA, and all documents concerning the activities performed pursuant to this Z2&3 Interior UAO, shall be directed to the OSCs in accordance with Section XVII (Notices and Submissions). The OSCs shall be responsible for overseeing Respondents' implementation of this Z2&3 Interior UAO. The OSCs shall have the authority vested in a Remedial Project Manager (RPM) and OSCs by the NCP, including the authority to halt, conduct, or direct any Z2&3 Interior Work required by this Z2&3 Interior UAO, or to direct any other response action when s/he determines that conditions at the Site constitute an emergency situation or may present a threat to public health or welfare or the environment. Absence of the OSCs from the Site shall not be cause for stoppage or delay of Z2&3 Interior Work.

(3) Respondents' Project Coordinator(s) shall communicate with EPA's OSCs regularly.

(4) Communications between Respondents and EPA, and all documents concerning the activities performed pursuant to this Z2&3 Interior UAO, shall be directed to the Project Coordinator and Alternate Project Coordinator. Receipt by Respondents' Project Coordinator or Alternate Project Coordinator of any notice or communication from EPA relating to this Z2&3 Interior UAO shall constitute receipt by all Respondents.

b. **Supervising Contractor.** Respondents' proposed Supervising Contractor must have sufficient technical expertise to supervise the Z2&3 Interior Sampling and Cleaning Work and a quality assurance system that complies with ASQ/ANSI E4:2014 "Quality management systems for environmental information and technology programs – Requirements with guidance for use" (American Society for

Quality, February 2014). Respondents shall submit a copy of the proposed contractor's Quality Management Plan (QMP). The QMP should be prepared in accordance with "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01/002, Reissued May 2006) or equivalent documentation as determined by EPA.

c. **Procedures for Disapproval/Notice to Proceed**.

(1) Respondents shall designate, and notify EPA, within 10 days after the Effective Date, of the names, titles, contact information, and qualifications of the Respondents' proposed Project Coordinator, Alternate Project Coordinator, and Supervising Contractor, whose qualifications shall be subject to EPA's review for verification based on objective assessment criteria (e.g., experience, capacity, technical expertise) and that they do not have a conflict of interest with respect to the project.

(2) EPA shall issue notices of disapproval and/or authorizations to proceed regarding the proposed Project Coordinator, Alternate Project Coordinator, and Supervising Contractor, as applicable. If EPA issues a notice of disapproval, Respondents shall, within 15 days, submit to EPA a list of supplemental proposed Project and Alternate Project Coordinators and/or Supervising Contractors, as applicable, including a description of the qualifications of each. EPA shall issue a notice of disapproval or authorization to proceed regarding each supplemental proposed coordinator/alternate coordinator and/or contractor. Respondents may select any coordinator/contractor covered by an authorization to proceed and shall, within 7 days, notify EPA of Respondents' selection.

(3) Respondents may change their Project Coordinator and/or Supervising Contractor, as applicable, by following the procedures of 15.c(1) and 15.c(2).

XI. Z2&3 INTERIOR SAMPLING AND CLEANING WORK TO BE PERFORMED

16. Respondents shall perform, at a minimum, all actions necessary to implement the Z2&3 Interior Sampling and Cleaning Work consistent with the Z2&3 Interior SOW. The required Z2&3 Interior Sampling and Cleaning Work is set forth in detail in Paragraphs 4.2–4.8 of the Z2&3 Interior SOW.

17. For any regulation or guidance referenced in the Z2&3 Interior UAO or the Z2&3 Interior SOW, the reference will be read to include any subsequent modification, amendment, or replacement of such regulation or guidance. Such modifications, amendments, or replacements apply to the Z2&3 Interior Sampling and Cleaning Work only after Respondents receive notification from EPA of the modification, amendment, or replacement.

18. **Zone 2 and Zone 3 Interior Sampling and Cleaning Work Plan and Implementation**

a. Within 60 days after the EPA's Notice of Authorization to Proceed regarding the Supervising Contractor, Respondents shall submit to EPA for review and approval a draft work plan for performing the Z2&3 Interior Sampling and Cleaning Work (the "Z2&3 Interior WP") in accordance with the Z2&3 Interior SOW. The submission shall be made to EPA's OSCs pursuant to Section XVII (Notices and Submissions). The draft Z2&3 Interior WP shall provide a description of, and an expeditious schedule for, the Z2&3 Interior Sampling and Cleaning Work required by this Z2&3 Interior UAO.

b. Any non-compliance with any EPA-approved plans, reports, specifications, schedules, or other deliverables shall be considered a violation of the requirements of this Z2&3 Interior UAO. Determinations of non-compliance shall be made by EPA. Approval of the Z2&3 Interior WP shall not limit EPA's authority under the terms of this Z2&3 Interior UAO to require Respondents to conduct activities consistent with this Z2&3 Interior UAO to accomplish the Z2&3 Interior Sampling and Cleaning Work outlined in this Section.

XII. PROPERTY REQUIREMENTS

19. **Agreements Regarding Access and Non-Interference**.

a. Substance of Agreement. Respondents shall, with respect to any Z2&3 Interior Sampling Residence and Z2&3 Interior Cleaning Residence, use "best efforts," as defined in ¶ 21, to secure an agreement, enforceable by Respondents and EPA, providing EPA, Respondents, and their representatives, contractors, and subcontractors with access at all reasonable times to such Z2&3 Interior Sampling Residence and to such Z2&3 Interior Cleaning Residence to conduct any activity regarding this Z2&3 Interior UAO, including those activities listed in Paragraph 20 (Access Requirements).

b. Signatories to Access Agreements.

(1) Single Family Homes. Respondents shall use best efforts to secure an access agreement from the Owner. If the Resident is different from the Owner, Respondents shall use best efforts to secure an access agreement from both the Owner and the Resident Lessee.

(2) Multi-Family Homes/Apartments. Respondents shall use best efforts to secure an access agreement from both the Owner and each Resident Lessee.

c. Respondents shall provide a copy of such access agreement(s) to EPA.

20. **Access Requirements.** Respondents may use an access agreement that is substantially in the form of the access agreement attached as Appendix F. Use of such an access agreement shall satisfy the requirements of this Paragraph. If Respondents do not use an access agreement substantially in the form of access agreement attached as Appendix F, the following is

a list of activities for which access is required regarding the Z2&3 Interior Sampling Residence and Z2&3 Interior Cleaning Residence:

a. Performing the Z2&3 Interior Work;

b. Monitoring the Z2&3 Interior Work;

c. Verifying any data or information submitted to EPA;

d. Conducting investigations regarding contamination at or near the Site;

e. Obtaining samples;

f. Assessing the need for, planning, implementing, or monitoring response actions;

g. Assessing implementation of quality assurance and quality control practices as defined in the approved QAPP;

h. Implementing the Z2&3 Interior Work pursuant to the conditions set forth in Section XVI (Enforcement/Work Takeover); and

i. Assessing Respondents' compliance with the Z2&3 Interior UAO.

21. **Best Efforts**. As used in this Section and the Z2&3 Interior SOW, "best efforts" means the efforts that a reasonable person in the position of Respondents would use so as to achieve the goal in a timely manner, including the cost of employing professional assistance to secure access agreements, as required by this Section. If Respondents are unable to accomplish what is required through "best efforts," they shall confer with EPA pursuant to Paragraphs 4.4(b)(3), 4.5(b)(2), and 4.7(b)(2) of the Z2&3 Interior SOW, as applicable, and include a description of the steps taken to secure access. If EPA deems it appropriate, it may assist Respondents or take independent action in obtaining such access. EPA reserves the right to seek payment from Respondents for all costs, including cost of attorneys' time, incurred by the United States in obtaining such access.

22. In the event of any Transfer of any Z2&3 Interior Sampling Residence or any Z2&3 Interior Cleaning Residence, unless EPA otherwise consents in writing, Respondents shall continue to comply with their obligations under this Z2&3 Interior UAO, including their obligation to secure access.

23. Notwithstanding any provision of this Z2&3 Interior UAO, EPA retains all of its access authorities and rights including enforcement authorities related thereto under CERCLA, RCRA, and any other applicable statute or regulations.

XIII. ACCESS TO INFORMATION

24. Respondents shall provide to EPA, upon request, copies of all records, reports, documents, and other information (including records, reports, documents, and other information

in electronic form) (hereinafter referred to as "Records") within Respondents' possession or control or that of their contractors or agents relating to Z2&3 Interior Work or to the implementation of this Z2&3 Interior UAO, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information regarding the Z2&3 Interior Work. Respondents shall also make available to EPA, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Z2&3 Interior Work.

25. **Privileged and Protected Claims**

a. Respondents may assert that all or part of a Record requested by EPA is privileged or protected as provided under federal law, in lieu of providing the Record, provided Respondents comply with Paragraph 25.b, and except as provided in Paragraph 25.c.

b. If Respondents assert a claim of privilege or protection, they shall provide EPA with the following information regarding such Record: its title; its date; the name, title, affiliation (e.g., company or firm), and address of the author, of each addressee, and of each recipient; a description of the Record's contents; and the privilege or protection asserted. If a claim of privilege or protection applies only to a portion of a Record, Respondents shall provide the Record to EPA in redacted form to mask the privileged or protected portion only. Respondents shall retain all Records that they claim to be privileged or protected until EPA or a court determines that such Record is privileged or protected.

c. Respondents may make no claim of privilege or protection regarding: (1) any data regarding the Site, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, radiological, or engineering data, or the portion of any other Record that evidences conditions at or around the Site; or (2) the portion of any Record that Respondents are required to create or generate pursuant to this Z2&3 Interior UAO.

26. **Business Confidential Claims**. Respondents may assert that all or part of a Record provided to EPA under this Section or Section XIV (Retention of Records) is business confidential to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Respondents shall segregate and clearly identify all Records or parts thereof submitted under this Z2&3 Interior UAO for which Respondents assert business confidentiality claims. Records that Respondents claim to be confidential business information will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies Records when they are submitted to EPA, or if EPA has notified Respondents that the Records are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such Records without further notice to Respondents.

27. **Personally Identifiable Information**

a. In the course of implementing this Z2&3 Interior UAO, Respondents shall receive from EPA and shall generate themselves written and/or electronic materials that contain Personally Identifiable Information. Respondents shall keep PII confidential and not disclose it

to other persons or entities except as required by law, court order or other lawful process that protects disclosure to the public of PII. Respondents shall take all necessary and appropriate measures to maintain the confidentiality of PII and to retain written or electronic materials in a secure manner.

b. Respondents may share PII with agents and contractors of theirs who are responsible for assisting in the implementation of this Z2&3 Interior UAO provided that any such person with whom such information is shared either: (i) is specifically made aware of, and, prior to receiving the information, agrees in writing with Respondents to comply with the substantive requirements of ¶ 27.a as if he/she were a Respondent; or (ii) already has executed a confidentiality agreement with the Respondent that is broad enough to cover PII.

c. PII otherwise admissible, discoverable or subject to subpoena in any proceeding shall not be rendered inadmissible, non-discoverable or not subject to subpoena because of its coverage under this Z2&3 Interior UAO.

d. In the event that Respondents conclude in good faith that applicable law, a subpoena or other lawful process, or a court order, requires disclosure of PII to a third party, Respondents shall provide, as far as is practicable, advance written notice to EPA of the intent to disclose, including a description of the applicable law or a copy of the subpoena, process or order requiring disclosure. Respondents shall not disclose any Personally Identifiable Information sooner than one day following provision of such written notice, unless required by law or order of a court.

e. Each Respondent shall promptly report to EPA breaches of PII, unauthorized disclosures or releases, and/or system vulnerability (to the extent known). Any disclosure of PII in contravention of this Z2&3 Interior UAO shall not result in a waiver of the claim of confidentiality, except as provided by law.

28. Notwithstanding any provision of this Z2&3 Interior UAO, EPA retains all of its information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

XIV. RETENTION OF RECORDS

29. During the pendency of this Z2&3 Interior UAO and for a minimum of 10 years after EPA provides Certification of the Completion of the Z2&3 Interior Sampling and Cleaning Work under ¶ 4.14 of the Z2&3 Interior SOW, each Respondent shall preserve and retain all non-identical copies of Records (including Records in electronic form) now in its possession or control, or that come into its possession or control, that relate in any manner to its liability under CERCLA with respect to the Site, provided, however, that Respondents who are potentially liable as owners or operators of the Site must retain, in addition, all Records that relate to the liability of any other person under CERCLA with respect to the Site. Each Respondent must also retain, and instruct its contractors and agents to preserve, for the same period of time specified above, all non-identical copies of the last draft or final version of any Records (including Records in electronic form) now in its possession or control or that come into its possession or control that relate in any manner to the performance of the Z2&3 Interior Work, provided,

however, that each Respondent (and its contractors and agents) must retain, in addition, copies of all data generated during performance of the Z2&3 Interior Work and not contained in the aforementioned Records required to be retained. Each of the above record retention requirements shall apply regardless of any corporate retention policy to the contrary.

30. At the conclusion of this document retention period, Respondents shall notify EPA at least 90 days prior to the destruction of any such Records, and, upon request by EPA, and except as provided in Paragraph 25, Respondents shall deliver any such Records to EPA.

31. Each Respondent certifies individually that, to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed, or otherwise disposed of any Records (other than identical copies) relating to its potential liability regarding the Site since notification of potential liability by EPA and that it has fully complied with any and all EPA requests for information regarding the Site pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927.

XV. COMPLIANCE WITH OTHER LAWS

32. Nothing in this Z2&3 Interior UAO limits Respondent's obligations to comply with the requirements of all applicable state and federal laws and regulations, except as provided in Section 121(e) of CERCLA, 42 U.S.C. § 9621(e), and 40 C.F.R. §§ 300.400(e) and 300.415(j). In accordance with 40 C.F.R. § 300.415(j), all on-site actions required pursuant to this Z2&3 Interior UAO shall, to the extent practicable, as determined by EPA, considering the exigencies of the situation, attain applicable or relevant and appropriate requirements (ARARs) under federal environmental or state environmental or facility siting laws. Respondents shall include ARARs selected by EPA in the Z2&3 Interior SOW.

33. No local, state, or federal permit shall be required for any portion of the Z2&3 Interior Work conducted entirely on-site (i.e., within the areal extent of contamination or in very close proximity to the contamination and necessary for implementation of the Z2&3 Interior Work) including studies, if the action is selected and carried out in compliance with Section 121 of CERCLA, 42 U.S.C. § 9621. Where any portion of the Z2&3 Interior Work that is not on-site requires a federal or state permit or approval, Respondents shall submit timely and complete applications and take all other actions necessary to obtain and to comply with all such permits or approvals. This Z2&3 Interior UAO is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

XVI. ENFORCEMENT/WORK TAKEOVER

34. Any willful violation, or failure or refusal to comply with any provision of this Z2&3 Interior UAO may subject Respondents to civil penalties of up to $53,907 per violation per day, as provided in Section 106(b)(1) of CERCLA, 42 U.S.C. § 9606(b)(1), and the Civil Monetary Penalty Inflation Adjustment Rule, 81 Fed. Reg. 43,091, 40 C.F.R. Part 19.4. In the event of such willful violation, or failure or refusal to comply, EPA may carry out the required actions unilaterally, pursuant to Section 104 of CERCLA, 42 U.S.C. § 9604, and/or may seek judicial enforcement of this Z2&3 Interior UAO pursuant to Section 106 of CERCLA, 42 U.S.C. § 9606. Respondents may also be subject to punitive damages in an amount up to three times the

amount of any costs incurred by the United States as a result of such failure to comply, as provided in Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3).

XVII. NOTICES AND SUBMISSIONS

35. All approvals, consents, deliverables, modifications, notices, notifications, objections, proposals, reports, and requests specified in this Z2&3 Interior UAO must be in writing unless otherwise specified. Whenever, under this Z2&3 Interior UAO, notice is required to be given, or a report or other document is required to be sent, by one Party to another, it must be directed to the person(s) specified below at the address(es) specified below. Any Party may change the person and/or address applicable to it by providing notice of such change to all Parties. All notices under this Section are effective upon receipt, unless otherwise specified. Except as otherwise provided, notice to a Party by email (if that option is provided below) or by regular mail in accordance with this Section satisfies any notice requirement of the Z2&3 Interior UAO regarding such Party.

As to EPA:

Director, Superfund Division
Region 5, US EPA
77 W. Jackson Blvd. (SR-6J)
Chicago, IL 60604-3590

Jacob Hassan
On-Scene Coordinator
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	Steven Kaiser Office of Regional Counsel Region 5, US EPA 77 West Jackson Blvd. (C-14J) Chicago, IL 60604-3590 kaiser.steven@epa.gov (312) 353-3804
	Leonardo Chingcuanco Office of Regional Counsel Region 5, US EPA 77 West Jackson Blvd. (C-14J) Chicago, IL 60604-3590 chingcuanco.leonardo@epa.gov (312) 886-7236
As to the Regional Financial Management Officer:	Chief, Program Accounting and Analysis Section United States Environmental Protection Agency Region 5, MF-10J 77 West Jackson Blvd. Chicago, IL 60604-3590
As to EPA Cincinnati Finance Center	EPA Cincinnati Finance Center 26 W. Martin Luther King Dr. Cincinnati, OH 45268 cinwd_acctsreceivable@epa.gov

36. Respondents shall submit all deliverables in the manner specified in Section 6 of the Z2&3 Interior SOW.

XVIII. RESERVATIONS OF RIGHTS BY EPA

37. Nothing in this Z2&3 Interior UAO shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants, or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing in this Z2&3 Interior UAO shall prevent EPA from seeking legal or equitable

relief to enforce the terms of this Z2&3 Interior UAO, from taking other legal or equitable action as it deems appropriate and necessary, or from requiring Respondents in the future to perform additional activities pursuant to CERCLA or any other applicable law. EPA reserves the right to bring an action against Respondents under Section 107 of CERCLA, 42 U.S.C. § 9607, for recovery of any response costs incurred by the United States related to this Z2&3 Interior UAO or the Site and not paid by Respondents pursuant to this Z2&3 Interior UAO, including but not limited to Z2&3 Interior Response Costs.

XIX. OTHER CLAIMS

38. By issuance of this Z2&3 Interior UAO, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondents. The United States or EPA shall not be deemed a party to any contract entered into by Respondents or their directors, officers, employees, agents, successors, representatives, assigns, contractors, or consultants in carrying out actions pursuant to this Z2&3 Interior UAO.

39. Nothing in this Z2&3 Interior UAO constitutes a satisfaction of or release from any claim or cause of action against Respondents or any person not a party to this Z2&3 Interior UAO, for any liability such person may have under CERCLA, other statutes, or common law, including but not limited to any claims of the United States under Sections 106 and 107 of CERCLA, 42 U.S.C. §§ 9606 and 9607.

40. Nothing in this Z2&3 Interior UAO shall be deemed to constitute preauthorization of a claim within the meaning of Section 111(a)(2) of CERCLA, 42 U.S.C. § 9611(a)(2), or 40 C.F.R. § 300.700(d).

41. No action or decision by EPA pursuant to this Z2&3 Interior UAO shall give rise to any right to judicial review, except as set forth in Section 113(h) of CERCLA, 42 U.S.C. § 9613(h).

XX. INSURANCE

42. No later than 15 days before commencing any on-site Z2&3 Interior Work, Respondents shall secure, and shall maintain for the duration of this Z2&3 Interior UAO, commercial general liability with limits of liability of $1 million per occurrence, automobile liability insurance with limits of liability of $1 million per accident, and umbrella liability insurance with limits of liability of $5 million in excess of the required commercial general liability and automobile liability limits, naming EPA as an additional insured with respect to all liability arising out of the activities performed by or on behalf of Respondents pursuant to this Z2&3 Interior UAO. Within the same time period, Respondents shall provide EPA with certificates of such insurance and a copy of each insurance policy. Respondents shall submit such certificates and copies of policies each year on the anniversary of the Effective Date. In addition, for the duration of the Z2&3 Interior UAO, Respondents shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing Z2&3 Interior Work on behalf of Respondents in furtherance of this Z2&3 Interior UAO. If Respondents demonstrate by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent

to that described above, or insurance covering some or all of the same risks but in a lesser amount, then, with respect to that contractor or subcontractor, Respondents need provide only that portion of the insurance described above which is not maintained by such contractor or subcontractor. Respondents shall ensure that all submittals to EPA under this Paragraph identify the U.S. Smelter and Lead Refinery, Inc. Superfund Site, East Chicago, Indiana, and the EPA docket number for this action.

XXI. MODIFICATION

43. If circumstances warrant, an OSC may modify, in writing or by oral direction, the Z2&3 Interior SOW or any plan or schedule submitted pursuant to this Z2&3 Interior UAO of the Z2&3 Interior SOW. Any oral modification will be memorialized by EPA in writing within 30 days, but shall have as its effective date the date of the OSC's oral direction. Any other requirements of this Z2&3 Interior UAO may be modified in writing by signature of the Superfund Division Director for Region 5. All modifications under this Paragraph must be consistent with the Fourth and Fifth Amendments to the Action Memorandum.

44. If Respondents seek permission to deviate from the Z2&3 Interior SOW or any approved deliverable or schedule, Respondents' Project Coordinator shall submit a written request to EPA for approval outlining the proposed modification and its basis. Respondents may not proceed with the requested deviation until receiving approval from the OSC pursuant to Paragraph 43.

45. No informal advice, guidance, suggestion, or comment by the OSCs or other EPA representatives regarding reports, plans, specifications, schedules, or any other writing submitted by Respondents shall relieve Respondents of their obligation to obtain any formal approval required by this Z2&3 Interior UAO or the Z2&3 Interior SOW, or to comply with all requirements of this Z2&3 Interior UAO and the Z2&3 Interior SOW, unless it is formally modified.

XXII. DELAY IN PERFORMANCE

46. Respondents shall notify EPA of any delay or anticipated delay in performing any requirement of this Z2&3 Interior UAO. Such notification shall be made by telephone and email to the OSCs within 48 hours after Respondents first knew or should have known that a delay might occur. Respondents shall adopt all reasonable measures to avoid or minimize any such delay. Within 7 days after notifying EPA by telephone and email, Respondents shall provide to EPA written notification fully describing the nature of the delay, the anticipated duration of the delay, any justification for the delay, all actions taken or to be taken to prevent or minimize the delay or the effect of the delay, a schedule for implementation of any measures to be taken to mitigate the effect of the delay, and any reason why Respondents should not be held strictly accountable for failing to comply with any relevant requirements of this Z2&3 Interior UAO. Increased costs or expenses associated with implementation of the activities called for in this Z2&3 Interior UAO is not a justification for any delay in performance.

47. Any delay in performance of this Z2&3 Interior UAO that, in EPA's judgment, is not properly justified by Respondents under the terms of Paragraph 46 shall be considered a

violation of this Z2&3 Interior UAO. EPA shall notify Respondents of any such violation. Any delay in performance of this Z2&3 Interior UAO shall not affect Respondents' obligations to fully perform all obligations under the terms and conditions of this Z2&3 Interior UAO. If EPA determines that a delay in performance of this Z2&3 Interior UAO is properly justified, EPA shall, in writing, inform Respondents of that determination and the revised deadline.

XXIII. ADDITIONAL REMOVAL ACTIONS

48. If EPA determines that additional removal actions not included in an approved plan are necessary to protect public health, welfare, or the environment, EPA will notify Respondents of that determination and will either modify this Z2&3 Interior UAO or issue a new order to address any additional removal actions. Any modification to this Z2&3 Interior UAO under this Paragraph shall be consistent with the Fourth or Fifth Amendment to the Action Memorandum.

XXIV. ADMINISTRATIVE RECORD

49. EPA has established an administrative record that contains the documents that form the basis for the issuance of this Z2&3 Interior UAO, including, but not limited to, the Fourth and Fifth Amendments. EPA will make the administrative record available for review at the EPA Region 5 Superfund Record Center located 77 W. Jackson Blvd., Chicago, IL 60604. A copy of the administrative record is also available for viewing at https://www.epa.gov/uss-lead-superfund-site.

XXV. APPENDICES

50. The following appendices are attached to and incorporated into this Z2&3 Interior UAO:

a. Appendix A: Z2&3 Interior SOW

b. Appendix B: Map of USS Lead Site OU1 and OU2

c. Appendix C: Map of USS Lead Site OU1 – Zones 1, 2, and 3

d. Appendix D: Action Memorandum–Fourth Amendment

e. Appendix E: Action Memorandum–Fifth Amendment

f. Appendix F: Form of Interior Access Agreement

g. Appendix G: Letter from John N. Moscato, Senior Counsel, Dep't of Justice, to E. Donald Elliott, Partner, Willkie Farr & Gallagher LLP (Apr. 19, 2010)

h. Appendix H: Letter from Annette Lang, Dep't of Justice, to E. Donald Elliot, Senior Of Counsel, Covington & Burling LLP (Apr. 7, 2017)

i. Appendix I: Letter from Annette Lang, Dep't of Justice, to E. Donald Elliot, Senior Of Counsel, Covington & Burling LLP (Oct. 4, 2017)

j. Appendix J: Letter from E. Donald Elliott, Partner, Willkie Farr & Gallagher LLP, to John N. Moscato, Senior Counsel, Dep't of Justice (Feb. 18, 2010)

k. Appendix K: Letter from E. Donald Elliott, Partner, Willkie Farr & Gallagher LLP, to John N. Moscato, Senior Counsel, Dep't of Justice (Apr. 1, 2010)

l. Appendix L: Letter from E. Donald Elliott, Partner, Senior Of Counsel, Covington & Burling LLP, to Annette Lang, Senior Counsel, Dep't of Justice (Dec. 29, 2016)

m. Appendix M: Letter from E. Donald Elliott, Senior Of Counsel, Covington & Burling LLP, to John N. Moscato, Senior Counsel, Dep't of Justice (Nov. 6, 2017)

n. Appendix N: 104(e) Information Request Issued by EPA to USS Lead (May 25, 2017)

o. Appendix O: 104(e) Information Request Issued by EPA to USS Lead (Mar. 3, 2015)

p. Appendix P: Original Z2&3 Interior UAO (Excluding Appendices)

q. Appendix Q: Comments on Original Z2 Soil UAO and Z2&3 Interior UAO from ARC, Chemours, DuPont, and USMR to EPA (Jan. 10, 2018)

r. Appendix R: Comments on Original Z2 Soil UAO and Z2&3 Interior UAO from USS Lead to EPA (Dec. 26, 2017)

s. Appendix S: Comments on Original Z2 Soil UAO and Z2&3 Interior UAO from Mueller to EPA (Dec. 29, 2017)

XXVI. SEVERABILITY

51. If a court issues an order that invalidates any provision of this Z2&3 Interior UAO or finds that Respondents have sufficient cause not to comply with one or more provisions of this Z2&3 Interior UAO, Respondents shall remain bound to comply with all provisions of this Z2&3 Interior UAO either not invalidated or not determined to be subject to a sufficient cause defense by the court's Z2&3 Interior UAO.

It is so ORDERED.

BY: _____ DATE: 1/12/2015

Robert A. Kaplan
for Acting Director, Superfund Division
Region 5
U.S. Environmental Protection Agency

APPENDIX A

TO
Z2&3 INTERIOR UAO

Z2&3 INTERIOR SOW

UNILATERAL ADMINISTRATIVE ORDER

STATEMENT OF WORK FOR INTERIOR REMOVAL ACTION IN ZONE 2 AND ZONE 3 OF OPERABLE UNIT 1 OF THE USS LEAD SUPERFUND SITE

City of East Chicago, Lake County, State of Indiana

EPA Region 5

TABLE OF CONTENTS

1. INTRODUCTION

1.1 Background and Scope of the Zone 2 and Zone 3 Interior Statement of Work

(a) Background.

(1) This Statement of Work forms a part of the Unilateral Administrative Order (Z2&3 Interior UAO) for the continued implementation of interior removal activities at Zone 2 and Zone 3 of Operable Unit 1 of the U.S. Smelter and Lead Refinery, Inc. Superfund Site (Site) in East Chicago, Indiana, consistent with both the Action Memorandum–4th Amendment (hereinafter "Fourth Amendment") and the Action Memorandum–5th Amendment (hereinafter "Fifth Amendment"), which were signed by the Assistant Administrator of the Office of Land and Emergency Management of the U.S. Environmental Protection Agency on October 28, 2016, and March 14, 2017, respectively. This document shall be referred to as the "Z2&3 Interior Statement of Work" or the "Z2&3 Interior SOW."

(2) Operable Unit 1. EPA has divided the Site into two operable units: Operable Unit 1 (OU1) and Operable Unit 2 (OU2). OU1 consists generally of a residential neighborhood in East Chicago, Indiana, commonly known as the Calumet neighborhood. OU1 has been further divided into three zones: Zone 1 (Z1), Zone 2 (Z2), and Zone 3 (Z3). The definition and boundaries of OU1 and Zones 1, 2, and 3 are set forth in Section III ("Definitions") of the Z2&3 Interior UAO.

(3) Operable Unit 2. OU2 consists a 79-acre parcel of land that formerly housed the lead refining and smelting operations of U.S. Smelter and Lead Refinery Inc. (Former USS Lead Facility), as well as the groundwater associated with both OU1 and the Former USS Lead Facility. The definition of OU2 is set forth in the Definitions Section of the Z2&3 Interior UAO.

(b) Scope. This Z2&3 Interior SOW applies to the Z2&3 Interior Sampling and Cleaning Work, as that term is defined in the Z2&3 Interior UAO.

(c) Z2&3 Interior Sampling and Cleaning Work.

(1) Authorization and Applicability. In the Fourth and Fifth Amendments, EPA authorized certain removal actions in the interior of residences in Zones 2 and 3. These actions include sampling indoor dust for lead and arsenic, screening indoor paint for lead, and cleaning the interior of homes where the lead in the dust equals or exceeds 316 ppm and/or the arsenic in the dust equals or exceeds 26 ppm. The Fourth and Fifth Amendment also authorized re-cleaning of the interior of residences where a loading rate of 25 $\mu g/ft^2$ for lead or 36 $\mu g/ft^2$ for arsenic was not met after the initial or

any subsequent cleaning, unless sampling results indicate that lead-based paint may be present in the residence.

(2) Z2&3 Interior Sampling and Cleaning Work: Responsibilities. Respondents will be responsible for implementing the Z2&3 Interior Sampling and Cleaning Work. EPA will support Respondents in implementing the Z2&3 Sampling and Interior Work consistent with ¶ 4.11.

(d) Respondents will implement their activities consistent with the Z2&3 Interior UAO; this Z2&3 Interior SOW; the applicable parts of the Fourth and Fifth Amendments; all plans approved by EPA pursuant to the Z2&3 Interior UAO and this Z2&3 Interior SOW; any additional written direction provided by EPA; the *National Contingency Plan*; the *Superfund Lead-Contaminated Residential Sites Handbook*, August 2003 ("*Lead Handbook*"); and the documents and guidance identified in Section 9 of this Z2&3 Interior SOW.

1.2 Structure of the Z2&3 Interior SOW

- Section 2 (Community Involvement) sets forth EPA's and Respondents' responsibilities for community involvement.
- Section 3 has been intentionally left blank.
- Section 4 (Z2&3 Interior Sampling and Cleaning Work) sets forth requirements regarding the implementation of the Z2&3 Interior Sampling and Cleaning Work, including primary deliverables related to completion of the Z2&3 Interior Sampling and Cleaning Work.
- Section 5 (Reporting) sets forth Respondents' reporting obligations.
- Section 6 (Deliverables) describes the content of the supporting deliverables and the general requirements regarding Respondents' submission of, and EPA's review of, approval of, comment on, and/or modification of, the deliverables.
- Section 7 (Schedules) sets forth the schedule for submitting the primary deliverables, specifies the supporting deliverables that must accompany each primary deliverable, and sets forth the schedule of milestones regarding the completion of the Z2&3 Interior Sampling and Cleaning Work.
- Section 8 (State Participation) addresses providing documents to the State.
- Section 9 (References) provides a list of references, including URLs.

1.3 The terms used in this Z2&3 Interior SOW that are defined in CERCLA, in regulations promulgated under CERCLA, or in the Z2&3 Interior UAO, have the meanings assigned to them in CERCLA, in such regulations, or in the Z2&3 Interior UAO, except that the term "Paragraph" or "¶" means a paragraph of the Z2&3 Interior SOW, and the term "Section" means a section of this Z2&3 Interior SOW, unless otherwise stated.

2. COMMUNITY INVOLVEMENT

2.1 Community Involvement Responsibilities

(a) EPA has the lead responsibility for developing and implementing community involvement activities at the Site. Previously, EPA developed a Community Involvement Plan (CIP) for the Site. Pursuant to 40 C.F.R. § 300.435(c), EPA shall review the existing CIP and determine whether it should be revised to describe further public involvement activities during the Z2&3 Interior Sampling and Cleaning Work that are not already addressed or provided for in the existing CIP.

(b) If requested by EPA, Respondents shall participate in community involvement activities, including participation in (1) the preparation of information regarding the Z2&3 Interior Sampling and Cleaning Work for dissemination to the public, and (2) public meetings that may be held or sponsored by EPA to explain activities at or relating to the Site. Respondents' support of EPA's community involvement activities may include providing initial submissions and updates of deliverables to any Community Advisory Groups or other entity to provide them with a reasonable opportunity for review and comment. EPA may describe in its CIP Respondents' responsibilities for community involvement activities. All community involvement activities conducted by Respondents at EPA's request are subject to EPA's oversight.

(c) **Respondents' CI Coordinator**. Within 30 days of the Effective Date, Respondents shall designate and notify EPA of Respondents' Community Involvement Coordinator (Respondents' CI Coordinator). Respondents may hire a contractor for this purpose. Respondents' notice must include the name, title, and qualifications of the Respondents' CI Coordinator. Respondents' CI Coordinator is responsible for providing support regarding EPA's community involvement activities, including coordinating with EPA's CI Coordinator regarding responses to the public's inquiries about the Site.

3. THIS SECTION INTENTIONALLY BLANK

4. Z2&3 INTERIOR SAMPLING AND CLEANING WORK

4.1 Z2&3 Interior Sampling and Cleaning Work Plan. Respondents shall submit a Z2&3 Interior Sampling and Cleaning Work Plan (Z2&3 Interior WP) for EPA approval that includes:

(a) A proposed Z2&3 Interior Sampling and Cleaning Work Schedule in Gantt chart format;

(b) The deliverables or a schedule for the deliverables identified in Paragraph 6.7;

(c) A list of key contractor personnel who will provide support during the Z2&3 Interior Sampling and Cleaning Work; and

(d) A schedule of deliverables to be provided during the Z2&3 Interior Sampling and Cleaning Work.

4.2 Z2&3 Interior Sampling and Cleaning Work. Respondents shall conduct the Z2&3 Sampling and Cleaning Work in accordance with the Z2&3 Interior WP. At a minimum, the Z2&3 Interior WP shall include, and Respondents shall conduct, the activities identified in Paragraphs 4.3 through 4.8 of this Z2&3 Interior SOW.

4.3 Z2&3 Interior Sampling and Cleaning Work: Access.

(a) Form of Access Agreement. As set forth in the Z2&3 Interior UAO, Respondents may use an access agreement substantially in the form attached as Appendix F to the Z2&3 Interior UAO or may develop their own access agreement. Regardless, the access agreement shall include access for interior sampling and for response actions based on sampling results.

(b) Relevant Persons for Purposes of Securing Access and Providing Notification of Sampling Results. The following are the "Relevant Persons" for purposes of securing access and providing notification of sampling results:

(1) For Single Family Homes. The Owner and, if the Resident is different from the Owner, the Resident Lessee.

(2) For Multi-Family Homes/Apartments. Both the Owner and each Resident Lessee.

(c) Access Issues Related to Residences where the Resident is different from the Owner. For those residences where the Resident is different from the Owner, Respondents shall confer with EPA if either: (i) a conflict arises between an Owner and a Resident Lessee over access for any activity required by this Z2&3 Interior SOW; or (ii) a Resident is responsive to requests for access for any activity required by this Z2&3 Interior SOW but the Owner is non-responsive.

4.4 Z2&3 Interior Sampling Work: Initial Sampling.

(a) Residences Covered. Respondents shall implement the Z2&3 Interior Sampling Work at those residences in Zones 2 and 3 that meet the definition of "Z2&3 Interior Sampling Residence" where Respondents secure access.

(b) Timing.

(1) Zone 2.

(i) At the same time as, or as soon as reasonably possible after, performing a pre-construction walkthrough for exterior soil excavation work at a property, Respondents shall contact each Relevant Person identified in Paragraph 4.34.4(b) to secure access.

(ii) As soon as reasonably possible after completing exterior restoration activities at a property (excluding the 30-day maintenance period), Respondents shall contact each Resident whose residences they have secured access to and offer to schedule and perform the initial interior sampling of the residence.

(2) Zone 3. EPA shall notify Respondents when EPA has completed restoration activities (excluding the 30-day maintenance period) at a property. As soon as reasonably possible after that notification, Respondents shall contact each Relevant Person identified in Paragraph 4.34.4(b) to secure access. At the same time as trying to secure access from each Relevant Person, Respondents shall offer to each Resident to schedule and perform the interior sampling of the residence.

(3) Best Efforts. Respondents shall use best efforts to contact each Relevant Person identified in Paragraph 4.34.4(b) to secure access. Respondents shall also use best efforts to schedule the interior sampling with each Resident. Respondents shall keep a log of those efforts. No less than once a month commencing in the first month after the first restoration (excluding the 30-day maintenance period) of a property in Zone 2 or 3 is complete, Respondents and EPA shall confer about issues relating to communications, securing access, and scheduling sampling. The frequency of these communications may be increased at the request of either the Respondents or EPA. These conferences may be held in conjunction with the conferences related to cleaning identified in ¶ 4.5(b)(2) and re-cleaning identified in ¶ 4.7(b)(2).

(c) Activities Covered. Respondents shall conduct all Z2&3 Interior Sampling Work in accordance with the approved Indoor Dust and Lead-Based Paint Sampling Plan described in ¶ 6.7(d).

(d) Results Letters to Relevant Persons. No later than 7 days after receiving the final, verified interior sampling results for a residence, Respondents shall notify each Relevant Person identified in Paragraph 4.3(b), in writing, of the results. If Respondents do not have the final, verified interior sampling results for a residence within 21 days of taking those samples, Respondents shall notify each Relevant Person identified in Paragraph 4.3(b), in writing, of the delay.

4.5 Z2&3 Interior Cleaning Work.

(a) Residences Covered. Respondents shall implement the Z2&3 Interior Cleaning Work at those residences in Zones 2 and 3 that meet the definition of "Z2&3 Interior Cleaning Residence" where the Respondents secure access. Respondents shall implement the Z2&3 Interior Cleaning Work at a Z2&3 Interior Cleaning Residence even if lead-based paint is identified during the lead-based paint screening phase of the initial interior sampling event.

(b) Timing.

(1) Respondents shall offer to schedule and perform an interior cleaning to a Resident when Respondents notify the Resident of their final, verified interior sampling results.

(2) Best Efforts. Respondents shall use best efforts to communicate directly with a Resident after sending the initial offer to clean with the sample results notification letter. Respondents shall keep a log of those efforts. No less than once a month commencing in the first month after the first interior sampling results are received by Respondents, Respondents and EPA shall confer about issues relating to communications, securing access, and scheduling cleanings. The frequency of these communications may be increased at the request of either the Respondents or EPA. These conferences may be held in conjunction with the conferences related to sampling identified in ¶ 4.4(b)(3) and re-cleaning identified in ¶ 4.7(b)(2).

(c) Activities Covered. Respondents shall conduct all Z2&3 Interior Cleaning Work in accordance with the approved the Indoor Cleaning Plan described in ¶ 6.7(c).

4.6 Z2&3 Interior Sampling Work: Efficacy Sampling.

(a) Standard. Interior cleanings and re-cleanings are effective if the loading rate for floors after the cleaning is below 25 $\mu g/ft^2$ for lead and below 36 $\mu g/ft^2$ for arsenic.

(b) Residences Covered. Respondents shall implement Efficacy Sampling at all residences in Zone 2 and Zone 3 that have undergone interior cleaning or re-cleaning.

(c) Timing. Respondents shall conduct Efficacy Sampling as soon as they complete the interior cleaning of a residence. If Respondents are not able to complete Efficacy Sampling within 14 days of completing the cleaning, Respondents shall confer with EPA.

(d) Activities Covered. Respondents shall conduct all Efficacy Sampling in accordance with the approved Indoor Dust and Lead-Based Paint Sampling Plan described in ¶ 6.7(d).

(e) Results Letters to Relevant Persons. No later than 7 days after receiving all final, verified Efficacy Sampling results for a residence, Respondents shall notify each Relevant Person identified in Paragraph 4.3(b), in writing, of the results. If Respondents do not have the final, verified Efficacy Sampling results for a residence within 21 days of taking those samples, Respondents shall notify each Relevant Person identified in Paragraph 4.3(b), in writing, of the delay.

4.7 Z2&3 Interior Cleaning Work: Re-Cleanings.

(a) Residences Covered. Respondents shall re-clean the interior of a residence if the results of the Efficacy Sampling after the interior cleaning or re-cleaning shows a loading rate for floors at or above 25 µg/ft^2 for lead or 36 µg/ft^2 for arsenic; provided however, that Respondents are not required to re-clean any residence where the initial sampling indicated that lead-based paint may be present.

(b) Timing.

(1) Respondents shall offer to schedule and perform an interior re-cleaning to a Resident when Respondents notify a Resident in writing of their final, verified Efficacy Sampling results.

(2) Best Efforts. Respondents shall use best efforts to communicate directly with a Resident after sending the initial offer to re-clean with the Efficacy Sampling results. Respondents shall keep a log of those efforts. No less than once a month commencing in the first month after the first re-cleaning becomes necessary, Respondents and EPA shall confer about issues relating to communications, securing access, and scheduling cleanings and re-cleanings. The frequency of these communications may be increased at the request of either the Respondents or EPA. These conferences may be held in conjunction with the conferences related to sampling identified in ¶ 4.4(b)(3) and cleaning identified in ¶ 4.5(b)(2).

(c) Activities Covered. Respondents shall conduct all interior re-cleanings in accordance with the approved Indoor Cleaning Plan described in ¶ 6.7(c). Pursuant to that Indoor Cleaning Plan, Respondents shall be required to re-clean only those areas and associated areas of the residence where the loading rate for floors exceeded 25 µg/ft^2 for lead or 36 µg/ft^2 for arsenic. Respondents are not required to re-clean any residence where the initial sampling indicated that lead-based paint may be present.

4.8 Transport and Disposal. Respondents shall transport and dispose of any Waste Material generated by the Z2&3 Interior Sampling and Cleaning Work consistent with ¶ 4.13 of this Z2&3 Interior SOW.

4.9 Independent Quality Assurance Team. Respondents shall notify EPA of Respondents' designated Independent Quality Assurance Team (IQAT). The Supervising Contractor may perform this function or Respondents may hire a third party for this purpose. Respondents' notice must include the names, titles, contact information, and qualifications of the members of the IQAT. The IQAT will have the responsibility to determine whether Z2&3 Interior Sampling and Cleaning Work are of expected quality and conforms to applicable plans and specifications.

4.10 Meetings and Inspections

(a) **Pre-implementation Conference**. Respondents shall hold a conference with EPA and others as directed by EPA, prior to beginning any Z2&3 Interior Sampling

Work. Respondents shall prepare minutes of that meeting and shall distribute the minutes to all Parties.

(b) **Periodic Meetings**. During the Z2&3 Interior Sampling and Cleaning Work, Respondents shall conduct regular progress meetings to which EPA, and others as directed or determined by EPA, will be invited to discuss performance issues. Respondents shall distribute an agenda and list of attendees to all Parties prior to each meeting. Respondents shall prepare minutes of the meetings and shall distribute the minutes to all Parties. The meetings required by ¶¶ 4.3(c)(3), 4.4(b)(2), and 4.6(b)(2) may be integrated into these meetings.

(c) **Inspections**

(1) EPA or its representative shall conduct periodic inspections of the Z2&3 Interior Sampling and Cleaning Work. At EPA's request, the Supervising Contractor or other designee shall accompany EPA or its representative during inspections.

(2) Upon notification by EPA of any deficiencies in the Z2&3 Interior Sampling and Cleaning Work, Respondents shall take all necessary steps to correct the deficiencies and/or bring the Z2&3 Interior Sampling and Cleaning Work into compliance with the approved Z2&3 Interior WP. If applicable, Respondents shall comply with any schedule provided by EPA in its notice of deficiency.

4.11 EPA Support

(a) Respondents may refer any questions or comments from the public regarding the Site to the EPA's On-Scene Coordinator, the EPA CI Coordinator, or any other person designated by EPA.

(b) Upon request by Respondents' Project Coordinator or Supervising Contractor, an EPA On-Scene Coordinator will:

(1) Conduct pre-cleaning walkthroughs of individual properties with Respondents' employees and/or contractors;

(2) Conduct post-cleaning walkthroughs of individual properties with Respondents' employees and/or contractors; and

(3) Conduct additional walkthroughs of individual properties with Respondents' employees and/or contractors, as practicable.

4.12 Emergency Response and Reporting

(a) **Emergency Response and Reporting**. If any event occurs during performance of the Z2&3 Interior Sampling and Cleaning Work that causes or threatens to cause a release of Waste Material on, at, or from the Site and that either constitutes an

emergency situation or that may present an immediate threat to public health or welfare or the environment, Respondents shall: (1) immediately take all appropriate action to prevent, abate, or minimize such release or threat of release; (2) immediately notify the authorized EPA officer (as specified in ¶ 4.12(c)) orally; and (3) take such actions in consultation with the authorized EPA officers and in accordance with all applicable provisions of the Health and Safety Plan, the Emergency Response Plan, and any other deliverable approved by EPA under the Z2&3 Interior SOW. In the event that Respondents fail to take appropriate response action as required by this Paragraph, and EPA takes such action instead, EPA reserves the right to pursue cost recovery.

(b) **Release Reporting**. Upon the occurrence of any event during performance of the Z2&3 Interior Sampling and Cleaning Work that Respondents are required to report pursuant to Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA), 42 U.S.C. § 11004, Respondents shall immediately notify the authorized EPA officer orally.

(c) The "authorized EPA officers" for purposes of immediate oral notifications and consultations under ¶ 4.12(a) and ¶ 4.12(b) are the designated OSCs or the Emergency Response Section, Region 5, U.S. Environmental Protection Agency (if none of the OSCs are available), which is at (312) 353-2318.

(d) For any event covered by ¶ 4.12(a) and ¶ 4.12(b), Respondents shall: (1) within 14 days after the onset of such event, submit a report to EPA describing the actions or events that occurred and the measures taken, and to be taken, in response thereto; and (2) within 30 days after the conclusion of such event, submit a report to EPA describing all actions taken in response to such event.

(e) The reporting requirements under ¶ 4.12 are in addition to the reporting required by CERCLA § 103 or EPCRA § 304.

4.13 Off-Site Shipments

(a) Respondents may ship hazardous substances, pollutants, and contaminants from the Site to an off-Site facility only if they comply with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondents will be deemed to be in compliance with CERCLA § 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if Respondents obtain a prior determination from EPA that the proposed receiving facility for such shipment is acceptable under the criteria of 40 C.F.R. § 300.440(b).

(b) Respondents may ship Waste Material from the Site to an out-of-state waste management facility only if, prior to any shipment, they provide notice to the appropriate state environmental official in the receiving facility's state and to the EPA Project Coordinator. This notice requirement will not apply to any off-Site shipments when the total quantity of all such shipments does not exceed 10 cubic yards. The notice must include the following information, if available: (1) the

name and location of the receiving facility; (2) the type and quantity of Waste Material to be shipped; (3) the schedule for the shipment; and (4) the method of transportation. Respondents also shall notify the state environmental official referenced above and the EPA Project Coordinator of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-state facility. Respondents shall provide the notice after the award of the contract for the Z2&3 Interior Sampling and Cleaning Work and before the Waste Material is shipped.

(c) Respondents may ship Investigation Derived Waste (IDW) from the Site to an off-Site facility only if they comply with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), 40 C.F.R. § 300.440, EPA's *Guide to Management of Investigation Derived Waste*, OSWER 9345.3-03FS (Jan. 1992), and any IDW-specific requirements contained in the ROD. Wastes shipped off-Site to a laboratory for characterization, and RCRA hazardous wastes that meet the requirements for an exemption from RCRA under 40 CFR § 261.4(e) shipped off-site for treatability studies, are not subject to 40 C.F.R. § 300.440.

4.14 Certification of Completion of Z2&3 Interior Sampling and Cleaning Work

(a) Definitions.

(1) The "Cleanup Standards" for the Z2&3 Interior Sampling and Cleaning Work are:

(i) For residences where interior cleaning has not been performed, Interior Screening Levels below 316 mg/kg and 26 mg/kg for lead and arsenic, respectively.

(ii) For residences where interior cleaning has been performed, a loading rate for floors below 25 $\mu g/ft^2$ for lead and 36 $\mu g/ft^2$ for arsenic.

(2) "Z2&3 Interior Excluded Residences."

(i) Prior to scheduling a Z2&3 Interior Sampling and Cleaning Work Completion Meeting pursuant to Paragraph 4.14(b) of this Z2&3 Interior SOW, Respondents must secure a final list of the Z2&3 Interior Excluded Residences from EPA. The development of the list of Z2&3 Interior Excluded Residences shall take place as follows.

(ii) **No Access.** If, after the exercise of best efforts, Respondents cannot gain access to a residence to take interior samples or perform an interior cleaning, Respondents shall confer with EPA pursuant to ¶¶ 4.4(b)(3), 4.5(b)(2), and 4.7(b)(2), as applicable. If EPA agrees that Respondents shall not be required to undertake further efforts, EPA may undertake efforts to secure access. If EPA

secures the necessary access, Respondents shall thereafter perform the Z2&3 Interior Sampling Work and/or the Z2&3 Interior Cleaning Work, as applicable. If EPA does not secure access, this residence shall be placed on the preliminary list of Z2&3 Interior Excluded Residences.

(iii) **Lead Based Paint Present.** If, after conducting interior sampling at a residence, Respondents determine that lead-based paint may be present in the residence, Respondents shall keep a log of such residences and periodically provide that log to EPA.

(iv) **Cleanup Standards Cannot Be Met.** If, after conducting an interior cleaning at a residence, Respondents determine that the Cleanup Standard in ¶ 4.14(a)(1)(ii) cannot be met at a particular residence, Respondents shall notify EPA. EPA may elect to conduct sampling or screenings and/or perform cleanings at any residence to determine that either the Cleanup Standards cannot be met or that lead-based paint may be present in the residence. EPA reserves the right to seek cost recovery for any costs incurred by EPA under this ¶ 4.14(a)(2)(iv). If neither EPA nor Respondents can achieve the Cleanup Standard, then the residence shall be placed on the preliminary list of Z2&3 Interior Excluded Residences.

(v) No later than six months prior to Respondents' expected date of final demobilization of the Z2&3 Interior Cleaning Work, Respondents shall notify EPA of their expected date of final demobilization and will regularly update that expected date in the monthly Progress Reports submitted pursuant to ¶ 5.1.

(vi) By no later than 30 days after the notification in ¶ 4.14(a)(2)(v), EPA will finalize the preliminary list of Z2&3 Interior Excluded Residences and provide it to the Respondents. Thereafter, EPA and Respondents will informally discuss the list. By no later than 30 days prior to Respondents' expected date of final demobilization of the Z2&3 Interior Cleaning Work, EPA will provide to Respondents a final list of the "Z2&3 Interior Excluded Residences." The residences on this list shall constitute the "Z2 Interior Excluded Residences."

(vii) At such time as EPA provides Respondents with the final list of Z2&3 Interior Excluded Residences, Respondents' obligations to perform Z2&3 Interior Sampling and Cleaning Work at the Z2&3 Interior Excluded Residences shall cease under the Z2&3 Interior UAO and this Z2&3 Interior SOW. After Respondents complete any remaining Z2&3 Interior Sampling and Cleaning Work at any non-Z2&3 Interior Excluded Residences (if any), Respondents

may schedule a Z2&3 Interior Sampling and Cleaning Work Completion Meeting.

(b) **Z2&3 Interior Sampling and Cleaning Work Completion Meeting**. The Z2&3 Interior Sampling and Cleaning Work is "Complete" for purposes of this ¶ 4.14 when it has been fully performed and the Cleanup Standards have been achieved at all Z2&3 Interior Sampling Residences and all Z2&3 Interior Cleaning Residences, except the Z2&3 Interior Excluded Residences. Respondents shall schedule a meeting for the purpose of obtaining EPA's Certification of Completion of Z2&3 Interior Sampling and Cleaning Work. The meeting must be attended by Respondents and EPA and/or their representatives.

(c) **Z2&3 Interior Sampling and Cleaning Work Completion Report.** Following the meeting, Respondents shall submit a Z2&3 Interior Sampling and Cleaning Work Report to EPA requesting EPA's Certification of the Completion of the Z2&3 Interior Sampling and Cleaning Work. The report must: (1) include a certification by Respondents' Project Coordinator that the Z2&3 Interior Sampling and Cleaning Work are complete; (2) contain initial interior sampling results and Efficacy Sampling results to demonstrate that the Cleanup Standards have been achieved at all Z2&3 Interior Sampling Residences and Z2&3 Interior Cleaning Residences that are not included on the final list of Z2&3 Interior Excluded Residences; and (3) be certified in accordance with ¶ 6.5 (Certification).

(d) **EPA Notice of Deficiencies.** If EPA concludes that the Z2&3 Interior Sampling and Cleaning Work is not Complete, EPA shall so notify Respondents. EPA's notice must include a description of any deficiencies. EPA's notice may include a schedule for addressing such deficiencies or may require Respondents to submit a schedule for EPA approval. Respondents shall perform all activities described in the notice in accordance with the schedule.

(e) If EPA concludes, based on the initial or any subsequent Z2&3 Interior Sampling and Cleaning Work Completion Report requesting Certification of Z2&3 Interior Sampling and Cleaning Work Completion, that the Z2&3 Interior Sampling and Cleaning Work is Complete, EPA shall so certify to the Respondents. This certification will constitute the Certification of the Completion of the Z2&3 Interior Sampling and Cleaning Work for purposes of the Z2&3 Interior UAO. Issuance of the Certification of the Completion of the Z2&3 Interior Sampling and Cleaning Work will not affect Respondents' remaining obligations under the Z2&3 Interior UAO.

5. REPORTING

5.1 Progress Reports. Commencing with the month following the Effective Date of the Z2&3 Interior UAO and until EPA certifies the Z2&3 Interior Sampling and Cleaning Work Completion, Respondents shall submit progress reports to EPA on a monthly basis, or as otherwise requested by EPA. The reports must cover all activities that took place during the prior reporting period, including:

(a) The actions that have been taken toward achieving compliance with the Z2&3 Interior UAO;

(b) A summary of all results of sampling, tests, and all other data received or generated by Respondents;

(c) A description of all deliverables that Respondents submitted to EPA;

(d) A description of all activities relating to Z2&3 Interior Sampling and Cleaning Work that are scheduled for the next six weeks;

(e) An updated Z2&3 Interior Sampling and Cleaning Work Schedule (if that schedule has been modified), together with information regarding percentage of completion, delays encountered or anticipated that may affect the future schedule for implementation of the Z2&3 Interior Sampling and Cleaning Work, and a description of efforts made to mitigate those delays or anticipated delays;

(f) A description of any modifications to the work plans or other schedules that Respondents have proposed or that have been approved by EPA; and

(g) A description of all activities undertaken in support of the Community Involvement Plan during the reporting period and those to be undertaken in the next six weeks.

5.2 Notice of Progress Report Schedule Changes. If the schedule for any activity described in the Progress Reports, including activities required to be described under ¶ 5.1(d), changes, Respondents shall notify EPA of such change at least 7 days before performance of the activity.

6. DELIVERABLES

6.1 Applicability. Respondents shall submit deliverables for EPA approval or for EPA comment as specified in this Z2&3 Interior SOW. If neither is specified, the deliverable does not require EPA's approval or comment. Paragraphs 6.2 (In Writing) through 6.4 (Technical Specifications) apply to all deliverables. Paragraph 6.5 (Certification) applies to any deliverable that is required to be certified. Paragraph 6.6 (Approval of Deliverables) applies to any deliverable that is required to be submitted for EPA approval.

6.2 In Writing. All deliverables under this Z2&3 Interior SOW must be in writing unless otherwise specified.

6.3 General Requirements for Deliverables. All deliverables must be submitted by the deadlines in the Z2&3 Interior Sampling and Cleaning Work Schedule. Respondents shall submit all deliverables in electronic form. Technical specifications for sampling and monitoring data and spatial data are addressed in ¶ 6.4. All other deliverables shall be submitted to EPA in the electronic form specified by the EPA OSC. If any deliverable

includes maps, drawings, or other exhibits that are larger than 8.5" by 11", Respondents shall also provide EPA with paper copies of such exhibits.

6.4 Technical Specifications

(a) Sampling and monitoring data should be submitted in standard Regional Electronic Data Deliverable (EDD) format. Respondents shall consult with one or more of the OSCs prior to transmitting sampling and monitoring data in order to be advised of the EDD format that the data should be transmitted in. Other delivery methods may be allowed if electronic direct submission presents a significant burden or as technology changes.

(b) Spatial data, including spatially-referenced data and geospatial data, should be submitted: (1) in the ESRI File Geodatabase format; and (2) as unprojected geographic coordinates in decimal degree format using North American Datum 1983 (NAD83) or World Geodetic System 1984 (WGS84) as the datum. If applicable, submissions should include the collection method(s). Projected coordinates may optionally be included but must be documented. Spatial data should be accompanied by metadata, and such metadata should be compliant with the Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata and its EPA profile, the EPA Geospatial Metadata Technical Specification. An add-on metadata editor for ESRI software, the EPA Metadata Editor (EME), complies with these FGDC and EPA metadata requirements and is available at https://edg.epa.gov/EME/.

(c) Each file must include an attribute name for each site unit or sub-unit submitted. Consult http://www.epa.gov/geospatial/geospatial-policies-and-standards for any further available guidance on attribute identification and naming.

(d) Spatial data submitted by Respondents does not, and is not intended to, define the boundaries of the Site.

6.5 Certification. All deliverables that require compliance with this ¶ 6.5 must be signed by the Respondents' Project Coordinator, or other responsible official of Respondents, and must contain the following statement:

> I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

6.6 Approval of Deliverables

(a) **Initial Submissions**

(1) After review of any deliverable that is required to be submitted for EPA approval under the Z2&3 Interior UAO or this Z2&3 Interior SOW, EPA shall: (i) approve, in whole or in part, the submission; (ii) approve the submission upon specified conditions; (iii) disapprove, in whole or in part, the submission; or (iv) any combination of the foregoing.

(2) EPA also may modify the initial submission to cure deficiencies in the submission if: (i) EPA determines that disapproving the submission and awaiting a resubmission would cause substantial disruption to the Z2&3 Interior Sampling and Cleaning Work; or (ii) previous submission(s) have been disapproved due to material defects and the deficiencies in the initial submission under consideration indicate a bad faith lack of effort to submit an acceptable deliverable.

(b) **Resubmissions**. Upon receipt of a notice of disapproval under ¶ 6.6(a) (Initial Submissions), or if required by a notice of approval upon specified conditions under ¶ 6.6(a), Respondents shall, within 14 days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the deliverable for approval. After review of the resubmitted deliverable, EPA may: (1) approve, in whole or in part, the resubmission; (2) approve the resubmission upon specified conditions; (3) modify the resubmission; (4) disapprove, in whole or in part, the resubmission, requiring Respondents to correct the deficiencies; or (5) any combination of the foregoing.

(c) **Implementation**. Upon approval, approval upon conditions, or modification by EPA under ¶ 6.6(a) (Initial Submissions) or ¶ 6.6(b) (Resubmissions), of any deliverable, or any portion thereof: (1) such deliverable, or portion thereof, will be incorporated into and enforceable under the Z2&3 Interior UAO; and (2) Respondents shall take any action required by such deliverable, or portion thereof.

6.7 Supporting Deliverables. Respondents shall submit each of the following supporting deliverables for EPA approval as part of the Z2&3 Interior WP, except as specifically provided. Respondents shall develop the deliverables in accordance with all applicable regulations, guidances, and policies (see Section 9 (References)). Respondents shall update each of these supporting deliverables as necessary or appropriate during the course of the Z2&3 Interior Sampling and Cleaning Work, and/or as requested by EPA. For those documents which EPA will make available to Respondents, EPA will separately provide instructions to Respondents on how to access a secure website which has those documents.

(a) **Health and Safety Plan**. The Health and Safety Plan (HASP) describes all activities to be performed to protect on site personnel and area residents from physical, chemical, and all other hazards posed by the Z2&3 Interior Sampling and Cleaning Work. Respondents shall develop the HASP in accordance with EPA's Emergency Responder Health and Safety and Occupational Safety and

Health Administration (OSHA) requirements under 29 C.F.R. §§ 1910 and 1926. The HASP should cover activities during the Z2&3 Interior Sampling and Cleaning Work and be updated to cover activities after completion of the Z2&3 Interior Sampling and Cleaning Work. EPA does not approve the HASP, but will review it to ensure that all necessary elements are included and that the plan provides for the protection of human health and the environment. EPA shall make an example HASP that EPA developed for the residential areas of the USS Lead Site available to Respondents**.**

(b) **Emergency Response Plan**. The Emergency Response Plan (ERP) must describe procedures to be used in the event of an accident or emergency at the Site (for example, power outages, water impoundment failure, treatment plant failure, slope failure). The ERP must include:

(1) Name of the person or entity responsible for responding in the event of an emergency incident;

(2) Plan and date(s) for meeting(s) with the local community, including local, State, and federal agencies involved in the cleanup, as well as local emergency squads and hospitals;

(3) Spill Prevention, Control, and Countermeasures (SPCC) Plan (if applicable), consistent with the regulations under 40 C.F.R. Part 112, describing measures to prevent, and contingency plans for, spills and discharges;

(4) Notification activities in accordance with ¶ 4.12(b) (Release Reporting) in the event of a release of hazardous substances requiring reporting under Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA), 42 U.S.C. § 11004; and

(5) A description of all necessary actions to ensure compliance with ¶ 4.12 in the event of an occurrence during the performance of the Z2&3 Interior Sampling and Cleaning Work that causes or threatens a release of Waste Material from the Site that constitutes an emergency or may present an immediate threat to public health or welfare or the environment.

EPA shall make an example ERP that EPA developed for the residential areas of the USS Lead Site available at to Respondents.

(c) **Indoor Cleaning Plan**. The Indoor Cleaning Plan (ICP) addresses all interior cleaning and re-cleaning activities. The ICP must be written so that a cleaning team unfamiliar with the project would be able to perform the interior cleanings. The ICP must include:

(1) Procedures for documenting the conditions of residences both immediately before and immediately after any interior cleaning;

(2) Description of security measures to prevent unauthorized access to any residences being cleaned; and

(3) Procedures for managing waste.

The ICP must be substantially similar to EPA's *Site Work Plan: Interior Remedial Cleaning – Zone 2*, which EPA shall make available to Respondents, unless otherwise directed by EPA.

(d) **Indoor Dust and Lead-Based Paint Sampling Plan**. The Indoor Dust and Lead-Based Paint Sampling Plan (ISP) addresses all sample collection activities, including Efficacy Sampling. The ISP must be written so that a field sampling team unfamiliar with the project would be able to gather the samples and field information required. The ISP must include:

(1) Procedures for assessing the concentration of lead and arsenic present in indoor dust in a residence;

(2) Procedures for assessing by XRF whether lead-based paint may be a source of recontamination; and

(3) Procedures for assessing the effectiveness of any interior cleaning, including visual inspection, and for determining whether the loading rate for floors after any interior cleaning is below 25 $\mu g/ft^2$ for lead and 36 $\mu g/ft^2$ for arsenic.

The ISP must be substantially similar to EPA's *Abbreviated Sampling and Analysis Plan for the USS Lead Site*, which EPA shall make available to Respondents, unless otherwise directed by EPA.

(e) **Quality Assurance Project Plan**. The Quality Assurance Project Plan (QAPP) augments the ISP and addresses sample analysis and data handling regarding the Z2&3 Interior Sampling and Cleaning Work. The QAPP must include a detailed explanation of Respondents' quality assurance, quality control, and chain of custody procedures for all treatability, design, compliance, and monitoring samples. Respondents shall develop the QAPP in accordance with *EPA Requirements for Quality Assurance Project Plans*, QA/R-5, EPA/240/B-01/003 (Mar. 2001, reissued May 2006); *Guidance for Quality Assurance Project Plans*, QA/G-5, EPA/240/R 02/009 (Dec. 2002); and *Uniform Federal Policy for Quality Assurance Project Plans*, Parts 1-3, EPA/505/B-04/900A though 900C (Mar. 2005). The QAPP also must include procedures:

(1) To ensure that EPA and its authorized representative have reasonable access to laboratories used by Respondents in implementing the Z2&3 Interior Sampling and Cleaning Work (Respondents' Labs);

(2) To ensure that Respondents' Labs analyze all samples submitted by EPA pursuant to the QAPP for quality assurance monitoring;

(3) To ensure that Respondents' Labs perform all analyses using EPA-accepted methods (i.e., the methods documented in *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis*, ILM05.4 (Dec. 2006); *USEPA Contract Laboratory Program Statement of Work for Organic Analysis*, SOM01.2 (amended Apr. 2007); and *USEPA Contract Laboratory Program Statement of Work for Inorganic Superfund Methods (Multi-Media, Multi-Concentration)*, ISM01.2 (Jan. 2010)) or other methods acceptable to EPA;

(4) To ensure that Respondents' Labs participate in an EPA-accepted QA/QC program or other program QA/QC acceptable to EPA;

(5) For Respondents to provide split samples and/or duplicate samples to EPA upon request;

(6) For EPA to take any additional samples that it deems necessary;

(7) For EPA to provide to Respondents, upon request, split samples and/or duplicate samples in connection with EPA's oversight sampling; and

(8) For Respondents to submit to EPA all sampling and tests results and other data in connection with the implementation of the Z2&3 Interior Sampling and Cleaning Work.

EPA shall make an example QAPP that EPA developed for interior sampling and cleaning work at the USS Lead Site available to Respondents**.**

(f) **Resident Communication Plan.** The Resident Communication Plan (RCP) addresses outreach to residents by Respondents and their employees, contractors, and representatives. The RCP must include:

(1) Procedures for securing access agreements for the Z2&3 IRA;

(2) Procedures for scheduling interior sampling and interior cleaning activities with residents;

(3) Procedures for notifying owners and residents, in writing, of the final interior sampling results and their meanings; and

(4) Description of materials to be provided to owners and residents whose residences may contain lead-based paint, based on final interior sampling results. EPA shall provide those materials to Respondents.

EPA shall make an example RCP that EPA developed for interior sampling and cleaning work at the USS Lead Site available to Respondents**.**

(g) **Addendum to the Data Management Plan.** EPA shall make EPA's current Data Management Plan for residential areas of the USS Lead Site available to

Respondents. Respondents shall prepare an Addendum to the Data Management Plan (ADMP) that shall describe the information that Respondents shall collect during the Z2&3 Interior Sampling and Cleaning Work and how Respondents shall collect and manage that information so that it is compatible with EPA's data management practices.

(1) For field activities, the ADMP must include requirements to use the appropriate iForm (or equivalent) to record dust sampling information for initial sampling and Efficacy Sampling.

(2) The flow chart on Page 4 of the current Data Management Plan identifies data that must be exported to Scribe (which is a software program for managing environmental data). For data that must be exported to Scribe, the ADMP must include requirements to:

(i) Re-create digital forms for field data entry (i.e., using iForms or equivalent);

(ii) Ensure that export data from digital forms can be imported to Scribe without adjustments to Scribe (stated otherwise, ensure that comma-separated values (CSV) files are able to be imported to Scribe without adjustments to Scribe);

(iii) QA/QC CSV exports for iForms (or equivalent) to ensure information entered is correct/valid;

(iv) Update the field version of Scribe by subscribing to the updated version of Scribe.NET;

(v) Upload CSV files into field version of Scribe for creation of chain of custody (COC) for submission of samples;

(vi) Export the COC XML files from Scribe;

(vii) Email the CSV files from the digital forms and the COC XML files to the database administrator; and

(viii) Backup all CSV and COC XML files submitted to the database administrator.

EPA will work with Respondents during their development of the ADMP and the necessary digital forms.

7. SCHEDULES

7.1 Applicability and Revisions. All deliverables and tasks required under this Z2&3 Interior SOW must be submitted or completed by the deadlines or within the time durations listed in the Z2&3 Interior Sampling and Cleaning Work Schedule set forth

below. Respondents may submit proposed revised Z2&3 Interior Sampling and Cleaning Work Schedules for EPA approval. Upon EPA's approval, the revised Z2&3 Interior Sampling and Cleaning Work Schedules supersede the Z2&3 Interior Sampling and Cleaning Work Schedule set forth below, and any previously-approved Z2&3 Interior Sampling and Cleaning Work Schedules.

7.2 Z2&3 Interior Sampling and Cleaning Work Schedule

	Description of Deliverable / Task	**¶ Ref.**	**Deadline (the dates are "not later than") ("days" is calendar days)**
1	Z2&3 Interior WP	4.1	60 days after EPA's Notice of Authorization to Proceed regarding the Supervising Contractor under ¶ 15(c)(2) of the Z2&3 Interior UAO
2	Designate IQAT (either a third party or the Supervising Contractor)	4.9	30 days after EPA's Notice of Authorization to Proceed regarding the Supervising Contractor under ¶ 15(c)(2) of the Z2&3 Interior UAO
3	Pre-Implementation Conference	4.10(a)	60 days after EPA's Notice of Authorization to Proceed regarding the Supervising Contractor under ¶ 15(c)(2) of the Z2&3 Interior UAO
4	Start of Z2&3 Interior Sampling and Cleaning Work Implementation		Per approved Z2&3 Interior Sampling and Cleaning Work Schedule and consistent with the timing requirements of ¶¶ 4.4(b)(1) (interior sampling for residences in Zone 2); 4.4(b)(2) (interior sampling for residences in Zone 3); 4.5(b)(2) (interior cleaning); 4.6(c) (Efficacy Sampling); and 4.7(b) (re-cleaning)
5	Completion of Z2&3 Interior Sampling and Cleaning Work		Per approved Z2&3 Interior Sampling and Cleaning Work Schedule
6	Z2&3 Interior Sampling and Cleaning Work Completion Meeting	4.14(b)	60 days after Completion of Z2&3 Interior Sampling and Cleaning Work
7	Z2&3 Interior Sampling and Cleaning Work Completion Report	4.14(c)	60 days after the Z2&3 Interior Sampling and Cleaning Work Completion Meeting

8. STATE PARTICIPATION

8.1 Respondents shall, at any time they send a deliverable to EPA, send a copy of such deliverable to the State in care of:

Doug Petroff
Project Manager, Federal Programs
Indiana Dep't of Environmental Management

100 North Senate Ave.
IGCN – 11th Floor
Indianapolis, IN 46204

EPA shall, at any time it sends a notice, authorization, approval, disapproval, or certification to Respondents, send a copy of such document to the State in care of:

9. REFERENCES

9.1 The following regulations and guidance documents, among others, apply to the Z2&3 Interior Sampling and Cleaning Work. Any item for which a specific URL is not provided below is available on one of the two EPA Web pages listed in ¶ 9.2:

(a) A Compendium of Superfund Field Operations Methods, OSWER 9355.0-14, EPA/540/P-87/001a (Aug. 1987).

(b) CERCLA Compliance with Other Laws Manual, Part I: Interim Final, OSWER 9234.1-01, EPA/540/G-89/006 (Aug. 1988).

(c) CERCLA Compliance with Other Laws Manual, Part II, OSWER 9234.1-02, EPA/540/G-89/009 (Aug. 1989).

(d) Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, OSWER 9355.5-01, EPA/540/G-90/001 (Apr.1990).

(e) Guidance on Expediting Remedial Design and Remedial Actions, OSWER 9355.5-02, EPA/540/G-90/006 (Aug. 1990).

(f) Guide to Management of Investigation-Derived Wastes, OSWER 9345.3-03FS (Jan. 1992).

(g) Permits and Permit Equivalency Processes for CERCLA On-Site Response Actions, OSWER 9355.7-03 (Feb. 1992).

(h) National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule, 40 C.F.R. Part 300 (Oct. 1994).

(i) Guidance for Scoping the Remedial Design, OSWER 9355.0-43, EPA/540/R-95/025 (Mar. 1995).

(j) Remedial Design/Remedial Action Handbook, OSWER 9355.0-04B, EPA/540/R-95/059 (June 1995).

(k) EPA Guidance for Data Quality Assessment, Practical Methods for Data Analysis, QA/G-9, EPA/600/R-96/084 (July 2000).

(l) Comprehensive Five-year Review Guidance, OSWER 9355.7-03B-P, 540-R-01-007 (June 2001).

(m) Guidance for Quality Assurance Project Plans, QA/G-5, EPA/240/R-02/009 (Dec. 2002).

(n) Superfund Lead-Contaminated Residential Sites Handbook, OSWER 9285.7-50 (Aug. 2003).

(o) Institutional Controls: Third Party Beneficiary Rights in Proprietary Controls (Apr. 2004).

(p) Quality management systems for environmental information and technology programs - Requirements with guidance for use, ASQ/ANSI E4:2014 (American Society for Quality, February 2014).

(q) Uniform Federal Policy for Quality Assurance Project Plans, Parts 1-3, EPA/505/B-04/900A though 900C (Mar. 2005).

(r) Superfund Community Involvement Handbook, SEMS 100000070 (January 2016), http://www.epa.gov/superfund/community-involvement-tools-and-resources.

(s) EPA Guidance on Systematic Planning Using the Data Quality Objectives Process, QA/G-4, EPA/240/B-06/001 (Feb. 2006).

(t) EPA Requirements for Quality Assurance Project Plans, QA/R-5, EPA/240/B-01/003 (Mar. 2001, reissued May 2006).

(u) EPA Requirements for Quality Management Plans, QA/R-2, EPA/240/B-01/002 (Mar. 2001, reissued May 2006).

(v) USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, ILM05.4 (Dec. 2006).

(w) USEPA Contract Laboratory Program Statement of Work for Organic Analysis, SOM01.2 (amended Apr. 2007).

(x) EPA National Geospatial Data Policy, CIO Policy Transmittal 05-002 (Aug. 2008), http://www.epa.gov/geospatial/geospatial-policies-and-standards and http://www.epa.gov/geospatial/epa-national-geospatial-data-policy.

(y) Principles for Greener Cleanups (Aug. 2009), http://www.epa.gov/greenercleanups/epa-principles-greener-cleanups.

(z) USEPA Contract Laboratory Program Statement of Work for Inorganic Superfund Methods (Multi-Media, Multi-Concentration), ISM01.2 (Jan. 2010).

(aa) Close Out Procedures for National Priorities List Sites, OSWER 9320.2-22 (May 2011).

(bb) Recommended Evaluation of Institutional Controls: Supplement to the "Comprehensive Five-Year Review Guidance," OSWER 9355.7-18 (Sep. 2011).

(cc) Construction Specifications Institute's MasterFormat 2012, available from the Construction Specifications Institute, http://www.csinet.org/masterformat.

(dd) Updated Superfund Response and Settlement Approach for Sites Using the Superfund Alternative Approach, OSWER 9200.2-125 (Sep. 2012)

(ee) Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites, OSWER 9355.0-89, EPA/540/R-09/001 (Dec. 2012).

(ff) Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites, OSWER 9200.0-77, EPA/540/R-09/02 (Dec. 2012).

(gg) EPA's Emergency Responder Health and Safety Manual, OSWER 9285.3-12 (July 2005 and updates), http://www.epaosc.org/_HealthSafetyManual/manual-index.htm

(hh) Broader Application of Remedial Design and Remedial Action Pilot Project Lessons Learned, OSWER 9200.2-129 (Feb. 2013).

(ii) Groundwater Remedy Completion Strategy: Moving Forward with the End in Mind, OSWER 9200.2-144 (May 2014).

(jj) Guidance for Management of Superfund Remedies in Post Construction, OLEM 9200.3-105 (Feb. 2017), https://www.epa.gov/superfund/superfund-post-construction-completion.

9.2 A more complete list may be found on the following EPA Web pages:

Laws, Policy, and Guidance: http://www.epa.gov/superfund/superfund-policy-guidance-and-laws

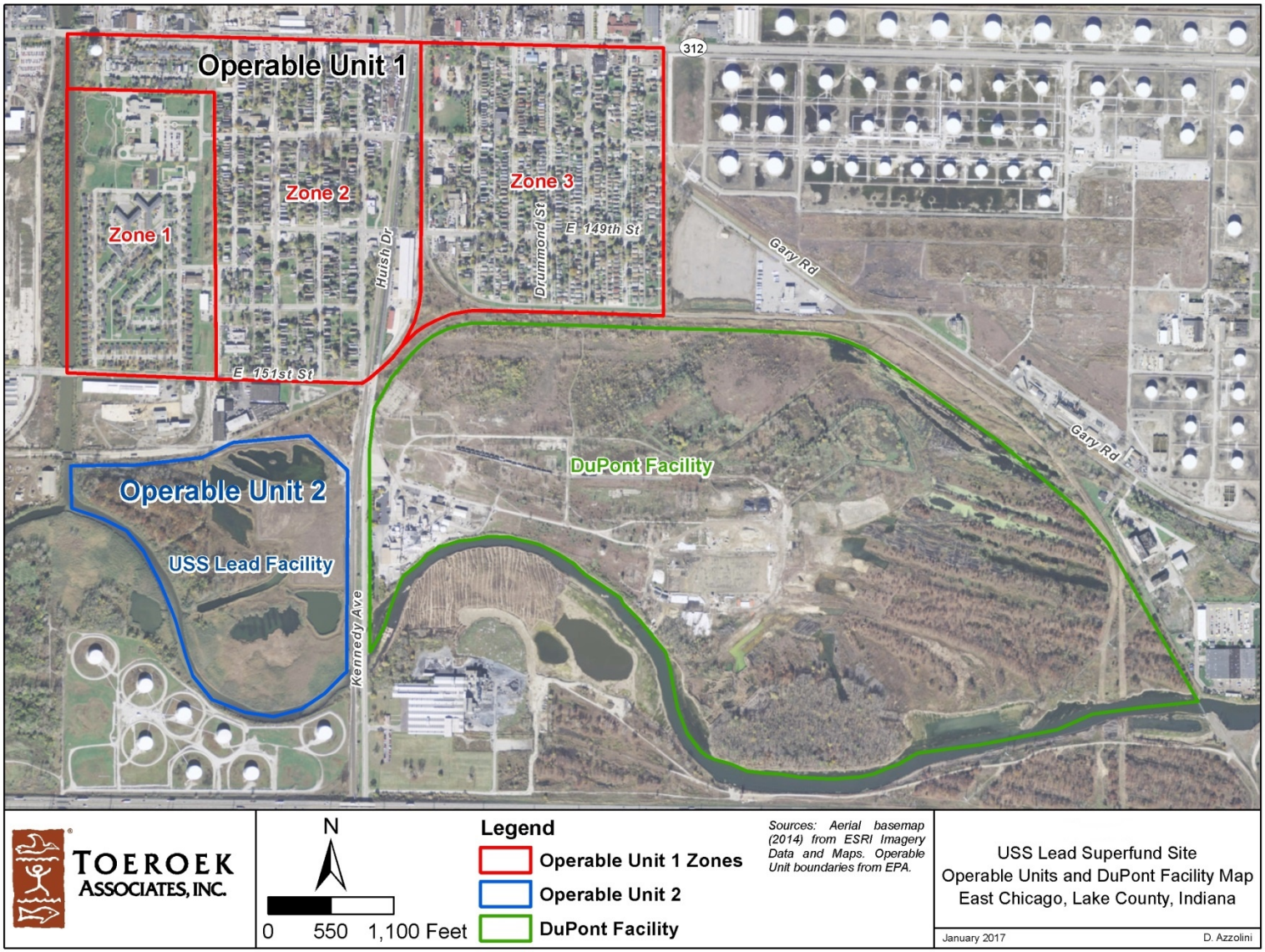
Test Methods Collections: http://www.epa.gov/measurements/collection-methods

9.3 For any regulation or guidance referenced in the Z2&3 Interior UAO or Z2&3 Interior SOW, the reference will be read to include any subsequent modification, amendment, or replacement of such regulation or guidance. Such modifications, amendments, or replacements apply to the Z2&3 Interior Sampling and Cleaning Work only after Respondents receive notification from EPA of the modification, amendment, or replacement.

APPENDIX B

TO
Z2&3 INTERIOR UAO

MAP OF USS LEAD SITE OU1 AND OU2

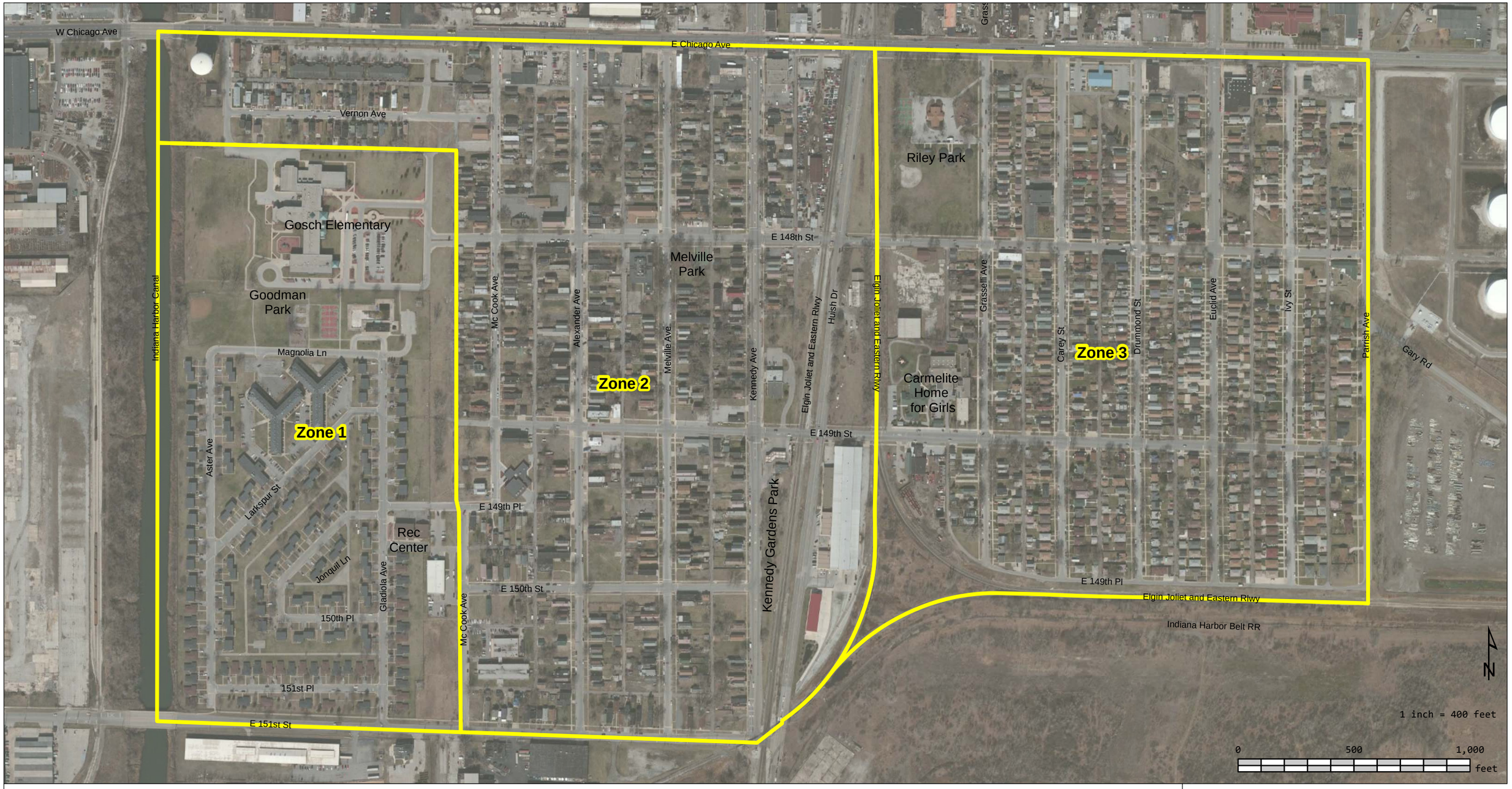


APPENDIX B: USS Lead Superfund Site Operable Units 1 and 2

APPENDIX C

TO
Z2&3 INTERIOR UAO

MAP OF USS LEAD SITE
OU1 – ZONES 1, 2, AND 3



Zone

Basemap source: Esri

US SMELTER & LEAD REFINERY
LAKE COUNTY, EAST CHICAGO, INDIANA

APPENDIX C

OU1 ZONES

EPA REGION 5 RAC 2 | REVISION 0 | JULY 2014

SulTRAC

APPENDIX D

TO
Z2&3 INTERIOR UAO

ACTION MEMORANDUM
FOURTH AMENDMENT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

OCT 24 2016

REPLY TO THE ATTENTION OF:

MEMORANDUM

SUBJECT: **ACTION MEMORANDUM – 4th AMENDMENT:** Request for a Change in Scope and Ceiling Increase for the Time-Critical Removal Action at the U.S. Smelter and Lead Refinery Site, East Chicago, Lake County, Indiana (Site ID # 053J)

FROM: Douglas Ballotti, Acting Director
Superfund Division

THRU: Reggie Cheatham, Office Director
Office of Emergency Management (OEM)

TO: Mathy Stanislaus, Assistant Administrator
Office of Land and Emergency Management

I. PURPOSE

The purpose of this Action Memorandum Amendment is to request and document your approval, consistent with Section 104(c)(1)(A) of CERCLA, 42 U.S.C. Section 9604 (c)(1)(A), to Change the Scope of the Response and for a Ceiling Increase for the time-critical removal action at portions of the U.S. Smelter and Lead Refinery Site (the Site) residential area defined as Zone 2 of Operable Unit 1 (OU1), in East Chicago, Lake County, Indiana (see Figure 2). The sought increase of $13,870,506 would raise the project ceiling for the time-critical removal action from $26,397,542 to $40,268,048

The Change of Scope of the Response and Ceiling Increase is necessary as the previous Action Memoranda approved on January 22, 2008, August 13, 2008, September 12, 2011, and October 13, 2016 (Attachments IX, X, XI, XII), were for the excavation and proper disposal of lead-contaminated soils from residential parcels in OU1, Zones 1, 2 and 3, indoor cleanup of lead contaminated dust inside of residences in Zone 1, and temporary relocation of residents in the West Calumet Housing Complex (WCHC) in Zone 1. Subsequent soil data collected in Zone 2 during the remedial design (RD) phase in order to implement EPA's Remedial Action as set forth in the Record of Decision (November 2012), found lead and arsenic concentrations in surface soils (0-6") in a number of residential yards above EPA screening criteria.

Response actions are necessary in Zone 2 of OU1 to mitigate threats to public health, welfare, and the environment posed by the release and/or threatened release of uncontrolled hazardous substances at the Site. This removal involves (1) the excavation and proper disposal of lead

and/or arsenic contaminated soils from residential parcels in Zone 2, and (2) testing for lead and/or arsenic contaminated dust in residential homes if requested by the home owner and, if necessary, removal of the contaminated dust.

Conditions existing at the Site present a threat to public health and the environment and meet the criteria for initiating a removal action under 40 CFR § 300.415(b) of the National Contingency Plan (NCP). The U.S. Environmental Protection Agency (EPA or the Agency) documented elevated levels of lead and arsenic in surface soil in residential parcels at the Site. Lead and arsenic are hazardous substances as defined by Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

There are no nationally significant or precedent setting issues associated with the Change of Scope sought in this Action Memorandum to the extent it seeks approval for the excavation of soils. Testing at the owner's request and the removal of lead and/or arsenic contaminated dust in residential homes may set a precedent. The Site is on the National Priorities List (NPL).

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID: IND047030226
RCRA ID: IND047030226
STATE ID: None
Category: Time-Critical Removal

A. Site Description

1. Removal Site Evaluation

The Indiana Department of Environmental Management (IDEM) sampled some of the residential parcels to the north of the U.S. Smelter and Lead Refinery, Inc. (U.S.S. Lead) facility in 1985. This area is now known as Operable Unit 1 of the Site. IDEM found elevated lead levels in these residential yards. In September of 1985, the Indiana State Board of Health found the U.S.S. Lead facility in violation of state law and stated that the lead-contaminated soils within the facility boundaries may pose a risk to human health and the environment. IDEM referred the U.S.S. Lead facility, but not the area now known as Operable Unit 1, to EPA for cleanup.

From 1993 through 2006, EPA's Resource Conservation and Recovery Act (RCRA) Corrective Action program oversaw the remediation and management of lead-contaminated soils within the boundaries of the U.S.S. Lead facility, currently referred to as Operable Unit 2 (OU2). On November 18, 1993, EPA and U.S.S. Lead entered into an Administrative Order on Consent (AOC) pursuant to Section 3008(h) of RCRA. The AOC required U.S.S. Lead to implement interim measures, including site stabilization and construction of a corrective action management unit (CAMU) to contain contaminated soils and slag and to conduct a Modified RCRA Facility Investigation at the U.S.S. Lead facility, OU2. The CAMU covers approximately 10 acres and is surrounded by a subsurface slurry wall. Excavation and construction of the CAMU was conducted in two phases and completed between August and September 2002. Slag generated from the blast-furnace operations was routinely placed by U.S.S. Lead in piles on the southern

portion of the property near the banks of the Grand Calumet River. The cleanup of slag was described in the Interim Stabilization Measures Work Plan prepared by ENTACT, LLC and was completed during the third quarter of 2002.

As part of a RCRA Corrective Action in 2003 and 2006, EPA conducted soil sampling in the residential neighborhood to the north located in OU1 of the U.S.S. Lead Site. In the investigation of late July and early August 2003, 83 residential parcels within OU1 were sampled and analyzed for lead using a Niton X-ray fluorescence (XRF) instrument. Soils from 43 locations (52 percent) exceeded the 400 milligrams per kilogram (mg/kg) residential soil screening criterion for lead. In 2006, EPA's Field Environmental Decision Support (FIELDS) team supplemented the work performed in 2003 by collecting additional data from 14 parcels sampled in 2003 to (1) assess whether the top-most soils (zero to one inch below ground surface (bgs)) had elevated lead concentrations relative to deeper soils (one to six inches bgs), (2) collect and compare composite samples to individual samples to assess whether composite samples accurately represented the concentrations in residential yards and parks, and (3) compare lead concentrations in the fine and coarse fractions of sieved samples to evaluate whether lead was preferentially distributed in the fine-grain sizes. These sampling results showed some yards in OU1 to have high levels of lead contamination with the highest sample containing lead at 3,000 mg/kg. The RCRA Corrective Action program looked at the possible source of the lead contamination and determined it was from various industrial sources. The RCRA Corrective Action program referred OU1—the off-site contamination from the U.S.S. Lead facility—and other industrial sources to the Superfund Program in 2004; the remainder of OU2—the on-site contamination—was referred in 2006.

Consistent with the OSWER Publication 9285.7-50 *Superfund Lead-Contaminated Residential Sites Handbook* (Handbook) (2003), the Superfund Program used a tiered approach to prioritize which homes needed to be cleaned up first. Residential parcels with lead concentrations in surface soil at or greater than 1,200 mg/kg were the highest priority for immediate action under a time-critical removal action. Residential parcels with lead concentrations in surface soil below 1,200 mg/kg, but above 400 mg/kg would be addressed through remedial actions. EPA does not consider the 1,200 mg/kg concentration as an action level for removal actions, but this level does provide an alternative to running the Integrated Exposure Uptake Biokinetic (IEUBK) model with limited data to determine if the site poses an urgent threat. On January 22, 2008, EPA signed the original action memorandum to conduct a time-critical removal action in OU1 to address known parcels with lead levels in surface soil exceeding 1,200 mg/kg. These parcels had been identified as part of the RCRA Corrective Action residential investigation. The EPA identified 15 private parcels that contained soil with lead concentrations exceeding 1,200 mg/kg in the top six inches of soil. On June 9, 2008, the EPA initiated the time-critical removal action to address the 15 residential parcels with lead levels exceeding 1,200 mg/kg. On August 13, 2008, the EPA amended the original action memorandum to increase the project ceiling by $511,950 for a total of $984,060. The EPA was able to obtain access agreements and remediate only 13 of the 15 parcels. The removal action was completed on November 18, 2008. In total, 1,838 tons of lead-contaminated soil were removed and disposed of at an approved landfill.

A Remedial Investigation (RI) was conducted from 2009 through 2010 to collect additional soil data in OU 1 which consists of Zone 1, Zone 2, and Zone 3. As a result of the sampling, EPA

discovered an additional 14 areas within OU1 with lead levels exceeding the removal action level of 1,200 mg/kg. On September 11, 2011, EPA signed the second amendment to the original action memorandum which increased the total project ceiling to $1,928,460. On October 11, 2011, EPA started the time-critical removal action involving lead-contaminated soil removals at five West Calumet Housing Complex (WCHC) addresses (located in Zone 1) and nine other residential parcels outside the WCHC. In addition, two parcels that were not remediated during the previous removal action in 2008 because of access issues were remediated during this removal action. The removal action was completed on December 9, 2011. In total, 1,913 additional tons of lead-contaminated soil were removed and disposed of at an approved landfill as a result of the 2011 removal activities.

In November 2012, EPA issued a Record of Decision (ROD) for Operable Unit 1 (OU1) of the Site. OU1 has been divided into 3 separate zones for implementation of the remedy (Zones 1, 2, and 3). OU1 contains residential yards contaminated with lead and arsenic at levels that pose a threat to human health through ingestion, inhalation and direct contact. EPA's selected remedy for OU1 addresses these risks from exposure to contaminated soils through the excavation and off-site disposal of lead or arsenic contaminated soils. The remedial action levels (RALs) for OU1 are 400 mg/kg for lead at residential parcels, 800 mg/kg for lead at industrial/commercial parcels, and 26 mg/kg for arsenic at both residential and industrial/commercial parcels.

From November 2014 through April 2015, EPA conducted more extensive soil sampling within Zone 1 as part of the remedial design process for OU1 and completed remedial designs for Zone 1 in October 2015. Zone 1 includes approximately 118 separate "parcels," including 111 parcels in the WCHC, three right-of-way parcels, and a school, park, recreation center, and maintenance facilities. EPA sampled all parcels in Zone 1 except a narrow strip of land on the east bank of the Indiana Harbor Canal. In May 2016, EPA received validated sampling results which revealed lead concentrations in soil up to 24 inches in depth ranged from non-detect (ND) to 91,100 mg/kg for lead. Arsenic concentrations ranged from ND to 3,530 mg/kg (See Attachment V – Summary of OU1 RD Soil Sampling Results). Within Zone 1, a total of 117 parcels exceeded the removal management level (RML) for lead of 400 mg/kg for residential soil and 61 parcels exceeded the RML for arsenic of 68 mg/kg. Each of the parcels that exceeded the RML for arsenic also exceeded the RML for lead. Sample results from surface soils (0-6") indicated that lead concentrations at 13 parcels in the WCHC exceed 5,000 mg/kg with concentrations up to 45,000 mg/kg.

Beginning in July 2016, EPA began conducting more extensive soil sampling within Zone 2 as part of the RD process for OU1. Zone 2 includes approximately 590 separate "parcels." Most of these parcels are residential parcels, though there are some commercial/industrial parcels. In September 2016, EPA received validated sampling results from 48 parcels which revealed lead concentrations in surface soil (0-6 inches below ground surface) at values ranging from 38.3 to 2,120 mg/kg. Arsenic concentrations ranged from 4.3 to 111 mg/kg (See Attachment V – Summary of OU1 RD Soil Sampling Results). Ten sampled parcels had surface soil lead concentrations above 1,200 mg/kg and 40 of 48 parcels exceed the RML for lead of 400 mg/kg for residential surface soil. Two parcels exceeded the 68 mg/kg RML for arsenic (111 and 78.1 mg/kg in surface soil). One parcel that exceeded the RML for arsenic also exceeded the RML for lead in soil.

On July 29, 2016, EPA initiated in-house sampling for dust collection in Zone 1 to determine lead concentrations in homes given the elevated levels of lead in surface soils within the WCHC and the likelihood that lead contaminated soil/dust was being tracked or blown into the housing units. EPA prioritized homes for sampling based on the likelihood that they would have elevated lead levels in indoor dust, based on elevated lead concentrations in yards and elevated blood lead level (BLL) records associated with those residences. As of September 28, 2016, EPA has received validated results from 154 residences. Concentrations ranged from 3.9 to 32,000 mg/kg for lead fines and 0.12J (J means the associated value is the approximate concentration) to 880 mg/kg for arsenic fines. Results from indoor dust from the first 154 homes indicate 69 parcels exceed the EPA screening level of 316 mg/kg for lead for indoor living spaces (See Attachment VII – Indoor Dust Screening Criteria for Lead).

On August 12, 2016, EPA began cleaning the inside of residences in the WCHC to remove lead contaminated dust. A combination of HEPA vacuums and wet cleaning are used to remove lead dust from ceilings, floors, carpets, walls, drapes, accessible ductwork, furnace, and furniture. As of October 3, 2016, EPA has cleaned approximately 113 out of 334 occupied units. Residents were temporarily relocated during the cleaning process and clearance sampling conducted as necessary to document efficacy of cleaning.

The Indiana State Department of Health (ISDH) accompanied EPA into 14 of the initial 42 residences in Zone 1 and conducted a separate inspection for compliance with lead paint abatement policies. Wipe samples were collected from floors, interior window sills, and window troughs and compared to HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (2012 Edition)(40 $\mu g/ft^2$-floors, 250 $\mu g/ft^2$- window sills, and 400 $\mu g/ft^2$– window trough). Wipe samples from six of the 14 units sampled were above the respective lead dust clearance standards (see Attachment VIII - Indiana State Department of Health Wipe Sample Results). Lead based paint was not found by ISDH in any of the inspected units.

The Agency for Toxic Substances and Disease Registry (ATSDR) is working with the East Chicago Health Department (ECHD), which is conducting an ongoing exposure investigation of blood lead in the WCHC. The following is a summary of the findings from screenings of children living in the WCHC, which is derived both from historical data and from the on-going blood lead testing campaign being conducted by ECHD:

- From the most recent ECHD testing in summer 2016, 18 out of 94 (19%) tested children from the WCHC under age six were identified with elevated blood lead (EBL) levels (> 5 µg/dL) based on capillary (finger stick) measurements.

- From 2014 through 2015, 26% of children under age seven tested at the WCHC were identified with EBL levels, with the highest measurement at 33 µg/dL in a one-year-old child. Within the same period, the census tract that includes all of the children from the WCHC (Zone 1) and part of Zone 2 had an EBL incidence rate of 22%. By comparison, the EBL rates for the two adjacent census tracts were 9% and 11%.

- The ATSDR Exposure Investigation conducted in the West Calumet neighborhood in 1997 showed a 35% EBL incidence rate, which was defined at that time as greater than 10 µg/dL.

These observations by ATSDR across almost 20 years demonstrate a consistent pattern of elevated blood lead levels in young children living in OU1. Given that the ISDH Lead Inspectors found no lead-based paint in recently sampled units within the WCHC, it is likely that exposure to soil-based lead contamination in the WCHC and portions of Zone 2 is a primary cause of elevated blood lead levels in children there.

2. Physical Location

The U.S.S. Lead Site lies approximately 18 miles southeast of Chicago, Illinois, in East Chicago, Indiana (Figure 1). The Site consists of the former U.S.S. Lead facility located at 5300 Kennedy Avenue, East Chicago, Indiana (designated as Operable Unit 2 (OU2)) and the residential area to the north and northeast (defined as OU1). OU1 is bound by East Chicago Avenue on the north, East 151st Street/149th Place on the south, the Indiana Harbor Canal on the west, and Parrish Avenue on the east. OU1 includes about 1200 homes, a small number of parks, open space as a part of the railroad right-of-way, schools, and public buildings. For the purpose of implementing the remedial action (RA) in OU1, EPA has divided OU1 into three distinct geographic areas (Zones 1, 2, and 3). This removal action is taking place in OU1 Zone 2. Zone 2 is adjacent to and directly east of Zone 1 and is generally bordered: (1) on the north by East Chicago Avenue; (2) on the east by Joliet, Elgin Railroad; (3) on the south by East 151st Street; and (4) on the west by the East Chicago Public Housing Complex, the Carrie Gosch Elementary School, and the Harbor Canal.

The EPA conducted an EJ analysis for the Site (see Attachment I). Screening of the surrounding area was conducted using Region 5's EJ Screen Tool. Region 5 has reviewed environmental and demographic data for the area surrounding the U.S.S. Lead Site and has determined there is high potential for EJ concerns at this location.

3. Site Characteristics

OU1 includes about 1,200 homes, a small number of parks, open space as a part of the railroad right-of-way, schools, and public buildings. OU1 is primarily a residential area, which includes commercial and light industrial areas. Some parcels in the residential area in Zones 1, 2 and 3 have levels of lead above EPA's RML of 400 mg/kg and arsenic above the RML of 68 mg/kg.

United States Geological Survey (USGS) historical aerial photographs from 1939, 1951, 1959, and 2005 show OU1 over time. Review of these aerial photographs indicates that most of the residential neighborhoods within the Site west of the railroad tracks were built before 1939. By 1951, approximately 75 to 80 percent of the homes were built; by 1959, most of the homes east of the railroad tracks had also been built. These photographs also show that the International Smelting and Refining Company, a subsidiary of the Anaconda Copper Company (whose successor in interest is now the Atlantic Richfield Company [ARC]) occupied the area where the WCHC is currently located (Zone 1 in the southwest portion of OU1) prior to 1946. Title records indicate that the East Chicago Housing Authority constructed the WCHC on the former Anaconda Copper Mining Company/International Smelting and Refining Company site between 1970 and 1973.

The U.S.S. Lead facility was a primary and secondary smelter of lead in the East Chicago, Indiana area. It began operations around 1906 and ended operations in 1985. From about 1920 until 1973, the facility was a primary smelter of lead. This included a refining process to create high quality lead free of bismuth. From 1973 until its closure in 1985, the facility was a secondary smelter and a reprocessor of car batteries. The secondary refinery operations included: battery breaking with tank treatment of spent battery acid at a rate of 16,000 gallons per day; baghouse dust collection with storage in on-site waste piles of up to 8,000 tons of flue dust; and blast furnace slag disposal, which was deposited in the wetland adjacent to and along the southern boundary of the facility. The blast-furnace baghouse collected approximately 300 tons of baghouse flue dust per month during maximum operating conditions. Some of the flue dust escaped the baghouse capture system and was deposited by the wind within the boundaries of OU1. Secondary lead recovery operations ceased in 1985.

In addition to the U.S.S. Lead facility operation, other industrial operations have managed or processed lead and other metals and are sources of contamination in OU1. Immediately east of the U.S.S. Lead facility and south of Zone 3 is the former DuPont site (currently leased and operated by W.R. Grace & Co., Grace Davison). One of the processes that historically took place at the DuPont site was the manufacturing of a lead arsenate pesticide. In 2015, DuPont spun off certain assets and liabilities to a newly created company, The Chemours Company FC, LLC (Chemours). Chemours is now the owner of the former DuPont facility.

North of the former U.S.S. Lead facility stood two smelter operations, which processed lead and other metals. A 1930 Sanborn map identifies the operations as Anaconda Lead Products and International Lead Refining Company (referred to as the former Anaconda facility). Anaconda Lead Products was a manufacturer of white lead and zinc oxide and the International Lead Refining Company was a metal refining facility. These facilities consisted of a pulverizing mill, white lead storage areas, a chemical laboratory, a machine shop, a zinc oxide experimental unit building and plant, a silver refinery, a lead refinery, a baghouse, and other miscellaneous buildings and processing areas. The International Lead Refining Company was a subsidiary of the Anaconda Copper Mining Company. Title to the property in Zone 1 was held between 1934 and 1946 by International Lead Smelting and Refinery Company. International Lead Smelting and Refinery Company acquired titled to the property in Zone 1 in 1934 from International Lead Refining Company, which had acquired title in 1912.

The residential area that comprises Zone 2 has been contaminated by aerial deposition of windblown contaminants from the U.S.S. Lead facility, the Anaconda Copper Mining Company/International Lead Smelting and Refinery Company facility, and the DuPont/Chemours facility. The focus of this time-critical removal action is Zone 2, which has approximately 590 residential parcels.

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

The threat is presented by the presence of lead and arsenic-contaminated soil in residential yards and potential lead and arsenic contaminated dust within the residences in Zone 2. The presence of lead and arsenic in outdoor soils and potentially in indoor dust at concentrations above health

screening values provides a constant source of exposure for individuals both outside and while in the home. Lead and arsenic are hazardous substances as defined by section 101(14) of CERCLA. *See* 40 C.F.R. § 302.4. Nearby lead processing operations caused extensive lead and arsenic contamination in soils throughout the Site. The removal is responding to actual and potential outdoor lead and arsenic contamination, as well as potential indoor contamination caused by the migration of lead and arsenic contaminated soil from outdoors to indoors (like the source of contamination found in Zone 1). The presence of elevated lead and arsenic levels in surface soils and potential presence of lead and arsenic in indoor dust in Zone 2 makes this a time-critical removal action.

Exposure may occur from direct ingestion of soil in yards, soil tracked indoors, or house dust; and inhalation of fugitive dust. Potential human receptors include residents, including children six years of age and under, and pregnant or nursing women.

Lead exposure via inhalation and/or ingestion can have detrimental effects on almost every organ and system in the human body. Exposure may occur from direct ingestion of soil in yards, soil tracked indoors, or house dust; and inhalation of fugitive dust. Lead can cause a variety of health problems to people who are exposed to it. Potential human receptors include residents, including children six years of age and under, and pregnant or nursing women. Children are at greatest risk from the toxic effects of lead. Initially, lead travels in the blood to the soft tissues (heart, liver, kidney, brain, etc.). Then, it gradually redistributes to the bones and teeth where it tends to remain. Children exposed to high levels of lead have exhibited nerve damage, liver damage, colic, anemia, brain damage, and death. The most serious effects associated with markedly elevated blood lead levels include neurotoxic effects such as irreversible brain damage.

Ingesting very high levels of arsenic can result in death. Exposure to lower levels can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, damage to blood vessels, and a sensation of "pins and needles" in hands and feet. Ingesting or breathing low levels of inorganic arsenic for a long time can cause a darkening of the skin and the appearance of small "corns" or "warts" on the palms, soles, and torso. Skin contact with inorganic arsenic may cause redness and swelling. Several studies have shown that ingestion of inorganic arsenic can increase the risk of skin cancer and cancer in the liver, bladder, and lungs. Inhalation of inorganic arsenic can cause increased risk of lung cancer. The Department of Health and Human Services (DHHS) and the EPA have determined that inorganic arsenic is a known human carcinogen (ATSDR, Chemical Abstract Services [CAS] # 7440-38-2], August 2007).

5. NPL status

The U.S.S. Lead Site consisting of both the former U.S.S. Lead facility (OU2) and the West Calumet neighborhood to the north (OU1) was listed as a Superfund site on the national priorities list (NPL) on April 8, 2009. EPA began the RI for OU1 on June 26, 2009. During December 2009 and August 2010, EPA contractors sampled yards in residential areas and background locations. In June 2012, EPA completed a preliminary investigation and study to determine the level and extent of lead and arsenic contamination within OU1 and proposed a remedy. In November 2012, after considering comments received from the City and IDEM,

EPA outlined the long-term permanent cleanup plan in a Record of Decision for OU1. The EPA has completed the remedial designs for work in Zone 1 and Zone 3 and is in the process of completing the remedial design for Zone 2.

6. Maps, pictures and other graphic representations

Maps include:

Figure 1 – USS Lead and Lead Refinery, E. Chicago, IN. Location Map
Figure 2 – OU1 Zones 1, 2, and 3– Location Map

B. Other Actions to Date

1. Previous actions

On January 22, 2008, EPA signed the original action memorandum to conduct a time-critical removal action in OU1 to address known parcels with lead levels exceeding the removal action limit of 1,200 mg/kg. These parcels were identified based on sampling data collected during the RCRA Corrective Action investigation. That removal action began on June 9, 2008, and involved the excavation and off-site disposal of lead contaminated soil from 13 residential parcels. On August 13, 2008, EPA amended the original action memorandum to increase the project ceiling in order to complete the ongoing, time-critical removal action. In total, 1,838 tons of lead-contaminated soil were removed and disposed of at an approved landfill. Excavated areas were backfilled with clean fill and seeded. This removal action was completed on September 25, 2008, and the final Pollution Report was issued on November 18, 2008.

On September 12, 2011, EPA signed an action memorandum to conduct a time-critical removal action in Zones 1, 2, and 3 of OU1 to address 16 parcels (including the 2 that were missed in 2008) with lead levels exceeding the removal action limit of 1,200 mg/kg. These parcels were identified based on sampling data collected during the RI. This removal action began on October 24, 2011, and involved the excavation and off-site disposal of lead contaminated soil from 16 residential parcels. In total, 1,913 tons of lead-contaminated soil were removed and disposed of at an approved landfill. Excavated areas were backfilled with clean fill and seeded. This removal action was completed on December 9, 2011, and the final Pollution Report was issued on December 15, 2011.

2. Current actions

On July 11, 2016, EPA started remedial action activities to cover bare soils with wood mulch within the WCHC to minimize fugitive dust, direct contact and potential migration of soil with elevated lead levels. The mulching work was completed on July 22, 2016, although maintenance of the mulch cover is ongoing as part of the remedial work associated with the implementation of the ROD for OU1.

On July 29, 2016, EPA initiated in-house sampling for dust collection in Zone 1 to determine lead concentrations in homes. As of September 28, 2016, EPA has received validated results

from 154 residences. Concentrations ranged from 3.9 to 32,000 mg/kg for lead fines and 0.12J (J means value is estimate) to 880 mg/kg for arsenic fines (See Attachment VI – Summary of Indoor Dust Sampling Results). Data results from indoor dust from the first 154 homes indicate 69 parcels exceed the EPA screening level of 316 mg/kg for lead for indoor living spaces (See Attachment VII – Indoor Dust Screening Criteria).

ISDH conducted a separate inspection of fourteen of the identified residential units for compliance with lead paint abatement policies. Lead-based paint was not found in any of the inspected units. On August 12, 2016, EPA began cleaning (under October 13, 2016 USS Lead action memo for Zone 1) the inside of all occupied (approximately 334) units within the WCHC, all of which are or have the potential to be contaminated with lead contaminated dust above the risk-based screening criteria for indoor dust from industrial activities. A combination of HEPA vacuums and wet cleaning are used to remove lead dust from ceilings, floors, carpets, walls, drapes, accessible ductwork, furnace, and furniture. As of October 3, 2016, approximately 113 out of 334 occupied units have been cleaned. Residents were temporarily relocated during the indoor cleaning period.

C. State and Local Authorities' Roles

1. State and Local Actions to Date

On August 24, 2016, Rex Osborn, Federal Programs Section Chief with IDEM, sent an email indicating the State of Indiana does not have the financial resources to eliminate the threat posed by lead-contaminated soil in yards and dust within the residences or to fund temporary relocations. Neither the State of Indiana nor the City of East Chicago have taken or have the capacity to take action to abate the immediate threat.

2. Potential for Continued State/Local Response

The EPA is working with ATSDR, the East Chicago Health Department, the Indiana State Department of Health, and City of East Chicago elected officials to provide information to the public. EPA is coordinating discussions with stakeholders regarding the elevated levels of lead and arsenic in soil and EPA's plans to address this issue. Neither the state nor local officials have the resources to conduct the necessary cleanup of the indoor dust contamination or to provide for the temporary relocation of residents.

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

The conditions at Zone 2 of the U.S.S. Lead Site present a threat to the public health or welfare and the environment and meet the criteria for a time-critical removal action as provided for in the NCP, 40 C.F.R. § 300.415(b)(1), based on the factors in 40 C.F.R. § 300.415(b)(2). These factors include, but are not limited to, the following:

§ 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;

Beginning in July 2016, EPA began conducting more extensive soil sampling within Zone 2 as part of the RD process for OU1. Zone 2 includes approximately 590 separate parcels. Most of these parcels are residential parcels, though there are some commercial/industrial parcels. In September 2016, EPA received validated sampling results from 48 parcels in Zone 2 which revealed lead concentrations in surface soil (0-6 inches below ground surface) at values ranging from 38.3 to 2,120 mg/kg. Arsenic concentrations ranged from 4.3 to 111 mg/kg (See Attachment V – Summary of OU1 RD Soil Sampling Results). Ten sampled parcels had surface soil lead concentrations above 1,200 mg/kg and 40 of 48 parcels exceed the RML for lead of 400 mg/kg for residential surface soil. Two parcels exceeded the 68 mg/kg RML for arsenic (111 and 78.1 mg/kg in surface soil). One parcel that exceeded the RML for arsenic also exceeded the RML for lead in soil.

Data results from indoor dust from the first 154 homes sampled in Zone 1 indicate 69 properties exceed the EPA screening level of 316 mg/kg for lead for indoor living spaces. EPA is currently addressing exposure to lead contaminated soil in yards and indoor dust in Zone 1. High lead concentrations in indoor dust are a risk to human health, particularly for children under the age of six (i.e., inhalation, ingestion). A recent blood lead study conducted by ECHD found that children in the WCHC and part of Zone 2 are at an increased risk for lead exposure (22% at or above 5 µg/dL compared to the national average of 2.5%).

Lead is a hazardous substance, as defined by Section 101(14) of CERCLA. The effects of lead are the same whether it enters the body through breathing or swallowing. Lead can affect almost every organ and system in the body. The main target for lead toxicity is the nervous system, both in adults and children. Long-term exposure of adults can result in decreased performance in some tests that measure functions of the nervous system. It may also cause weakness in fingers, wrists, or ankles. Lead exposure also causes small increases in blood pressure, particularly in middle-aged and older people and can cause anemia. Exposure to high lead levels can severely damage the brain and kidneys in adults or children and ultimately cause death. In pregnant women, high levels of exposure to lead may cause miscarriage. High-level exposure in men can damage the organs responsible for sperm production.

Arsenic is a hazardous substance under CERCLA and may be ingested or inhaled by residents living at the Site. Acute (short-term) high-level inhalation exposure to arsenic dust or fumes has resulted in gastrointestinal effects (nausea, diarrhea, abdominal pain); central and peripheral nervous system disorders have occurred in workers acutely exposed to inorganic arsenic. Chronic (long-term) inhalation exposure to inorganic arsenic in humans is associated with irritation of the skin and mucous membranes and effects in the brain and nervous system. Chronic oral exposure to elevated levels of inorganic arsenic has resulted in gastrointestinal effects, anemia, peripheral neuropathy, in humans. Chronic exposure by the inhalation route, has been shown to cause a form of skin cancer and also to cause bladder, liver, and lung cancer. EPA has classified inorganic arsenic as a human carcinogen.

§ 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;

As stated in the previous paragraphs, surface soils in Zone 2 where found to be contaminated with lead and arsenic above the EPA screening levels.

Residents living in Zone 2 may cause the high levels of lead and arsenic to migrate into other areas including inside the home by walking through and tracking in, gardening, play, and other residential activities, especially in areas where the soil does not have any cover. Other means of migration may include routine construction activities.

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

There is a threat of release from high winds dispersing surface particulate matter containing lead, resulting in exposure to children and adults who reside within the Site. Grass cover is generally lighter in the early spring and fall, allowing more potential of tracking contaminated soil into the home. Rain or thundershowers may cause the outdoor lead to migrate via surface runoff. The use of an air conditioner during the hot summer months or the running of a furnace during the winter would also result in the migration of indoor dust.

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

At this time, no local or state agency has the resources to respond to the immediate threat.

IV. EXEMPTION FROM STATUTORY LIMITS

Section 104(c) of CERCLA, as amended by the Superfund Amendments and Reauthorization Act (SARA), limits a Federal response action to 12 months and $2 million unless response actions meet emergency and/or consistency exemptions. Documentation for the aforementioned exemptions are provided in the U.S.S. Lead Action Memorandum-Third Amendment approved on October 13, 2016.

V. ENDANGERMENT DETERMINATION

Given the Site conditions, the nature of the known and suspected hazardous substances on-site, and the potential exposure pathways described in Sections II and III above, actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response actions selected in this Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment.

VI. PROPOSED ACTIONS

The response actions described in this memorandum directly address actual or potential releases of hazardous substances on Site, which may pose an imminent and substantial endangerment to public health, or welfare, or the environment.

The proposed action involves excavation and removal of lead and arsenic-contaminated soil at residential parcels within Zone 2 with surficial soil concentrations at or above 1,200 mg/kg for lead and/or the removal management level (RML) of 68 mg/kg for arsenic, and indoor dust sampling and cleaning upon the request of residents and owners. The response actions are consistent with the (OSWER) Publication 9285.7-50 *Superfund Lead-Contaminated Residential Sites Handbook* (Handbook) (2003), where the Superfund Program uses a tiered approach to prioritize which homes needed to be cleaned up first. Residential parcels with lead concentrations in surface soil at or greater than 1,200 mg/kg would be the highest priority for immediate action under a time-critical removal action. Excavated areas will be backfilled to original grade with clean soil and the yards restored as closely as practicable to its pre-removal condition.

Approximately 590 Zone 2 parcels will be sampled during the remedial design process. For cost accounting purposes, EPA anticipates the scope of this removal action in Zone 2 to include approximately 132 residential parcels that are at or greater than 1,200 mg/kg for lead and/or 68 mg/kg for arsenic based on historical and the latest remedial design validated data from Zone 2.

Removal activities associated with the excavation of lead and arsenic contaminated soil from residential yards in Zone 2 will include:

1. Development of site plans, including a Work Plan, Sampling Plan/QAPP, site-specific HASP, and Emergency Contingency Plan;

2. Development of an air monitoring plan and conduct dust control measures to ensure worker and public health protection;

3. Provision for site security measures as necessary;

4. Excavation of soil at residential parcels where lead is equal to or exceeds 1,200 mg/kg and/or arsenic exceeds 68 mg/kg as determined by EPA's RD sampling. Soil will be excavated to a depth of approximately two feet bgs, to eliminate any direct contact and inhalation threats. Excavated material that fails toxicity characteristic leaching procedure (TCLP) for lead may be treated with a fixation agent prior to disposal. Excavation will cease if lead and/or average arsenic concentrations are less than 400 mg/kg for lead and 26 mg/kg for arsenic.

5. Collection and analysis of confirmation samples from the bottom of each excavation. If lead levels below 400 mg/kg or arsenic levels below 26 mg/kg cannot be achieved at an excavation depth of approximately two feet bgs, excavation will cease and a visible barrier will be placed at the bottom of the excavation to alert the property owner of the existence of high levels of lead and/or arsenic. In such instances and consistent with the record of

decision, institutional controls (ICs) will be implemented as part of the remedial action to ensure the users of the property are not exposed to the contaminants of concern in soil;

6. Replacement of excavated soil with clean soil, including 6 inches of top soil to maintain the original grade. Each yard will be restored as close as practicable to its pre-removal condition. Once the parcels are sodded or seeded, removal site control of the sod or seed, including, watering, fertilizing, and cutting, will be conducted for 30 days. After the initial 30 day period, property owners will be responsible for the maintenance of their own yards. The aforementioned work shall be documented in a Work Plan;

7. Transportation and disposal off-site of any hazardous substances, pollutants and contaminants at a CERCLA-approved disposal facility in accordance with EPA's Off-Site Rule (40 CFR § 300.440);

8. Performance of any other response actions to address any release or threatened release of a hazardous substance, pollutant or contaminant that the EPA On-Scene Coordinator (OSC) determines may pose an imminent and substantial endangerment to the public health or the environment; and

9. Conduct an evaluation to determine if soil excavation activities result in a release of lead scale particles from lead service lines into the drinking water supply. This sampling will be conducted from parcels being excavated in the fall of 2016. Data will be evaluated prior to the 2017 construction season to determine if construction activities impact drinking water quality. Bottled water and water filters will be provided during and after the soil excavation activities as necessary during the evaluation period. Based on findings from the 2016 evaluation, a determination will be made on whether the provision of bottled water and water filters should continue beyond the evaluation period. (Note: This evaluation is being conducted at the request of the Agency for Toxic Substances and Disease Registry, see memo from Mark Johnson to Doug Ballotti dated October 24, 2016.)

Data results in Zone 1 from indoor dust from the first 154 homes sampled indicate 69 parcels exceed the EPA screening level of 316 mg/kg for lead for indoor living spaces. Given the significant number of indoor samples that indicated action is needed and the threat posed by high concentrations of lead in soil in adjacent outdoor areas, and the consistent pattern of EBL levels in children less than 6 years of age living in WCHC and portions of Zone 2, EPA, at the request of the residents and homeowners, will vacuum sample indoor dust for lead and arsenic. EPA will clean the inside of residences that are above the risk-based screening criteria of 316 mg/kg for lead and 100 mg/kg arsenic for indoor dust from industrial-related activities. In general, the indoor cleanup process will involve four basic steps: (1) collection of indoor dust vacuum samples (in homes previously not sampled), (2) possible temporary relocation of residents, (3) removal of contaminated indoor dust from floors and carpeting, and cleaning of accessible HVAC systems and filter replacement (4) Post cleaning clearance sampling; and (5) the return of occupants to their residence if temporarily relocated. A combination of HEPA vacuums and/or wet cleaning will be used to remove contaminated dust from floors, carpeting and HVAC systems. Replacement of carpets/mats may be considered on a case by case basis if cleaning mechanisms fail to remove lead and arsenic dust below cleanup criteria.

Removal activities associated with indoor sampling, evaluation, and removal of contaminated dust in homes in Zone 2 will include:

1. Development of a Work Plan and Site Specific Health and Safety Plan;

2. Development and implementation of an air monitoring/sampling plan for the work zone and Site;

3. Continuation of indoor dust and other sampling as determined necessary;

4. Provision for Site security, as directed by the OSC;

5. Development of a relocation plan to address, if necessary, the temporary relocation of residents during the cleaning process;

6. Performance of interior dust cleanup activities as specified in the Site Work Plan;

7. Transportation and disposal off-site of any hazardous substances, pollutants and contaminants at a CERCLA-approved disposal facility in accordance with EPA's Off-Site Rule (40 CFR § 300.440); and

8. Performance of any other response actions to address any release or threatened release of a hazardous substance, pollutant or contaminant that the EPA On-Scene Coordinator (OSC) determines may pose an imminent and substantial endangerment to the public health or the environment.

The Action Memorandum and supporting documentation follow the April 2002 Superfund Response Actions: Temporary Relocations Implementation Guidance, particularly in considering residents' needs, property security, dealing with resident's stress and disruptions, and explaining benefits. Consistent with EPA's guidance on temporary relocations (2002), Sec. IV.A ("Making the Relocation Decision"), temporary relocation at the Site is justified during the cleaning process by the following factor:

- Efficiency of response action: temporary relocation minimizes concerns about noise, property access, and other restrictions on the hours or types of response activities that may be conducted at the Site.

The removal actions will be conducted in a manner not inconsistent with the NCP.

The threats posed by uncontrolled substances considered hazardous meet the NCP criteria listed at § 300.415(b), and the response actions proposed herein are consistent with any long-term remedial actions which may be required.

Off-Site Rule

All hazardous substances, pollutants, or contaminants removed off-site pursuant to this removal action for treatment, storage, and disposal shall be treated, stored, or disposed of at a facility in compliance, as determined by EPA, with the EPA Off-Site Rule, 40 C.F.R. § 300.440.

1. Contribution to remedial performance

The proposed action should not impede future remedial performance.

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

Not Applicable

3. Applicable or relevant and appropriate requirements (ARARs)

All applicable or relevant and appropriate requirements (ARARs) will be complied with to the extent practicable. On August 18, 2016, EPA sent an e-mail to Rex Osborn of IDEM asking for any State of Indiana ARARs that may apply. IDEM provided both Action and Chemical specific state ARARs in a letter dated August 26, 2016. EPA will consider and implement the submitted ARARs as appropriate.

Project Schedule

The time-critical removal actions will require approximately 528 working days to complete.

B. Removal Project Ceiling Estimate – Extramural Costs:

The detailed cleanup contractor cost is presented in Attachment 1 and the Independent Government Cost Estimate is presented in Attachment IV. Estimated project costs are summarized below:

REMOVAL ACTION PROJECT CEILING ESTIMATE

Extramural Costs	**Current Ceiling**	**Proposed Increase**	**Proposed Ceiling**
Regional Removal Allowance Costs:			
Total Cleanup Contractor Costs (This cost category includes estimates for ERRS, subcontractors, Notices to Proceed, and Interagency Agreements with Other Federal Agencies and 20% Contingency)	$18,875,702	$10,133,755	$29,009,457
Other Extramural Costs Not Funded from the Regional Allowance:			
Total START, including multiplier costs	$3,122,250	$1,425,000	$4,547,250
. Subtotal	.	.	.
Subtotal Extramural Costs	$21,997,952	$11,558,755	$33,556,707
Extramural Costs Contingency (20% of Subtotal, Extramural Costs rounded to nearest thousand for Proposed Increase)	$4,399,590	$2,311,751	.
TOTAL REMOVAL ACTION PROJECT CEILING	**$26,397,542**	**$13,870,506**	**$40,268,048**

The response actions described in this memorandum directly address the actual or threatened release of hazardous substances, pollutants, or contaminants at the Site which may pose an imminent and substantial endangerment to public health or welfare or to the environment. These response actions do not impose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

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

Given the Site conditions, the nature of the hazardous substances and pollutants or contaminants documented in Zone 2 of OU1, and the potential exposure pathways to nearby populations described in Section II and Section III, above, actual or threatened releases of hazardous substances and pollutants or 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, welfare, or the environment.

VIII. OUTSTANDING POLICY ISSUES

None

IX. ENFORCEMENT

For administrative purposes, information concerning the enforcement strategy for this Site is contained in the Confidential Enforcement Addendum.

The total EPA costs of this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be $68,457,330[1].

($40,268,048+ $2,000,000) + (61.96% x $42,268,048) = $68,457,330

[1] 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 direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgement 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.

X. RECOMMENDATION

This decision document, along with the Action Memorandum signed on January 22, 2008, and the Action Memorandum Amendments signed on August 13, 2008, September 12, 2011, and October 13, 2016 represents the selected removal action for the U.S. Smelter and Lead Refinery Site, Zone 2, OU1, East Chicago, Lake County, Indiana. It was developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for the Site (Attachment II). Conditions at OU1, Zone 2 meet the NCP Section 300.415(b) criteria for a removal action and the CERCLA Section 104(c) emergency exemption from the $2 million and 12-month limitation. The total removal action project ceiling, if approved, will be $40,268,048 of which as much as $33,770,398 may be used from the removal allowance. I recommend your approval of the proposed removal action. You may indicate your decision by signing below.

APPROVE _____ DATE: 10/28/16
Assistant Administrator Office of Land and Emergency Management

DISAPPROVE _____ DATE: _____
Assistant Administrator Office of Office of Land and Emergency Management

Enforcement Addendum

Figures:

Figure 1 – USS Lead and Lead Refinery, E. Chicago, IN. Location Map
Figure 2 – OU1 Zones 1, 2, and 3– Location Map

Attachments:

I. Environmental Justice Analysis
II. Administrative Record Index
III. Detailed Cleanup Contractor Estimate
IV. Independent Government Cost Estimate
V. Summary of OU1 RD Soil Sampling Results
VI. Indoor Dust Screening Criteria for Lead
VII. Indoor Dust Screening Criteria for Arsenic
VIII. Third Amended Action Memorandum dated October 13, 2016

cc: Brian Schlieger, U.S. EPA, 5104A/B517F **(Schlieger.Brian@epa.gov)**
Lindy Nelson, U.S. DOI, **w/o Enf. Addendum (Lindy_Nelson@ios.doi.gov)**
Rex Osborn, IDEM **w/o Enf. Addendum (rosborn@idem.in.gov)**

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NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

ENFORCEMENT ADDENDUM

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ENFORCEMENT CONFIDENTIAL

NOT SUBJECT TO DISCOVERY

FOIA EXEMPT

NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

Figure 1
Site Location
USS Smelter and Lead Refinery , East Chicago, IN

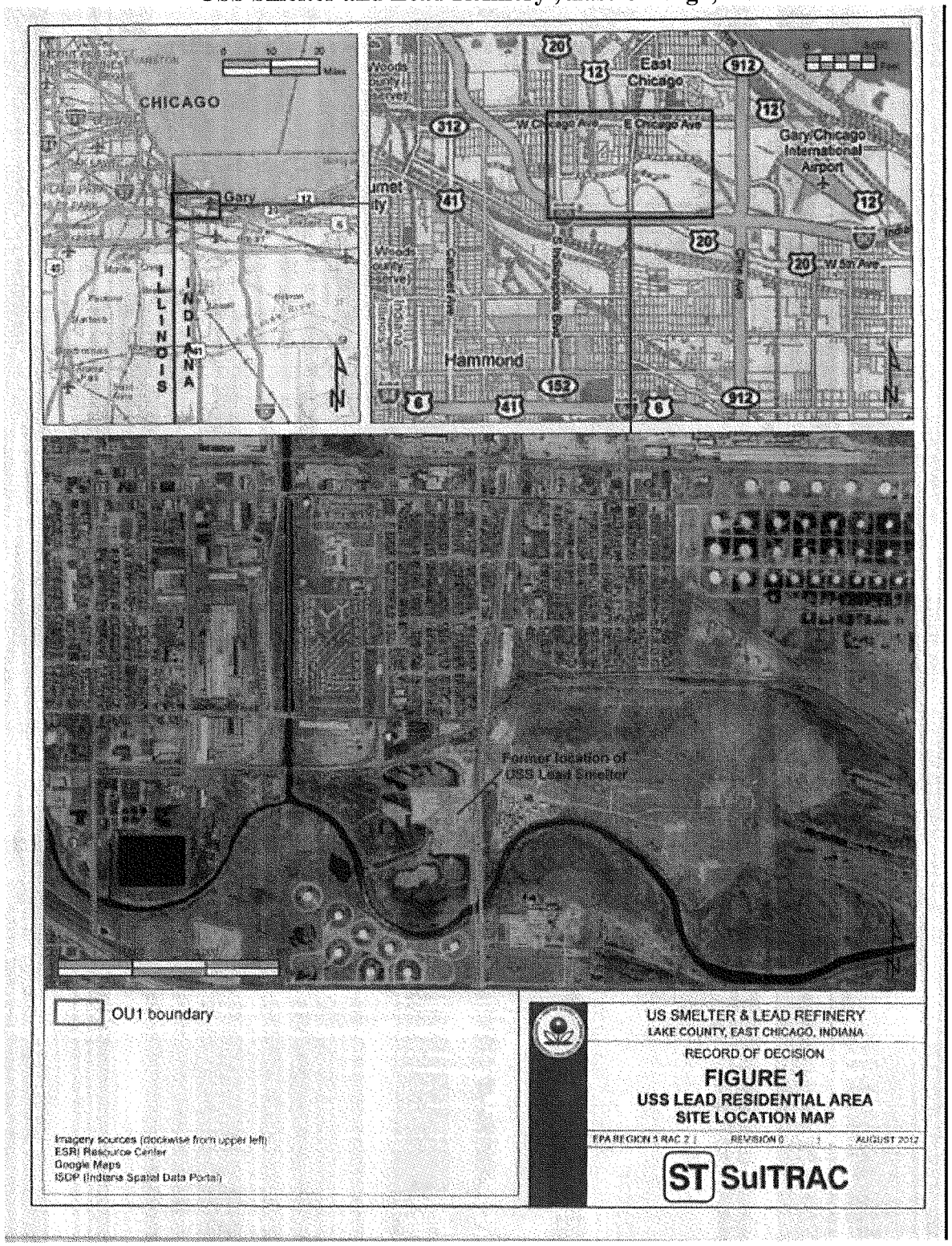
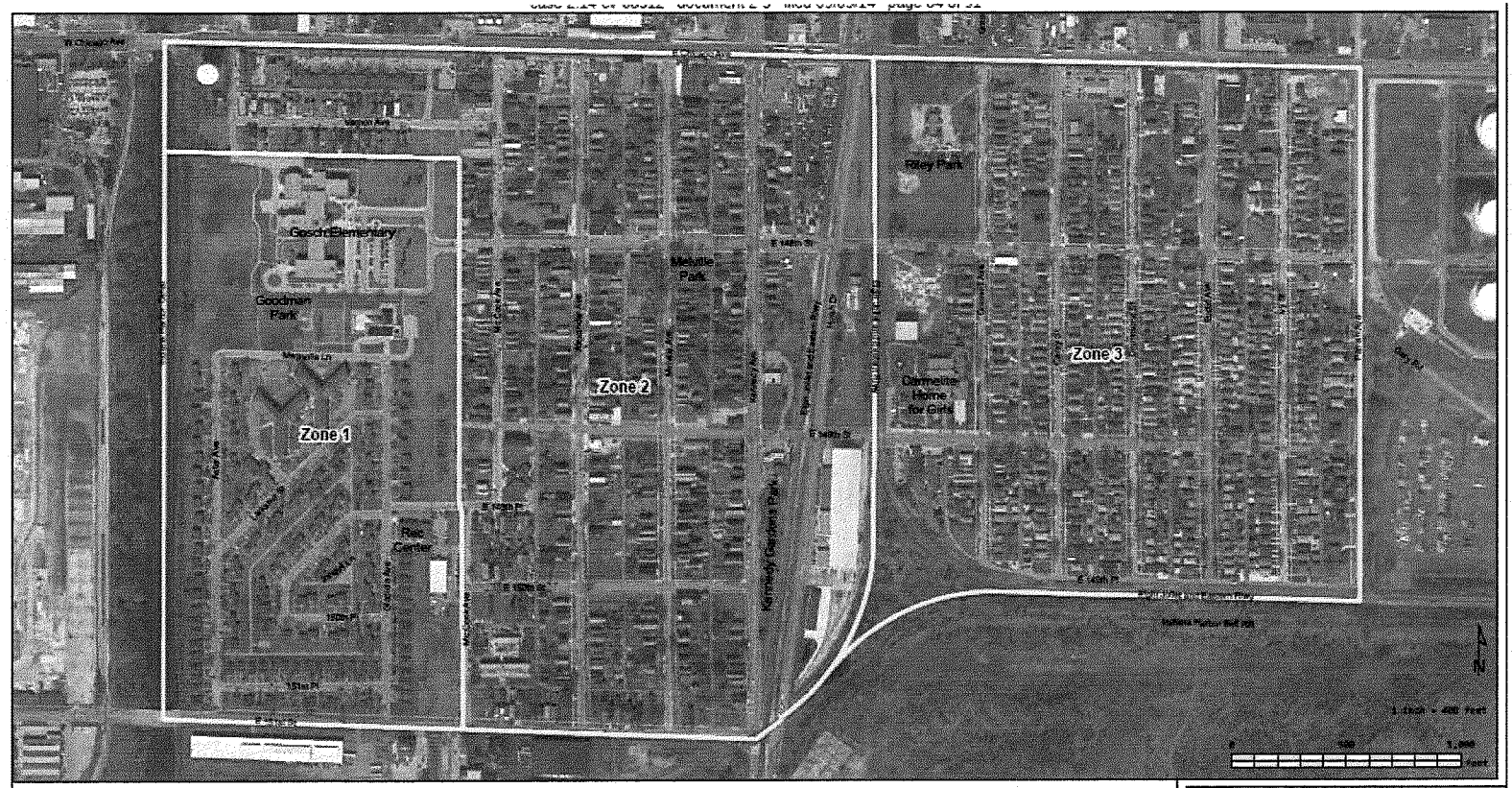


FIGURE 2
Zone 2/OU1 MAP
U.S. Smelter and Lead Refinery Site, East Chicago, Lake County, Indiana



ATTACHMENT I

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ENVIRONMENTAL JUSTICE ANALYSIS
FOR
U.S. SMELTER AND LEAD REFINERY SITE, EAST CHICAGO, LAKE COUNTY, INDIANA

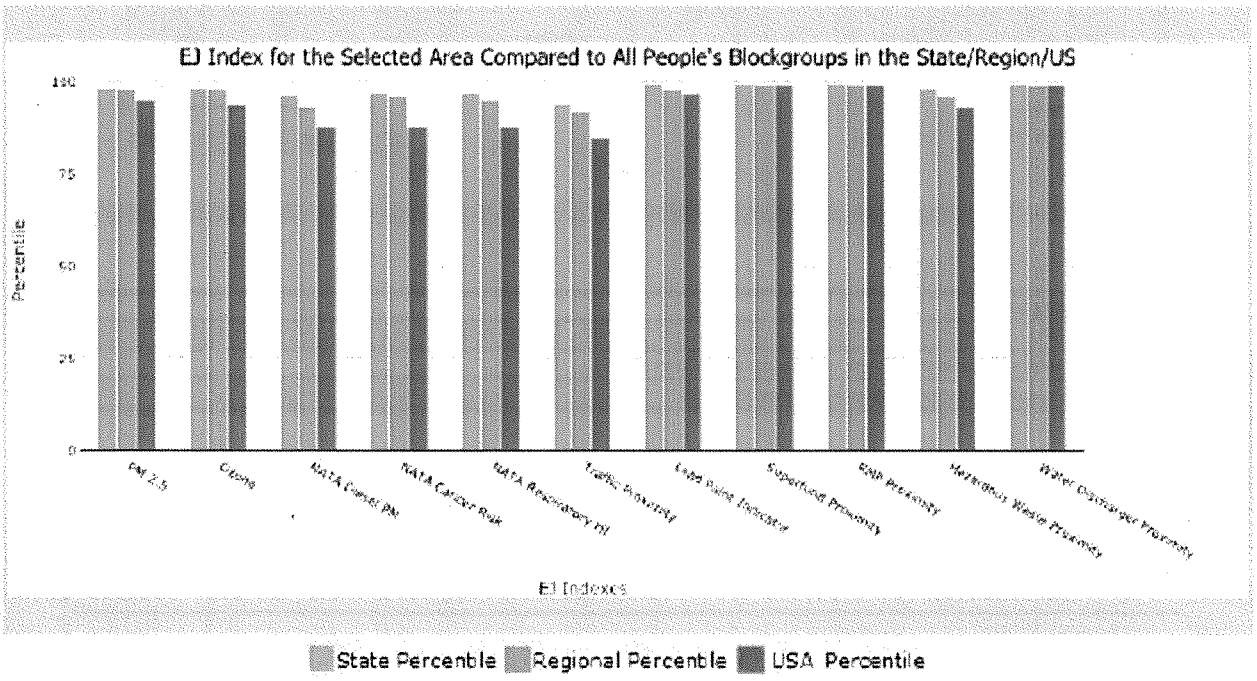
EJSCREEN Report (Version 2016)

0.5 mile Ring Centered at 41.623974,-87.469228, INDIANA, EPA Region 5

Approximate Population: 2,455

Input Area (sq. miles): 0.79

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	98	98	95
EJ Index for Ozone	98	98	94
EJ Index for NATA* Diesel PM	96	93	88
EJ Index for NATA* Air Toxics Cancer Risk	97	96	88
EJ Index for NATA* Respiratory Hazard Index	97	95	88
EJ Index for Traffic Proximity and Volume	94	92	85
EJ Index for Lead Paint Indicator	99	98	97
EJ Index for Superfund Proximity	99	99	99
EJ Index for RMP Proximity	99	99	99
EJ Index for Hazardous Waste Proximity	98	96	93
EJ Index for Water Discharger Proximity	99	99	99

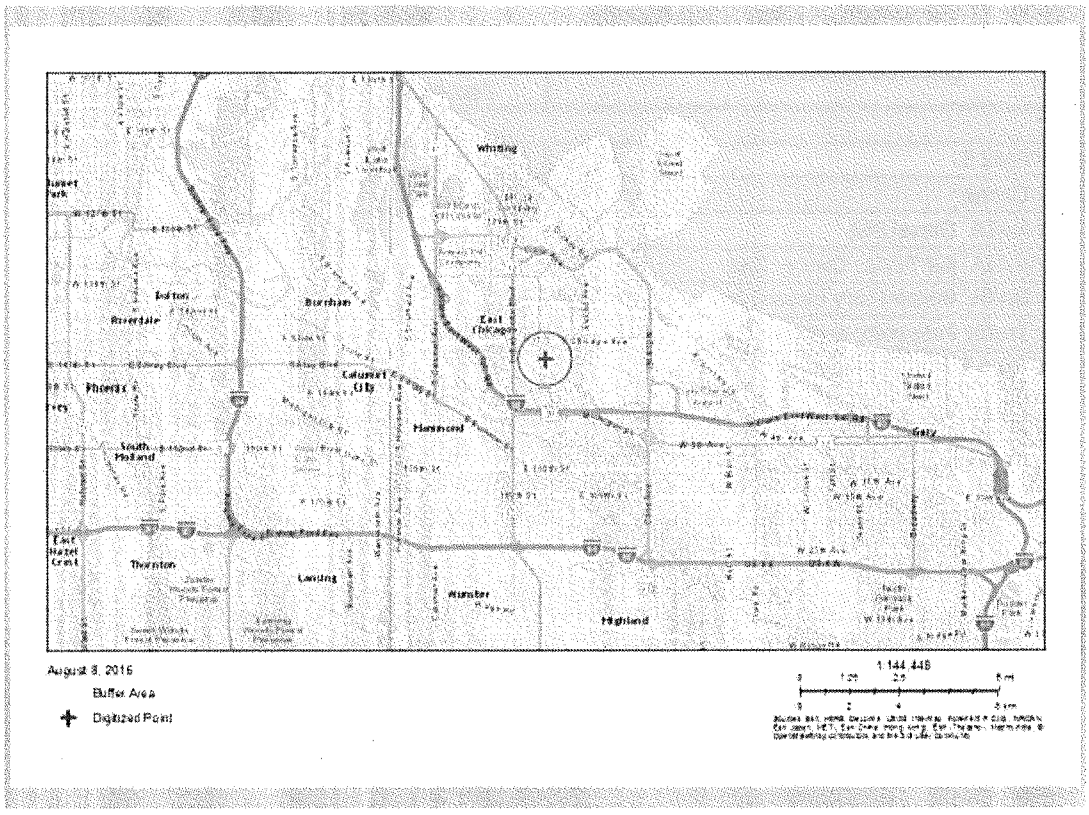


This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

EJSCREEN Report (Version 2016)

0.5 mile Ring Centered at 41.623974,-87.469228, INDIANA, EPA Region 5

Approximate Population: 2,455
Input Area (sq. miles): 0.79



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0
National Pollutant Discharge Elimination System (NPDES)	0

EJSCREEN Report (Version 2016)

0.5 mile Ring Centered at 41.623974,-87.469228, INDIANA, EPA Region 5

Approximate Population: 2,455

Input Area (sq. miles): 0.79

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	11.7	11	98	10.6	86	9.32	93
Ozone (ppb)	48.8	51.2	11	50.3	21	47.4	52
NATA* Diesel PM (µg/m³)	0.86	0.835	57	0.931	50-60th	0.937	50-60th
NATA* Cancer Risk (lifetime risk per million)	32	34	38	34	<50th	40	<50th
NATA* Respiratory Hazard Index	1.5	1.4	61	1.7	<50th	1.8	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	240	250	73	370	70	590	65
Lead Paint Indicator (% Pre-1960 Housing)	0.65	0.36	82	0.39	77	0.3	84
Superfund Proximity (site count/km distance)	1.5	0.16	99	0.12	99	0.13	99
RMP Proximity (facility count/km distance)	4.3	0.52	99	0.51	99	0.43	99
Hazardous Waste Proximity (facility count/km distance)	0.09	0.044	91	0.069	78	0.072	77
Water Discharger Proximity (facility count/km distance)	2.9	0.34	99	0.31	99	0.31	99
Demographic Indicators							
Demographic Index	84%	27%	99	29%	97	36%	96
Minority Population	92%	19%	98	24%	94	37%	91
Low Income Population	77%	35%	95	33%	95	35%	95
Linguistically Isolated Population	5%	2%	87	2%	83	5%	70
Population With Less Than High School Education	22%	12%	84	11%	87	14%	78
Population Under 5 years of age	10%	6%	81	6%	83	6%	81
Population over 64 years of age	8%	14%	23	14%	23	14%	27

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

ATTACHMENT II

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMEDIAL ACTION

ADMINISTRATIVE RECORD
FOR THE
U.S. SMELTER AND LEAD SITE
EAST CHICAGO, LAKE COUNTY, INDIANA

UPDATE 4
OCTOBER 2016
SEMS ID:

NO.	SEMS ID	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	424362	8/1/03	U.S. EPA	File	Superfund Lead Contaminated Residential Sites Handbook	124
2	424349	3/1/04	Geochemical Solutions	USS Lead	Final USS Lead Modified RCRA Facility Investigation (MRFI) Report (Draft: Text Only)	46
3	308202	3/1/04	Geochemical Solutions	USS Lead	Final USS Lead Modified RCRA Facility Investigation (MRFI) Report (Draft)	878
4	315595	11/18/08	Micke, F., U.S. EPA	Distribution List	Pollution Report (POLREP) #3 - Final	3
5	424390	8/31/09	Weston Solutions	U.S. EPA	Federal OSC Report, Revision 1, CERCLA Removal Action	44
6	413853	11/1/11	Micke, F., U.S. EPA	Distribution List	Pollution Report (POLREP) #1 - Initial - USS Lead-2	5
7	418177	11/16/11	Micke, F., U.S. EPA	Distribution List	Pollution Report (POLREP) #2 - USS Lead-2	6
8	418526	12/15/11	Micke, F., U.S. EPA	Distribution List	Pollution Report (POLREP) #3 - USS Lead-2	6

9	424434-424435	6/1/12	SulTRAC	U.S. EPA	Remedial Investigation Report (Final) for the U.S. Smelter and Lead Refinery Superfund Site w/ Appendices A-D (***Portions of this document have been redacted***)	9086
10	928966	7/1/12	U.S. Dept. of Housing and Urban Development	File	Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing	874
11	929468	7/23/13	Del Toral, M., Porter, A., and Schock, M., U.S. EPA	File	Journal Article: "Detection and Evaluation of Elevated Lead Release from ServiceLines: A Field Study"	8
12	928964	7/1/16	SulTRAC	U.S. EPA	Data Evaluation Report for Sampling Conducted During 2014-2015 - USS Lead Residential Area (Text, Figures, and Tables)	101
13	928955	8/8/16	Johnston, M., U.S. EPA	Ribordy, M., U.S. EPA	Email re: Blood Lead Level Summary for Action Memo	2
14	928958	8/10/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report - USS Lead Indoor Dust Samples from July 29 - August 4, 2016	35
15	928957	8/11/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report - USS Lead Indoor Dust Samples from August 5, 2016	11
16	928959	8/12/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report - USS Lead Indoor Dust Samples from August 8, 2016	10
17	928960	8/16/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report - USS Lead Indoor Dust Samples from August 9, 2016	9
18	928969	8/16/16	King, J., Indiana State Department of Health	File	Lead Risk Assessment Reports for 14 Properties (***Portions of this document have been redacted***)	382
19	928968	8/18/16	Johnson, M., ATSDR	Ribordy, M., U.S. EPA	Email re: USS Lead - Updated Summary Table (***Portions of this document have been redacted***)	4
20	928961	8/24/16	Osborn, R., IDEM	Ribordy, M., U.S. EPA	Email re: Lack of State Resources to Conduct Removal	2

21	928962	8/26/16	Petroff, D., IDEM	Ribordy, M., U.S. EPA	Letter re: Applicable or Relevant and Appropriate Requirements (ARARs)	3
22	929439	9/14/16	Caudill, M., ATSDR	Ribordy, M., U.S. EPA	Email re: Blood Lead Level Statements for Your Records	1
23	929469	10/7/16	Johnson, M., ATSDR	Ballotti, D., U.S. EPA	Memo re: Evaluation of Release of Lead from Water Service Lines and Temporary Use of Water Filters	2
24	-	-	Ballotti, D., U.S. EPA	Stanislaus, M., U.S. EPA	Action Memorandum re: Request for an Exemption from the $2 Million and 12-month Statutory Limits, Change in Scope of the Response and Ceiling Increase for the Time-Critical Removal Action at the U.S. Smelter and Lead Refinery Site (***PENDING***)	-

ATTACHMENT III

DETAILED CLEANUP CONTRACTOR ESTIMATE

HAS BEEN REDACTED – TWO PAGES

NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

ATTACHMENT IV

INDEPENDENT GOVERNMENT COST ESTIMATE

HAS BEEN REDACTED – FOUR PAGES

NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

ATTACHMENT V

SUMMARY OF OU1 RD SOIL SAMPLING RESULTS FOR ZONE 2

HAS BEEN REDACTED – TWELVE PAGES

NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

ATTACHMENT VI

US Smelter and Lead Refinery Site Dust Screening Level for Lead

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
9311 GROH ROAD
GROSSE ILE, MI 48138

MEMORANDUM

SUBJECT: Development of an Indoor Dust Screening Criteria for the USS Lead Site

FROM: Keith Fusinski, PhD Toxicologist US EPA
Superfund Division, Remedial Response Branch #1, Remedial Response Section #1

TO: Jim Mitchell, On-Scene Coordinator US EPA
Superfund Division, Emergency Response Branch #2, Emergency Response Section #4

AND

Kristina Behnke, On-Scene Coordinator US EPA
Superfund Division, Emergency Response Branch #2, Emergency Response Section #3

DATE: 8/10/2016

The Integrated Exposure Uptake Biokinetic (IEUBK) model used by the US Environmental Protection Agency (USEPA) uses the concentration of indoor dust as a key parameter to evaluate risks to children from lead in soil. EPA separates dust into fine (≤150 µm) and coarse (>150 µm) fractions. It has been shown that the fine particle size is the fraction that is most likely to adhere to children's hands and be ingested. In addition, more recent information also indicates that there is a potential for enrichment of lead in smaller sized particles and increased bioavailability (USEPA 2016). Using only the fine particle size concentration for screening can improve the accuracy of exposure and risk calculations in lead risk assessments.

The IEUBK model (version 1.1 Build 11) was used to determine an indoor dust screening level for lead. The default assumption in the model is that the concentration of lead in indoor dust is 70% of the concentration of lead in outdoor soil (Brattin and Griffin - 2011). US EPA recommends that lead concentrations in residential soil do not exceed 400 parts per million (ppm) in soil.

The modeling was performed using default inputs from the IEUBK model for diet, drinking water, air concentration and bioavailability. The IEUBK model was run using 400 ppm for lead in soil and modeled children 0 to 84 months of age. The calculated screening level to protect this population from a current US EPA acceptable blood lead level of 10 µg/dL is **316 ppm** of lead in

dust. This concentration should be used when evaluating the fine particle size fraction of lead dust contamination.

REFERENCES

Brattin and Griffin - 2011 - William Brittin. Susan Griffin. Evaluation of the Contribution of Lead in Soil to Lead in Dust at Superfund Sites. Human and Ecological Risk Assessment: An International journal Vol. 17, Iss. 1, 2011.

USEPA 2016 - OLEM Directive 9200.1-128. Recommendations for Sieving Soil and Dust Samples at Lead Sites for Assessment of Incidental Ingestion.

Attachment VII

US Smelter and Lead Refinery Site Dust Screening Level for Arsenic

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
9311 GROH ROAD
GROSSE ILE, MI 48138

MEMORANDUM

SUBJECT: Development of an Indoor Dust Arsenic Screening Criteria for the USS Lead Site

FROM: Keith Fusinski, PhD Toxicologist US EPA
Superfund Division, Remedial Response Branch #1, Remedial Response Section #1

TO: Jim Mitchell, On-Scene Coordinator US EPA
Superfund Division, Emergency Response Branch #2, Emergency Response Section #4

AND

Kristina Behnke, On-Scene Coordinator US EPA
Superfund Division, Emergency Response Branch #2, Emergency Response Section #3

DATE: 9/20/2016

The US EPA determines probability of a non-cancer detrimental health effect to occur by calculating a hazard quotient (HQ). The HQ is a ratio of a single substance exposure level over a specified period of time to a reference dose of the same substance derived from a similar exposure period. It is recommended that the HQ of an exposure to a chemical of concern be below or equal to 1 which is the level at which no adverse human health effects are expected to occur. For cancer risk, the U.S. EPA recommends a screening level that would equate to a one in a million ($1x10^{-6}$) or greater lifetime risk of developing cancer from exposure to a contaminated site. However, rates up to 1 in 10,000 ($1x10^{-4}$) can be considered acceptable. The Office of Land and Emergency Management (OLEM) recommends removal management levels (RMLs) be set at an excess lifetime cancer risk (ELCR) of 1 in 10,000 or a non-cancer HQ of 3, whichever is most protective.

Per the direction of the EPA Lead Technical Review Workgroup, the Regional Screening Level (RSL) calculator was used to determine the "clearance" level for arsenic in dust at the USS Lead site. The calculator was set to determine arsenic concentrations based upon RMLs over a lifetime exposure of 24 hours a day, for 350 days per year, for 26 years (6 as child/20 as adult). With the ingestion rate of 100 mg/day of dust for all receptors (General Population Upper Percentile -EPA Exposure Factors Handbook 2011).

This results in a "clearance" level of **100 mg of arsenic/kg of dust**. Any concentrations of arsenic below this level is within our acceptable risk range or below it.

ATTACHMENT VIII

THIRD AMENDEDACTION MEMORANDUM
DATED OCTOBER 13, 2016

APPENDIX E

TO
Z2&3 INTERIOR UAO

ACTION MEMORANDUM
FIFTH AMENDMET

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

MAR 06 2017

REPLY TO THE ATTENTION OF:

MEMORANDUM

SUBJECT: **ACTION MEMORANDUM – 5th AMENDMENT:** Request for a Change in Scope and Ceiling Increase for the Time-Critical Removal Action at the U.S. Smelter and Lead Refinery Site, East Chicago, Lake County, Indiana (Site ID # 053J)

FROM: Margaret M. Guerriero, Acting Director
Superfund Division

THRU: Reggie Cheatham, Office Director
Office of Emergency Management (OEM)

TO: Barry Breen, Acting Assistant Administrator
Office of Land and Emergency Management

I. PURPOSE

The purpose of this Action Memorandum Amendment is to request and document your approval, consistent with Section 104(c)(1)(A) of CERCLA, 42 U.S.C. Section 9604 (c)(1)(A), to change the scope of the response and for a ceiling increase for the time-critical removal action at portions of the U.S. Smelter and Lead Refinery Site (the Site) residential area defined as Zone 2 and Zone 3 of Operable Unit 1 (OU1), in East Chicago, Lake County, Indiana (see Figure 2). The sought increase of $2,983,985 would raise the project ceiling for the time-critical removal action from $40,268,048 to $43,252,033.

Indoor data collected as a part of cleanup actions in Zones 2 and 3 found lead and arsenic concentrations in indoor dust samples above the screening criteria established for the Site. Response actions are necessary in Zones 2 and 3 to mitigate threats to public health, welfare, and the environment posed by the release and/or threatened release of uncontrolled hazardous substances at the Site. This removal action is twofold. It involves testing for lead and/or arsenic contaminated dust in residential homes located within Zones 2 and 3 where excavation of lead- or arsenic-contaminated soils has already taken place, or where EPA has been specifically requested to perform sampling by a resident. If dust in homes contains concentrations of lead or arsenic above the site-specific screening levels, and those homes had exterior soils that required remediation, contaminated dust will be removed from those homes. It also involves excavating soils in properties in Zone 2 that are eligible for time-critical removal actions based on criteria outlined in OSWER Publication 9285.7-50 *Superfund Lead-Contaminated Residential Sites*

Handbook (Lead Handbook) (2003) that were not previously considered in the fourth amendment to the action memorandum.

A change of scope of the response and ceiling increase is necessary as the previous Action Memoranda approved on January 22, 2008, August 13, 2008, September 12, 2011, October 13, 2016, and October 28, 2016 (Attachments IX, X, XI, XII, XIII), were for the excavation and proper disposal of lead-contaminated soils from residential parcels in OU1, Zones 1, 2 and 3; indoor cleanup of lead contaminated dust inside of residences in Zones 1 and 2; and temporary relocation of residents in the West Calumet Housing Complex (WCHC) in Zone 1 and residents in Zone 2. They did not address indoor cleanup of lead contaminated dust inside of residences in Zone 3. Further, for residences in Zones 2 and 3, the site-specific interior dust screening level for arsenic has been revised downward from 100 mg/kg to 26 mg/kg.

A change of scope is also necessary to further define the prioritization of Zone 2 properties for time-critical removal actions for the excavation of exterior soil to include properties with lead concentrations in surface soils at or greater than 400 mg/kg where a member of a sensitive population resides (children up to age 7 and/or pregnant women) and properties with lead concentrations at or greater than 400 mg/kg at any depth down to 24 inches bgs where a child with blood lead levels at or greater than 10 µg/dL lives.

Conditions existing at the Site in Zone 2 and Zone 3 present a threat to public health and the environment and meet the criteria for initiating a removal action under 40 CFR § 300.415(b) of the National Contingency Plan (NCP). The U.S. Environmental Protection Agency (EPA or the Agency) documented elevated levels of lead and arsenic in surface soil in residential parcels at the Site in Zones 1, 2 and 3. Lead and arsenic are hazardous substances as defined by CERCLA § 101(14). The EPA has also documented elevated levels of lead and arsenic in dust found within residences located within Zones 1, 2 and 3 of the Site.

There are no nationally significant or precedent setting issues associated with the Change of Scope sought in this Action Memorandum as it seeks approval only for the sampling and removal of lead and/or arsenic contaminated dust in residential homes in Zone 3 and for the inclusion of soil removals in Zone 2 where sensitive populations live. EPA has previously issued Action Memoranda for the sampling and removal of lead and/or arsenic contaminated dust in residential homes in Zone 1 and Zone 2, and performing time-critical removal actions at contaminated properties with sensitive populations is consistent with OSWER Publication 9285.7-50 *Superfund Lead-Contaminated Residential Sites Handbook* (Lead Handbook) (2003). The Site is on the National Priorities List (NPL) and has been since April of 2009.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID: IND047030226
RCRA ID: IND047030226
STATE ID: None
Category: Time-Critical Removal

A. Site Description

1. Removal Site Evaluation

The Indiana Department of Environmental Management (IDEM) sampled some of the residential parcels to the north of the U.S. Smelter and Lead Refinery, Inc. (U.S.S. Lead) facility in 1985. This area, known locally as the Calumet neighborhood, is now known as Operable Unit 1 of the Site. IDEM found elevated lead levels in these residential yards. In September of 1985, the Indiana State Board of Health found the U.S.S. Lead facility in violation of state law and stated that the lead-contaminated soils within the facility boundaries may pose a risk to human health and the environment. IDEM referred the U.S.S. Lead facility, now known as Operable Unit 2 or OU2, to EPA for cleanup but did not refer for cleanup the area now known as Operable Unit 1.

From 1993 through 2006, EPA's Resource Conservation and Recovery Act (RCRA) Corrective Action program oversaw the remediation and management of lead-contaminated soils within the boundaries of OU2, the U.S.S. Lead facility. On November 18, 1993, EPA and U.S.S. Lead entered into an Administrative Order on Consent (AOC) pursuant to Section 3008(h) of RCRA. The AOC required U.S.S. Lead to implement interim measures, including site stabilization and construction of a corrective action management unit (CAMU) to contain contaminated soils and slag and to conduct a Modified RCRA Facility Investigation at the U.S.S. Lead facility, OU2. The CAMU now covers approximately 10 acres and is surrounded by a subsurface slurry wall. Excavation and construction of the CAMU was conducted in two phases and completed between August and September 2002. Slag generated from the U.S.S. Lead facility's blast-furnace operations was routinely placed in piles on the southern portion of OU2 near the banks of the Grand Calumet River. The cleanup of slag was described in the Interim Stabilization Measures Work Plan prepared by ENTACT, LLC and was completed during the third quarter of 2002.

As part of a RCRA Corrective Action in 2003 and 2006, EPA conducted soil sampling in the residential neighborhood to the north located in what is now referred to as OU1 of the U.S.S. Lead Site. In the investigation of late July and early August 2003, 83 residential parcels within OU1 were sampled and analyzed for lead using a Niton X-ray fluorescence (XRF) instrument. Soils from 43 locations (52 percent) exceeded the 400 milligrams per kilogram (mg/kg) residential soil screening criterion for lead. In 2006, EPA's Field Environmental Decision Support (FIELDS) team supplemented the work performed in 2003 by collecting additional data from 14 parcels sampled in 2003 to (1) assess whether the top-most soils (zero to one inch below ground surface (bgs)) had elevated lead concentrations relative to deeper soils (one to six inches bgs), (2) collect and compare composite samples to individual samples to assess whether composite samples accurately represented the concentrations in residential yards and parks, and (3) compare lead concentrations in the fine and coarse fractions of sieved samples to evaluate whether lead was preferentially distributed in the fine-grain sizes. These sampling results showed some yards in OU1 to have high levels of lead contamination with the highest sample containing lead at a concentration of 3,000 mg/kg. The RCRA Corrective Action program looked at the possible source of the lead contamination and determined it was from various industrial sources. The RCRA Corrective Action program referred OU1—the off-site contamination from the U.S.S. Lead facility and other industrial sources - to the Superfund Program in 2004; the remainder of OU2—the on-site contamination—was referred in 2006.

Consistent with the Lead Handbook, the Superfund Program prioritized which homes needed to be cleaned up first based on the above-referenced sampling results. Specifically, residential parcels with lead concentrations in surface soils (0-6 inches) at or above 1,200 mg/kg were given priority. EPA does not consider the 1,200 mg/kg concentration as an action level for removal actions but this level does provide an alternative to running the Integrated Exposure Uptake Biokinetic (IEUBK) model with limited data to determine if the site poses an urgent threat.

On January 22, 2008, EPA signed the original action memorandum to conduct a time-critical removal action in OU1 to address known parcels with lead levels in surface soil that exceeded 1,200 mg/kg. These parcels had been identified as part of the RCRA Corrective Action residential investigation. The EPA identified 15 private parcels that contained soil with lead concentrations that exceeded 1,200 mg/kg in the top six inches of soil. On June 9, 2008, the EPA initiated the time-critical removal action to address the 15 residential parcels with lead levels that exceeded 1,200 mg/kg. On August 13, 2008, the EPA amended the original action memorandum to increase the project ceiling by $511,950 for a total of $984,060. The EPA was able to obtain access agreements and remediate 13 of the 15 parcels; two parcels were not remediated. The removal action was completed on November 18, 2008. In total, 1,838 tons of lead-contaminated soil were removed and disposed of at an approved landfill.

A Remedial Investigation (RI) was conducted from 2009 through 2010 to collect additional soil data in OU1, which EPA later divided for implementation of the remedy into Zone 1, Zone 2, and Zone 3. As a result of the sampling, EPA discovered an additional 14 areas within OU1 with lead levels that exceeded the removal action level of 1,200 mg/kg. On September 11, 2011, EPA signed the second amendment to the original action memorandum, which increased the total project ceiling to $1,928,460. On October 11, 2011, EPA started the time-critical removal action involving lead-contaminated soil removals at five West Calumet Housing Complex (WCHC) addresses (located in Zone 1) and nine other residential parcels outside the WCHC. In addition, two parcels that were not remediated during the previous removal action in 2008 because of access issues were remediated during this removal action. The removal action was completed on December 9, 2011. In total, 1,913 additional tons of lead-contaminated soil were removed and disposed of at an approved landfill as a result of the 2011 removal activities.

In November 2012, EPA issued a Record of Decision (ROD) for Operable Unit 1 (OU1) of the Site. EPA has divided OU1 into 3 separate zones for implementation of the remedy (Zones 1, 2, and 3). Residential yards within OU1 are contaminated with lead and arsenic at levels that pose a threat to human health through ingestion, inhalation and direct contact. EPA's selected remedy for OU1 addresses these risks from exposure to contaminated soils through the excavation and off-site disposal of lead or arsenic contaminated soils. The remedial action levels (RALs) for OU1 are 400 mg/kg for lead at residential parcels, 800 mg/kg for lead at industrial/commercial parcels, and 26 mg/kg for arsenic at both residential and industrial/commercial parcels.

ZONE 1 ACTIONS

From November 2014 through April 2015, EPA conducted more extensive soil sampling within Zone 1 as part of the remedial design process for OU1. EPA completed remedial designs for Zone 1, the WCHC, in the summer of 2016 Zone 1 includes approximately 118 separate

"parcels," including 111 parcels in the WCHC, three right-of-way parcels, and a school, park, recreation center, and maintenance facilities. EPA sampled all parcels in Zone 1 except a narrow strip of land on the east bank of the Indiana Harbor Canal. In May 2016, EPA received validated sampling results, which revealed lead concentrations in soil up to 24 inches in depth ranged from non-detect (ND) to 91,100 mg/kg for lead. Arsenic concentrations ranged from ND to 3,530 mg/kg (See Attachment V – Summary of OU1 RD Soil Sampling Results). Within Zone 1, a total of 117 parcels exceeded the removal management level (RML) for lead of 400 mg/kg for residential soil and 61 parcels exceeded the RML for arsenic of 68 mg/kg. Each of the parcels that exceeded the RML for arsenic also exceeded the RML for lead. Sample results from surface soils (0-6") indicated that lead concentrations at 13 parcels in the WCHC exceed 5,000 mg/kg with concentrations up to 45,000 mg/kg.

On July 29, 2016, EPA initiated in-house sampling for dust collection in the WCHC in Zone 1 to determine lead concentrations in homes. EPA was concerned about the elevated levels of lead in surface soils within the WCHC and the likelihood that lead contaminated soil/dust was being tracked or blown into the housing units. EPA prioritized homes for sampling based on residency of sensitive populations and the lead concentration in the soils of the yard. The prioritization process included homes occupied by a child with an elevated blood lead level (EBLL) as determined by reference to records from Indiana State Department of Health (ISDH), and homes with elevated soil lead concentrations in their yards. As of January 9, 2017, EPA had received validated results from 269 residences. Concentrations ranged from 3.9 to 32,000 mg/kg for lead fines and 0.077J (J means the associated value is the approximate concentration) to 880 mg/kg for arsenic fines. Indoor dust results from 110 out of the 269 sampled residences exceeded the EPA screening level of 316 mg/kg for lead for indoor living spaces (See Attachment VII – Indoor Dust Screening Criteria for Lead).

Lead Inspectors from the Indiana State Department of Health (ISDH) accompanied EPA into 28 of the initial 42 residences in Zone 1 and conducted a separate inspection for compliance with lead paint abatement policies. Wipe samples were collected from floors, interior window sills, and window troughs and compared to HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (2012 Edition) (40 $\mu g/ft^2$ - floors, 250 $\mu g/ft^2$ - window sills, and 400 $\mu g/ft^2$ - window trough). Wipe samples from six of the initial 14 units sampled were above the respective lead dust clearance standards (see Attachment VIII - Indiana State Department of Health Wipe Sample Results). Evidence of lead based paint was not found by ISDH in any of the Zone 1 inspected units based on X-Ray fluorescence (XRF) screening of painted surfaces. EPA contractors performed side by side XRF screening of painted surfaces and compared their results with the ISDH's findings; EPA's findings were consistent with the findings of ISDH. Following this comparison, EPA contractors continued screening properties with an XRF.

On August 12, 2016, EPA began to clean the inside of residences in the WCHC to remove lead contaminated dust. A combination of HEPA vacuums and wet cleaning were used to remove lead dust from ceilings, floors, carpets, walls, drapes, accessible ductwork, furnace, and furniture. As of November 7, 2016, EPA had cleaned approximately 270 out of 334 occupied units. Residents were temporarily relocated during the cleaning process and clearance sampling was conducted as necessary to document the efficacy of the cleaning.

The Agency for Toxic Substances and Disease Registry (ATSDR) is working with the East Chicago Health Department (ECHD), which is conducting an ongoing exposure investigation of blood lead levels of residents in the WCHC. The following is a summary of the findings from screenings of children living in the WCHC, which is derived from both historical data and the on-going blood lead testing campaign being conducted by ECHD:

- From the most recent ECHD testing in summer 2016, 18 out of 94 (19%) tested children from the WCHC under age six were identified with elevated blood lead (EBL) levels (> 5 µg/dL) based on capillary (finger stick) measurements.

- From 2014 through 2015, 26% of children under age seven tested at the WCHC were identified with EBL levels, with the highest measurement at 33 µg/dL in a one-year-old child. Within the same period, the census tract that includes all of the children from the WCHC (Zone 1) and part of Zone 2 had an EBL incidence rate of 22%. By comparison, the EBL rates for the two adjacent census tracts were 9% and 11%.

- The ATSDR Exposure Investigation conducted in the West Calumet neighborhood in 1997 showed a 35% EBLL incidence rate, which was defined at that time as greater than 10 µg/dL.

These observations by ATSDR, ISDH, and ECHD across almost 20 years demonstrate a consistent pattern of elevated blood lead levels in young children living in OU1. Given that the ISDH Lead Inspectors found no lead-based paint in recently sampled units within the WCHC, it is likely that exposure to soil-based lead contamination in the WCHC and portions of Zone 2 is a principle cause of elevated blood lead levels in children there.

ZONE 2 ACTIONS

Beginning in July 2016, EPA began conducting more extensive soil sampling within Zone 2 as part of the RD process for OU1. Zone 2 includes approximately 590 separate "parcels." Most of these parcels are residential parcels, though there are some commercial/industrial parcels and some of the residential parcels contain multi-family residences. As of February 7, 2017, EPA has sampled 499 properties in Zone 2, of which 404 properties have results that exceed the RALs for lead (400 mg/kg) and/or arsenic (26 mg/kg). The concentrations in surface soils range from 13 to 17,500 mg/kg for lead and 2.2 to 210 mg/kg arsenic.

In the fourth amendment to the action memorandum, EPA defined priority properties as those with surface (0 – 6 inches) soil values for lead at or above 1,200 mg/kg or arsenic at or above 68 mg/kg. Of the properties that exceeded the RMLs, 47 properties were deemed priorities.

Beginning on November 1, 2016, EPA performed removal actions to excavate and dispose of contaminated soil from those properties where lead and/or arsenic contamination in the top six inches exceeded 1,200 mg/kg or 68 kg/mg, respectively. During the fall 2016 construction season, EPA performed removal actions at 17 properties in Zone 2, including the 10 properties initially identified when the fourth amendment to the action memorandum was signed.

As a part of the larger USS Lead Site response and in conjunction with the 17 soil removal actions performed in the fall of 2016, EPA conducted interior dust sampling in residences at those properties (some properties are multiunit residences) to determine whether contaminated dust was present at concentrations that exceed screening levels established for arsenic and lead based on the August 10, 2016 (lead) and December 13, 2016 (arsenic) recommendations of the EPA-Region 5 toxicologist and in consultation with ATSDR. Dust sampling was conducted in high traffic areas of the interior of a residence to evaluate if contamination has been tracked into the home and whether it may pose a potential health risk. The lead based paint screening procedures, conducted by EPA contractors, were also used at a few homes in Zones 2 and 3 as a part of the interior dust sampling process.

Indoor dust sampling was offered to all Zone 2 priority properties where EPA had performed exterior soil remediation. EPA sampled 30 residences in Zone 2 for dust and identified 15 residences with lead or arsenic levels above the site specific screening values. Interior cleanings were conducted at 14 of those residences (one property owner deferred cleaning to Spring 2017).

ZONE 3 ACTIONS

On October 2, 2016, EPA initiated excavation activities in Zone 3. The excavation activities were performed consistent with the terms of a Consent Decree entered into in 2014 by the federal government, State of Indiana and certain private entities. Property specific design drawings prescribed dig depths for each property based on sampling data generated during the remedial design process. As of December 14, 2016, EPA had completed excavations at 37 priority properties and 1 park (Riley Park) in Zone 3. The work included excavation of the contaminated soil and its replacement with clean dirt fill, topsoil, and sod.

As in Zone 2, EPA offered to perform indoor sampling at all properties in Zone 3 that had their soil remediated. The lead based paint screening procedures, conducted by EPA contractors, were also used at a few homes in Zone 3 as a part of the interior dust sampling process. As of January 9, 2017, 36 priority residences in Zone 3 have had interior dust sampling completed and have validated data. Laboratory results indicated 17 residences exceed the interior dust screening levels of 316 mg/kg for lead and/or 26 mg/kg for arsenic (See Attachment V – Summary of OU1 Interior Dust Sampling Results for Zone 3). This exceedance rate is consistent with the exceedance rates in both Zones 1 and 2. To date, EPA has identified one residence in Zone 3 as having lead based paint inside the structure. EPA intends to perform additional lead based paint screenings during future sampling events.

2. Physical Location

The U.S.S. Lead Site lies approximately 18 miles southeast of Chicago, Illinois, in East Chicago, Indiana (Figure 1). The Site consists of the former U.S.S. Lead facility located at 5300 Kennedy Avenue, East Chicago, Indiana (designated as Operable Unit 2 (OU2)) and the residential area to the north and northeast (defined as OU1). OU1 is bound by East Chicago Avenue on the north, East 151st Street/149th Place on the south, the Indiana Harbor Canal on the west, and Parrish Avenue on the east. OU1 includes about 1200 homes, a small number of parks, open space as a part of the railroad right-of-way, schools, and public buildings. For the purpose of implementing

the remedial action (RA) in OU1, EPA has divided OU1 into three distinct geographic areas (Zones 1, 2, and 3). The actions authorized by this fifth amendment are taking place in OU1, Zones 2 and 3. Zone 2 is generally bordered: (1) on the north by Chicago Avenue; (2) on the east, by Elgin, Joliet Railroad; (3) on the south by East 151st Street; and (4) on the west by: (i) the Indiana Harbor Canal between Chicago Avenue and the northern boundary of the Carrie Gosch Elementary School; (ii) the eastern-most edge of a north/south utility right of way that runs parallel to McCook Avenue until East 149th Place, and (iii) McCook Avenue between East 149th Place and 151st Street. Zone 3 is adjacent to and directly east of Zone 2 and is generally bordered: (1) on the north by East Chicago Avenue; (2) on the east by Parrish Ave; (3) on the south by East 149st Street; and (4) on the west by the Elgin, Joliet Railroad.

The EPA conducted an EJ analysis for the Site (see Attachment I). Screening of the surrounding area was conducted using Region 5's EJ Screen Tool. Region 5 has reviewed environmental and demographic data for the area surrounding the U.S.S. Lead Site and has determined there is high potential for EJ concerns at this location.

3. Site Characteristics

OU1 includes about 1,200 homes, a small number of parks, open space as a part of the railroad right-of-way, schools, and public buildings. OU1 is primarily a residential area, which includes commercial and light industrial areas. Some parcels in the residential area in Zones 1, 2 and 3 have levels of lead in soils above EPA's RML of 400 mg/kg and arsenic above the RML of 68 mg/kg. Indoor dust sampling of residential properties in OU1 has lead and arsenic dust values above the site specific screening level.

United States Geological Survey (USGS) historical aerial photographs from 1939, 1951, 1959, and 2005 show OU1 over time. Review of these aerial photographs indicates that most of the residential neighborhoods within the Site west of the railroad tracks were built before 1939. By 1951, approximately 75 to 80 percent of the homes were built; by 1959, most of the homes east of the railroad tracks had also been built. These photographs also show that the International Smelting and Refining Company, a subsidiary of the Anaconda Copper Company (whose successor in interest is now the Atlantic Richfield Company [ARC]) occupied the area where the WCHC is currently located (Zone 1 in the southwest portion of OU1) prior to 1946. Title records indicate that the East Chicago Housing Authority constructed the WCHC on the former Anaconda Copper Mining Company/International Smelting and Refining Company site between 1970 and 1973.

The U.S.S. Lead facility was a primary and secondary smelter of lead. It began operations around 1906 and ended operations in 1985. From about 1920 until 1973, the facility was a primary smelter of lead but also conducted secondary smelting operations. The primary smelting operations included a refining process to create high quality lead free of bismuth. From 1973 until its closure in 1985, the facility was exclusively a secondary smelter. The secondary refinery operations included: battery breaking with tank treatment of spent battery acid at a rate of 16,000 gallons per day; baghouse dust collection with storage in on-site waste piles of up to 8,000 tons of flue dust; and blast furnace slag disposal, which was deposited in the wetland adjacent to and along the southern boundary of the facility (OU2). The blast-furnace baghouse

collected approximately 300 tons of baghouse flue dust per month during maximum operating conditions. Some of the flue dust escaped the baghouse capture system and was deposited by the wind within the boundaries of OU1. Secondary lead recovery operations ceased in 1985.

In addition to the U.S.S. Lead facility operation, other industrial operations have managed or processed lead and other metals and are likely sources of contamination in OU1. Immediately east of the U.S.S. Lead facility and south of Zone 3 is the former DuPont site (currently leased and operated by W.R. Grace & Co., Grace Davison). One of the processes that historically took place at the DuPont site was the manufacturing of a lead arsenate pesticide. In 2015, DuPont spun off certain assets and liabilities to a newly created company, The Chemours Company FC, LLC (Chemours). Chemours is now the owner of the former DuPont facility.

North of the former U.S.S. Lead facility stood two lead processing operations, which processed lead and other metals. A 1930 Sanborn map identifies the operations as Anaconda Lead Products and International Lead Refining Company (referred to as the former Anaconda facility). Anaconda Lead Products was a manufacturer of white lead and zinc oxide and the International Lead Refining Company was a metal refining facility. These facilities consisted of a pulverizing mill, white lead storage areas, a chemical laboratory, a machine shop, a zinc oxide experimental unit building and plant, a silver refinery, a lead refinery, a baghouse, and other miscellaneous buildings and processing areas. The International Lead Refining Company was a subsidiary of the Anaconda Copper Mining Company. Title to the property in Zone 1 was held between 1934 and 1946 by International Lead Smelting and Refinery Company. International Lead Smelting and Refinery Company acquired titled to the property in Zone 1 in 1934 from International Lead Refining Company, which had acquired title in 1912.

The residential area that comprises Zones 2 and 3 has been contaminated by the deposition of contaminants from the U.S.S. Lead facility, Anaconda Copper Mining Company/International Lead Smelting and Refinery Company facility, and DuPont/Chemours facility. The focus of this time-critical removal action is two-fold: The first focus is the removal of exterior lead and/or arsenic contaminated soils from two additional categories of priority properties: (1) residences where sensitive populations (i.e., pregnant women and/or children 6 years of age and under) live *and* the top six inches of soil associated with the residence has lead in excess of 400 mg/kg; (2) residences where a child has a blood lead level above 10 ug/dL and the top 24 inches of soil associated with the residence has lead in excess of 400 mg/kg. The second focus is the interior sampling and cleaning of residences in Zones 2 and 3 that have associated soils which require or required remediation. Approximately 81% of the properties in Zone 2 and 51% of the properties in Zone 3 require or required soil remediation. Based on data generated during work performed during the 2016 construction season, EPA anticipates that 50% of residences in both Zones 2 and 3 which require exterior soil remediation will also require interior cleaning.

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

The threat is presented by the presence of lead and arsenic-contaminated soil in residential yards and lead and arsenic contaminated dust within some of the residences in Zones 2 and 3. The presence of lead and arsenic in outdoor soils and in indoor dust at concentrations above health

screening values provides a constant source of exposure for individuals both outside and while in the home. Lead and arsenic are hazardous substances as defined by section 101(14) of CERCLA. *See* 40 C.F.R. § 302.4. Nearby lead processing operations caused extensive lead and arsenic contamination in soils throughout the Site. This removal is responding to actual and potential outdoor lead and arsenic contamination, as well as potential indoor contamination caused by the migration of lead and arsenic contaminated soil from outdoors to indoors (like the source of contamination found in Zone 1). The presence of elevated lead and arsenic levels in surface soils and potential presence of lead and arsenic in indoor dust in Zones 2 and 3 makes this a time-critical removal action.

Exposure may occur from direct ingestion of soil in yards, soil tracked indoors, or house dust; and inhalation of fugitive dust. Potential human receptors include residents, including children six years of age and under, and pregnant or nursing women.

Lead exposure via inhalation and/or ingestion can have detrimental effects on almost every organ and system in the human body. Exposure may occur from direct ingestion of soil in yards, soil tracked indoors (house dust), and inhalation of fugitive dust. Lead can cause a variety of health problems to people who are exposed to it. Potential human receptors include residents, with a particular concern for children six years of age and under and pregnant or nursing women. Children are at greatest risk from the toxic effects of lead. Initially, lead travels in the blood to the soft tissues (heart, liver, kidney, brain, etc.). Then, it gradually redistributes to the bones and teeth where it tends to remain. Children exposed to high levels of lead have exhibited nerve damage, liver damage, colic, anemia, brain damage, and death. The most serious effects associated with markedly elevated blood lead levels include neurotoxic effects such as irreversible brain damage.

Ingesting very high levels of arsenic can result in death. Exposure to lower levels can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, damage to blood vessels, and a sensation of "pins and needles" in hands and feet. Ingesting or breathing low levels of inorganic arsenic for a long time can cause a darkening of the skin and the appearance of small "corns" or "warts" on the palms, soles, and torso. Skin contact with inorganic arsenic may cause redness and swelling. Several studies have shown that ingestion of inorganic arsenic can increase the risk of skin cancer and cancer in the liver, bladder, and lungs. Inhalation of inorganic arsenic can cause increased risk of lung cancer. The Department of Health and Human Services (DHHS) and the EPA have determined that inorganic arsenic is a known human carcinogen (ATSDR, Chemical Abstract Services [CAS] # 7440-38-2], August 2007).

5. NPL status

The U.S.S. Lead Site consisting of both the former U.S.S. Lead facility (OU2) and the Calumet neighborhood to the north (OU1) was listed as a Superfund site on the National Priorities List (NPL) on April 8, 2009. EPA began the RI for OU1 on June 26, 2009. During December 2009 and August 2010, EPA contractors sampled yards in residential areas and background locations. In June 2012, EPA completed a preliminary remedial investigation and feasibility study to determine the level and extent of lead and arsenic contamination within OU1 and proposed a

remedy. In November 2012, after considering comments received from the City and IDEM, EPA outlined the long-term permanent cleanup plan in a Record of Decision for OU1. EPA has completed the remedial designs for work in Zone 1 and most of Zone 3. EPA is in the process of completing the remedial designs for Zone 2.

6. Maps, pictures and other graphic representations

Maps include:

Figure 1 – USS Lead and Lead Refinery, E. Chicago, IN. Location Map
Figure 2 – OU1 Zones 1, 2, and 3 – Location Map

B. Other Actions to Date

On January 22, 2008, EPA signed the original action memorandum to conduct a time-critical removal action in OU1 to address known parcels with lead levels that exceeded the removal action limit of 1,200 mg/kg. These parcels were identified based on sampling data collected during the RCRA Corrective Action investigation. That removal action began on June 9, 2008, and involved the excavation and off-site disposal of lead contaminated soil from 13 residential parcels. On August 13, 2008, EPA amended the original action memorandum to increase the project ceiling in order to complete the ongoing, time-critical removal action. In total, 1,838 tons of lead-contaminated soil were removed and disposed of at an approved landfill. Excavated areas were backfilled with clean fill and seeded. This removal action was completed on September 25, 2008, and the final Pollution Report was issued on November 18, 2008.

On September 12, 2011, EPA signed a second amendment to the action memorandum – which is an extension of the original memorandum - to conduct a time-critical removal action in Zones 1, 2, and 3 of OU1 to address 16 parcels (including the 2 that were missed in 2008) with lead levels exceeding the removal action limit of 1,200 mg/kg. These parcels were identified based on sampling data collected during the RI. This removal action began on October 24, 2011, and involved the excavation and off-site disposal of lead contaminated soil from 16 residential parcels. In total, 1,913 tons of lead-contaminated soil were removed and disposed of at an approved landfill. Excavated areas were backfilled with clean fill and seeded. This removal action was completed on December 9, 2011, and the final Pollution Report was issued on December 15, 2011.

On August 2, 2016, and continuing throughout the month of August, verbal authorizations were provided for emergency removal actions within the West Calumet Housing Complex for the purpose of conducting indoor home cleanings and the temporary relocation of residents during the cleanings. On September 20, 2016, EPA approved a third amendment to the action memorandum. The third amendment authorized the continuation of the activities within the WCHC.

On October 2, 2016, pursuant to the Consent Decree referenced above, EPA started excavation activities at 38 high priority properties in Zone 3 of OU1. As of December 14, 2016, 31 properties in Zone 3 have been excavated, backfilled and fully restored. An additional 7

properties in Zone 3 have been excavated and backfilled, but will require sod placement in the Spring of 2017.

On October 28, 2016, EPA signed a fourth amendment to the action memorandum to conduct a time-critical soil removal actions in Zone 2 for priority properties. On November 1, 2016, soil excavations commenced in Zone 2 on 17 properties. By December 14, 2016, all 17 properties in Zone 2 were excavated, backfilled and fully restored

As a part of the soil removal work in Zones 2 and 3, EPA conducted interior dust sampling to determine whether contaminated dust is present at concentrations that exceed screening levels established for arsenic and lead based on the August 10, 2016 (lead), and December 13, 2016 (arsenic) recommendations of EPA's toxicologist. In Zone 2, 15 of the 30 residences that were sampled had results that exceed the screening levels. Pursuant to the fourth amendment, EPA completed cleaning 14 of these 15 by the end of 2016 (one property owner deferred cleaning to Spring 2017). As of January 9, 2017, 17 of the 36 sampled residences in Zone 3 have results that exceed the screening levels (3 residences exceeded for arsenic only and 14 residences for lead or both lead and arsenic).

C. State and Local Authorities' Roles

1. State and Local Actions to Date

On August 24, 2016, Rex Osborn, Federal Programs Section Chief with IDEM, sent an email that indicated the State of Indiana does not have the financial resources to eliminate the threat posed by lead-contaminated soil in yards and lead-contaminated dust within the residences, or to fund temporary relocations. Neither the State of Indiana nor the City of East Chicago have taken or have the capacity to take action to abate the immediate threat.

2. Potential for Continued State/Local Response

The EPA is working with ATSDR, the East Chicago Health Department, the Indiana State Department of Health, and City of East Chicago elected officials to provide information to the public. EPA is coordinating discussions with stakeholders regarding the elevated levels of lead and arsenic in soil and dust, as well as EPA's plans to address these issues. Neither the state nor local officials have the resources to conduct the necessary cleanup of the indoor dust contamination or to provide for the temporary relocation of residents.

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

The conditions at Zones 2 and 3 of the U.S.S. Lead Site present a threat to the public health or welfare and the environment and meet the criteria for a time-critical removal action as provided for in the NCP, 40 C.F.R. § 300.415(b)(1), based on the factors in 40 C.F.R. § 300.415(b)(2). These factors include, but are not limited to, the following:

§ 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;

On October 2, 2016, EPA commenced excavation activities in Zone 3 to remove contaminated soil from high priority properties. To date, EPA has identified 250 properties above the remedial action level in Zone 3. In 2016, EPA remediated the soil in 38 high priority properties in Zone 3 (37 residential and 1 park). EPA conducted indoor dust sampling in conjunction with the yard excavations to fully evaluate the extent of contamination and to determine if exterior soils have migrated into homes. As of January 9, 2017, EPA has validated dust samples at 36 residential properties in Zone 3. Of the 36 residences, EPA has determined that 17 have levels above the established screening values (316 mg/kg for lead [fine fraction dust] and 26 mg/kg for arsenic [fine fraction]). Three residences had only arsenic values above the screening level with values ranging from 33 to 310 mg/kg. Fifteen residences exceeded the screening levels for lead or both lead and arsenic with lead values ranging from 330 to 1,200 mg/kg (attachment V).

Similarly, in 2016 EPA performed removal actions at 17 properties in Zone 2 and sampled 30 residences at those properties for lead and/or arsenic contaminated dust. EPA identified 15 residences with lead or arsenic levels above the site specific screening values. Interior cleanings were conducted at 14 of those residences (one property owner deferred cleaning to Spring 2017).

EPA expects to find similar exceedance rates in the interior of the remaining properties that still require outdoor soil remediation. High lead or arsenic concentrations in indoor dust are a risk to human health, particularly for children under the age of seven, because the contaminated dust may be ingested or an occupant or visitor may come into direct contact with the contaminated dust.

Pursuant to this fifth amendment, EPA is defining priority properties for the purposes of time-critical removal action as those with one or more of the following present: (1) surface soil (0-6 inches) with lead concentrations at or above 1,200 mg/kg and/or arsenic concentrations at or above 68 mg/kg, (2) residences with sensitive populations (children under 7 years of age and/or pregnant women) and surface soils (0-6 inches) with lead concentrations in excess of 400 mg/kg, and (3) children residing at a residence with blood lead levels at or above 10 µg/dL. Of the 404 Zone 2 properties with soil results that exceed the RALs, 72 have been identified as priority properties under this fifth amendment. 34 properties in Zone 2 have surface soils at 1,200 mg/kg or greater for lead and/or 68 mg/kg for arsenic, and 38 residential properties in Zone 2 have surface soils at 400 mg/kg or greater for lead and with sensitive populations present.

Lead is a hazardous substance, as defined by Section 101(14) of CERCLA. The effects of lead are the same whether it enters the body through breathing or swallowing. Lead can affect almost every organ and system in the body. The main target for lead toxicity is the nervous system, both in adults and children. Long-term exposure of adults can result in decreased performance in some tests that measure functions of the nervous system. It may also cause weakness in fingers, wrists, or ankles. Lead exposure also causes small increases in blood pressure, particularly in middle-aged and older people and can cause anemia. Exposure to high lead levels can severely damage the brain and kidneys in adults or children and ultimately cause death. In pregnant

women, high levels of exposure to lead may cause miscarriage. High-level exposure in men can damage the organs responsible for sperm production.

Arsenic is a hazardous substance under CERCLA and may be ingested or inhaled by residents living at the Site. Acute (short-term) high-level inhalation exposure to arsenic dust or fumes has resulted in gastrointestinal effects (nausea, diarrhea, abdominal pain); central and peripheral nervous system disorders have occurred in workers acutely exposed to inorganic arsenic. Chronic (long-term) inhalation exposure to inorganic arsenic in humans is associated with irritation of the skin and mucous membranes and effects in the brain and nervous system. Chronic oral exposure to elevated levels of inorganic arsenic has resulted in gastrointestinal effects, anemia, peripheral neuropathy, in humans. Chronic exposure by the inhalation route has been shown to cause a form of skin cancer and also to cause bladder, liver, and lung cancer. EPA has classified inorganic arsenic as a human carcinogen.

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

At this time, no local or state agency has the resources to respond to the immediate threat.

IV. EXEMPTION FROM STATUTORY LIMITS

Section 104(c) of CERCLA, as amended by the Superfund Amendments and Reauthorization Act (SARA), limits a removal action to 12 months and $2 million unless continued response actions are immediately required to prevent, limit or mitigate an emergency (i.e., the emergency exemption) or is appropriate and consistent with the remedial action to be taken (i.e., the consistency exemption). This removal action continues to meet the exemption criteria stated in the Fourth Action Memorandum Amendment transmitted from Region 5 to EPA Headquarters on October 24, 2016, and signed by the Assistant Administrator of the Office of Land and Emergency Management on October 28, 2016: there is an immediate risk to public health or welfare or the environment; continued response actions are immediately required to prevent, limit, or mitigate an emergency; and assistance will not otherwise be provided on a timely basis.

V. ENDANGERMENT DETERMINATION

Given the Site conditions, the nature of the known and suspected hazardous substances on-site, and the potential exposure pathways described in Sections II. and III. above, actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response actions selected in this Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment.

VI. PROPOSED ACTIONS

The response actions described in this memorandum directly address actual or potential releases of hazardous substances on Site that pose an imminent and substantial endangerment to public health, welfare, or the environment.

The actions proposed for authorization in this memo are twofold. The first is to authorize indoor actions including indoor sampling and indoor cleaning in Zones 2 and 3. These indoor actions are consistent with interior work currently approved in the Fourth Amendment except that: (1) the interior screening level for arsenic has been lowered from 100 mg/kg to 26 mg/kg; and (2) based on the knowledge that EPA gained in the fall 2016 cleaning, temporary relocation as an option during interior cleanings can be more carefully circumscribed. While the fourth amendment authorized EPA to temporarily relocate residents to undertake cleaning, EPA did not in fact have to do so. Thus, EPA has determined that temporary relocation of residents during cleanings in either Zone 2 or Zone 3 should be considered only on a case-by-case basis and only where compelling circumstances justify the need to relocate the resident(s) during the cleaning and the cleaning cannot be effectuated without the temporary relocation.

The second action proposed for authorization is soil removal actions at properties in Zone 2 beyond those authorized in the Fourth Amendment.

EPA may seek an additional ceiling request if the cost estimate provided in this action memorandum proves to be inaccurate.

Exterior Soil Removal Actions

The fourth amendment to the action memorandum authorized the excavation and removal of lead and arsenic-contaminated soils at residential parcels within Zone 2 with surficial soil concentrations at or above 1,200 mg/kg for lead and/or at or above 68 mg/kg for arsenic. This fifth amendment to the action memorandum expands the definition of priority property to include properties within Zone 2 with (1) surficial soil concentrations at or above 400 mg/kg for lead if a member of a sensitive population (e.g., pregnant women, children under the age of 7) resides at that property; and (2) lead soil concentrations in the first 24 inches bgs at or above 400 mg/kg if a child residing at the property has a blood lead level at or above 10 ug/dL. The response actions are consistent with the (OSWER) Publication 9285.7-50 *Superfund Lead-Contaminated Residential Sites Handbook* (Handbook) (2003), where the Superfund Program uses a tiered approach to prioritize which soils need to be cleaned up first. The two categories added by this Fifth Amendment are prioritized for immediate action under a time-critical removal action in the same manner as residential parcels with lead concentrations in surface soil at or greater than 1,200 mg/kg.

For cost accounting purposes, EPA has identified a total of 72 properties in Zone 2 which require time-critical removal action: 34 properties have surficial soils with lead concentrations at or greater than 1,200 mg/kg and/or arsenic concentrations at or greater than 68 mg/kg, and 38 residential properties have surficial soils with lead concentrations at or greater than 400 mg/kg where a sensitive population also resides. (EPA is not aware at this time of any properties where a child with blood lead levels at or above 10 µg/dL resides where lead soil concentrations exist in the top 24 inches bgs at or above 400 mg/kg.) These properties were identified based on the latest validated remedial design data for Zone 2 and information collected when securing access agreements. The actual number of properties subject to removal action may change due to additional properties being sampled, or more information being gathered about where sensitive

populations or children with elevated blood lead levels currently live, or additional sensitive populations/children with elevated blood lead levels moving into a Zone 2 residence.

Removal activities associated with the excavation of lead and/or arsenic contaminated soil from properties in Zone 2 will include:

1. Development of site plans, including a Work Plan, Sampling Plan/QAPP, site-specific HASP, and Emergency Contingency Plan;

2. Development of an air monitoring plan and conduct dust control measures to ensure worker and public health protection;

3. Provision for site security measures as necessary;

4. Excavation of soil at parcels where lead in the top six inches of soil is equal to or exceeds 1,200 mg/kg and/or arsenic is equal to or exceeds 68 mg/kg, as determined by EPA's RD sampling. Soil will be excavated to a depth of approximately two feet bgs, to eliminate any direct contact and inhalation threats. Excavated material that fails toxicity characteristic leaching procedure (TCLP) for lead may be treated with a fixation agent prior to disposal. Excavation will cease if lead and/or arsenic concentrations are less than 400 mg/kg for lead and 26 mg/kg for arsenic;

5. Excavation of soil at residential parcels where lead in the top six inches is equal to or exceeds 400 mg/kg, as determined by EPA's RD sampling, and where a member of a sensitive population resides (children 6 years old and under or a pregnant woman). Soil will be excavated to a depth of approximately two feet bgs, to eliminate any direct contact and inhalation threats. Excavated material that fails toxicity characteristic leaching procedure (TCLP) for lead may be treated with a fixation agent prior to disposal. Excavation will cease if lead and/or arsenic concentrations are less than 400 mg/kg for lead and 26 mg/kg for arsenic;

6. Excavation of soil at residential parcels where lead in the top twenty-four inches is equal to or exceeds 400 mg/kg, as determined by EPA's RD sampling, and where a child with a blood lead level of 10 ug/dL or greater resides. Soil will be excavated to a depth of approximately two feet bgs, to eliminate any direct contact and inhalation threats. Excavated material that fails toxicity characteristic leaching procedure (TCLP) for lead may be treated with a fixation agent prior to disposal. Excavation will cease if lead and/or arsenic concentrations are less than 400 mg/kg for lead and 26 mg/kg for arsenic;

7. Collection and analysis of confirmation samples from the bottom of each excavation. If lead levels below 400 mg/kg or arsenic levels below 26 mg/kg cannot be achieved at an excavation depth of approximately two feet bgs, excavation will cease and a visible barrier will be placed at the bottom of the excavation to alert the property owner of the existence of high levels of lead and/or arsenic. In such instances and consistent with the Record of Decision, institutional controls (ICs) will be implemented as part of the

remedial action to ensure the users of the property are not exposed to the contaminants of concern in soil;

8. Replacement of excavated soil with clean soil, including 6 inches of top soil to maintain the original grade. Each yard will be restored as close as practicable to its pre-removal condition. Once the parcels are sodded or seeded, removal site control of the sod or seed, including, watering, fertilizing, and cutting, will be conducted for 30 days. After the initial 30-day period, property owners will be responsible for the maintenance of their own yards. The aforementioned work shall be documented in a Work Plan;

9. Transportation and disposal off-site of any hazardous substances, pollutants and contaminants at a CERCLA-approved disposal facility in accordance with EPA's Off-Site Rule (40 CFR § 300.440); and

10. Performance of any other response actions to address any release or threatened release of a hazardous substance, pollutant or contaminant that the EPA On-Scene Coordinator (OSC) determines may pose an imminent and substantial endangerment to the public health or the environment.

These removal activities prioritize imminent risks associated with high levels of soil lead contamination and are consistent with the *Superfund Lead-Contaminated Residential Sites Handbook* (2003), with current Removal Management Levels, and with Office of Land and Emergency Management Directive 9200.2-167. EPA will continue to review the protectiveness of any actions performed consistent with the remedy selected in the Record of Decision, in a manner consistent with EPA policies and guidance and EPA's obligations under 42 U.S.C. § 9621(c).

Interior Dust Removal Actions

Data results from the first 30 residences in Zone 2 sampled for indoor dust indicate that 15 of those residences exceed the EPA screening level of 316 mg/kg for lead and/or 26 mg/kg for arsenic. Similarly, data results from the first 36 residences in Zone 3 sampled for indoor dust indicate that 17 residences of those residences exceed the EPA screening level of 316 mg/kg for lead and/or 26 mg/kg for arsenic. These exceedance rates are consistent with the exceedance rate for residences in Zone 1, where it was determined that lead-based paint was not a contributing source to indoor dust contamination. Given the significant number of indoor dust samples from Zones 2 and 3 that exceed the screening levels, given the threat posed by high concentrations of lead or arsenic in soil in adjacent outdoor areas, and given the consistent pattern of EBL levels in children less than 6 years of age living in WCHC and portions of Zone 2, action is needed.

At all residences where soil remediation is required, EPA will offer to test indoor dust for lead and arsenic. EPA will also screen the residence for lead-based paint using an XRF. Indoor sampling/screening (and any necessary follow-up cleaning, as described below) will be offered after soil excavations to prevent potential recontamination to the dwelling. For residences that qualify for indoor cleaning by EPA, EPA will also take post-cleaning samples and compare these to World Trade Center (WTC) dust loading values to determine the efficacy of the cleaning.

(World Trade Center Indoor Environment Assessment: Selecting Contaminants of Potential Concern and Setting Health-Based Benchmarks; May 2003.)

EPA will offer to clean the inside of residences where indoor sampling results exceed the risk-based screening criteria if soils associated with those residences exceeded the remedial actions levels and have been remediated. A combination of HEPA vacuums and/or wet cleaning will be used to remove contaminated dust from floors, carpeting, upholstery, surfaces, and readily accessible elements of HVAC systems. EPA may also clean and/or replace HVAC and AC unit filters. Replacement of carpets/mats may be considered on a case-by-case basis if cleaning mechanisms fail to result in or, based on experience, will likely fail to result in, lead and arsenic loading numbers that are below the WTC cleanup efficacy criteria. EPA may re-clean a residence if post-cleaning samples are above the WTC dust loading values. However, EPA will not re-clean any residence where indoor sampling/screening indicates the presence of lead-based paint.

EPA will not temporarily relocate any residents during interior cleanings in Zones 2 or 3 unless, on a case-by-case basis, compelling circumstances justify the need to relocate the resident during the cleaning and the cleaning cannot be effectuated without the temporary relocation.

Given the risk of tracking and cross contamination from lead or arsenic contaminated soils identified at private properties and commonly used public properties, including Riley Park and Kennedy Gardens Park, EPA will also perform indoor dust sampling/lead paint screening at other Zone 2 and Zone 3 residences when specifically requested by residents. If indoor sampling results exceed the risk-based screening criteria, EPA will offer the resident the use of a HEPA vacuum for cleaning.

For cost accounting purposes, EPA anticipates the scope of these indoor removal actions in Zones 2 and 3 to include (1) approximately 700 to 800 residences for indoor sampling; and (2) approximately 350 to 400 residences for indoor cleaning. The interior sampling figures are based on an approximation of the number of residences associated with approximately 600 properties in Zones 2 and 3 that have exterior soil contamination that exceeds the RALs. The interior cleaning figures are 50% of the interior sampling figures based on past history. The past history is a relatively small data set, and the actual number of residences that require indoor cleaning may increase as more data is collected. This may result in additional ceiling increase requests.

Removal activities associated with indoor sampling, evaluation, and removal of contaminated dust in Zone 2 and Zone 3 homes will include:

1. Development and implementation of an indoor sampling/screening plan;

2. Development of a Work Plan and Site Specific Health and Safety Plan, including plans for indoor cleaning;

3. Provision for Site security, as directed by the OSC or RPM;

4. Performance of indoor cleaning as specified in the Site Work Plan;

5. On a case-by-case basis and only upon a showing of a compelling circumstances where the cleaning cannot otherwise be effectuated, temporary relocation of a resident(s) during the indoor cleaning; and

6. Transportation and disposal off-site of any hazardous substances, pollutants and contaminants at a CERCLA-approved disposal facility in accordance with EPA's Off-Site Rule (40 CFR § 300.440).

The Action Memorandum and supporting documentation follow the April 2002 Superfund Response Actions: Temporary Relocations Implementation Guidance, particularly in considering residents' needs, property security, dealing with residents' stress and disruptions, and explaining benefits. Consistent with EPA's guidance on temporary relocations (2002), Sec. IV.A ("Making the Relocation Decision"), temporary relocation at the Site is justified during the cleaning process by the following factor:

- Efficiency of response action: temporary relocation minimizes concerns about noise, property access, and other restrictions on the hours or types of response activities that may be conducted at the Site.

Both the exterior and interior removal actions will be conducted in a manner not inconsistent with the NCP.

The threats posed by uncontrolled substances considered hazardous meet the NCP criteria listed at § 300.415(b), and the response actions proposed herein are consistent with the remedial action to be taken.

Off-Site Rule

All hazardous substances, pollutants, or contaminants removed off-site pursuant to this removal action for treatment, storage, and disposal shall be treated, stored, or disposed of at a facility in compliance, as determined by EPA, with the EPA Off-Site Rule, 40 C.F.R. § 300.440.

1. Contribution to remedial performance

The proposed action should not impede future remedial performance.

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

Not Applicable

3. Applicable or relevant and appropriate requirements (ARARs)

All applicable or relevant and appropriate requirements (ARARs) will be complied with to the extent practicable. On August 18, 2016, EPA sent an e-mail to Rex Osborn of IDEM asking for any State of Indiana ARARs that may apply. IDEM provided both Action and Chemical specific

state ARARs in a letter dated August 26, 2016. EPA will consider and implement the submitted ARARs as appropriate.

Project Schedule

The time-critical removal actions will require approximately 528 working days to complete.

B. Removal Project Ceiling Estimate – Extramural Costs:

The detailed cleanup contractor cost is presented in Attachment 1 and the Independent Government Cost Estimate is presented in Attachment IV. Estimated project costs are summarized below:

REMOVAL ACTION PROJECT CEILING ESTIMATE

Extramural Costs	**Current Ceiling**	**Proposed Increase**	**Proposed Ceiling**
Regional Removal Allowance Costs			
Total Cleanup Contractor Costs (This costs category includes estimates for ERRS, subcontractors, Notices to Proceed, and Interagency Agreements with Other Federal Agencies and 20% Contingency)	$29,009,457	$1,359,154	$30,368,611
Other Extramural Costs Not funded from the Regional Allowance			
Total START including multiplier costs	$4,547,250	$1,127,500	$5,674,750
Subtotal			
Subtotal Extramural Costs	$33,556,707	$2,486,654	$36,043,361
Extramural Costs Contingency (20% of Subtotal, Extramural Costs rounded to nearest thousand for Proposed Increase)	$6,711,341	$497,331	$7,208,672
TOTAL REMOVAL ACTION PROJECT CEILING	**$40,268,048**	**$2,983,985**	**$43,252,033**

The response actions described in this memorandum directly address the actual or threatened release of hazardous substances, pollutants, or contaminants at the Site, which may pose an imminent and substantial endangerment to public health or welfare or to the environment. These response actions do not impose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

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

Given the Site conditions, the nature of the hazardous substances and pollutants or contaminants documented in Zones 2 and 3 of OU1, and the potential exposure pathways to nearby populations described in Section II. and Section III., above, actual or threatened releases of hazardous substances and pollutants or 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, welfare, or the environment.

VIII. OUTSTANDING POLICY ISSUES

None.

IX. ENFORCEMENT

For administrative purposes, information concerning the enforcement strategy for this Site is contained in the Confidential Enforcement Addendum.

The total EPA costs of this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be $71,929,729[1].

($43,252,033+ $2,000,000) + (61.96% x $45,252,033) = $73,290,193

[1] 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 direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgement 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.

X. RECOMMENDATION

This decision document, along with the Action Memorandum signed on January 22, 2008, and the Action Memorandum Amendments signed on August 13, 2008, September 12, 2011, October 13, 2016, and October 28, 2016, represents the selected removal action for the U.S. Smelter and Lead Refinery Site, Zone 3, OU1, East Chicago, Lake County, Indiana. This removal action is developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for the Site (Attachment II). Conditions at OU1, Zones 2 and 3 meet the NCP Section 300.415(b) criteria for a removal action and the CERCLA Section 104(c) emergency exemption from the $2 million and 12-month statutory limitations. The total removal action project ceiling, if approved, will be $43,252,033 of which as much as $35,343,361 may be used from the removal allowance. I recommend your approval of the proposed removal action. You may indicate your decision by signing below.

APPROVE _____ DATE: 3/14/2017
Barry N. Breen, Acting Assistant Administrator
Office of Land and Emergency Management

DISAPPROVE _____ DATE: _____
Barry N. Breen, Acting Assistant Administrator
Office of Land and Emergency Management

Enforcement Addendum

Figures:

Figure 1 – USS Lead and Lead Refinery, E. Chicago, IN. Location Map
Figure 2 – OU1 Zones 1, 2, and 3– Location Map

Attachments:

I. Environmental Justice Analysis
II. Administrative Record Index
III. Detailed Cleanup Contractor Estimate
IV. Independent Government Cost Estimate
V. Summary of OU1 RD Soil Sampling Results
VI. Indoor Dust Screening Criteria for Lead
VII. Indoor Dust Screening Criteria for Arsenic
VIII. Fourth Amended Action Memorandum dated October 13, 2016

cc: Brian Schlieger, U.S. EPA, 5104A/B517F **(Schlieger.Brian@epa.gov)**
Lindy Nelson, U.S. DOI, **w/o Enf. Addendum (Lindy_Nelson@ios.doi.gov)**
Rex Osborn, IDEM **w/o Enf. Addendum (rosborn@idem.in.gov)**

BCC PAGE HAS BEEN REDACTED

NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

ENFORCEMENT ADDENDUM

HAS BEEN REDACTED – FOUR PAGES

ENFORCEMENT CONFIDENTIAL

NOT SUBJECT TO DISCOVERY

FOIA EXEMPT

NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

Figure 1
Site Location
USS Smelter and Lead Refinery, East Chicago, IN

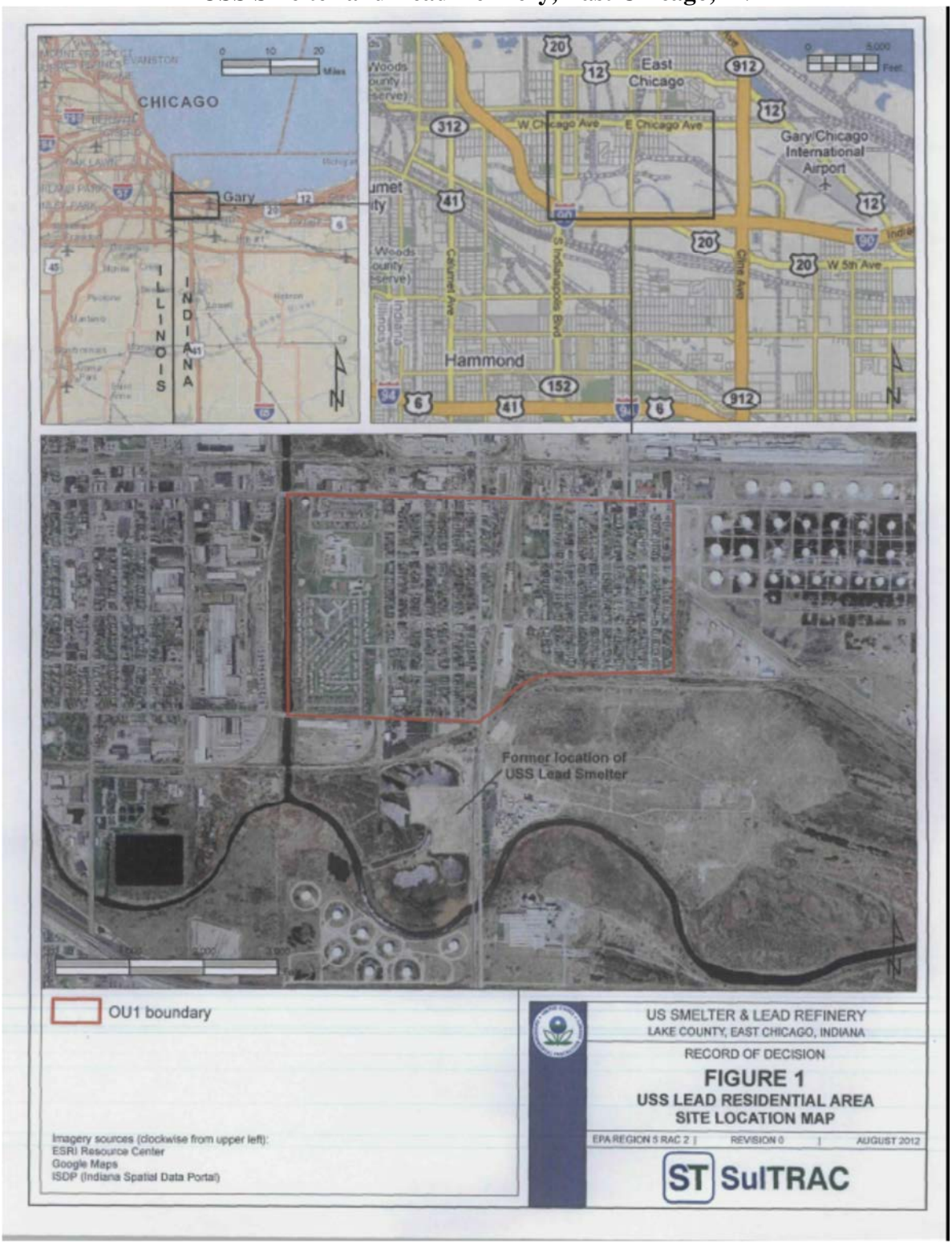
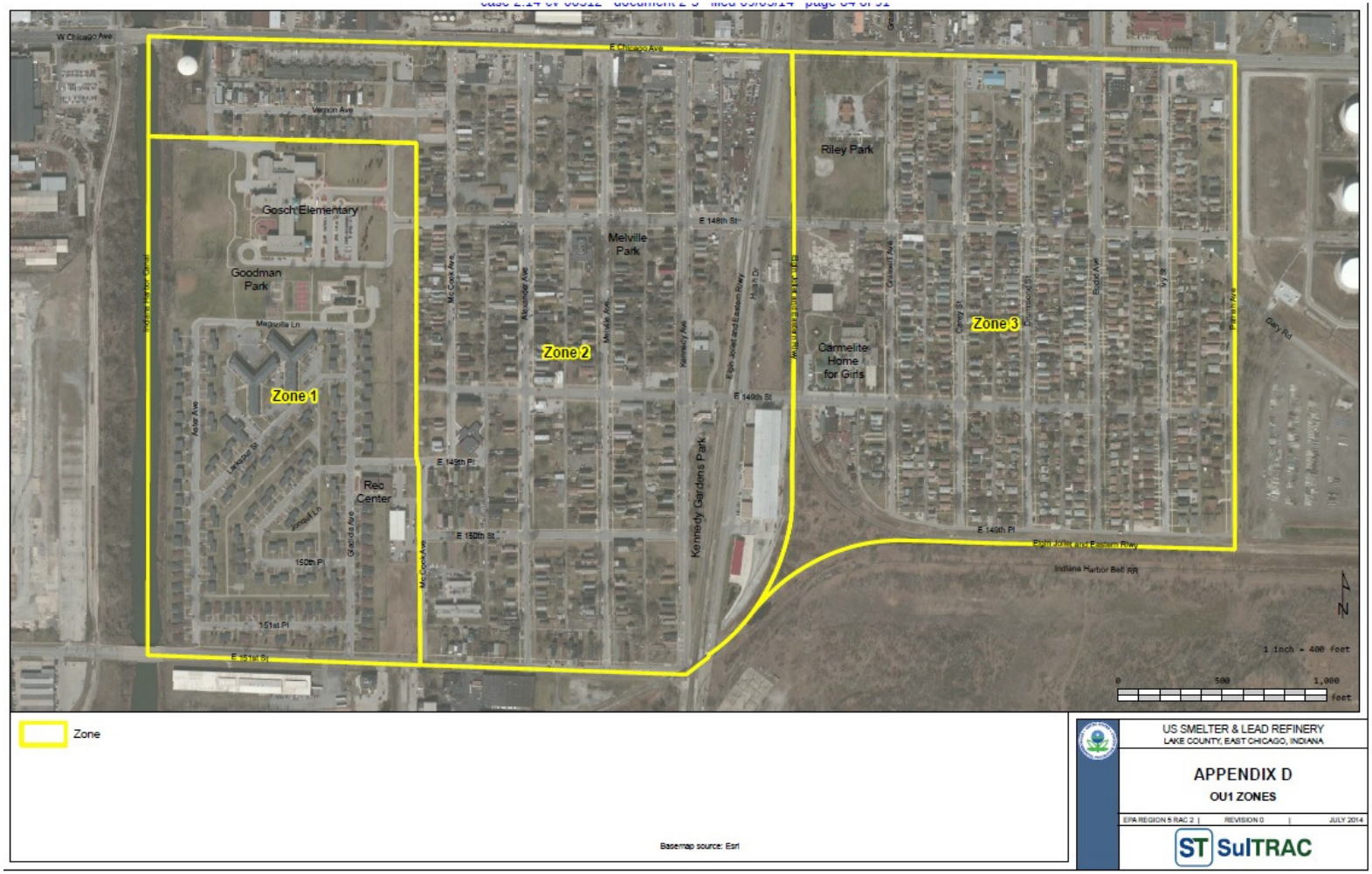


FIGURE 2
Zone 3/OU1 MAP
U.S. Smelter and Lead Refinery Site, East Chicago, Lake County, Indiana



ATTACHMENT I

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ENVIRONMENTAL JUSTICE ANALYSIS FOR U.S. SMELTER AND LEAD REFINERY SITE, EAST CHICAGO, LAKE COUNTY, INDIANA

EJSCREEN Report (Version 2016)

0.5 mile Ring Centered at 41.623974,-87.469228, INDIANA, EPA Region 5

Approximate Population: 2,455
Input Area (sq. miles): 0.79

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0
National Pollutant Discharge Elimination System (NPDES)	0

EJSCREEN Report (Version 2016)

0.5 mile Ring Centered at 41.623974,-87.469228, INDIANA, EPA Region 5

Approximate Population: 2,455

Input Area (sq. miles): 0.79

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	11.7	11	98	10.6	86	9.32	93
Ozone (ppb)	48.8	51.2	11	50.3	21	47.4	52
NATA* Diesel PM (µg/m³)	0.86	0.835	57	0.931	50-60th	0.937	50-60th
NATA* Cancer Risk (lifetime risk per million)	32	34	38	34	<50th	40	<50th
NATA* Respiratory Hazard Index	1.5	1.4	61	1.7	<50th	1.8	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	240	250	73	370	70	590	65
Lead Paint Indicator (% Pre-1960 Housing)	0.65	0.36	82	0.39	77	0.3	84
Superfund Proximity (site count/km distance)	1.5	0.16	99	0.12	99	0.13	99
RMP Proximity (facility count/km distance)	4.3	0.52	99	0.51	99	0.43	99
Hazardous Waste Proximity (facility count/km distance)	0.09	0.044	91	0.069	78	0.072	77
Water Discharger Proximity (facility count/km distance)	2.9	0.34	99	0.31	99	0.31	99
Demographic Indicators							
Demographic Index	84%	27%	99	29%	97	36%	96
Minority Population	92%	19%	98	24%	94	37%	91
Low Income Population	77%	35%	95	33%	95	35%	95
Linguistically Isolated Population	5%	2%	87	2%	83	5%	70
Population With Less Than High School Education	22%	12%	84	11%	87	14%	78
Population Under 5 years of age	10%	6%	81	6%	83	6%	81
Population over 64 years of age	8%	14%	23	14%	23	14%	27

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

ATTACHMENT II

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR THE
U.S. SMELTER AND LEAD SITE
EAST CHICAGO, LAKE COUNTY, INDIANA

UPDATE 5
FEBRUARY, 2017
SEMS ID:

NO.	SEMS ID	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	930087	5/1/03	World Trade Center Indoor Air Task Force Working Group	File	World Trade Center Indoor Environment Assessment: Selecting Contaminants of Potential Concern and Setting Health-Based Benchmarks	78
2	929996	8/10/16	Fusinski, K., U.S. EPA	Behnke, K., and Mitchell, J., U.S. EPA	Memorandum re: Development of an Indoor Dust Screening Criteria for the USS Lead Site	2
3	929997	9/20/16	Fusinski, K., U.S. EPA	Behnke, K., and Mitchell, J., U.S. EPA	Memorandum re: Development of an Indoor Dust Arsenic Screening Criteria for the USS Lead Site	1
4	931126	10/27/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report for USS Lead Indoor Dust	11
5	931127	11/4/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report for USS Lead Zone 3 Indoor Sampling	9
6	931128	11/9/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report for USS Lead Zone 3 Indoor Sampling	11
7	931129	11/10/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report for USS Lead Zone 3 Indoor Sampling	10

8	931130	11/18/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report for USS Lead Zone 3 Indoor Sampling	30
9	931131	11/22/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report for USS Lead Zone 3 Indoor Sampling	16
10	931245	11/30/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report for USS Lead Zone 3 Indoor Sampling	44
11	931125	12/13/16	Fusinski, K., U.S. EPA	Behnke, K., and Mitchell, J., U.S. EPA	Memo re: Justification for Using Site-Specific Arsenic Background Concentration in Soil for Indoor Dust Screening Concentration for the USS Lead Site	2
12	932276	1/9/17	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Reports for Indoor Dust Sampling (Combined) - August 11, 2016 - January 9, 2017	838
13	932290	1/27/16	Snyder, R., U.S. EPA	File	Lab Data and Data Validation Reports for 18 Soil Samples - December 8-16, 2016 (**Redacted**)	29
14	932291	3/24/10	Griffin, S., U.S. EPA	File	Data Validation Report for 20 Soil Samples - December 7-10, 2009	55
15	932292	9/7/10	Griffin, S., U.S. EPA	File	Data Validation Report for 20 Soil Samples - August 12-13, 2010	68
16	-	-	Guerriero M., U.S. EPA	Breen, B., U.S. EPA	Action Memorandum re: Request for Approval and Funding for a Time-Critical Removal Action at the U.S. Smelter and Lead Refinery Site (***PENDING***)	-

ATTACHMENT III

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

DETAILED CLEANUP & OVERSIGHT CONTRACTOR COST ESTIMATE
U.S. Smelter and Lead Refinery Site (Zone 3)
East Chicago, Indiana
January 2017

Indoor Dust Mitigation		
ERRS Removal contractor		**Funding Allocation**
Personnel	**$895,256**	Removal
Equipment	**$100,322**	Removal
Miscellaneous	**$136,900**	Removal
T&D	**$150**	Removal
Total	**$1,132,628**	
Plus 20% Contingency	**$226,525.69**	
Total ERRS Contractor Costs	**$1,359,154**	

Indoor Dust Mitigation		
START contractor		**Funding Allocation**
Personnel	**$375,000**	Removal
Dust Sampling	**600,000**	Removal
Equipment/Vehicle	**$40,000**	Removal
Data Management	**$100,000**	Removal
Report Writing	**$12,500**	Removal
Total START Contractor Costs	**$1,127,500**	

ATTACHMENT IV

January 2016
INDEPENDENT GOVERNMENT COST ESTIMATE
Indoor Dust Mitigation Zone 3
U.S. Smelter and Lead Refinery Site
East Chicago, Indiana (based on latest information from January 9, 2017)

Note: As of January 2017, Zone 3 indoor dust sampling is summarized as follows:

- 468 parcels in Zone
- Validated dust sampling results available from 36 residential homes scheduled for a 2016 cleanup.
- 17 of the 36 sampled residences have levels above the lead and/or arsenic indoor screening value(s) (Validated Results)
- Currently, 247 properties in Zone 3 have been identified as needing soil remediation
- Approximately 50% of 247 identified properties = 124 (rounded up) properties may need indoor dust mitigating actions.
- Indoor sampling cost about $2,000 per event. A home would require at least 2 sampling events

Based on the aforementioned information the IGCE is estimated for approximately **124 homes** in Zone 3, 1.5 days per home. Estimated **188 working days (includes 2 days for mobilization and demobilization)** Working Days for total of **1880 hours** at 10 hours per day or 15 hours per home.
(see IGCE below)

ESTIMATED DAYS TO COMPLETE WORK

Activity	*Days*
Mob/Demob	2
Sampling	0
Removal Action	186
TOTAL	188

ERRS TRANSPORTATION AND DISPOSAL

Matrix	*Quantity*	*Unit*	*Unit Price*	*Subtotal*	*Trans*	*Samples*	*Total*
Non-Haz Waste	1	ton	50	50		$100	$150
					T&D TOTAL		**$150**

Personnel & Equipment

Personnel	*Units*	*Reg Rate*	*OT Rate*	*Reg Hours*	*OT Hours*	*Labor Cost*	*PerDiem*	*Lodging*	*PerDiem/ Lodging Cost*	*Total*
Response Manager	1	66	66	1504	376	$124,080	$59	$104	$30,644	$154,724
FCA	1	35	52	1504	376	$72,192	$59	$104	$30,644	$102,836
Foreman	1	55	77	1504	376	$111,672	$59	$104	$30,644	$142,316
Equipment Operator	0	56	73	1504	376	$0	$59	$104	$0	$0
Laborer	5	35	42	1504	376	$342,160	$59	$104	$153,220	$495,380
T&D Coordinator	0	65	65	1504	376	$0	$59	$104	$0	$0
Industrial Hygienist	0	65	65	1504	376	$0	$59	$104	$0	$0
Chemist	0	45	45	1504	376	$0	$59	$104	$0	$0
Truck Driver	0	50	63	1504	376	$0	$59	$104	$0	$0
							PERSONNEL SUB TOTAL			**$895,256**

Equipment	*Units*	*Daily Rate*	*Weekly Rate*	*Monthly Rate*	*Length*	*Lump Sum*	*Total*
1/2 ton pickup truck	3	$49			188		$27,771
1 ton stakebed truck	1	$74			188		$13,895
HEPA Vacuum	2	$18			188		$6,768
Negative air machine	2	$30			188		$11,280
PPE	6	$36			188		$40,608
				EQUIPMENT SUB TOTAL			**$100,322**

Materials & Miscellaneous	*Quantity*	*Costs*	*Daily Cost*	*Lump Sum*	*Length*	*Subtotal*	*Misc*	
Miscellaneous cleaning materials						$1,000		$1,000
Carpet Replacement	124	$1,000				$125,000		$125,000
Vehicle (fuel)		$25			188	$4,700		$4,700
Utility Usage	124	$50				$6,200		$6,200
							MISC. TOTAL	**$136,900**

ERRS 20% Contingency		$226,525.69
ERRS SUBTOTAL		**$1,359,154**

START

	Units	*Rate*	*Hours*	*Labor Cost/Unit Cost*	*PerDiem*	*Lodging*	*Cost*	*Total*
START-on site	2	$125	1,500					$375,000
Sampling	300			2,000				600,000
Equipment: vehicle, air monitoring, supplies	2	$125	200					$40,000
Data Management		100	1,000					100,000
Report Writing	1	$125	100					$12,500
							START TOTAL	**$1,127,500**

ATTACHMENT V

Summary of OU1 Interior Dust Sampling Results for Zone 3
U.S. Smelter and Lead Refinery Site East Chicago, Lake County, Indiana

Final validated data from USS Lead OU1 Zone 3 Indoor Dust Sampling) (as of 11/29/2016). Pb > 316 and As > 26

EDD Status	Location	Samp_No	Sub_Location	Analyte	Result	Result_ Qualifier	Lab_Result_ Qualifier	Result_Units
Level4	USSL-3023	USSL-3023-BR-101116	Bedroom	Arsenic (fine fraction)	1.1	J	J	mg/Kg-dry
Level4	USSL-3023	USSL-3023-BR-101116	Bedroom	Lead (fine fraction)	21	J		mg/Kg-dry
Level4	USSL-3023	USSL-3023-FE-101116	Front Entrance	Arsenic (fine fraction)	3.9	J	J	mg/Kg-dry
Level4	USSL-3023	USSL-3023-FE-101116	Front Entrance	Lead (fine fraction)	180			mg/Kg-dry
Level4	USSL-3037	USSL-3037-BM-112216	Basement	Arsenic (fine fraction)	11			mg/Kg-dry
Level4	USSL-3037	USSL-3037-BM-112216	Basement	Lead (fine fraction)	920			mg/Kg-dry
Level4	USSL-3037	USSL-3037-BR-110216	Bedroom	Arsenic (fine fraction)	2.6	J	J	mg/Kg-dry
Level4	USSL-3037	USSL-3037-BR-110216	Bedroom	Lead (fine fraction)	58			mg/Kg-dry
Level4	USSL-3037	USSL-3037-FE-110216	Front Entrance	Arsenic (fine fraction)	12			mg/Kg-dry
Level4	USSL-3037	USSL-3037-FE-110216	Front Entrance	Lead (fine fraction)	360			mg/Kg-dry
Level4	USSL-3039	USSL-3039-BR-110916	Bedroom	Arsenic (fine fraction)	3.3	J	J	mg/Kg-dry
Level4	USSL-3039	USSL-3039-BR-110916	Bedroom	Lead (fine fraction)	58			mg/Kg-dry
Level4	USSL-3039	USSL-3039-FE-110916	Front Entrance	Arsenic (fine fraction)	12	J	J	mg/Kg-dry
Level4	USSL-3039	USSL-3039-FE-110916	Front Entrance	Lead (fine fraction)	350			mg/Kg-dry

Level4	USSL-3043	USSL-3043-BM-101116	Basement	Arsenic (fine fraction)	310			mg/Kg-dry
Level4	USSL-3043	USSL-3043-BM-101116	Basement	Lead (fine fraction)	53			mg/Kg-dry
Level4	USSL-3043	USSL-3043-BR-101116	Bedroom	Arsenic (fine fraction)	37			mg/Kg-dry
Level4	USSL-3043	USSL-3043-BR-101116	Bedroom	Lead (fine fraction)	56			mg/Kg-dry
Level4	USSL-3043	USSL-3043-FE-101116	Front Entrance	Arsenic (fine fraction)	18			mg/Kg-dry
Level4	USSL-3043	USSL-3043-FE-101116	Front Entrance	Lead (fine fraction)	56			mg/Kg-dry
Level4	USSL-3046	USSL-3046-BR-101216	Bedroom	Arsenic (fine fraction)	3.8	J-		mg/Kg-dry
Level4	USSL-3046	USSL-3046-BR-101216	Bedroom	Lead (fine fraction)	350			mg/Kg-dry
Level4	USSL-3046	USSL-3046-FE-101216	Front Entrance	Arsenic (fine fraction)	26	J-		mg/Kg-dry
Level4	USSL-3046	USSL-3046-FE-101216	Front Entrance	Lead (fine fraction)	210			mg/Kg-dry
Level4	USSL-3047	USSL-3047-BM-101116	Basement	Arsenic (fine fraction)	38			mg/Kg-dry
Level4	USSL-3047	USSL-3047-BM-101116	Basement	Lead (fine fraction)	150			mg/Kg-dry
Level4	USSL-3047	USSL-3047-BR-101116	Bedroom	Arsenic (fine fraction)	17			mg/Kg-dry
Level4	USSL-3047	USSL-3047-BR-101116	Bedroom	Lead (fine fraction)	220			mg/Kg-dry
Level4	USSL-3047	USSL-3047-FE-101116	Front Entrance	Arsenic (fine fraction)	11			mg/Kg-dry
Level4	USSL-3047	USSL-3047-FE-101116	Front Entrance	Lead (fine fraction)	170			mg/Kg-dry

Level4	USSL-3055	USSL-3055-BM-101716	Basement	Arsenic (fine fraction)	3.6	J	J	mg/Kg-dry
Level4	USSL-3055	USSL-3055-BM-101716	Basement	Lead (fine fraction)	61			mg/Kg-dry
Level4	USSL-3055	USSL-3055-BR-092316	Bedroom	Arsenic (fine fraction)	3.5	J	J	mg/Kg-dry
Level4	USSL-3055	USSL-3055-BR-092316	Bedroom	Lead (fine fraction)	60			mg/Kg-dry
Level4	USSL-3055	USSL-3055-FE-092316	Front Entrance	Arsenic (fine fraction)	4.5			mg/Kg-dry
Level4	USSL-3055	USSL-3055-FE-092316	Front Entrance	Lead (fine fraction)	120			mg/Kg-dry
Level4	USSL-3070	USSL-3070-BR-102516	Bedroom	Arsenic (fine fraction)	1.8	J-	J	mg/Kg-dry
Level4	USSL-3070	USSL-3070-BR-102516	Bedroom	Lead (fine fraction)	80			mg/Kg-dry
Level4	USSL-3070	USSL-3070-RE-102516	Rear Entrance	Arsenic (fine fraction)	7.5	J-	J	mg/Kg-dry
Level4	USSL-3070	USSL-3070-RE-102516	Rear Entrance	Lead (fine fraction)	890			mg/Kg-dry
Level4	USSL-3071	USSL-3071-BM-111516	Basement	Arsenic (fine fraction)	13			mg/Kg-dry
Level4	USSL-3071	USSL-3071-BM-111516	Basement	Lead (fine fraction)	83	J-		mg/Kg-dry
Level4	USSL-3071	USSL-3071-FE-110416	Front Entrance	Arsenic (fine fraction)	9			mg/Kg-dry
Level4	USSL-3071	USSL-3071-FE-110416	Front Entrance	Lead (fine fraction)	87	J+		mg/Kg-dry
Level4	USSL-3071	USSL-3071-LR-110416	Living Room	Arsenic (fine fraction)	6.4			mg/Kg-dry
Level4	USSL-3071	USSL-3071-LR-110416	Living Room	Lead (fine fraction)	86			mg/Kg-dry

Level4	USSL-3072	USSL-3072-BR-101716	Bedroom	Arsenic (fine fraction)	2.4	J+	J	mg/Kg-dry
Level4	USSL-3072	USSL-3072-BR-101716	Bedroom	Lead (fine fraction)	120			mg/Kg-dry
Level4	USSL-3072	USSL-3072-FE-101716	Front Entrance	Arsenic (fine fraction)	2.7	J+	J	mg/Kg-dry
Level4	USSL-3072	USSL-3072-FE-101716	Front Entrance	Lead (fine fraction)	64			mg/Kg-dry
Level4	USSL-3075	USSL-3075-BR-102816	Bedroom	Arsenic (fine fraction)	8.1	J		mg/Kg-dry
Level4	USSL-3075	USSL-3075-BR-102816	Bedroom	Lead (fine fraction)	29	J		mg/Kg-dry
Level4	USSL-3075	USSL-3075-RE-102816	Rear Entrance	Arsenic (fine fraction)	33	J	J	mg/Kg-dry
Level4	USSL-3075	USSL-3075-RE-102816	Rear Entrance	Lead (fine fraction)	85	J	J	mg/Kg-dry
Level4	USSL-3087	USSL-3087-BM-101416	Basement	Arsenic (fine fraction)	48	J		mg/Kg-dry
Level4	USSL-3087	USSL-3087-BM-101416	Basement	Lead (fine fraction)	500			mg/Kg-dry
Level4	USSL-3087	USSL-3087-BR-101416	Bedroom	Arsenic (fine fraction)	14	J	J	mg/Kg-dry
Level4	USSL-3087	USSL-3087-BR-101416	Bedroom	Lead (fine fraction)	110			mg/Kg-dry
Level4	USSL-3087	USSL-3087-FE-101416	Front Entrance	Arsenic (fine fraction)	26			mg/Kg-dry
Level4	USSL-3087	USSL-3087-FE-101416	Front Entrance	Lead (fine fraction)	190			mg/Kg-dry
Level4	USSL-3088	USSL-3088-BM-101216	Basement	Arsenic (fine fraction)	1.6	J-	J	mg/Kg-dry
Level4	USSL-3088	USSL-3088-BM-101216	Basement	Lead (fine fraction)	110			mg/Kg-dry

Level4	USSL-3088	USSL-3088-BR-101216	Bedroom	Arsenic (fine fraction)	3	J-	J	mg/Kg-dry
Level4	USSL-3088	USSL-3088-BR-101216	Bedroom	Lead (fine fraction)	50			mg/Kg-dry
Level4	USSL-3088	USSL-3088-FE-101216	Front Entrance	Arsenic (fine fraction)	7.3	J-	J	mg/Kg-dry
Level4	USSL-3088	USSL-3088-FE-101216	Front Entrance	Lead (fine fraction)	330			mg/Kg-dry
Level4	USSL-3091	USSL-3091-BR/KI-111116	Bedroom, Kitchen	Arsenic (fine fraction)	20	J+	J	mg/Kg-dry
Level4	USSL-3091	USSL-3091-BR/KI-111116	Bedroom, Kitchen	Lead (fine fraction)	140	J	J	mg/Kg-dry
Level4	USSL-3091	USSL-3091-FE-111116	Front Entrance	Arsenic (fine fraction)	6.6	J	J	mg/Kg-dry
Level4	USSL-3091	USSL-3091-FE-111116	Front Entrance	Lead (fine fraction)	62			mg/Kg-dry
Level4	USSL-3092	USSL-3092-BR-101716	Bedroom	Arsenic (fine fraction)	4.5			mg/Kg-dry
Level4	USSL-3092	USSL-3092-BR-101716	Bedroom	Lead (fine fraction)	71			mg/Kg-dry
Level4	USSL-3092	USSL-3092-FE-101716	Front Entrance	Arsenic (fine fraction)	7.2	J	J	mg/Kg-dry
Level4	USSL-3092	USSL-3092-FE-101716	Front Entrance	Lead (fine fraction)	190			mg/Kg-dry
Level4	USSL-3097	USSL-3097-BR-102916	Bedroom	Arsenic (fine fraction)	5.2			mg/Kg-dry
Level4	USSL-3097	USSL-3097-BR-102916	Bedroom	Lead (fine fraction)	57			mg/Kg-dry
Level4	USSL-3097	USSL-3097-FE-102916	Front Entrance	Arsenic (fine fraction)	6.2			mg/Kg-dry
Level4	USSL-3097	USSL-3097-FE-102916	Front Entrance	Lead (fine fraction)	74			mg/Kg-dry

Level4	USSL-3106	USSL-3106-FE/RE-111016	Front Entrance, Rear Entrance	Arsenic (fine fraction)	3.3	J+	J	mg/Kg-dry
Level4	USSL-3106	USSL-3106-FE/RE-111016	Front Entrance, Rear Entrance	Lead (fine fraction)	18			mg/Kg-dry
Level4	USSL-3106	USSL-3106-LR-111016	Living Room	Arsenic (fine fraction)	22	J	J	mg/Kg-dry
Level4	USSL-3106	USSL-3106-LR-111016	Living Room	Lead (fine fraction)	81			mg/Kg-dry
Level4	USSL-3119	USSL-3119-BR-091516	Bedroom	Arsenic (fine fraction)	75	U	U	mg/Kg-dry
Level4	USSL-3119	USSL-3119-BR-091516	Bedroom	Lead (fine fraction)	160			mg/Kg-dry
Level4	USSL-3119	USSL-3119-LR-091516	Living Room	Arsenic (fine fraction)	75	U	U	mg/Kg-dry
Level4	USSL-3119	USSL-3119-LR-091516	Living Room	Lead (fine fraction)	73	J	J	mg/Kg-dry
Level4	USSL-3119	USSL-3119-RE-091516	Rear Entrance	Arsenic (fine fraction)	8	J	J	mg/Kg-dry
Level4	USSL-3119	USSL-3119-RE-091516	Rear Entrance	Lead (fine fraction)	110			mg/Kg-dry
Level4	USSL-3185	USSL-3185-FE-110216	Front Entrance	Arsenic (fine fraction)	4.9	J	J	mg/Kg-dry
Level4	USSL-3185	USSL-3185-FE-110216	Front Entrance	Lead (fine fraction)	210			mg/Kg-dry
Level4	USSL-3185	USSL-3185-LR-110216	Living Room	Arsenic (fine fraction)	12	J	J	mg/Kg-dry
Level4	USSL-3185	USSL-3185-LR-110216	Living Room	Lead (fine fraction)	140			mg/Kg-dry
Level4	USSL-3206	USSL-3206-BR-101416	Bedroom	Arsenic (fine fraction)	4.1	J	J	mg/Kg-dry
Level4	USSL-3206	USSL-3206-BR-101416	Bedroom	Lead (fine fraction)	410			mg/Kg-dry

Level4	USSL-3206	USSL-3206-FE-101416	Front Entrance	Arsenic (fine fraction)	12	J+	J	mg/Kg-dry
Level4	USSL-3206	USSL-3206-FE-101416	Front Entrance	Lead (fine fraction)	1200			mg/Kg-dry
Level4	USSL-3226	USSL-3226-BR-102616	Bedroom	Arsenic (fine fraction)	1.1	J	J	mg/Kg-dry
Level4	USSL-3226	USSL-3226-BR-102616	Bedroom	Lead (fine fraction)	44			mg/Kg-dry
Level4	USSL-3226	USSL-3226-FE-102616	Front Entrance	Arsenic (fine fraction)	8.9			mg/Kg-dry
Level4	USSL-3226	USSL-3226-FE-102616	Front Entrance	Lead (fine fraction)	190			mg/Kg-dry
Level4	USSL-3277	USSL-3277-BR-101116	Bedroom	Arsenic (fine fraction)	5.7			mg/Kg-dry
Level4	USSL-3277	USSL-3277-BR-101116	Bedroom	Lead (fine fraction)	84			mg/Kg-dry
Level4	USSL-3277	USSL-3277-FE-101116	Front Entrance	Arsenic (fine fraction)	7	J	J	mg/Kg-dry
Level4	USSL-3277	USSL-3277-FE-101116	Front Entrance	Lead (fine fraction)	520			mg/Kg-dry
Level4	USSL-3277	USSL-3277-RE-101116	Rear Entrance	Arsenic (fine fraction)	34			mg/Kg-dry
Level4	USSL-3277	USSL-3277-RE-101116	Rear Entrance	Lead (fine fraction)	740			mg/Kg-dry
Level4	USSL-3282	USSL-3282-BR-102616	Bedroom	Arsenic (fine fraction)	2.5	J	J	mg/Kg-dry
Level4	USSL-3282	USSL-3282-BR-102616	Bedroom	Lead (fine fraction)	75			mg/Kg-dry
Level4	USSL-3282	USSL-3282-SE-102616	Side Entrance	Arsenic (fine fraction)	4	J	J	mg/Kg-dry
Level4	USSL-3282	USSL-3282-SE-102616	Side Entrance	Lead (fine fraction)	100			mg/Kg-dry
Level4	USSL-3301	USSL-3301-BR-110116	Bedroom	Arsenic (fine fraction)	2.1	J	J	mg/Kg-dry

Level4	USSL-3301	USSL-3301-BR-110116	Bedroom	Lead (fine fraction)	120	J		mg/Kg-dry
Level4	USSL-3301	USSL-3301-FE/RE-110116	Front Entrance, Rear Entrance	Arsenic (fine fraction)	16			mg/Kg-dry
Level4	USSL-3301	USSL-3301-FE/RE-110116	Front Entrance, Rear Entrance	Lead (fine fraction)	280			mg/Kg-dry
Level4	USSL-3302	USSL-3302-BR-102716A	Bedroom	Arsenic (fine fraction)	2.8	J	J	mg/Kg-dry
Level4	USSL-3302	USSL-3302-BR-102716A	Bedroom	Lead (fine fraction)	160			mg/Kg-dry
Level4	USSL-3302	USSL-3302-BR-102716B	Bedroom	Arsenic (fine fraction)	4.4	J	J	mg/Kg-dry
Level4	USSL-3302	USSL-3302-BR-102716B	Bedroom	Lead (fine fraction)	220			mg/Kg-dry
Level4	USSL-3302	USSL-3302-BR-102716C	Bedroom	Arsenic (fine fraction)	3.4	J	J	mg/Kg-dry
Level4	USSL-3302	USSL-3302-BR-102716C	Bedroom	Lead (fine fraction)	150			mg/Kg-dry
Level4	USSL-3302	USSL-3302-FE-102716B	Front Entrance	Arsenic (fine fraction)	6.3	J	J	mg/Kg-dry
Level4	USSL-3302	USSL-3302-FE-102716B	Front Entrance	Lead (fine fraction)	430			mg/Kg-dry
Level4	USSL-3302	USSL-3302-FE-102716C	Front Entrance	Arsenic (fine fraction)	120	U	U	mg/Kg-dry
Level4	USSL-3302	USSL-3302-FE-102716C	Front Entrance	Lead (fine fraction)	110	J	J	mg/Kg-dry
Level4	USSL-3302	USSL-3302-RE-102716A	Rear Entrance	Arsenic (fine fraction)	5.6	J	J	mg/Kg-dry
Level4	USSL-3302	USSL-3302-RE-102716A	Rear Entrance	Lead (fine fraction)	400			mg/Kg-dry
Level4	USSL-3310	USSL-3310-BR-101116	Bedroom	Arsenic (fine fraction)	5.9	J	J	mg/Kg-dry

Level4	USSL-3310	USSL-3310-BR-101116	Bedroom	Lead (fine fraction)	110			mg/Kg-dry
Level4	USSL-3310	USSL-3310-FE-101116	Front Entrance	Arsenic (fine fraction)	16	J	J	mg/Kg-dry
Level4	USSL-3310	USSL-3310-FE-101116	Front Entrance	Lead (fine fraction)	170	J	J	mg/Kg-dry
Level4	USSL-3319	USSL-3319-BR-101816	Bedroom	Arsenic (fine fraction)	75	U	U	mg/Kg-dry
Level4	USSL-3319	USSL-3319-BR-101816	Bedroom	Lead (fine fraction)	69	J	J	mg/Kg-dry
Level4	USSL-3319	USSL-3319-FE-101816	Front Entrance	Arsenic (fine fraction)	4.8	J	J	mg/Kg-dry
Level4	USSL-3319	USSL-3319-FE-101816	Front Entrance	Lead (fine fraction)	460			mg/Kg-dry
Level4	USSL-3338	USSL-3338-BR-101116	Bedroom	Arsenic (fine fraction)	3.3	J	J	mg/Kg-dry
Level4	USSL-3338	USSL-3338-BR-101116	Bedroom	Lead (fine fraction)	91			mg/Kg-dry
Level4	USSL-3338	USSL-3338-FE-101116	Front Entrance	Arsenic (fine fraction)	8.5	J	J	mg/Kg-dry
Level4	USSL-3338	USSL-3338-FE-101116	Front Entrance	Lead (fine fraction)	170			mg/Kg-dry
Level4	USSL-3338	USSL-3338-RE-101116	Rear Entrance	Arsenic (fine fraction)	6.7	J	J	mg/Kg-dry
Level4	USSL-3338	USSL-3338-RE-101116	Rear Entrance	Lead (fine fraction)	210			mg/Kg-dry
Level4	USSL-3345	USSL-3345-BR-101116	Bedroom	Arsenic (fine fraction)	2.7	J	J	mg/Kg-dry
Level4	USSL-3345	USSL-3345-BR-101116	Bedroom	Lead (fine fraction)	130			mg/Kg-dry
Level4	USSL-3345	USSL-3345-FE-101116	Front Entrance	Arsenic (fine fraction)	7.1			mg/Kg-dry
Level4	USSL-3345	USSL-3345-FE-101116	Front Entrance	Lead (fine fraction)	190			mg/Kg-dry

Level4	USSL-3383	USSL-3383-BR-110316	Bedroom	Arsenic (fine fraction)	1.4	J	J	mg/Kg-dry
Level4	USSL-3383	USSL-3383-BR-110316	Bedroom	Lead (fine fraction)	76			mg/Kg-dry
Level4	USSL-3383	USSL-3383-FE/RE-110316	Front Entrance, Rear Entrance	Arsenic (fine fraction)	10			mg/Kg-dry
Level4	USSL-3383	USSL-3383-FE/RE-110316	Front Entrance, Rear Entrance	Lead (fine fraction)	560			mg/Kg-dry
Level4	USSL-3406	USSL-3406-BR-101716	Bedroom	Arsenic (fine fraction)	1.9	J	J	mg/Kg-dry
Level4	USSL-3406	USSL-3406-BR-101716	Bedroom	Lead (fine fraction)	110			mg/Kg-dry
Level4	USSL-3406	USSL-3406-RE-101716	Rear Entrance	Arsenic (fine fraction)	6.2			mg/Kg-dry
Level4	USSL-3406	USSL-3406-RE-101716	Rear Entrance	Lead (fine fraction)	920			mg/Kg-dry
Level4	USSL-3434	USSL-3434-BR-101416	Bedroom	Arsenic (fine fraction)	380	U	U	mg/Kg-dry
Level4	USSL-3434	USSL-3434-BR-101416	Bedroom	Lead (fine fraction)	110	J+	J	mg/Kg-dry
Level4	USSL-3434	USSL-3434-FE-101416	Front Entrance	Arsenic (fine fraction)	9			mg/Kg-dry
Level4	USSL-3434	USSL-3434-FE-101416	Front Entrance	Lead (fine fraction)	500			mg/Kg-dry
Level4	USSL-3437	USSL-3437-BR-110316	Bedroom	Arsenic (fine fraction)	1.8	J	J	mg/Kg-dry
Level4	USSL-3437	USSL-3437-BR-110316	Bedroom	Lead (fine fraction)	67			mg/Kg-dry
Level4	USSL-3437	USSL-3437-FE-110316	Front Entrance	Arsenic (fine fraction)	4.8	J	J	mg/Kg-dry
Level4	USSL-3437	USSL-3437-FE-110316	Front Entrance	Lead (fine fraction)	230			mg/Kg-dry

Level4	USSL-3443	USSL-3443-BR-110416	Bedroom	Arsenic (fine fraction)	4.7	J	J	mg/Kg-dry
Level4	USSL-3443	USSL-3443-BR-110416	Bedroom	Lead (fine fraction)	57	J+	J	mg/Kg-dry
Level4	USSL-3443	USSL-3443-FE-110416	Front Entrance	Arsenic (fine fraction)	7			mg/Kg-dry
Level4	USSL-3443	USSL-3443-FE-110416	Front Entrance	Lead (fine fraction)	220			mg/Kg-dry

Lead screening level exceedance (316 ppm)

Arsenic screening level exceedance (26 ppm) and not U qualified

Arsenic screening level exceedance (26 ppm) but U qualified= not detected above reporting limit

ATTACHMENT VI

US Smelter and Lead Refinery Site Dust Screening Level for Lead

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
9311 GROH ROAD
GROSSE ILE, MI 48138

MEMORANDUM

SUBJECT: Development of an Indoor Dust Screening Criteria for the USS Lead Site

FROM: Keith Fusinski, PhD Toxicologist US EPA
Superfund Division, Remedial Response Branch #1, Remedial Response Section #1

TO: Jim Mitchell, On-Scene Coordinator US EPA
Superfund Division, Emergency Response Branch #2, Emergency Response Section #4

AND

Kristina Behnke, On-Scene Coordinator US EPA
Superfund Division, Emergency Response Branch #2, Emergency Response Section #3

DATE: 8/10/2016

The Integrated Exposure Uptake Biokinetic (IEUBK) model used by the US Environmental Protection Agency (USEPA) uses the concentration of indoor dust as a key parameter to evaluate risks to children from lead in soil. EPA separates dust into fine (<150 µm) and coarse (>150 µm) fractions. It has been shown that the fine particle size is the fraction that is most likely to adhere to children's hands and be ingested. In addition, more recent information also indicates that there is a potential for enrichment of lead in smaller sized particles and increased bioavailability (USEPA 2016). Using only the fine particle size concentration for screening can improve the accuracy of exposure and risk calculations in lead risk assessments.

The IEUBK model (version 1.1 Build 11) was used to determine an indoor dust screening level for lead. The default assumption in the model is that the concentration of lead in indoor dust is 70% of the concentration of lead in outdoor soil (Brattin and Griffin - 2011). US EPA recommends that lead concentrations in residential soil do not exceed 400 parts per million (ppm) in soil.

The modeling was performed using default inputs from the IEUBK model for diet, drinking water, air concentration and bioavailability. The IEUBK model was run using 400 ppm for lead in soil and modeled children 0 to 84 months of age. The calculated screening level to protect this population from a current US EPA acceptable blood lead level of 10 µg/dL is **316 ppm** of lead in

dust. This concentration should be used when evaluating the fine particle size fraction of lead dust contamination.

REFERENCES

Brattin and Griffin - 2011 - William Brittin, Susan Griffin. Evaluation of the Contribution of Lead in Soil to Lead in Dust at Superfund Sites. Human and Ecological Risk Assessment: An International journal Vol. 17, Iss. 1, 2011.

USEPA 2016 - OLEM Directive 9200.1-128. Recommendations for Sieving Soil and Dust Samples at Lead Sites for Assessment of Incidental Ingestion.

Attachment VII

US Smelter and Lead Refinery Site Dust Screening Level for Arsenic

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
9311 GROH ROAD
GROSSE ILE, MI 48138

MEMORANDUM

SUBJECT: Justification for Using Site-Specific Arsenic Background Concentration in Soil for Indoor Dust Screening Concentration for the USS Lead Site.

FROM: Keith Fusinski, PhD Toxicologist US EPA
Superfund Division, Remedial Response Branch #1, Science and Quality Assurance Section

TO: Jim Mitchell, On-Scene Coordinator US EPA
Superfund Division, Emergency Response Branch #2, Emergency Response Section #4

AND

Kristina Behnke, On-Scene Coordinator US EPA
Superfund Division, Emergency Response Branch #2, Emergency Response Section #3

DATE: 12/13/2016

The US EPA looks at both cancer and non-cancer detrimental effects of exposure to contaminants. For non-cancer, EPA determines probability of a detrimental health effect to occur by calculating a hazard quotient (HQ). The HQ is a ratio of a single substance exposure level over a specified period of time to a reference dose of the same substance derived from a similar exposure period. It is recommended that the HQ of an exposure to a chemical of concern be below or equal to 1 which is the level at which no adverse human health effects are expected to occur. For cancer risk, the U.S. EPA recommends a screening level that would equate to a one in a million ($1x10^{-6}$) or greater lifetime risk of developing cancer from exposure to a contaminated site. However, rates up to 1 in 10,000 ($1x10^{-4}$) can be considered acceptable. Regional screening levels (RSLs) are based upon an excess lifetime cancer risk (ELCR) of $1x10^{-6}$ or an HQ of 1, whichever is most protective. The Office of Land and Emergency Management (OLEM) recommends removal management levels (RMLs) be set at an excess lifetime cancer risk of 1 in 10,000 or a non-cancer HQ of 3, whichever is most protective. Risks found between the RSLs and RMLs are remediated at the discretion of EPA risk managers. Risks greater than the RML, typically require remediation.

The residential RSL for arsenic in soil is 0.68 mg/kg. The residential RML for soil is 68 mg/kg. These values are highly protective and are based upon an individual working or playing in the soil for 24 hours a day, for 350 days per year for 26 years. This includes the first 6 years of life, where children are most susceptible to developmental effects of contaminant exposure. Routes of exposure in these calculations include ingestion, inhalation, and dermal contact. Any concentration

of arsenic in soil less than 68 mg/kg is considered within EPA's acceptable risk range and protective of human health.

House dust is composed of small amounts of plant pollen, human and animal hairs and skin cells, textile fibers, paper fibers, outdoor soil, and many other materials which may be found in the local environment. It is important to note that only a fraction of house dust actually comes from exterior soils. However, in order to be protective of human health, US EPA will assume that 100 percent of house dust at the USS Lead Site comes directly from exterior soil degradation.

Arsenic is a naturally occurring substance and can be found in soils all across the US at some concentration. This is considered naturally occurring background. The site specific background concentration for arsenic in soils at the USS Lead site has been determined to be 26 milligrams of arsenic per kilogram of soil (mg/kg). This value is well below the residential soil RML of 68 mg/kg. As US EPA is assuming that 100 percent of house dust comes from exterior soils, then it can be considered that 26 mg/kg is not only the background in exterior soils, but also residential house dust.

When evaluating homes for remediation, or to review the effects of remediation, any home with concentrations of arsenic below 26 mg/kg should be considered below background concentrations and safe for unrestricted residential use.

ATTACHMENT VIII
FOURTH AMENDED ACTION MEMORANDUM
DATED OCTOBER 13, 2016

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

OCT 24 2016

REPLY TO THE ATTENTION OF:

MEMORANDUM

SUBJECT: **ACTION MEMORANDUM – 4th AMENDMENT:** Request for a Change in Scope and Ceiling Increase for the Time-Critical Removal Action at the U.S. Smelter and Lead Refinery Site, East Chicago, Lake County, Indiana (Site ID # 053J)

FROM: Douglas Ballotti, Acting Director
Superfund Division

THRU: Reggie Cheatham, Office Director
Office of Emergency Management (OEM)

TO: Mathy Stanislaus, Assistant Administrator
Office of Land and Emergency Management

I. PURPOSE

The purpose of this Action Memorandum Amendment is to request and document your approval, consistent with Section 104(c)(1)(A) of CERCLA, 42 U.S.C. Section 9604 (c)(1)(A), to Change the Scope of the Response and for a Ceiling Increase for the time-critical removal action at portions of the U.S. Smelter and Lead Refinery Site (the Site) residential area defined as Zone 2 of Operable Unit 1 (OU1), in East Chicago, Lake County, Indiana (see Figure 2). The sought increase of $13,870,506 would raise the project ceiling for the time-critical removal action from $26,397,542 to $40,268,048

The Change of Scope of the Response and Ceiling Increase is necessary as the previous Action Memoranda approved on January 22, 2008, August 13, 2008, September 12, 2011, and October 13, 2016 (Attachments IX, X, XI, XII), were for the excavation and proper disposal of lead-contaminated soils from residential parcels in OU1, Zones 1, 2 and 3, indoor cleanup of lead contaminated dust inside of residences in Zone 1, and temporary relocation of residents in the West Calumet Housing Complex (WCHC) in Zone 1. Subsequent soil data collected in Zone 2 during the remedial design (RD) phase in order to implement EPA's Remedial Action as set forth in the Record of Decision (November 2012), found lead and arsenic concentrations in surface soils (0-6") in a number of residential yards above EPA screening criteria.

Response actions are necessary in Zone 2 of OU1 to mitigate threats to public health, welfare, and the environment posed by the release and/or threatened release of uncontrolled hazardous substances at the Site. This removal involves (1) the excavation and proper disposal of lead

and/or arsenic contaminated soils from residential parcels in Zone 2, and (2) testing for lead and/or arsenic contaminated dust in residential homes if requested by the home owner and, if necessary, removal of the contaminated dust.

Conditions existing at the Site present a threat to public health and the environment and meet the criteria for initiating a removal action under 40 CFR § 300.415(b) of the National Contingency Plan (NCP). The U.S. Environmental Protection Agency (EPA or the Agency) documented elevated levels of lead and arsenic in surface soil in residential parcels at the Site. Lead and arsenic are hazardous substances as defined by Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

There are no nationally significant or precedent setting issues associated with the Change of Scope sought in this Action Memorandum to the extent it seeks approval for the excavation of soils. Testing at the owner's request and the removal of lead and/or arsenic contaminated dust in residential homes may set a precedent. The Site is on the National Priorities List (NPL).

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID:	IND047030226
RCRA ID:	IND047030226
STATE ID:	None
Category:	Time-Critical Removal

A. Site Description

1. Removal Site Evaluation

The Indiana Department of Environmental Management (IDEM) sampled some of the residential parcels to the north of the U.S. Smelter and Lead Refinery, Inc. (U.S.S. Lead) facility in 1985. This area is now known as Operable Unit 1 of the Site. IDEM found elevated lead levels in these residential yards. In September of 1985, the Indiana State Board of Health found the U.S.S. Lead facility in violation of state law and stated that the lead-contaminated soils within the facility boundaries may pose a risk to human health and the environment. IDEM referred the U.S.S. Lead facility, but not the area now known as Operable Unit 1, to EPA for cleanup.

From 1993 through 2006, EPA's Resource Conservation and Recovery Act (RCRA) Corrective Action program oversaw the remediation and management of lead-contaminated soils within the boundaries of the U.S.S. Lead facility, currently referred to as Operable Unit 2 (OU2). On November 18, 1993, EPA and U.S.S. Lead entered into an Administrative Order on Consent (AOC) pursuant to Section 3008(h) of RCRA. The AOC required U.S.S. Lead to implement interim measures, including site stabilization and construction of a corrective action management unit (CAMU) to contain contaminated soils and slag and to conduct a Modified RCRA Facility Investigation at the U.S.S. Lead facility, OU2. The CAMU covers approximately 10 acres and is surrounded by a subsurface slurry wall. Excavation and construction of the CAMU was conducted in two phases and completed between August and September 2002. Slag generated from the blast-furnace operations was routinely placed by U.S.S. Lead in piles on the southern

portion of the property near the banks of the Grand Calumet River. The cleanup of slag was described in the Interim Stabilization Measures Work Plan prepared by ENTACT, LLC and was completed during the third quarter of 2002.

As part of a RCRA Corrective Action in 2003 and 2006, EPA conducted soil sampling in the residential neighborhood to the north located in OU1 of the U.S.S. Lead Site. In the investigation of late July and early August 2003, 83 residential parcels within OU1 were sampled and analyzed for lead using a Niton X-ray fluorescence (XRF) instrument. Soils from 43 locations (52 percent) exceeded the 400 milligrams per kilogram (mg/kg) residential soil screening criterion for lead. In 2006, EPA's Field Environmental Decision Support (FIELDS) team supplemented the work performed in 2003 by collecting additional data from 14 parcels sampled in 2003 to (1) assess whether the top-most soils (zero to one inch below ground surface (bgs)) had elevated lead concentrations relative to deeper soils (one to six inches bgs), (2) collect and compare composite samples to individual samples to assess whether composite samples accurately represented the concentrations in residential yards and parks, and (3) compare lead concentrations in the fine and coarse fractions of sieved samples to evaluate whether lead was preferentially distributed in the fine-grain sizes. These sampling results showed some yards in OU1 to have high levels of lead contamination with the highest sample containing lead at 3,000 mg/kg. The RCRA Corrective Action program looked at the possible source of the lead contamination and determined it was from various industrial sources. The RCRA Corrective Action program referred OU1—the off-site contamination from the U.S.S. Lead facility—and other industrial sources to the Superfund Program in 2004; the remainder of OU2—the on-site contamination—was referred in 2006.

Consistent with the OSWER Publication 9285.7-50 *Superfund Lead-Contaminated Residential Sites Handbook* (Handbook) (2003), the Superfund Program used a tiered approach to prioritize which homes needed to be cleaned up first. Residential parcels with lead concentrations in surface soil at or greater than 1,200 mg/kg were the highest priority for immediate action under a time-critical removal action. Residential parcels with lead concentrations in surface soil below 1,200 mg/kg, but above 400 mg/kg would be addressed through remedial actions. EPA does not consider the 1,200 mg/kg concentration as an action level for removal actions, but this level does provide an alternative to running the Integrated Exposure Uptake Biokinetic (IEUBK) model with limited data to determine if the site poses an urgent threat. On January 22, 2008, EPA signed the original action memorandum to conduct a time-critical removal action in OU1 to address known parcels with lead levels in surface soil exceeding 1,200 mg/kg. These parcels had been identified as part of the RCRA Corrective Action residential investigation. The EPA identified 15 private parcels that contained soil with lead concentrations exceeding 1,200 mg/kg in the top six inches of soil. On June 9, 2008, the EPA initiated the time-critical removal action to address the 15 residential parcels with lead levels exceeding 1,200 mg/kg. On August 13, 2008, the EPA amended the original action memorandum to increase the project ceiling by $511,950 for a total of $984,060. The EPA was able to obtain access agreements and remediate only 13 of the 15 parcels. The removal action was completed on November 18, 2008. In total, 1,838 tons of lead-contaminated soil were removed and disposed of at an approved landfill.

A Remedial Investigation (RI) was conducted from 2009 through 2010 to collect additional soil data in OU 1 which consists of Zone 1, Zone 2, and Zone 3. As a result of the sampling, EPA

discovered an additional 14 areas within OU1 with lead levels exceeding the removal action level of 1,200 mg/kg. On September 11, 2011, EPA signed the second amendment to the original action memorandum which increased the total project ceiling to $1,928,460. On October 11, 2011, EPA started the time-critical removal action involving lead-contaminated soil removals at five West Calumet Housing Complex (WCHC) addresses (located in Zone 1) and nine other residential parcels outside the WCHC. In addition, two parcels that were not remediated during the previous removal action in 2008 because of access issues were remediated during this removal action. The removal action was completed on December 9, 2011. In total, 1,913 additional tons of lead-contaminated soil were removed and disposed of at an approved landfill as a result of the 2011 removal activities.

In November 2012, EPA issued a Record of Decision (ROD) for Operable Unit 1 (OU1) of the Site. OU1 has been divided into 3 separate zones for implementation of the remedy (Zones 1, 2, and 3). OU1 contains residential yards contaminated with lead and arsenic at levels that pose a threat to human health through ingestion, inhalation and direct contact. EPA's selected remedy for OU1 addresses these risks from exposure to contaminated soils through the excavation and off-site disposal of lead or arsenic contaminated soils. The remedial action levels (RALs) for OU1 are 400 mg/kg for lead at residential parcels, 800 mg/kg for lead at industrial/commercial parcels, and 26 mg/kg for arsenic at both residential and industrial/commercial parcels.

From November 2014 through April 2015, EPA conducted more extensive soil sampling within Zone 1 as part of the remedial design process for OU1 and completed remedial designs for Zone 1 in October 2015. Zone 1 includes approximately 118 separate "parcels," including 111 parcels in the WCHC, three right-of-way parcels, and a school, park, recreation center, and maintenance facilities. EPA sampled all parcels in Zone 1 except a narrow strip of land on the east bank of the Indiana Harbor Canal. In May 2016, EPA received validated sampling results which revealed lead concentrations in soil up to 24 inches in depth ranged from non-detect (ND) to 91,100 mg/kg for lead. Arsenic concentrations ranged from ND to 3,530 mg/kg (See Attachment V – Summary of OU1 RD Soil Sampling Results). Within Zone 1, a total of 117 parcels exceeded the removal management level (RML) for lead of 400 mg/kg for residential soil and 61 parcels exceeded the RML for arsenic of 68 mg/kg. Each of the parcels that exceeded the RML for arsenic also exceeded the RML for lead. Sample results from surface soils (0-6") indicated that lead concentrations at 13 parcels in the WCHC exceed 5,000 mg/kg with concentrations up to 45,000 mg/kg.

Beginning in July 2016, EPA began conducting more extensive soil sampling within Zone 2 as part of the RD process for OU1. Zone 2 includes approximately 590 separate "parcels." Most of these parcels are residential parcels, though there are some commercial/industrial parcels. In September 2016, EPA received validated sampling results from 48 parcels which revealed lead concentrations in surface soil (0-6 inches below ground surface) at values ranging from 38.3 to 2,120 mg/kg. Arsenic concentrations ranged from 4.3 to 111 mg/kg (See Attachment V – Summary of OU1 RD Soil Sampling Results). Ten sampled parcels had surface soil lead concentrations above 1,200 mg/kg and 40 of 48 parcels exceed the RML for lead of 400 mg/kg for residential surface soil. Two parcels exceeded the 68 mg/kg RML for arsenic (111 and 78.1 mg/kg in surface soil). One parcel that exceeded the RML for arsenic also exceeded the RML for lead in soil.

On July 29, 2016, EPA initiated in-house sampling for dust collection in Zone 1 to determine lead concentrations in homes given the elevated levels of lead in surface soils within the WCHC and the likelihood that lead contaminated soil/dust was being tracked or blown into the housing units. EPA prioritized homes for sampling based on the likelihood that they would have elevated lead levels in indoor dust, based on elevated lead concentrations in yards and elevated blood lead level (BLL) records associated with those residences. As of September 28, 2016, EPA has received validated results from 154 residences. Concentrations ranged from 3.9 to 32,000 mg/kg for lead fines and 0.12J (J means the associated value is the approximate concentration) to 880 mg/kg for arsenic fines. Results from indoor dust from the first 154 homes indicate 69 parcels exceed the EPA screening level of 316 mg/kg for lead for indoor living spaces (See Attachment VII – Indoor Dust Screening Criteria for Lead).

On August 12, 2016, EPA began cleaning the inside of residences in the WCHC to remove lead contaminated dust. A combination of HEPA vacuums and wet cleaning are used to remove lead dust from ceilings, floors, carpets, walls, drapes, accessible ductwork, furnace, and furniture. As of October 3, 2016, EPA has cleaned approximately 113 out of 334 occupied units. Residents were temporarily relocated during the cleaning process and clearance sampling conducted as necessary to document efficacy of cleaning.

The Indiana State Department of Health (ISDH) accompanied EPA into 14 of the initial 42 residences in Zone 1 and conducted a separate inspection for compliance with lead paint abatement policies. Wipe samples were collected from floors, interior window sills, and window troughs and compared to HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (2012 Edition)(40 $\mu g/ft^2$-floors, 250 $\mu g/ft^2$- window sills, and 400 $\mu g/ft^2$– window trough). Wipe samples from six of the 14 units sampled were above the respective lead dust clearance standards (see Attachment VIII - Indiana State Department of Health Wipe Sample Results). Lead based paint was not found by ISDH in any of the inspected units.

The Agency for Toxic Substances and Disease Registry (ATSDR) is working with the East Chicago Health Department (ECHD), which is conducting an ongoing exposure investigation of blood lead in the WCHC. The following is a summary of the findings from screenings of children living in the WCHC, which is derived both from historical data and from the on-going blood lead testing campaign being conducted by ECHD:

- From the most recent ECHD testing in summer 2016, 18 out of 94 (19%) tested children from the WCHC under age six were identified with elevated blood lead (EBL) levels (> 5 µg/dL) based on capillary (finger stick) measurements.

- From 2014 through 2015, 26% of children under age seven tested at the WCHC were identified with EBL levels, with the highest measurement at 33 µg/dL in a one-year-old child. Within the same period, the census tract that includes all of the children from the WCHC (Zone 1) and part of Zone 2 had an EBL incidence rate of 22%. By comparison, the EBL rates for the two adjacent census tracts were 9% and 11%.

- The ATSDR Exposure Investigation conducted in the West Calumet neighborhood in 1997 showed a 35% EBL incidence rate, which was defined at that time as greater than 10 µg/dL.

These observations by ATSDR across almost 20 years demonstrate a consistent pattern of elevated blood lead levels in young children living in OU1. Given that the ISDH Lead Inspectors found no lead-based paint in recently sampled units within the WCHC, it is likely that exposure to soil-based lead contamination in the WCHC and portions of Zone 2 is a primary cause of elevated blood lead levels in children there.

2. Physical Location

The U.S.S. Lead Site lies approximately 18 miles southeast of Chicago, Illinois, in East Chicago, Indiana (Figure 1). The Site consists of the former U.S.S. Lead facility located at 5300 Kennedy Avenue, East Chicago, Indiana (designated as Operable Unit 2 (OU2)) and the residential area to the north and northeast (defined as OU1). OU1 is bound by East Chicago Avenue on the north, East 151st Street/149th Place on the south, the Indiana Harbor Canal on the west, and Parrish Avenue on the east. OU1 includes about 1200 homes, a small number of parks, open space as a part of the railroad right-of-way, schools, and public buildings. For the purpose of implementing the remedial action (RA) in OU1, EPA has divided OU1 into three distinct geographic areas (Zones 1, 2, and 3). This removal action is taking place in OU1 Zone 2. Zone 2 is adjacent to and directly east of Zone 1 and is generally bordered: (1) on the north by East Chicago Avenue; (2) on the east by Joliet, Elgin Railroad; (3) on the south by East 151st Street; and (4) on the west by the East Chicago Public Housing Complex, the Carrie Gosch Elementary School, and the Harbor Canal.

The EPA conducted an EJ analysis for the Site (see Attachment I). Screening of the surrounding area was conducted using Region 5's EJ Screen Tool. Region 5 has reviewed environmental and demographic data for the area surrounding the U.S.S. Lead Site and has determined there is high potential for EJ concerns at this location.

3. Site Characteristics

OU1 includes about 1,200 homes, a small number of parks, open space as a part of the railroad right-of-way, schools, and public buildings. OU1 is primarily a residential area, which includes commercial and light industrial areas. Some parcels in the residential area in Zones 1, 2 and 3 have levels of lead above EPA's RML of 400 mg/kg and arsenic above the RML of 68 mg/kg.

United States Geological Survey (USGS) historical aerial photographs from 1939, 1951, 1959, and 2005 show OU1 over time. Review of these aerial photographs indicates that most of the residential neighborhoods within the Site west of the railroad tracks were built before 1939. By 1951, approximately 75 to 80 percent of the homes were built; by 1959, most of the homes east of the railroad tracks had also been built. These photographs also show that the International Smelting and Refining Company, a subsidiary of the Anaconda Copper Company (whose successor in interest is now the Atlantic Richfield Company [ARC]) occupied the area where the WCHC is currently located (Zone 1 in the southwest portion of OU1) prior to 1946. Title records indicate that the East Chicago Housing Authority constructed the WCHC on the former Anaconda Copper Mining Company/International Smelting and Refining Company site between 1970 and 1973.

The U.S.S. Lead facility was a primary and secondary smelter of lead in the East Chicago, Indiana area. It began operations around 1906 and ended operations in 1985. From about 1920 until 1973, the facility was a primary smelter of lead. This included a refining process to create high quality lead free of bismuth. From 1973 until its closure in 1985, the facility was a secondary smelter and a reprocessor of car batteries. The secondary refinery operations included: battery breaking with tank treatment of spent battery acid at a rate of 16,000 gallons per day; baghouse dust collection with storage in on-site waste piles of up to 8,000 tons of flue dust; and blast furnace slag disposal, which was deposited in the wetland adjacent to and along the southern boundary of the facility. The blast-furnace baghouse collected approximately 300 tons of baghouse flue dust per month during maximum operating conditions. Some of the flue dust escaped the baghouse capture system and was deposited by the wind within the boundaries of OU1. Secondary lead recovery operations ceased in 1985.

In addition to the U.S.S. Lead facility operation, other industrial operations have managed or processed lead and other metals and are sources of contamination in OU1. Immediately east of the U.S.S. Lead facility and south of Zone 3 is the former DuPont site (currently leased and operated by W.R. Grace & Co., Grace Davison). One of the processes that historically took place at the DuPont site was the manufacturing of a lead arsenate pesticide. In 2015, DuPont spun off certain assets and liabilities to a newly created company, The Chemours Company FC, LLC (Chemours). Chemours is now the owner of the former DuPont facility.

North of the former U.S.S. Lead facility stood two smelter operations, which processed lead and other metals. A 1930 Sanborn map identifies the operations as Anaconda Lead Products and International Lead Refining Company (referred to as the former Anaconda facility). Anaconda Lead Products was a manufacturer of white lead and zinc oxide and the International Lead Refining Company was a metal refining facility. These facilities consisted of a pulverizing mill, white lead storage areas, a chemical laboratory, a machine shop, a zinc oxide experimental unit building and plant, a silver refinery, a lead refinery, a baghouse, and other miscellaneous buildings and processing areas. The International Lead Refining Company was a subsidiary of the Anaconda Copper Mining Company. Title to the property in Zone 1 was held between 1934 and 1946 by International Lead Smelting and Refinery Company. International Lead Smelting and Refinery Company acquired titled to the property in Zone 1 in 1934 from International Lead Refining Company, which had acquired title in 1912.

The residential area that comprises Zone 2 has been contaminated by aerial deposition of windblown contaminants from the U.S.S. Lead facility, the Anaconda Copper Mining Company/International Lead Smelting and Refinery Company facility, and the DuPont/Chemours facility. The focus of this time-critical removal action is Zone 2, which has approximately 590 residential parcels.

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

The threat is presented by the presence of lead and arsenic-contaminated soil in residential yards and potential lead and arsenic contaminated dust within the residences in Zone 2. The presence of lead and arsenic in outdoor soils and potentially in indoor dust at concentrations above health

screening values provides a constant source of exposure for individuals both outside and while in the home. Lead and arsenic are hazardous substances as defined by section 101(14) of CERCLA. *See* 40 C.F.R. § 302.4. Nearby lead processing operations caused extensive lead and arsenic contamination in soils throughout the Site. The removal is responding to actual and potential outdoor lead and arsenic contamination, as well as potential indoor contamination caused by the migration of lead and arsenic contaminated soil from outdoors to indoors (like the source of contamination found in Zone 1). The presence of elevated lead and arsenic levels in surface soils and potential presence of lead and arsenic in indoor dust in Zone 2 makes this a time-critical removal action.

Exposure may occur from direct ingestion of soil in yards, soil tracked indoors, or house dust; and inhalation of fugitive dust. Potential human receptors include residents, including children six years of age and under, and pregnant or nursing women.

Lead exposure via inhalation and/or ingestion can have detrimental effects on almost every organ and system in the human body. Exposure may occur from direct ingestion of soil in yards, soil tracked indoors, or house dust; and inhalation of fugitive dust. Lead can cause a variety of health problems to people who are exposed to it. Potential human receptors include residents, including children six years of age and under, and pregnant or nursing women. Children are at greatest risk from the toxic effects of lead. Initially, lead travels in the blood to the soft tissues (heart, liver, kidney, brain, etc.). Then, it gradually redistributes to the bones and teeth where it tends to remain. Children exposed to high levels of lead have exhibited nerve damage, liver damage, colic, anemia, brain damage, and death. The most serious effects associated with markedly elevated blood lead levels include neurotoxic effects such as irreversible brain damage.

Ingesting very high levels of arsenic can result in death. Exposure to lower levels can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, damage to blood vessels, and a sensation of "pins and needles" in hands and feet. Ingesting or breathing low levels of inorganic arsenic for a long time can cause a darkening of the skin and the appearance of small "corns" or "warts" on the palms, soles, and torso. Skin contact with inorganic arsenic may cause redness and swelling. Several studies have shown that ingestion of inorganic arsenic can increase the risk of skin cancer and cancer in the liver, bladder, and lungs. Inhalation of inorganic arsenic can cause increased risk of lung cancer. The Department of Health and Human Services (DHHS) and the EPA have determined that inorganic arsenic is a known human carcinogen (ATSDR, Chemical Abstract Services [CAS] # 7440-38-2], August 2007).

5. NPL status

The U.S.S. Lead Site consisting of both the former U.S.S. Lead facility (OU2) and the West Calumet neighborhood to the north (OU1) was listed as a Superfund site on the national priorities list (NPL) on April 8, 2009. EPA began the RI for OU1 on June 26, 2009. During December 2009 and August 2010, EPA contractors sampled yards in residential areas and background locations. In June 2012, EPA completed a preliminary investigation and study to determine the level and extent of lead and arsenic contamination within OU1 and proposed a remedy. In November 2012, after considering comments received from the City and IDEM,

EPA outlined the long-term permanent cleanup plan in a Record of Decision for OU1. The EPA has completed the remedial designs for work in Zone 1 and Zone 3 and is in the process of completing the remedial design for Zone 2.

6. Maps, pictures and other graphic representations

Maps include:

Figure 1 – USS Lead and Lead Refinery, E. Chicago, IN. Location Map
Figure 2 – OU1 Zones 1, 2, and 3– Location Map

B. Other Actions to Date

1. Previous actions

On January 22, 2008, EPA signed the original action memorandum to conduct a time-critical removal action in OU1 to address known parcels with lead levels exceeding the removal action limit of 1,200 mg/kg. These parcels were identified based on sampling data collected during the RCRA Corrective Action investigation. That removal action began on June 9, 2008, and involved the excavation and off-site disposal of lead contaminated soil from 13 residential parcels. On August 13, 2008, EPA amended the original action memorandum to increase the project ceiling in order to complete the ongoing, time-critical removal action. In total, 1,838 tons of lead-contaminated soil were removed and disposed of at an approved landfill. Excavated areas were backfilled with clean fill and seeded. This removal action was completed on September 25, 2008, and the final Pollution Report was issued on November 18, 2008.

On September 12, 2011, EPA signed an action memorandum to conduct a time-critical removal action in Zones 1, 2, and 3 of OU1 to address 16 parcels (including the 2 that were missed in 2008) with lead levels exceeding the removal action limit of 1,200 mg/kg. These parcels were identified based on sampling data collected during the RI. This removal action began on October 24, 2011, and involved the excavation and off-site disposal of lead contaminated soil from 16 residential parcels. In total, 1,913 tons of lead-contaminated soil were removed and disposed of at an approved landfill. Excavated areas were backfilled with clean fill and seeded. This removal action was completed on December 9, 2011, and the final Pollution Report was issued on December 15, 2011.

2. Current actions

On July 11, 2016, EPA started remedial action activities to cover bare soils with wood mulch within the WCHC to minimize fugitive dust, direct contact and potential migration of soil with elevated lead levels. The mulching work was completed on July 22, 2016, although maintenance of the mulch cover is ongoing as part of the remedial work associated with the implementation of the ROD for OU1.

On July 29, 2016, EPA initiated in-house sampling for dust collection in Zone 1 to determine lead concentrations in homes. As of September 28, 2016, EPA has received validated results

from 154 residences. Concentrations ranged from 3.9 to 32,000 mg/kg for lead fines and 0.12J (J means value is estimate) to 880 mg/kg for arsenic fines (See Attachment VI – Summary of Indoor Dust Sampling Results). Data results from indoor dust from the first 154 homes indicate 69 parcels exceed the EPA screening level of 316 mg/kg for lead for indoor living spaces (See Attachment VII – Indoor Dust Screening Criteria).

ISDH conducted a separate inspection of fourteen of the identified residential units for compliance with lead paint abatement policies. Lead-based paint was not found in any of the inspected units. On August 12, 2016, EPA began cleaning (under October 13, 2016 USS Lead action memo for Zone 1) the inside of all occupied (approximately 334) units within the WCHC, all of which are or have the potential to be contaminated with lead contaminated dust above the risk-based screening criteria for indoor dust from industrial activities. A combination of HEPA vacuums and wet cleaning are used to remove lead dust from ceilings, floors, carpets, walls, drapes, accessible ductwork, furnace, and furniture. As of October 3, 2016, approximately 113 out of 334 occupied units have been cleaned. Residents were temporarily relocated during the indoor cleaning period.

C. State and Local Authorities' Roles

1. State and Local Actions to Date

On August 24, 2016, Rex Osborn, Federal Programs Section Chief with IDEM, sent an email indicating the State of Indiana does not have the financial resources to eliminate the threat posed by lead-contaminated soil in yards and dust within the residences or to fund temporary relocations. Neither the State of Indiana nor the City of East Chicago have taken or have the capacity to take action to abate the immediate threat.

2. Potential for Continued State/Local Response

The EPA is working with ATSDR, the East Chicago Health Department, the Indiana State Department of Health, and City of East Chicago elected officials to provide information to the public. EPA is coordinating discussions with stakeholders regarding the elevated levels of lead and arsenic in soil and EPA's plans to address this issue. Neither the state nor local officials have the resources to conduct the necessary cleanup of the indoor dust contamination or to provide for the temporary relocation of residents.

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

The conditions at Zone 2 of the U.S.S. Lead Site present a threat to the public health or welfare and the environment and meet the criteria for a time-critical removal action as provided for in the NCP, 40 C.F.R. § 300.415(b)(1), based on the factors in 40 C.F.R. § 300.415(b)(2). These factors include, but are not limited to, the following:

§ 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;

Beginning in July 2016, EPA began conducting more extensive soil sampling within Zone 2 as part of the RD process for OU1. Zone 2 includes approximately 590 separate parcels. Most of these parcels are residential parcels, though there are some commercial/industrial parcels. In September 2016, EPA received validated sampling results from 48 parcels in Zone 2 which revealed lead concentrations in surface soil (0-6 inches below ground surface) at values ranging from 38.3 to 2,120 mg/kg. Arsenic concentrations ranged from 4.3 to 111 mg/kg (See Attachment V – Summary of OU1 RD Soil Sampling Results). Ten sampled parcels had surface soil lead concentrations above 1,200 mg/kg and 40 of 48 parcels exceed the RML for lead of 400 mg/kg for residential surface soil. Two parcels exceeded the 68 mg/kg RML for arsenic (111 and 78.1 mg/kg in surface soil). One parcel that exceeded the RML for arsenic also exceeded the RML for lead in soil.

Data results from indoor dust from the first 154 homes sampled in Zone 1 indicate 69 properties exceed the EPA screening level of 316 mg/kg for lead for indoor living spaces. EPA is currently addressing exposure to lead contaminated soil in yards and indoor dust in Zone 1. High lead concentrations in indoor dust are a risk to human health, particularly for children under the age of six (i.e., inhalation, ingestion). A recent blood lead study conducted by ECHD found that children in the WCHC and part of Zone 2 are at an increased risk for lead exposure (22% at or above 5 µg/dL compared to the national average of 2.5%).

Lead is a hazardous substance, as defined by Section 101(14) of CERCLA. The effects of lead are the same whether it enters the body through breathing or swallowing. Lead can affect almost every organ and system in the body. The main target for lead toxicity is the nervous system, both in adults and children. Long-term exposure of adults can result in decreased performance in some tests that measure functions of the nervous system. It may also cause weakness in fingers, wrists, or ankles. Lead exposure also causes small increases in blood pressure, particularly in middle-aged and older people and can cause anemia. Exposure to high lead levels can severely damage the brain and kidneys in adults or children and ultimately cause death. In pregnant women, high levels of exposure to lead may cause miscarriage. High-level exposure in men can damage the organs responsible for sperm production.

Arsenic is a hazardous substance under CERCLA and may be ingested or inhaled by residents living at the Site. Acute (short-term) high-level inhalation exposure to arsenic dust or fumes has resulted in gastrointestinal effects (nausea, diarrhea, abdominal pain); central and peripheral nervous system disorders have occurred in workers acutely exposed to inorganic arsenic. Chronic (long-term) inhalation exposure to inorganic arsenic in humans is associated with irritation of the skin and mucous membranes and effects in the brain and nervous system. Chronic oral exposure to elevated levels of inorganic arsenic has resulted in gastrointestinal effects, anemia, peripheral neuropathy, in humans. Chronic exposure by the inhalation route, has been shown to cause a form of skin cancer and also to cause bladder, liver, and lung cancer. EPA has classified inorganic arsenic as a human carcinogen.

§ 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;

As stated in the previous paragraphs, surface soils in Zone 2 where found to be contaminated with lead and arsenic above the EPA screening levels.

Residents living in Zone 2 may cause the high levels of lead and arsenic to migrate into other areas including inside the home by walking through and tracking in, gardening, play, and other residential activities, especially in areas where the soil does not have any cover. Other means of migration may include routine construction activities.

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

There is a threat of release from high winds dispersing surface particulate matter containing lead, resulting in exposure to children and adults who reside within the Site. Grass cover is generally lighter in the early spring and fall, allowing more potential of tracking contaminated soil into the home. Rain or thundershowers may cause the outdoor lead to migrate via surface runoff. The use of an air conditioner during the hot summer months or the running of a furnace during the winter would also result in the migration of indoor dust.

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

At this time, no local or state agency has the resources to respond to the immediate threat.

IV. EXEMPTION FROM STATUTORY LIMITS

Section 104(c) of CERCLA, as amended by the Superfund Amendments and Reauthorization Act (SARA), limits a Federal response action to 12 months and $2 million unless response actions meet emergency and/or consistency exemptions. Documentation for the aforementioned exemptions are provided in the U.S.S. Lead Action Memorandum-Third Amendment approved on October 13, 2016.

V. ENDANGERMENT DETERMINATION

Given the Site conditions, the nature of the known and suspected hazardous substances on-site, and the potential exposure pathways described in Sections II and III above, actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response actions selected in this Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment.

VI. PROPOSED ACTIONS

The response actions described in this memorandum directly address actual or potential releases of hazardous substances on Site, which may pose an imminent and substantial endangerment to public health, or welfare, or the environment.

The proposed action involves excavation and removal of lead and arsenic-contaminated soil at residential parcels within Zone 2 with surficial soil concentrations at or above 1,200 mg/kg for lead and/or the removal management level (RML) of 68 mg/kg for arsenic, and indoor dust sampling and cleaning upon the request of residents and owners. The response actions are consistent with the (OSWER) Publication 9285.7-50 *Superfund Lead-Contaminated Residential Sites Handbook* (Handbook) (2003), where the Superfund Program uses a tiered approach to prioritize which homes needed to be cleaned up first. Residential parcels with lead concentrations in surface soil at or greater than 1,200 mg/kg would be the highest priority for immediate action under a time-critical removal action. Excavated areas will be backfilled to original grade with clean soil and the yards restored as closely as practicable to its pre-removal condition.

Approximately 590 Zone 2 parcels will be sampled during the remedial design process. For cost accounting purposes, EPA anticipates the scope of this removal action in Zone 2 to include approximately 132 residential parcels that are at or greater than 1,200 mg/kg for lead and/or 68 mg/kg for arsenic based on historical and the latest remedial design validated data from Zone 2.

Removal activities associated with the excavation of lead and arsenic contaminated soil from residential yards in Zone 2 will include:

1. Development of site plans, including a Work Plan, Sampling Plan/QAPP, site-specific HASP, and Emergency Contingency Plan;

2. Development of an air monitoring plan and conduct dust control measures to ensure worker and public health protection;

3. Provision for site security measures as necessary;

4. Excavation of soil at residential parcels where lead is equal to or exceeds 1,200 mg/kg and/or arsenic exceeds 68 mg/kg as determined by EPA's RD sampling. Soil will be excavated to a depth of approximately two feet bgs, to eliminate any direct contact and inhalation threats. Excavated material that fails toxicity characteristic leaching procedure (TCLP) for lead may be treated with a fixation agent prior to disposal. Excavation will cease if lead and/or average arsenic concentrations are less than 400 mg/kg for lead and 26 mg/kg for arsenic.

5. Collection and analysis of confirmation samples from the bottom of each excavation. If lead levels below 400 mg/kg or arsenic levels below 26 mg/kg cannot be achieved at an excavation depth of approximately two feet bgs, excavation will cease and a visible barrier will be placed at the bottom of the excavation to alert the property owner of the existence of high levels of lead and/or arsenic. In such instances and consistent with the record of

decision, institutional controls (ICs) will be implemented as part of the remedial action to ensure the users of the property are not exposed to the contaminants of concern in soil;

6. Replacement of excavated soil with clean soil, including 6 inches of top soil to maintain the original grade. Each yard will be restored as close as practicable to its pre-removal condition. Once the parcels are sodded or seeded, removal site control of the sod or seed, including, watering, fertilizing, and cutting, will be conducted for 30 days. After the initial 30 day period, property owners will be responsible for the maintenance of their own yards. The aforementioned work shall be documented in a Work Plan;

7. Transportation and disposal off-site of any hazardous substances, pollutants and contaminants at a CERCLA-approved disposal facility in accordance with EPA's Off-Site Rule (40 CFR § 300.440);

8. Performance of any other response actions to address any release or threatened release of a hazardous substance, pollutant or contaminant that the EPA On-Scene Coordinator (OSC) determines may pose an imminent and substantial endangerment to the public health or the environment; and

9. Conduct an evaluation to determine if soil excavation activities result in a release of lead scale particles from lead service lines into the drinking water supply. This sampling will be conducted from parcels being excavated in the fall of 2016. Data will be evaluated prior to the 2017 construction season to determine if construction activities impact drinking water quality. Bottled water and water filters will be provided during and after the soil excavation activities as necessary during the evaluation period. Based on findings from the 2016 evaluation, a determination will be made on whether the provision of bottled water and water filters should continue beyond the evaluation period. (Note: This evaluation is being conducted at the request of the Agency for Toxic Substances and Disease Registry, see memo from Mark Johnson to Doug Ballotti dated October 24, 2016.)

Data results in Zone 1 from indoor dust from the first 154 homes sampled indicate 69 parcels exceed the EPA screening level of 316 mg/kg for lead for indoor living spaces. Given the significant number of indoor samples that indicated action is needed and the threat posed by high concentrations of lead in soil in adjacent outdoor areas, and the consistent pattern of EBL levels in children less than 6 years of age living in WCHC and portions of Zone 2, EPA, at the request of the residents and homeowners, will vacuum sample indoor dust for lead and arsenic. EPA will clean the inside of residences that are above the risk-based screening criteria of 316 mg/kg for lead and 100 mg/kg arsenic for indoor dust from industrial-related activities. In general, the indoor cleanup process will involve four basic steps: (1) collection of indoor dust vacuum samples (in homes previously not sampled), (2) possible temporary relocation of residents, (3) removal of contaminated indoor dust from floors and carpeting, and cleaning of accessible HVAC systems and filter replacement (4) Post cleaning clearance sampling; and (5) the return of occupants to their residence if temporarily relocated. A combination of HEPA vacuums and/or wet cleaning will be used to remove contaminated dust from floors, carpeting and HVAC systems. Replacement of carpets/mats may be considered on a case by case basis if cleaning mechanisms fail to remove lead and arsenic dust below cleanup criteria.

Removal activities associated with indoor sampling, evaluation, and removal of contaminated dust in homes in Zone 2 will include:

1. Development of a Work Plan and Site Specific Health and Safety Plan;
2. Development and implementation of an air monitoring/sampling plan for the work zone and Site;
3. Continuation of indoor dust and other sampling as determined necessary;
4. Provision for Site security, as directed by the OSC;
5. Development of a relocation plan to address, if necessary, the temporary relocation of residents during the cleaning process;
6. Performance of interior dust cleanup activities as specified in the Site Work Plan;
7. Transportation and disposal off-site of any hazardous substances, pollutants and contaminants at a CERCLA-approved disposal facility in accordance with EPA's Off-Site Rule (40 CFR § 300.440); and
8. Performance of any other response actions to address any release or threatened release of a hazardous substance, pollutant or contaminant that the EPA On-Scene Coordinator (OSC) determines may pose an imminent and substantial endangerment to the public health or the environment.

The Action Memorandum and supporting documentation follow the April 2002 Superfund Response Actions: Temporary Relocations Implementation Guidance, particularly in considering residents' needs, property security, dealing with resident's stress and disruptions, and explaining benefits. Consistent with EPA's guidance on temporary relocations (2002), Sec. IV.A ("Making the Relocation Decision"), temporary relocation at the Site is justified during the cleaning process by the following factor:

- Efficiency of response action: temporary relocation minimizes concerns about noise, property access, and other restrictions on the hours or types of response activities that may be conducted at the Site.

The removal actions will be conducted in a manner not inconsistent with the NCP.

The threats posed by uncontrolled substances considered hazardous meet the NCP criteria listed at § 300.415(b), and the response actions proposed herein are consistent with any long-term remedial actions which may be required.

Off-Site Rule

All hazardous substances, pollutants, or contaminants removed off-site pursuant to this removal action for treatment, storage, and disposal shall be treated, stored, or disposed of at a facility in compliance, as determined by EPA, with the EPA Off-Site Rule, 40 C.F.R. § 300.440.

1. Contribution to remedial performance

The proposed action should not impede future remedial performance.

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

Not Applicable

3. Applicable or relevant and appropriate requirements (ARARs)

All applicable or relevant and appropriate requirements (ARARs) will be complied with to the extent practicable. On August 18, 2016, EPA sent an e-mail to Rex Osborn of IDEM asking for any State of Indiana ARARs that may apply. IDEM provided both Action and Chemical specific state ARARs in a letter dated August 26, 2016. EPA will consider and implement the submitted ARARs as appropriate.

Project Schedule

The time-critical removal actions will require approximately 528 working days to complete.

B. Removal Project Ceiling Estimate – Extramural Costs:

The detailed cleanup contractor cost is presented in Attachment 1 and the Independent Government Cost Estimate is presented in Attachment IV. Estimated project costs are summarized below:

REMOVAL ACTION PROJECT CEILING ESTIMATE

Extramural Costs	**Current Ceiling**	**Proposed Increase**	**Proposed Ceiling**
Regional Removal Allowance Costs:			
Total Cleanup Contractor Costs (This cost category includes estimates for ERRS, subcontractors, Notices to Proceed, and Interagency Agreements with Other Federal Agencies and 20% Contingency)	$18,875,702	$10,133,755	$29,009,457
Other Extramural Costs Not Funded from the Regional Allowance:			
Total START, including multiplier costs	$3,122,250	$1,425,000	$4,547,250
Subtotal			
Subtotal Extramural Costs	$21,997,952	$11,558,755	$33,556,707
Extramural Costs Contingency (20% of Subtotal, Extramural Costs rounded to nearest thousand for Proposed Increase)	$4,399,590	$2,311,751	
TOTAL REMOVAL ACTION PROJECT CEILING	**$26,397,542**	**$13,870,506**	**$40,268,048**

The response actions described in this memorandum directly address the actual or threatened release of hazardous substances, pollutants, or contaminants at the Site which may pose an imminent and substantial endangerment to public health or welfare or to the environment. These response actions do not impose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

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

Given the Site conditions, the nature of the hazardous substances and pollutants or contaminants documented in Zone 2 of OU1, and the potential exposure pathways to nearby populations described in Section II and Section III, above, actual or threatened releases of hazardous substances and pollutants or 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, welfare, or the environment.

VIII. OUTSTANDING POLICY ISSUES

None

IX. ENFORCEMENT

For administrative purposes, information concerning the enforcement strategy for this Site is contained in the Confidential Enforcement Addendum.

The total EPA costs of this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be $68,457,330[1].

($40,268,048+ $2,000,000) + (61.96% x $42,268,048) = $68,457,330

[1] 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 direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgement 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.

X. RECOMMENDATION

This decision document, along with the Action Memorandum signed on January 22, 2008, and the Action Memorandum Amendments signed on August 13, 2008, September 12, 2011, and October 13, 2016 represents the selected removal action for the U.S. Smelter and Lead Refinery Site, Zone 2, OU1, East Chicago, Lake County, Indiana. It was developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for the Site (Attachment II). Conditions at OU1, Zone 2 meet the NCP Section 300.415(b) criteria for a removal action and the CERCLA Section 104(c) emergency exemption from the $2 million and 12-month limitation. The total removal action project ceiling, if approved, will be $40,268,048 of which as much as $33,770,398 may be used from the removal allowance. I recommend your approval of the proposed removal action. You may indicate your decision by signing below.

APPROVE _____ DATE: 10/28/16
Assistant Administrator Office of Land and Emergency Management

DISAPPROVE _____ DATE: _____
Assistant Administrator Office of Office of Land and Emergency Management

Enforcement Addendum

Figures:

Figure 1 – USS Lead and Lead Refinery, E. Chicago, IN. Location Map
Figure 2 – OU1 Zones 1, 2, and 3– Location Map

Attachments:

I. Environmental Justice Analysis
II. Administrative Record Index
III. Detailed Cleanup Contractor Estimate
IV. Independent Government Cost Estimate
V. Summary of OU1 RD Soil Sampling Results
VI. Indoor Dust Screening Criteria for Lead
VII. Indoor Dust Screening Criteria for Arsenic
VIII. Third Amended Action Memorandum dated October 13, 2016

cc: Brian Schlieger, U.S. EPA, 5104A/B517F **(Schlieger.Brian@epa.gov)**
Lindy Nelson, U.S. DOI, **w/o Enf. Addendum (Lindy_Nelson@ios.doi.gov)**
Rex Osborn, IDEM **w/o Enf. Addendum (rosborn@idem.in.gov)**

APPENDIX F

TO
Z2&3 INTERIOR UAO

FORM OF INTERIOR ACCESS AGREEMENT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

CONSENT FOR ACCESS TO PROPERTY FOR SAMPLING AND TO TAKE RESPONSE ACTION

Name: _____ Daytime Phone Number: _____
(Print)

Evening Phone Number: _____

Title (e.g., tenant, owner): _____

Address of Property: _____

I consent to officers, employees, contractors and authorized representatives of the U.S. Environmental Protection Agency entering and having continued access to the property described above (the Property), including the interior of residences located within the Property, to perform the following actions: (1) to conduct sampling and lead-based paint screenings as deemed necessary by EPA; and (2) to perform response actions within the residences to address risks to human health and the environment as deemed necessary by EPA.

I understand that these actions taken by EPA are undertaken pursuant to its response and enforcement responsibilities under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, 42 U.S.C. Section 9601 et seq., and that these activities are necessary to protect human health and the environment. I also understand that I may be required to share the results of the lead-based paint screenings with current and potential future residents of the property, and that I must comply with all relevant and applicable laws and regulations regarding lead-based paint.

I give this written permission voluntarily on behalf of myself and all other residents of the Property, with knowledge of my right to refuse and without threats or promises of any kind. I understand that EPA or authorized representatives of EPA will use best efforts to contact me before the sampling begins.

This document can only be signed by a resident of the property who is over 18 years of age.

PLEASE CHECK ONLY ONE BOX AND SIGN BELOW

_____
Date

☐ I grant access to the Property for the purposes stated above.

☐ I do not grant access to the Property.

_____
Signature

_____
Signature

Please provide the month and year in which you moved to this residence: _____

Please provide the age of each child under the age of 18 living at this residence:

_____

Are there any pregnant women living at this residence? _____

APPENDIX G

TO
Z2&3 INTERIOR UAO

Letter from John N. Moscato, Senior Counsel, Dep't of Justice, to E. Donald Elliott, Partner, Willkie Farr & Gallagher LLP (Apr. 19, 2010)

U.S. Department of Justice
Environment and Natural Resources Division

John N. Moscato
Environmental Enforcement Section
1961 Stout Street, 8th Floor
Denver, CO 80294

Telephone (303) 844-1380
Facsimile (303) 844-1360
Email:John.Moscato@USDOJ.gov

April 19, 2010

BY ELECTRONIC MAIL

E. Donald Elliott
Willkie Farr & Gallagher LLP
1875 K Street, N.W.
Washington, D.C. 20006
(202) 303-1120
delliott@willkie.com

Re: Eureka Mills Site: United States and Mueller Industries, Inc.

Dear Don:

On February 18, 2010 you sent me a letter on behalf of Mueller Industries, Inc. ("Mueller") discussing at length certain legal issues which Mueller contends "preclude any right to recovery by the United States for its response costs at the Eureka, Utah Site against Mueller on account of the past disposal activities of, or assumptions of liabilities for disposal, by UV Industries, Inc. ("UV") as opposed to Mueller itself."[1] That letter, among other things contends that any such claims are precluded based on the 1986 - 1990 litigation in United States v. Sharon Steel, et al, Civil Action Nos. 86-C-136 and 86-C-924J (the "Midvale Litigation") under the legal doctrines of: (1) novation and release; (2) res judicata; (3) collateral estoppel; and (4) judicial estoppel.[2] During our March 1, 2010 conference call we agreed that the United States would defer its response to Mueller's February letter in light of our ongoing settlement discussions. Nonetheless, on April 1, 2010, in response to our March 1st discussion, Muller provided me with a supplemental letter intended to further buttress positions taken by Mueller's in its February letter.[3]

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[1] February 18, 2010 letter from E. Donald Elliott to John N. Moscato, Andrea Madigan and Steven B. Moores, at 1 - 2.

[2] Id. at 3.

[3] April 1, 2010 letter from E. Donald Elliott to John N. Moscato, Andrea Madigan and Steven B. Moores. Both of Mueller's letters indicate that they are, "On the Record." We understand this to only mean that they are not subject to the "Confidentiality Agreement Between the United States and Mueller Industries, Inc. for Settlement Negotiations Regarding Alleged CERCLA Liability at the Eureka Mills National Priorities List Site" since it is our opinion that neither the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. §9601

In light of the status of our settlement discussions, and with the hope that a further presentation of the United States' position will facilitate a prompt and amicable resolution to the matters at hand, I thought it would be timely to share with you my client's response to Mueller's two letters. While Mueller's analysis is thoughtful, my client remains unpersuaded. There is clearly a fundamental difference of opinion between the government and Mueller as to the preclusive effect of the Midvale Litigation. As explained more fully herein, the government believes that the Consent Decrees between the United States and Sharon Steel Corporation ("Sharon Decree") and the United States and UV Industries, Inc. and the UV Industries, Inc. Liquidating Trust ("UV Decree"), on their face, unequivocally preserve an action by the government against Mueller for EPA's response costs at the Eureka Mills Site under Section 107 of CERCLA, 42 U.S.C. § 9607, by virtue of, at a minimum: (1) Mueller's status as a past "owner" of a facility at the Site, within the meaning of Sections 101(20)(A) and 107(a)(2) of CERCLA, 42 U.S.C. §§ 9601(20)(A) and 9607(a)(2); and (2) Sharon Steel Corporation's express assumption of UV's liabilities under the November 26, 1979 Agreement for Purchase of Assets between UV Industries, Inc. and the Sharon Steel Corporation, the November 26, 1979 Instrument of Assumption of Liabilities between UV Industries, Inc. and the Sharon Steel Corporation, and the November 5,1981 Grant Bargain and Sale Deed between UV Industries, Inc. and the UV Industries, Inc. Liquidating Trust and the Sharon Steel Corporation (hereafter, the "1979 Transaction"). In sum, Mueller's preclusion analysis is largely superfluous in light of the clear and plain terms of the Sharon and UV Decrees.

A. United States' Second Amended Complaint - Midvale Litigation

Because the covenants not to sue in both the Sharon and UV Decrees reference the "Actions," a brief review of the scope of the United States' Second Amended Complaint in the Midvale Litigation (the "Complaint") and the related pleadings, is warranted.

Paragraph 9 of the Complaint defines the "Site" as an area approximately 12 miles southwest from Salt Lake City, Utah covering approximately 260 acres. Both Decrees essentially adopt that definition.[4] Therefore, when the Decrees discuss a resolution of claims contained in the "Actions," those claims are geographically limited to the Slag Site and the Tailings Site and no other site.

Both Mueller and the United States agree that the United States' Complaint against Sharon Steel Corporation ("Sharon") alleges that Sharon was liable at Midvale solely on the basis of Sharon's status as a present owner/operator of a portion of the Midvale Site. CERCLA Section 107(a)(1), 42 U.S.C. § 9607(a)(1). Both Mueller and the United States also agree that the United States did not assert that Sharon was liable at Midvale as a successor to UV by virtue of the 1979 Transaction. Mueller, however, implies that the government was obligated to proceed against Sharon at the Midvale Site on a successor theory if such a theory was available. That simply is not correct. See, Carrier Corp. v. Piper, 460 F. Supp. 2d 827, 845 (W.D. Tenn. 2006) ("When a successor company becomes a new 'owner or operator' of a facility, it becomes directly liable and successor liability doctrine is not needed." See also, United States v. Price,

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et seq. (1980) ("CERCLA"), nor the Administrative Procedures Act, 5 U.S.C. § 500 et seq., provide for record review of either EPA's decision to refer a matter to DOJ, or DOJ's decision to institute a civil proceeding on behalf of EPA.

[4] The Site is more specifically defined in the Sharon and UV Decrees as the "Slag Site" and "Tailings Site." See, the Sharon Decree at p. 2 and Section I.G. and H. See also and the UV Decree at p.2 and Section I.D. and E.

523 F. Supp. 1055, 1073-74 (D.N.J.1981), aff' d, 688 F.2d 204 (3rd Cir.1982) ("new facility owner liable although not creator of the hazardous condition").

The United States' Complaint also alleges that UV was liable at Midvale based on UV's status as a past owner of the Site at the time of disposal, CERCLA Section 107(a)(2), 42 U.S.C. § 9607(a)(2), Complaint ¶¶ 11 - 12, and that the UV Industries Inc. Liquidating Trust (hereafter, the "Trust") was liable at Midvale on the basis of the Trust's status as the entity created to wind up UV's business affairs. See, Complaint ¶ 7. Subsequent briefings in the Midvale Litigation make clear that the United State's legal theory was that the Trust's liability arose because of the Trust's express assumption of UV's liability.[5]

The significance of the theories plead in the United States' Complaint to an analysis of Mueller's preclusion arguments is manifest. First, the transaction in which the Trust assumed UV's liabilities is not the same as the 1979 Transaction in which Sharon assumed certain liabilities from UV. In Mueller's analysis, including Mueller's discussions of the Midvale motions to dismiss and partial summary judgment briefings, Mueller conflates these two distinct transactions. This is incorrect and consequential as Sharon was not privy to the UV / Trust assumption agreement. For that reason alone, Mueller's preclusion arguments fail. Second, Mueller's preclusion arguments fail because they rest on the implied proposition that the United States asserted either in its Complaint or pleadings that the Trust was the sole successor to UV's liabilities – there is absolutely no support in the record of the Midvale Litigation for that proposition. Third, Mueller's preclusion arguments fail because the 1979 Transaction was not an issue placed in dispute by the United States' Complaint in the Midvale Litigation.[6] Fourth, Mueller's *res judicata* argument fails because for *res judicata* to attach, there must be a final judgment. A fair reading of the August 14, 1990 hearing transcript in the Midvale Litigation reveals that the Court failed to articulate a final opinion on the issue of the Trust's successorship.

> I've expressed my Conclusions in reference to the Trust, on prior occasions; and I have indicated that I am willing to discuss that. There's an effort to revisit that the third time; but I have indicated that we will revisit that at Pretrial, it at all...Generally, I'd indicated, that in times past, that the shareholders' interest are residual interests. They get paid after all the creditors are paid. Ordinarily, if we have assets that are transmuted into money, the money rides with the burden. It's not free money until we make sure that the creditors are taken care of ... And I might indicate, as well, that I felt that is made sense to at least indicate to you the Rulings and Holdings today. In doing so, I don't want to suggest that I have exhausted the reasons nor do I – and I should indicate that I reserve the Right to expand on the subject, if I feel inclined and if I have the time and energy, and reserve the Right to write on the subject, if time permits...But I thought, that because of the nature of what we've been doing, that it would be well to at least indicate to you the Rulings today. Emphasis added.

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[5] See, e.g., Midvale Litigation, Plaintiff United States of America's "Memorandum of Law In Reply to the Opposition of Defendants UV Industries, Inc. Liquidating Trust and UV Industries, Inc. to Plaintiff's Cross-motion for Summary Judgment," p. 8 and specifically, n. 10.

[6] It appears that to the extent the 1979 Transactions were put at issue, it was only in the context of cross-claims among Sharon, UV and ARCO. See, Midvale Litigation, Memorandum of Law In Opposition to Motion of Defendant UV Industries, Inc. Liquidating Trust To Dismiss The Complaint As To UV Industries, Inc., at p. 5 - 6 and n. 3.

August 14, 1990 hearing transcript 170 - 171,

Therefore, even assuming arguendo that the Sharon and UV Decrees did not clearly reserve the government's cause of action under CERCLA at the Eureka Site, Mueller's preclusion arguments would fail on other grounds.

B. Sharon Decree

Mueller contends that, "[t]here is nothing in the Partial Consent Decree with Sharon in *U.S. v. Sharon, UV Industries, and the UV Trust* that waives Sharon/Mueller's rights to rely on *res judicata*, collateral estoppel or other preclusion defenses based on these events in the prior litigation."[7] That position is untenable because it contradicts the plain meaning of multiple clauses of the Sharon Decree.

The Sharon Decree begins with the following judicial pronouncement, "THEREFORE without adjudication of any issue of law or fact and upon the consent of the parties hereto it is hereby ORDERED ADJUDGED AND DECREED as follows . . ."[8] The Decree itself is the court order resolving the litigation. It does so with the express caveat that resolution is by consent, not by the adjudication of "any issue of law or fact." In and of itself, this language undermines Mueller's preclusion arguments.

Section I, ¶ R of the Sharon Decree defines "Sharon Steel Corporation" to mean "Sharon Steel Corporation as debtor, debtor-in-possession or in reorganized form as result of the Bankruptcy Proceeding." Section I, ¶ Q.2 of the Sharon Decree further defines Sharon to include, "Any Person succeeding pursuant to a confirmed plan of reorganization, to any or all of Sharon Steel Corporations obligations under this Decree relating to the Sites . . ." If, as Mueller suggests, the intent of the Sharon Decree was to absolve Sharon from any liability Sharon assumed from UV in the 1979 Transaction, the Sharon Decree could have easily done so by explicitly expanding this definition to include Sharon in its capacity as a successor to UV. The fact that no such provision was made, particularly when both parties were aware of Sharon's potential liability at other locations purchased by Sharon under the 1979 Transaction, is damning.

Section V. of the Sharon Decree, Payment to the United States, at p. 14, specifies:

> In full and complete satisfaction of all of Sharon's liabilities, duties and responsibilities arising out of or relating to the Actions and the Sites (except as limited by Paragraphs VIII.B and (hereof), and in consideration of the Covenant not to Sue set forth in Section VIII. hereof the United States shall receive the following consideration . . . (Emphasis added.)

In settlement of the United States' claims in the Midvale Litigation, the only thing Sharon paid for was Sharon's liability "arising out of or relating to the Actions and the [Midvale] Sites." There is no hint in the Decree that the payments made by Sharon under the Decree compensated the government for anything other than Sharon's role at the Midvale Sites.

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[7] February 18, 2010 letter from E. Donald Elliott to John N. Moscato, Andrea Madigan and Steven B. Moores at p. 16.

[8] Sharon Decree at p. 5. Emphasis added.

Section VII. B. of the Sharon Decree, Effect of Settlement at 27 provides:

> By virtue of its payment of the settlement amount identified in Section V. of this Decree, Sharon Steel Corporation shall have resolved Sharon's liability to the United States for the matters covered by the Covenant Not to Sue in Paragraph VIII. A. hereof .

Section VIII. A., Covent Not To Sue, at p. 28 provides:

> [T]he United States and the State hereby covenant not to sue Sharon as to any matter alleged in either or both of the Actions, including any Future Liability with regard to the Tailings Site or the Slag Site . . . This Covenant not to Sue applies only to Sharon, the United States and the State.

The scope of the covenant is clearly limited to matters alleged in the "Actions" which themselves only reach the Midvale Site. While the meaning and effect of this provision could be no plainer, Section VII. F. of the Sharon Decree, Effect of Settlement, at p. 28 certainly removes any doubt:

> This Decree shall have no effect on any claims of the United States except those brought by the United States on behalf of EPA as they relate to the Sites

The intent of the parties and the effect of settlement is yet again expressed in Section X. A., Sharon Decree, Preservation of Other Claims, at pp. 35 - 36, where it states that:

> Nothing in this Decree shall be deemed to impair any claims identified in the United States' Proof of Claim, or any other claims of the United States on behalf of EPA, other than the United States' claims with respect to the Tailings Site and the Slag Site . . . all other such claims Other Claims shall not be affected by the confirmation of the Plan of Reorganization and shall not be discharged pursuant to Bankruptcy Code 1141 or otherwise.

Collectively, the foregoing provisions of the Sharon Decree absolutely and expressly reserve the United States' right to bring its claims against Mueller at the Eureka Mills Site. Muller as much as admits so:

> Any potential claims that Sharon/Mueller, rather than the UV Trust, was the legal successor to UV Industries had already been destroyed, not by "this" Partial Consent Decree settling the owner/operator claim against Sharon, but by the positions taken, as well as the positions not taken, by the U.S. previously in US. v. Sharon, UV Industries, and the UV Trust. (Emphasis added.)[9/]

Mueller's assertion is no more than bootstrapping. Reduced to its essence, Mueller argues, but for the Sharon Decree, Mueller's preclusion arguments would apply. To effectuate this but for argument, Mueller suggests that the above clauses in the Sharon Decree are insufficient:

9/ February 18, 2010 letter from E. Donald Elliott to John N. Moscato, Andrea Madigan and Steven B. Moores, at p. 16.

> It is widely held that the reservation of a right to litigate a claim must be express. There was certainly no such express reservation here.[10]

We agree with Mueller that there was no such [single] express reservation in the Sharon Decree – there are at minimum three "express" reservations[11] and we think that any court will find the same based on a facial reading of the Sharon Decree.

When there has been an express reservation of rights, a prior consent decree does not bar a cause of action for those rights which have been reserved. See, United States v. Martell, 887 F. Supp. 1183, 1190 (N.D. Ind. 1995) ("[a]nother exception to the general rule [that a consent decree generally bars a new lawsuit arising from the same dispute] exists when there has been an express reservation of rights in a consent decree." Due to the contractual nature of consent decrees, the general legal consensus is that the preclusive effects of consent decrees should be measured by the intent of the parties. See, Wright & Miller, Federal Practice and Procedure, Civ. 2d. § 4443 pp. 384-85 (1981). See also, May v. Parker-Abbott Transfer & Storage, Inc., 899 F .2d 1007, 1010 (10th Cir. 1990) ("Consent decrees are of a contractual nature and, as such, their terms may alter the preclusive effects of a judgment").[12] Where as here, the United States has expressly reserved its rights, the prior (Sharon) decree will not be given preclusive effect because it was not a final judgment as to those matters which were reserved. See, United States v. Athlone Indus., Inc., 746 F.2d 977,983 n.5 (3d Cir. 1984); Beehler v. Jeffes, 664 F. Supp. 931, 935 (M.D. Penn. 1986).

C. UV Decree

Realizing that the Sharon Decree preserves the United States causes of action at all sites other than the Midvale Sites, Mueller seeks to assert that Sharon was released from liability at Eureka by virtue of the UV Decree. Sharon was not a party to the UV Decree nor was Sharon privy to that judgment.[13] Once again, Mueller's preclusion arguments fail.

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[10] Id.

[11] "Express" means, "clearly and unmistakably communicated; directly stated." Black's Law Dictionary (8th ed. 2004). We believe that, applying that definition, the reservations in the Sharon Decree are "express."

[12] See also, See, 18 C. Wright, A. Miller & E. Cooper, Federal Practice and Procedure, § 4443 at 262 (1981); Young-Henderson v. Spartanburg Area Mental Health Center, 945 F.2d 770, 774-75 (4th Cir. 1991).

[13] As a general rule, successive representatives of the same interest are bound by judgment as to which their predecessors were parties. St. Louis Baptist Temple, Inc. v. Fed. Deposit Ins. Corp., 605 F.2d 1169, 1175 (10th Cir.1979), quoting 1 B Moore's Federal Practice, § 0.411(1) (2nd Ed.1974). ("It is well understood, however, though not usually stated in express terms in works upon the subject, that no one is privy to a judgment whose succession to the rights of property thereby affected, occurred previously to the institution of the suit.") Queenan v. Mays, 90 F.2d 525, 534 (10th Cir. 1937). Thus a judgment binds those who acquire an interest in the property affected thereby after suit is commenced, but it does not bind those whose interest attached prior to commencement of suit. Texas Co. v. Marlin, 109 F.2d 305, 308 (5th Cir. 1940) (One is not a privy to a judgment where his or her succession to the rights of property thereby affected occurred previous to the institution of the suit.). Because Sharon's interest in Eureka arose before the commencement of the Midvale Litigation, it cannot be in privity with UV and the Trust when Sharon itself was not a party to the UV Decree.

Mueller's arguments also fail because a plain reading of the UV Decree contradicts Mueller's assertion that the covenants granted to UV and the Trust somehow "preclude the governments cost recovery claims at Eureka."[14]

The UV Decree narrowly defines UV and the Trust to mean only those entities and to exclude, "any past or present parent subsidiary or business affiliate of UV Industries Inc. or of the Trust."[15] Like the Sharon Decree, the UV Decree also begins with the judicial pronouncement, "THEREFORE without adjudication of any issue of law or fact and upon the consent of the parties hereto it is hereby ORDERED ADJUDGED AND DECREED as follows."[16] Again, this express caveat that resolution is by consent, not by the adjudication of "any issue of law or fact," vitiates Mueller's preclusion arguments.

The covenants in the UV Decree provide as follows:

Section VII. A. at p. 22:

> A. Except as specifically provided hereafter in Section VII. C. and D. hereof, the United States and the State hereby covenant not to sue UV, the Trust, or any Trustee thereof (in their capacity as trustee) regarding the following matters
>
> > 1. Any matter alleged in either or both of the Actions including any future liability with regard to the Tailings Site or the Slag Site . . . (Emphasis added)

Section VII. B. at p. 22 - 23:

> Beyond the matters addressed in Paragraphs A. 1 and 2 of this Section, the United States is unaware of any other claims against UV or the Trust which it now or in the future may assert on behalf of the Environmental Protection Agency . . . Accordingly, to allow for the orderly liquidation and termination of the Trust in accordance with this Consent Decree, the United States agrees not to assert any such claims in the future on behalf of the Environmental Protection Agency . . .

It is important to note that the covenant not to sue contained in Section VII. A. is specifically limited to "[a]ny matter alleged in either or both of the Actions . . .with regard to the Tailings Site or the Slag Site. . ." Further, Section VII. A. is the only subsection among the Covenants not to Sue in Section VII. of the UV Decree that is characterized as a release. See, Section VI. B. at p. 20:

> By virtue of the payment of the amounts identified in Section IV of this Decree the Trust and UV shall have finally and completely resolved all alleged liabilities

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[14] February 18, 2010 letter from E. Donald Elliott to John N. Moscato, Andrea Madigan and Steven B. Moores, at p. 4.

[15] UV Decree, Section I., Definitions, at pp. 10 - 11.

[16] UV Decree at 8. See further discussion below regarding Section VI. I. at 22.

> of the Trust and UV to the United States for the matters covered by the Covenant Not to Sue in Section VII A. hereof and **are hereby released** therefrom (Emphasis added.)

Section VI. does not characterize Section VII.B as a release. This is no accident or oversight and the conclusion that the distinction between Section VII. A. and Section VII. B. is intentional is fortified by the following payment provision of the UV Decree:

> Section IV. at p. 12:
>
> > In full and complete satisfaction of all of UV's and the Trust's alleged liabilities, duties, and responsibilities arising out of or relating to the Actions and the Sites (except as limited by Section VII B., C. and D.[)] **and in consideration of the Covenant not to Sue set forth in Section VII A. hereof** the United States shall receive the following consideration . . . (Emphasis added.)

Contrary to Mueller's contention, payments received by the United States from the Trust were only for the Midvale Sites.[17] More importantly, sums paid by the Trust were specifically for the covenant and release in Section VII. A., not the covenant in VII. B.

In a futile attempt to prevail in its argument, Mueller conveniently blurs the legal distinction between a covenant and a release.[18] Mueller does so by citing to one unpublished opinion, Robbins v. Physicians/or Womens's Health, Inc., No. CV065002633, 2009 WL 5303887 *4 (Conn. Super. Ct. Dec. 7, 2009),[19] which, as best as we can tell, has not since been relied on in any subsequent decision. Mueller further attempts to bolster its position with the following extremely selective quote:

> A covenant not to sue, like a release, is a contract and it is also an affirmative defense to an action.[20]

We think that the full text of the citation is both more informative and more accurate:

> A covenant not to sue is distinguishable from a release in that it is not a present abandonment or relinquishment of a right or claim but is merely an agreement not

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[17] "Your [EPA] current claims are literally an attempt to recover twice from Sharon/Mueller for the same liabilities of UV Industries for which Sharon/Mueller already paid in 1990 through the conduit of the UV Trust." February 18, 2010 letter from E. Donald Elliott to John N. Moscato, Andrea Madigan and Steven B. Moores, at p. 2.

[18] "While we agree that there are distinctions between a covenant not to sue and a release for some purposes, there is no difference in their effect in this case." See, April 1, 2010 letter from E. Donald Elliott to John N. Moscato, Andrea Madigan and Steven B. Moores, at p. 2.

[19] See, April 1, 2010 letter from E. Donald Elliott to John N. Moscato, Andrea Madigan and Steven B. Moores, at p. 2.

[20] 66 Am. Jur. 2d. Release § 4 (2002).

to sue on an existing claim or it is an election not to proceed against a particular party. In other words, a covenant not to sue is an agreement not to enforce an existing cause of action against another party to the agreement. Stated another way it is an agreement to discharge a non-settling wrongdoer to the extent of recovery against the covenantee. The touchstone of a covenant not to sue is its reservation of rights for the benefit of one party. *A covenant not to sue, like a release, is a contract and it is also an affirmative defense to an action.*

. . .

Where multiple defendants are involved a covenant not to sue with one defendant **does not apply to all other joint tortfeasors therefore, a plaintiff's entire cause of action against a non-settling joint tortfeasor is preserved**. Thus, when a 'covenant not to sue' has been entered into usually the covenanting tortfeasor is no longer a party to the litigation. **Thus, a covenant not to sue differs from a release in that a 'release' extinguishes a cause of action as to all joint tortfeasors whereas a 'covenant not to sue' does not extinguish the cause of action and does not release other joint tortfeasors even if it does not specifically reserve rights against them.**[21]

A covenant not to sue preserves a legal cause of action while, at the same time, bars the right of recovery from the particular person with whom the covenant is made. Southern Pac. Co. v. Raish, 205 F.2d 389, 393 (9th Cir. 1953). A document will be construed as a covenant not to sue when it speaks in terms of covenanting not to sue (as does Section VII. B. of the UV Decree) rather than releasing, when it contains an express reservation of rights against other persons, and when it is given in consideration of an amount that clearly is not in full satisfaction of plaintiff's claim. See, Dale Hilton, Inc. v. Triangle Publications, Inc., 198 F. Supp. 638, 639-40 (S.D. N.Y. 1961). See also, Rector v. Warner Bros. Pictures, 102 F. Supp. 263, 265 (S.D. Cal. 1952). A covenant not to sue one tortfeasor for a harm does not discharge any other potentially liable party for the harm. See, Western Spring Service Co. v. Andrew, 229 F.2d 413, 418 (10th Cir. 1956). See also, Pacific States Lumber Co. v. Bargar, 10 F.2d 335, 337 (9th Cir. 1926) (A covenant not to sue does not release another tortfeasor because a covenant not to sue is said not to have the effect, technically, of extinguishing any part of the cause of action).

Section VII. A. of the UV Decree, by virtue of the express provisions of Section VI. B., is both a covenant and a release which would have the effect of releasing a joint tortfeasor like Sharon but only for Sharon's liability at the Midvale Site. Section VII. B. of the UV Decree is only a covenant and therefore does not release Sharon from its liabilities at the Eureka Site. Consistent with that interpretation, the UV Decree itself provides that Section VII. B. only applies to UV and the Trust:

This Section shall not be construed as Covenant Not to Sue any other Person,

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[21] Id. Emphasis added.

Mueller discusses at length Russell v. SunAmerica Securities, Inc., 1991 WL 352563 (S.D. Miss. 1991) and Russell v. SunAmerica Securities, 962 F.2d 1169 (5th Cir. 1992). Because those cases deal with releases, not covenants, they are not persuasive. Interestingly, the 1991 determination in Russell turns in part on a finding that the compensation paid was for all claims originally asserted. Russell, 1991 WL 352563*2. In contradistinction here, the UV and the Trust only compensated the United States for the Midvale Sites.

other than, UV, the Trust, or any Trustee thereof. This Covenant Not to Sue applies only to UV the Trust the Trustees the United States and the State.

Section VII. C., at p. 23. Emphasis added.

Finally, Mueller's preclusion arguments are clearly barred by the following provision in the UV Decree:

> No previous ruling of this Court in the Actions on any issue of law or fact shall be deemed to be binding upon the parties hereto for any purpose in any other action or legal proceeding of any type or kind.

Section VI. I., Effect of Settlement, at p. 22.

Counsel for Mueller has suggested that this provision in the UV Decree was negated by a bench order; we disagree. In the November 13, 1990 proceedings regarding the motions to enter three pending decrees, the Court says that "one area that bothers me a little is the section of each [UV and ARCO] decree that says, 'No previous ruling of this Court in the Actions on any issue of law or fact shall be deemed to be binding upon the parties hereto for any purpose in any other action or legal proceeding of any type or kind.'"[22] After a brief explanation by Ben Fisherow, DOJ, that the language is intended to preserve the Trust's corporate defense, the Court notes that the clause applies to use in proceedings other than the present case and does not presume to require the Court to withdraw its rulings in the Midvale Litigation. See, Tr. 27 at l. 3 - 5. In light of that clarification, the Court then merely replies, "Well, whatever We Found, however We've ruled, is a historic fact."[23] The Court then enters the decrees without caveat and without striking the above-discussed language.[24] This supports one and only one conclusion – that while the Court would not withdraw its rulings, neither would the Court not bar the United States and UV and the Trust from contractually agreeing that any ruling in Midvale Litigation would not bind either party in the future.[25] In making its preclusion arguments, Mueller attempts to do so as if Mueller was standing in the shoes of UV and the Trust; to the extent UV and the Trust are estopped by this language, Mueller also is estopped from arguing that the rulings in the Midvale Litigation bind the United States.

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[22] November 13, 1990 hearing Tr. at p. 26, l. 2 - 10.

[23] See, Tr. p. 27 at l. 7 - 8.

[24] See, Tr. p. 34 at l. 8 - 17.

[25] See also December 14, 1990 Order Entering Partial Consent Decree Between the United States, the State of Utah and UV Industries, Inc., Liquidating Trust which approves and enters the UV Decree without any qualification and without striking Section VII. C. of the UV Decree.

Conclusion

In closing, I wish to reiterate that the purpose of sharing our thoughts on these issues with you was the hope that a further presentation of the United States' position will facilitate a prompt and amicable resolution to the matters at hand. We wanted to be certain to avoid any impression that our lack of response to Mueller's letters evidenced in any way a lack of confidence in the government's claims against Mueller at the Eureka Site. That said, we look forward to our next meeting with you.

Sincerely,

JOHN N. MOSCATO
Senior Counsel
Environmental Enforcement Section
Environment and Natural Resource Division
U.S. Department of Justice
1961 Stout Street, 8th Floor
Denver, CO 80294

APPENDIX H

TO
Z2&3 INTERIOR UAO

Letter from Annette Lang, Dep't of Justice, to E. Donald Elliot, Senior Of Counsel, Covington & Burling LLP (Apr. 7, 2017)

U.S. Department of Justice

Environment and Natural Resources Division

90-11-3-10884/3

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April 7, 2017

BY EMAIL AND U.S. MAIL

Confidential Settlement Communication; Not for Public Release

E. Donald Elliott
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Washington, DC 20001-4956

Dear Don:

We are in receipt of your letters dated December 29, 2016 and January 25, 2017 (collectively, the "January 2017 Letters") regarding defenses that Mueller Industries, Inc. ("Mueller") asserts to potential CERCLA liability at the USS Lead Superfund Site in East Chicago, Indiana ("USS Lead Site").

Mueller's January 2017 Letters in turn attach two letters dated February 18, 2010 and April 1, 2010 to John Moscato, DOJ (collectively, the "*Moscato* Letters") regarding Mueller's defenses to potential CERCLA liability at the Eureka Mills Superfund Site in Eureka, Utah. In its January 2017 Letters, Mueller asserts that the defenses raised in the *Moscato* Letters apply with equal force to the USS Lead Site.

This letter provides the first response that the United States, regarding the USS Lead matter, makes to Mueller's January 2017 Letters and the *Moscato* Letters.[1] As we explain more fully later, we plan to supplement and expand this response over time.

Goal of this Letter. Mueller's reliance on transcripts, consent decrees, and numerous other filings in a thirty-year old case from Midvale, Utah, coupled with the sheer volume of arguments, assertions, and claims that Mueller raises in 40 single-spaced pages of letters with 104 copiously annotated footnotes, makes the task of responding to Mueller's defenses daunting, to say the least. After a first review of the materials, Mr. Khandeshi and I were tempted to throw up our

[1] The United States previously replied to Mueller's defenses in the Eureka Mills case.

hands and ask "why bother?" especially given the present resource pressures involved in the USS Lead Site.

However, once we took the time to apply a rigorous analysis to Mueller's arguments, the arguments became relatively simple and quite questionable. The real challenge here lies in cutting out the "noise," in separating the chaff from the wheat and in exposing the thinness of the arguments once they are laid bare.

Therefore, the goal of this letter is to distill Mueller's arguments down to their core and respond to them simply. The goal is not to provide a comprehensive response, complete with citations to the relevant transcripts, case law, and documents. While we have come a long way toward such a comprehensive response, we are not there yet. We will supplement this letter at a later time.

We hope that Mueller will start the process of participating with the currently existing group of PRPs at the Site and will work with the United States to resolve its liability. So far, neither USS Lead nor Mueller has contributed any money toward a cleanup that already has cost over $20 million and will require tens of millions more dollars before completion. We do not believe that Mueller's debatable view of the law justifies inaction any longer.

Definitions. Because of the nature and scope of Mueller's arguments, we found it useful to develop a list of definitions. Please see Appendix A.

Essence of Mueller's Arguments. The essence of Mueller's arguments against CERCLA liability relating to USS Lead's operation of the USS Lead Facility from 1920 to 1979 is that Mueller's predecessor, Sharon, did not assume the CERCLA liabilities of UV/USSRAM, USS Lead's parent. Instead, the CERCLA liabilities of UV/USSRAM were assumed by the UV Liquidating Trust. According to Mueller, the United States is now precluded from asserting that Sharon assumed UV/USSRAM's CERCLA liabilities because of positions, Court rulings, and settlements in the Midvale Litigation.[2]

Summary of US Response. The United States has developed a line of arguments in response to Mueller's defenses. That line of arguments can be found in Appendix B and its attachments at B-1 through B-5.[3]

Contrary to Mueller's assertions, Sharon assumed the CERCLA liabilities of UV/USSRAM through the 1979 Liability Assumption Agreement. Specifically, in that Agreement, Sharon

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[2] Mueller also asserts that UV/USSRAM itself likely is shielded from USS Lead's CERCLA liability because of the decision in *United States v. Bestfoods*, 524 U.S. 51 (1998). *See* December 29, 2016 Letter from E. D. Elliott to A. Lang at 2. The United States acknowledges its burden of establishing UV/USSRAM's liability for USS Lead. We have started to develop the facts necessary to carry this burden. However, we have not started a review of the documents from USS Lead's Redding CA warehouse because we are waiting for them to be coded. The coding should narrow our review. We may need to revisit California to undertake a further review of additional Redding CA warehouse documents in order to complete our analysis.

[3] We are also working on another line of arguments based on the radical undercapitalization of MRRC as a result of the Sharon bankruptcy. We are aware of the Bankruptcy Court's approval of the Plan of Reorganization that had the consequence of enabling that radical undercapitalization.

assumed "contingent" liabilities, that is, future, unknown liabilities. Moreover, the liabilities that Sharon assumed were without restriction: the language in the 1979 Liability Assumption Agreement was extremely broad. Therefore, Sharon assumed CERCLA liability even though the Agreement pre-dated CERCLA. The later ***1980*** UV Liquidating Trust Agreement (which also pre-dated CERCLA) was irrelevant to, and did not render ineffective, Sharon's ***prior*** assumption of liabilities in the ***1979*** Liability Assumption Agreement.

By virtue of the 1979 Liability Assumption Agreement and the 1980 UV Liquidating Trust Agreement, Sharon ***and*** the UV Liquidating Trust held a ***common liability*** to third party claimants, including the United States suing under CERCLA. Mueller's fundamental premise—that *either* Sharon *or* the UV Liquidating Trust assumed UV Industries' liability, but not both—is wrong.

Neither the positions taken by the United States in the Midvale Litigation nor the Court's statements made therein nor the two settlements reached in that Litigation preclude the United States from asserting that Sharon is a successor to UV/USSRAM in prospective USS Lead Litigation.

Because Mueller is a successor to Sharon, Mueller is a successor to UV/USSRAM.

Mueller's Preclusion Defenses and the United States' Response. We refer you to Appendices B–1 through B–5 for a more comprehensive response to Mueller's preclusion defenses. However, Mueller's preclusion defenses boil down to three. Our responses are as follows:

1. Argument: The Broad Covenant Not to Sue in the UV CD applies to Sharon and therefore to Mueller. (Mueller's novation theory and its *Res Judicata* claim preclusion theory both hinge on this assertion.)

   Response: The Covenants Not to Sue in the UV CD, including the Broad CNTS, expressly applied only to UV Industries and the UV Trust. Sharon was a not party to the UV CD. In Sharon's separate CD, the United States limited its CNTS to the Midvale Sites. Mueller is a successor to the Sharon CD, not the UV CD. Therefore, Mueller is the beneficiary of a CNTS only at the Midvale Sites, not the USS Lead Site.

2. Argument: The United States is precluded from asserting that Sharon succeeded to the liability of UV/USSRAM because in the Midvale Litigation the United States argued that the UV Trust succeeded to UV/USSRAM's liability and the District Court issued a decision holding that the UV Trust was the successor. (Mueller's *Res Judicata* claim splitting theory and its issue preclusion (*aka* "collateral estoppel") theory both hinge on this assertion.)

   Response: The District Court never issued any decision holding that the UV Trust succeeded to the liabilities of UV/USSRAM.

NOTE: The United States agrees that, in the Midvale Litigation, we argued that the UV Trust succeeded to UV/USSRAM's liability. But that position was not and is not inconsistent with the position that Sharon also succeeded to those liabilities. Both parties had a common shared liability. In the Midvale Litigation, the United States did not have to argue that Sharon succeeded to UV/USSRAM's liability because we argued that Sharon was liable under a direct owner/operator theory.

3. Argument: Judicial estoppel precludes the United States from now asserting that Sharon is the successor to UV/USSRAM's liability because in the Midvale Litigation, the United States asserted that the UV Trust was.

   Response: None of the requirements of judicial estoppel are met: the United States' position in prospective USS Lead Litigation is not inconsistent with its position in the Midvale Litigation; the United States never persuaded the District Court in the Midvale Litigation that the UV Trust succeeded to UV/USSRAM's liability; and the equities required by judicial estoppel clearly do not lie in Mueller's favor: the United States was left with tens of millions of dollars in unrecovered costs at the Midvale Sites and the United States and other PRPs are facing tens of millions of dollars in costs at the USS Lead Site.

Conclusion. Mueller's arguments are clever, artful, but wrong. We look forward to working with Mueller to resolve its liability and to seeing Mueller start to participate in the already-existing PRP Group at the Site.

Sincerely,

Annette M. Lang

Annette M. Lang
Senior Counsel

cc: Michael Elam
David Rieser
Patricia McGee
David Wallis
Robert Steinwurtzel
Sparsh Khandeshi
Steve Kaiser
Mary Fulghum
Leo Chingcuanco

APPENDIX I

TO
Z2&3 INTERIOR UAO

Letter from Annette Lang, Dep't of Justice, to E. Donald Elliot, Senior Of Counsel, Covington & Burling LLP (Oct. 4, 2017)

U.S. Department of Justice

Environment and Natural Resources Division

90-11-3-10884/3

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October 4, 2017

BY EMAIL AND U.S. MAIL

Settlement Confidential Communication; Not for Public Release

E. Donald Elliot
Covington & Burling LLP
One City Center
850 Tenth St. NW
Washington, DC 20001-4956

Re: Mueller's CERCLA Liability at the USS Lead Superfund Site

Dear Don:

This letter follows up on the United States' April 7, 2017 letter where we outlined the elements of our *prima facie* case regarding Mueller's succession to the CERCLA liability of UV/USSRAM for environmental contamination of the USS Lead Site in East Chicago, Indiana. *See* Exh. 1 ("April 2017 *Lang* Letter"). This letter fulfills our commitment to provide more details and supporting legal precedent. This letter also expands on our contention that the Midvale Litigation did not relieve Mueller of its liability for response actions and costs at the USS Lead Site and does not preclude the United States from asserting such claims against Mueller.

We have attached as Exhibit 2 the acronyms, shortened corporate names, and definitions that we use in this letter. In general, we have followed the conventions we used in the April 2017 *Lang* Letter. *See* Exh. 1 at App. A. However, we have added some definitions and we deviate in some respects from the conventions in the April 2017 *Lang* Letter, including but not limited to, sometimes using "Mueller" instead of "Sharon Steel" because Mueller indisputably is the successor to and assumed the liabilities of Sharon Steel.

Mueller has sent four letters identifying defenses to liability based on its contention that Sharon Steel was not a successor to the CERCLA liability of UV/USSRAM and the United States is precluded from claiming otherwise. The letters are formidable, spanning over 40 pages

with 104 copiously-annotated footnotes and multiple exhibits.[1] We appreciate Mueller's forceful advocacy; however, we view the facts and law very differently. Stripped to their core—as we did in the April 2017 *Lang* Letter—Mueller's arguments are thin and insubstantial. We hope that the April 2017 *Lang* Letter and this letter convince Mueller that the United States fully understands all of its arguments; we just fundamentally disagree.

We recognize and appreciate Mueller's recent agreement to provide financial assurance to Mueller's subsidiary, USS Lead, for the performance of a Remedial Investigation and Feasibility Study for Operable Unit 2 ("OU2") of the USS Lead Site pursuant to an Administrative Settlement Agreement and Order on Consent. Mueller's financial commitment there, however, is quite limited compared to the total past and expected future costs at the Site. Moreover, that commitment does not include any funds for soil remediation or interior cleanups of the yards and homes of the residential areas of the Site, also known as Operable Unit 1 ("OU1"). Meanwhile, EPA continues those cleanups with funds provided by several PRPs under a 2014 Consent Decree and a 2017 Administrative Settlement Agreement and Order on Consent. Those same PRPs also provide transportation and disposal services.

Therefore, we hope that Mueller will begin to work with the United States and engage with the existing PRPs to share the costs incurred and to be incurred in cleaning up the longstanding lead and arsenic contamination in the residential areas. The evidence and law are clear: Mueller succeeded to the CERCLA liability of UV/USSRAM and the Midvale Litigation does not provide Mueller with any meritorious defenses.[2]

I. Mueller Succeeded to UV/USSRAM's CERCLA Liabilities

In a transaction dated November 26, 1979, Mueller purchased the assets of UV/USSRAM and assumed all of its associated liabilities. Mueller's CERCLA liability for the USS Lead Site flows directly from this transaction. The plain language of the transaction agreements includes the assumption of ***all*** liabilities, including ***contingent*** liabilities, ***whether asserted before or after*** November 26, 1979. Thus, even though the transaction pre-dated CERCLA, Mueller's assumption of liability included UV/USSRAM's CERCLA liabilities.

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[1] These letters (without exhibits) are attached as:

- Exhibit 6 (February 18, 2010 Letter from D. Elliott to J. Moscato) ("First *Moscato* Letter")
- Exhibit 9 (April 1, 2010 Letter from D. Elliott to J. Moscato) ("Second *Moscato* Letter")
- Exhibit 15 (December 29, 2016 Letter from D. Elliott to A. Lang)
- Exhibit 16 (January 25, 2017 Letter from T. Brugato to A. Lang)

[2] This letter does not address the issue of UV/USSRAM's liability for USS Lead. We will be talking with you separately about that.

A. The Plain Language of the 1979 Asset Purchase and Liability Assumption Agreements is General Enough to Encompass Environmental Liability, including Subsequent CERCLA Liability

In the Seventh Circuit and elsewhere, a purchaser may assume CERCLA liabilities by contract, even when the contract predates CERCLA.[3] A pre-CERCLA agreement transfers CERCLA liability if the agreement "is specific enough to include CERCLA liability or *general enough* to include any and all environmental liability." *Peoples Gas Light and Coke Co. v. Beazer East, Inc.*, 802 F.3d 876, 883 (7th Cir. 2015) (emphasis in original) (citing *Beazer East, Inc., v. Mead Corp.*, 34 F.3d 206, 211 (3rd Cir. 1994)); *accord White Consol.,* 179 F.3d at 410; *John S. Boyd Co., Inc., v. Boston Gas Co.*, 992 F.2d 401, 406 (1st Cir. 1993) ("To transfer CERCLA liability, the Agreement must contain language broad enough to allow us to say that the parties intended to transfer either contingent environmental liability or all liability"); *Olin Corp.*, 5 F.3d at 15–16 (2nd Cir. 1993) ("Notwithstanding the fact that CERCLA did not exist at the time these contracts were executed, we hold that . . . these contractual provisions are sufficiently broad enough to encompass CERCLA liability."). The language of the liability assumption in this case is general enough to include any and all environmental liability, including subsequent CERCLA liability.

Two documents govern Mueller's assumption of UV/USSRAM's liabilities: (1) a 1979 Asset Purchase Agreement;[4] and (2) a 1979 Liability Assumption Agreement[5] (collectively, the "1979 Asset Purchase and Liability Assumption Agreements" or the "1979 Agreements"). Both use extremely broad and general language to describe the scope of Mueller's assumption of UV/USSRAM's liabilities.

The 1979 Asset Purchase Agreement defines "Assumed Liabilities" and "Non-Assumed Liabilities" as follows:

> 'Assumed Liabilities' shall mean ***all*** debts, obligations, contracts and liabilities of the Seller [*i.e.,* UV/USSRAM] as of the Closing Date ***of any kind character or description***, direct or indirect, whether accrued, absolute, ***contingent*** or otherwise, except the Non-Assumed Liabilities as hereinafter defined, together with all administrative expenses (other than income taxes) incident to the liquidation under the UV Liquidating Trust. [Exh. 3 at ¶ 1(d); emphasis added.]

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[3] *Kerr-McGee Chem. Corp. v. Lefton Iron & Metal Co.*, 14 F.3d 321, 327 (7th Cir. 1994); *E.I. Du Pont de Nemours and Co. v. U.S.*, 365 F.3d 1367, 1372 (Fed. Cir. 2004); *White Consol. Indus., Inc., v. Westinghouse Elec. Corp.*, 179 F.3d 403, 410 (6th Cir. 1999); *Dent v. Beazer Materials and Services*, 156 F.3d 523, 534 (4th Cir. 1998); *ALCOA v. Beazer East, Inc.*, 124 F.3d 551, 565-66 (3rd Cir. 1997); *Smithkline Beecham Corp. v. Rohm and Haas Co.*, 89 F.3d 154, 159-60 (3rd Cir. 1996); *Joslyn Mfg. Co. v. Koppers Co., Inc.*, 40 F.3d 750, 754–55 (5th Cir. 1994); *Olin Corp. v. Consol. Alum. Corp.*, 5 F.3d 10, 15-16 (2nd Cir. 1993); *see Marmon Group, Inc. v. Rexnord, Inc.*, 822 F.2d 31, 33 (7th Cir. 1986) (motion to dismiss reversed because a pre-CERCLA indemnity provision could be interpreted to cover CERCLA costs).

[4] Attached as Exhibit 3.

[5] Attached as Exhibit 4.

> 'Non-Assumed Liabilities' shall mean any tax liabilities attributable to the Seller's failure to satisfy the requirements of Section 337 of the Internal Revenue Code of 1954 except as otherwise provided in a letter agreement concerning Section 337 of the Code dated the date hereof between Buyer and Seller." [*Id.* at ¶ 1(e).]

The 1979 Asset Purchase Agreement thereafter states: "On the closing date, ***[Mueller] shall assume*** and thereafter pay, perform and discharge in the ordinary course of business and on or before the applicable due date ***all of the Assumed Liabilities***. . . . [Mueller] shall not assume or pay, perform or discharge, nor shall [Mueller] be responsible, directly or indirectly, for the Non-Assumed Liabilities." *Id.* at ¶ 2(e) (emphasis added).

The simultaneously executed 1979 Liability Assumption Agreement describes Mueller's assumed liabilities with equally broad language:

> ***[Mueller] hereby assumes and agrees to pay, perform and discharge*** and to indemnify and hold UV harmless from and against . . . ***all*** the debts, obligations, contracts and liabilities of UV as of the date hereof, ***of any kind, character or description***, direct or indirect, whether accrued, absolute, ***contingent*** or otherwise, and ***whether asserted before or after such date*** . . . . The debts, obligations, contracts, and liabilities so assumed being, ***without limitation on the generality of the foregoing***, more particularly described as follows:
>
> [A list of nine areas of liabilities follows]; and
>
> (x) ***all*** other debts, obligations and liabilities of UV as of the date hereof ***of any kind character or description***, whether direct or indirect, whether accrued, absolute, ***contingent*** or otherwise, whether asserted before or after the execution hereof and whether or not specifically mentioned or described here."

Exh. 4 at pp. 2, 5 (emphasis added). Thus, the 1979 Agreements state on four separate occasions that Mueller assumed ***"all"*** of UV/USSRAM's liabilities. They state on two separate occasions that Mueller assumed liabilities ***"of any kind, character or description."***

Courts presented with pre-CERCLA contracts containing similarly broad language to describe the scope of assumed liabilities have consistently held that the parties intended to transfer the CERCLA liabilities. *White Consol.,* 179 F.3d at 410 (agreement to assume "all of the liabilities and obligations of the Business, contingent or otherwise" included a transfer of CERCLA liabilities); *ALCOA,* 124 F.3d at 556 (agreement to assume "all of the liabilities and obligations of the [seller] of whatsoever nature" included transfer of CERCLA liabilities); *United States v. Iron Mountain Mines, Inc.*, 987 F.Supp. 1233, 1241 (E.D. Cal. 1997) ("Courts universally have held that language transferring 'all liabilities' is sufficiently broad to include environmental liability"); *accord* caselaw in Note 3, *supra*. Because Mueller's assumption of UV/USSRAM liabilities uses similarly broad language, Mueller has succeeded to UV/USSRAM's CERCLA liabilities.

Mueller's liability assumption also clearly includes liabilities that may not have been known or existing as of November 26, 1979. On two occasions, the Agreements include the assumption of ***"contingent"*** liability, meaning liability "dependent on something that might or might not happen in the future." *Black's Law Dictionary* (10th ed. 2014). And, the Agreements expressly include the assumption of liabilities ***"asserted before or after"*** the November 26, 1979 date of the Agreements.

Courts have held that pre-CERCLA contracts that include a transfer of or indemnification for "contingent" liabilities include future CERCLA liabilities not existing at the time of the contract. *White Consol.* 179 F.3d at 409 (pre-CERCLA purchase agreement that transferred "all obligations and liabilities . . . *contingent* or otherwise," transferred CERCLA liabilities); *Olin Corp.*, 5 F.3d at 15 (pre-CERCLA indemnity agreement that indemnified purchaser for "all liabilities (absolute or contingent)" encompassed CERCLA liabilities); *cf. North Shore Gas Co. v. Salomon Inc.*, 152 F.3d 642, 652 (7th Cir. 1998) (pre-CERCLA agreement to assume "existing" liabilities does not succeed to "contingent" liabilities); *John S. Boyd*, 992 F.2d at 406–407 (pre-CERCLA contract did not transfer CERCLA liabilities because the contract did not include any reference to "future or contingent liabilities").

Mueller's broad assumption of liability is not limited in any way by the identification of certain specific liabilities in the 1979 Liability Assumption Agreement. Indeed, the itemization of certain specific liabilities does not limit ***the generality of*** Mueller's assumption. Exh. 4 at p. 2. For this reason, several cases finding that buyers did not assume CERCLA liabilities are inapplicable.[6]

Though Mueller hopes otherwise, the use of the words "as of" in the 1979 Liability Assumption Agreement does not limit Mueller's assumption to existing liabilities. The "as of" phrase in this Agreement simply provides a cut-off date for the acts or omissions of UV/USSRAM that Mueller assumes liability for, specifically, those acts or omissions that occurred prior to, or "as of," the Closing Date. Mueller does not assume liability for UV/USSRAM's acts or omissions that occur after the Closing Date.

Mueller's argument—that the words "as of," should be interpreted to mean that it assumed only liabilities existing "as of" the closing date—is misplaced. Interpreting the one-time use of the phrase "as of" to mean "existing" would render the Agreements' many references to "all," "any kind, character, or description," and "contingent" superfluous, which is clearly contrary to the case law. *Oxford Financial Group, Ltd. v Evans*, 795 N.E.2d 1135, 1142 (Ind. Ct. App. 2003); *Ruttenberg v. Davidge Data Systems Corp.*, 215 A.D.2d 191, 194–95 (N.Y. 1995). In addition, Mueller's reading would require adding a word into the contract—"existing"—that is not there. That too is contrary to established case law. *Oxford Financial*

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[6] *Boyd,* 992 F.2d at 407 (CERCLA liability not included in the "all liabilities" language where the covered liabilities were explicitly listed); *United States v. Vermont Am. Corp.*, 871 F. Supp. 318, 321 (W.D. Mich. 1994) (CERCLA liability not included in the "all liabilities" language because the liabilities were limited to those "reflected or reserved against on the December 31, 1979 balance sheet" or "disclosed in the Disclosure Letter" or "existing on the Closing Date"); *Georgia-Pacific Consumer Products, LP v. International Paper Co.*, 566 F. Supp. 2d 246, 249 (S.D.N.Y. 2008) (CERCLA liability not included in the liabilities "of every kind, character or description, whether known or unknown, whether disclosed or undisclosed, whether accrued, absolute, contingent or otherwise" because the liabilities had to be "directly attributable to the New Jersey Operations, as the same exist on the date hereof").

Group, 795 N.E.2d at 1142; (courts should not "add provisions not agreed upon by the parties"); *see Osprey Partners, LLC v. Bank of New York Mellon Corp.,* 982 N.YS.2d 119, 120 (N.Y. 2014) ("the best evidence of the parties' intent is what they say in their writing").

B. Mueller and the UV Liquidating Trust *Share* a Common Liability for UV/USSRAM's CERCLA Liabilities

Ignoring the 1979 Asset Purchase and Liability Assumption Agreements, Mueller contends that UV/USSRAM transferred its CERCLA liability to the UV Liquidating Trust by means of the 1980 UV Liquidating Trust Agreement. Mueller focuses much of its defense on the misconception that it and the Trust cannot both be liable for UV/USSRAM's CERCLA liability. The law, however, clearly holds otherwise.

The UV Liquidating Trust's assumption of UV/USSRAM's liability occurred ***after*** Mueller's assumption of UV/USSRAM's liability: 1980 v. 1979. A careful review of the 1980 Liquidating Trust Agreement demonstrates that no terms or provisions contained therein renders the 1979 Agreements null and void. *See* Exh. 17. Mueller (in the form of Sharon Steel) was not even a party to the 1980 Liquidating Trust Agreement.

Two parties can hold a shared and common liability for another's CERCLA liability:

> CERCLA precludes efforts to divest liability. . . . But that is not the same as saying that CERCLA prohibits a non-liable party from entering into an agreement to take on direct liability *in addition to* that of the already-liable party; the only condition that CERCLA imposes is that the directly liable party must remain liable.

United States v. NCR Corp., 840 F.Supp.2d 1093, 1097 (E.D. Wisc. 2011) (emphasis in original) *rev'd on reh'g on other grounds, United States v. NCR Corp.*, Case No. 10-C-910 (E.D. Wisc. April 10, 2012) (Decision Granting Motion for Reconsideration) (attached as Exhibit 14); *see Harley-Davidson, Inc. v. Minstar, Inc.*, 41 F.3d 341, 342 (7th Cir. 1994) ("we agree with every other court that has been called on to interpret [Section 107(e)] that it does not outlaw indemnification agreements, but merely precludes efforts to divest a responsible party of his liability").

Stated otherwise, Mueller's assumption of UV/USSRAM's CERCLA liability in 1979 did not extinguish UV/USSRAM's CERCLA liability. Rather, it created *two* parties from whom the United States and other third parties could recover: Mueller and UV/USSRAM.[7]

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[7] The same non-divesture rule applied at common law in the context of tort liability. *Grant-Howard Assoc. v. Gen. Housewares Corp.*, 472 N.E.2d 1, 3 (N.Y. 1984). *Accord* 15 WILLIAM MEAD FLETCHER ET AL., FLETCHER CYCLOPEDIA OF THE LAW OF CORPORATIONS § 7123 (perm. ed., rev. vol. 2008) (citing *Grant-Howard*); *In re Silicone Gel Breast Implants Prods. Liab. Litig.*, 837 F.Supp. 1123, 1126 (N.D. Ala. 1993) ("It is beyond dispute that one company's transfer of assets to another under circumstances resulting in the transferee's becoming responsible for tort liabilities to third-parties as upon an express agreement to assume such liabilities – does not, as to the third parties, relieve the transferor of those same responsibilities.").

In 1980, when UV/USSRAM decided to liquidate, it established the UV Liquidating Trust as part of the corporate wind-down process. In that process, UV/USSRAM was required to arrange for the resolution of its outstanding liabilities. Those liabilities would have included the liabilities specifically excluded by the 1979 Asset Purchase and Liability Assumption Agreements and other liabilities that UV/USSRAM could not divest by law, like CERCLA. Accordingly, the corporate dissolution, windup, and liquidation of UV/USSRAM—and the associated distribution of UV/USSRAM's CERCLA liability to the UV Liquidating Trust—had no impact on Mueller's earlier assumption of liabilities through the 1979 Agreements with UV/USSRAM. *See Iron Mountain Mines*, 987 F. Supp. at 1238–44 (buyer's assumption of CERCLA liabilities for a particular site was not affected by the liquidation of the seller); *United States v. Chrysler Corp.*, Nos. 88-341, 88-534, 1990 WL 127160, at *4-7 (D. Del. Aug. 28, 1990) (United States' settlement with asset seller did not resolve asset purchaser's successor liability based on an express assumption).

The United States is entitled to recover CERCLA cleanup costs from Mueller or the UV Liquidating Trust or both because the Trust and Mueller share UV/USSRAM's CERCLA liability.[8]

II. Mueller's Defenses to Liability for the USS Lead Site Based on the Midvale Litigation are Without Merit

In the 1980's, EPA started the process of cleaning up the Midvale Slag and Tailings Superfund Sites located outside of Salt Lake City, Utah.[9] An estimated 2 million tons of hazardous waste from more than 70 years of smelting activity and tailings disposal covering approximately 330 acres of land required clean up. EPA's costs to clean up the Sites exceeded $114 million.

In 1986, the United States filed complaints against, *inter alia*, Sharon Steel, UV/USSRAM, the UV Liquidating Trust, and Atlantic Richfield Co. ("ARCO") to recover cleanup costs for the Midvale Sites. The "Midvale Litigation" ensued. Ultimately, the Midvale Litigation settled. The United States entered into several separate consent decrees and recovered a total of $61 million: $18 million from UV/USSRAM and the UV Liquidating Trust; $22 million from Sharon Steel; and $21 million from ARCO. These payments left more than $53 million in outstanding costs that the United States itself had to cover.

In a February 2010 letter to the United States involving another Superfund site known as Eureka Mills, Mueller raised numerous defenses to liability based on the Midvale Litigation. *See* Exh. 6 (February 18, 2010 Letter from D. Elliott to J. Moscato, *et al.*) ("First *Moscato* Letter").

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[8] The United States again refers Mueller to the *Plaintiffs' Joint Brief in Response to Motion for Summary Judgment on Non-Liability Filed by Defendant Appleton Papers Inc.* ("Joint Brief") filed on August 26, 2011, in the case of *United States v. NCR Corp. et al.*, Case No. 10-C-910 (E.D. Wisc.). *See* Exh. 5. This Joint Brief clearly and persuasively articulates the law and arguments supporting the shared, common liability of the UV Liquidating Trust and Mueller.

[9] EPA nominated the Midvale Sites to the National Priority List in June of 1986.

Mueller asserts that those defenses apply with equal force to a claim against Mueller related to the USS Lead Site. Those defenses are:

(1) The United States is precluded from asserting liability against Mueller because the covenant not to sue in the UV CD bars such a claim (Exh. 6 at 4–7);

(2) *Res Judicata* arising from the Midvale Litigation precludes the United States from asserting any claims against Mueller at the USS Lead Site:

  (a) The liability release in the UV CD precludes the United States (*id.* at 7–8)

  (b) The "claim splitting" branch of the doctrine of *Res Judicata* precludes the United States (*id.* at 8–13)

  (c) Collateral estoppel—also known as "issue preclusion"—precludes the United States (*id.* and at 13–15);

(3) Judicial Estoppel arising from the Midvale Litigation precludes the United States from asserting any claims against Mueller at the USS Lead Site (*id.* at 15–17).

While Mueller's arguments are long and expansive, when reduced to their core, they are without merit.

A. In the Midvale Litigation, the United States Never "Released" Mueller from CERCLA Liability for the USS Lead Superfund Site[10]

The United States resolved its Midvale CERCLA claims through two separate consent decrees:

(1) One with the UV Liquidating Trust and UV/USSRAM (the "UV CD"); *see* Exh. 7;

(2) One with Sharon Steel (Mueller's predecessor) (the "Sharon Steel CD"); *see* Exh. 8.[11]

Mueller was not required to and did not take any actions or pay any costs under the UV CD; only UV/USSRAM and the UV Liquidating Trust did. Mueller did not provide any "consideration" to the United States pursuant to the UV CD. Notwithstanding this, Mueller remarkably claims

[10] Section II.A of this letter addresses Mueller's arguments at Section I.A of the First *Moscato* Letter at 4–7.

[11] The United States also entered into a Consent Decree with ARCO but that is not relevant for the purposes of this letter.

that the covenants not to sue in the UV CD apply to Mueller. Mueller's entire "release" or "novation" defense is based on this false premise.[12]

1. Sharon Steel (*i.e.*, Mueller) Is Not Named in—and is Expressly Excluded From—the Covenant Not to Sue in the UV CD

Under the UV CD, the United States covenanted not to sue UV, the UV Trust, and the Trustees for three specific Sites: the Tailings and Slag Sites (i.e., the Midvale Sites) and the Re-Solve Site in Massachusetts. Exh. 7 at ¶ VII.A. In addition, the United States, "on behalf of the Environmental Protection Agency [and] the Department of the Interior" also covenanted not to sue these same three parties "for any [environmental] claims in the future." *Id.* at ¶ VII.B. The United States provided this second broad covenant not to sue for one express purpose: "to allow for the orderly liquidation and termination of the Trust in accordance with this Consent Decree." *Id.*

The Broad CNTS in the UV CD does not shield Mueller from liability for the USS Lead Superfund Site. The covenant's language specifically limits its applicability to UV, the UV Liquidating Trust, and the Trustees. *Id.* at ¶ VII.A. Moreover, parties other than UV, the Trust, and the Trustees are expressly excluded from the benefits of the UV CD covenants not to sue:

> This Section [Section VII] shall not be construed as a Covenant Not to Sue any other Person, other than, UV, the Trust, or any Trustee thereof. This Covenant Not to Sue applies only to UV, the Trust, the Trustees, the United States, and the State [Utah].

Exh. 7 at ¶ VII.C.

Federal courts long have construed consent decrees as contracts. *United States v. ITT Continental Banking Co.*, 420 U.S. 223, 238 (1975) ("[A] consent decree or order is to be construed for enforcement purposes basically as a contract"). "The scope of a consent decree must be discerned within its four corners." *United States v. Armour & Co.*, 402 U.S. 673, 682 (1971)); *Alliance to End Repression v. City of Chicago*, 119 F.3d 472, 474 (7th Cir. 1997); *Sinclair Oil Corp., v. Scherer*, 7 F.3d 191, 194 (10th Cir. 1993).

Particularly in the case of environmental covenants not to sue, federal courts carefully limit the scope to the express language of the consent decree.[13] To do otherwise not only would

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[12] We do not believe that Mueller's "release" defense is different from its first "claim preclusion" defense. Nevertheless, because Mueller separated them out (*see* First *Moscato* Letter, Section I.A v. Section I.B, first two paragraphs), we will do so as well.

[13] *Sinclair Oil,* 7 F.3d at 194 (United States' covenant not to sue for the violations alleged in the claims in the complaint did not include violations, that while known at the time of the settlement, were not specifically alleged in the complaints' claims); *United States v. Land O'Lakes, Inc.,* No. CIV-16-170-R, 2017 WL 706346, *4–*5 (W.D. Okla., Feb. 22, 2017) (United States' covenant not to sue for environmental cleanup under the Resource Conservation and Recovery Act did not preclude suit for cleanup under CERCLA); *Berry v. Farmland Indus. Inc.,* 114 F. Supp. 2d 1150, 1155–58 (D. Kan. 2000) (United States' covenant not to sue for reporting claims in the complaint and one other set of claims did not preclude citizen suit for other reporting claims that were known at the time but not alleged in the complaint); *Neighbors for a Toxic Free Community v. Vulcan Materials Co.*, 964 F.

contravene the express language of the covenants not to sue but also would undermine the public policy in favor of requiring the polluters—not the government—to pay for cleanups. *North Shore Gas Co.*, 152 F.3d at 649 ("When Congress enacted CERCLA, it enabled the federal government to provide an efficacious response to environmental hazards and to assign the cost of that response to the parties who created or maintained the hazards"). Therefore, Sharon Steel (*i.e.*, Mueller) is clearly excluded from the covenants not to sue in the UV CD.

Moreover, the express rationale for the Broad CNTS in the UV CD—to allow the orderly dissolution of the UV Liquidating Trust—does not apply to Sharon Steel.

Instead, Sharon Steel (*i.e.,* Mueller) was the beneficiary of the covenants not to sue in the Sharon Steel CD. Sharon Steel was required to take actions and pay costs under the Sharon Steel CD. In exchange for that consideration, the United States provided Sharon Steel with the covenants not to sue contained in that CD.

However, the covenants not to sue were limited. Specifically, the United States covenanted not to sue Sharon Steel only for the Tailings and Slag Sites. Exh. 8 at ¶ VIII.A. There was no broader covenant regarding potential future environmental claims.

Moreover, in the Sharon Steel CD, the United States expressly reserved its claims against Sharon Steel for every site in the country except for the Tailings and Slag Sites:

> ***Nothing in this Decree shall be deemed to impair any claims*** identified in the United States' Proof of Claim, or any other claims of the United States on behalf of EPA, ***other than the United States' claims with respect to the Tailings Site and the Slag Site***.

Id. at ¶ X.A (emphasis added). This limitation on the scope of the United States' covenant not to sue with Sharon Steel would have no meaning or effect if the Broad Covenant Not to Sue in the UV CD was interpreted to apply to Sharon Steel.

To the extent that Mueller asserts that the one-time use of the term "release" in Paragraph VI.B of the UV CD serves to extinguish all future causes of action against all parties to the *Midvale Litigation*, Mueller is wrong. The full text of the relevant sentence in Paragraph VI.B reads: "By virtue of the payment of the amounts identified in Section IV of this Decree, ***the Trust and UV*** shall have finally and completely resolved all alleged liabilities of the Trust and UV to the United States ***for the matters covered by the Covenant Not to Sue in Section VII.A*** hereof and are hereby released therefrom." Exh. 7 at ¶ VI.B (emphasis added). This language clearly establishes: (1) the "release" applies only to "the Trust and UV;" and (2) it applies only to the covenant not to sue in Paragraph VII.A. That covenant not to sue is the narrow covenant not to sue for the Midvale Sites and the Re-Solve Site. It is not the Broad Covenant Not to Sue in Section VII.B. Moreover, to construe this sentence as broadly as

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Supp. 1448, 1451–52 (D. Colo. 1997) (EPA's consent agreement resolving reporting failures under CERCLA did not preclude citizen suit for those same failures under EPCRA).

Mueller construes it would eviscerate the carefully crafted language and limitations in the UV CD and the equally carefully crafted limitations in the Sharon Steel CD.

2. Mueller's Status as a Successor to UV/USSRAM's Liability does not Render it a Beneficiary of the Covenant Not to Sue in the UV CD

In asserting that it is the beneficiary of the Broad Covenant Not to Sue in the UV CD, Mueller relies on the principle that successor liability does not attach if the predecessor's liability has been discharged. Exh. 6 at 7–8. Mueller, however, misapplies this principle.

A successor is entitled to the benefits of a predecessor's covenants not to sue when the basis of the succession is as a "mere continuation" of the predecessor. *Robbins v. Physicians for Women's Health Inc.*, No. CV065000633, 2009 WL 5303887 (Conn. Super. Ct. Dec. 7, 2009). When a company is the same company as the predecessor (such as with a name change), it provided the consideration given in a prior settlement. Therefore, it makes sense that it is entitled to the benefit (*i.e.*, the covenant not to sue) of that settlement.

But Mueller indisputably is not a "mere continuation" of UV/USSRAM. Rather, Mueller is a successor by virtue of an asset purchase agreement and an express assumption of liability. Under these circumstances, the purchaser is not entitled to the seller's covenants not to sue. *Chrysler*, Nos. 88-341, 88-534, 1990 WL 127160, at *7 (CERCLA consent decree covenants did not apply to an asset purchaser successor who expressly assumed a predecessor's liabilities).

Mueller's position here is much less persuasive than that of the *Chrysler* defendant. In *Chrysler,* the covenant included the term "successors." Nevertheless, the court declined to apply the covenant to the asset purchaser, finding that the purchaser was not the type of successor the government's covenant not to sue was intended to cover. *Id.*

The UV CD uses extremely careful language to limit the United States' covenants not to sue to UV, the UV Liquidating Trust, and the Trustees. The UV CD does not include any language referring to successors of those three named beneficiaries. Accordingly, the language used, as well as the language *omitted from*, the UV CD clearly demonstrates that the covenant not to sue does not apply to Mueller.

The existence of two separate Consent Decrees in the Midvale Litigation—with two separate covenants not to sue—was a deliberate choice. One CD applied to UV, the UV Liquidating Trust, and the Trustees. The other CD applied to Sharon Steel. If the covenants not to sue in either of these Consent Decrees had been intended for the benefit of the other parties to the Midvale Litigation—or their successors—there would have been no need for two separate Consent Decrees with two distinct covenants not to sue.

3. Mueller Cannot Make Defensive Use of the UV CD Because Mueller was Not a Party to It

Even if Mueller were an intended beneficiary of the UV CD—which it is not—Mueller could not take advantage of the UV CD's covenant not to sue. Under Supreme Court precedent,

reaching back nearly 100 years, "a consent decree is not enforceable directly or in collateral proceedings by those who are not parties to it even though they were intended to be benefitted by it." *Blue Chip Stamps v. Manor Drug Stores*, 421 U.S. 723, 750 (1975) (citing *Armour*, 402 U.S. 673)); *Buckeye Coal & Ry. Co. v. Hocking Valley Ry. Co.*, 269 U.S. 42 (1925).

This prohibition applies equally to the defensive use of a consent decree. *IBM v. Comdisco*, 834 F. Supp 264, 267 (N.D. Ill. 1993) (citing *May Dep't Stores Co. v. First Hartford Corp.*, 435 F. Supp. 849 (D. Conn. 1977)).

Courts strictly adhere to this prohibition in the context of a consent decree secured by the government. "Only the Government can seek enforcement of its consent decrees; therefore, even if the Government intended its consent decree to benefit a third party, that party could not enforce it unless the decree so provided." *Beckett v. Air Line Pilots Ass'n*, 995 F.2d 280, 288 (D.C. Cir. 1993); *Dale v. Selene Fin. LP*, No. 3:15CV1762, 2016 WL 1170772, at *13 (N.D. Ohio, March 25, 2016).

The prohibition on third party enforcement of consent decrees extends to successors, unless they are mere continuations of their predecessors. *Bauman v. City of Cleveland*, No. 1:04-CV-1757, 2015 WL 893285, at *4 (N.D. Ohio March 3, 2015). In *Bauman,* the court denied a successor company standing to sue a party for violating a consent decree that was entered into between its predecessor and the alleged violator of the consent decree. *Bauman*, 2015 WL 893285 at *4. The court's reasoning was that "because the [plaintiff] was not a party to the underlying litigation, or the Consent Decree that grew out of it, it lacks standing." *Id.* Similarly, Mueller's status as a successor to UV/USSRAM's liability does not enable it to use UV/USSRAM's covenant not to sue as an affirmative defense.

4. <u>Mueller's Counter Argument is Unsupported and Unpersuasive</u>

Mueller's position that the United States' Broad Covenant Not to Sue in the UV CD shields it from liability at the USS Lead Site is based on a single case from Connecticut, *Robbins,* 2009 WL 5303887. This case is readily distinguishable.

- In *Robbins*, the plaintiff's claim against the defendant was based on the "mere continuation" theory of successor liability. *Robbins v. Physicians for Women's Health, LLC,* 311 Conn. 707, 715 (Conn. 2014).[14] Here, by contrast, Mueller is a successor by virtue of asset purchase and liability assumption agreements where Mueller agreed to assume liabilities of "any kind character or description, direct or indirect, whether accrued, absolute, contingent or otherwise."

- In the absence of a clear intent on behalf of the United States, a covenant not to sue by the United States in an environmental settlement does not apply to successors. *Chrysler Corp.*, Nos. 88-341, 88-534, 1990 WL 127160 at *7.

[14] While the intermediate appellate court in *Robbins v. Physicians for Women's Health, LLC*, 38 A.3d 142 (Conn. App. Ct. 2012) reversed the lower court case that Mueller cites, the Supreme Court of Connecticut ultimately reinstated the trial court's decision, *Robbins v. Physicians for Women's Health, LLC*, 311 Conn. 707 (Conn. 2014).

- The *Robbins* decision involved a covenant not to sue in a settlement agreement executed by private litigants. The covenant not to sue was not made by the United States in a consent decree resolving environmental claims. Accordingly, the defendants in *Robbins* did not have to overcome the Supreme Court's prohibition on third-party enforcement of consent decrees and the Court's directive that consent decree language is to be strictly construed.

B. Mueller's *Res Judicata* Defenses to CERCLA Liability at the USS Lead Site are Without Merit[15]

1. Claim Preclusion Does Not Protect Mueller from Liability at the USS Lead Site

Claim preclusion arising from the Midvale Litigation does not protect Mueller from liability at the USS Lead Site. As we stated in Note 12, we do not believe that Mueller's first claim preclusion defense is any different from its "release" defense (*i.e.*, that the Broad Covenant Not to Sue in the UV CD applies to Mueller). Indeed, when we analyze Mueller's first "claim preclusion" defense on the basis of the clear legal requirements for claim preclusion, Mueller's defense withers.

The Seventh Circuit has identified three requirements to satisfy claim preclusion:

"(1) identity of the claim,

"(2) identity of parties, which includes those in 'privity' with the original parties, and

"(3) a final judgment on the merits."

Ross ex. rel. Ross v. Board of Educ. Of Twp. High Sch. Dist. 211, 486 F.3d 279, 283 (7th Cir. 2007) (cited in *Cannon v. Burge*, 752 F.3d 1079, 1101 (7th Cir. 2014)); *accord Barr v. Board of Trustees of W. Illinois Univ.*, 796 F.3d 837, 840 (7th Cir. 2015) ("Res judicata blocks a second lawsuit if there is (1) an identity of the parties in the two suits; (2) a final judgment on the merits in the first; and (3) an identity of the causes of action").[16]

These three requirements apply to both "branches" of claim preclusion: (1) preclusion based on a claim being resolved in a prior lawsuit; and (2) preclusion based on a claim *not* being brought in a prior lawsuit when it could and should have been (*i.e.*, claim splitting). *Ross*, 486

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[15] Section II.B of this letter address Mueller's arguments at Sections I.B and I.C of the First *Moscato* Letter at 7–15. As we mention later in this letter, we believe that Mueller's claim splitting argument is no different from its issue preclusion argument. That is why we largely address Mueller's "claim splitting" argument in our response to Mueller's issue preclusion (*i.e.*, collateral estoppel) argument.

[16] Mueller never specifically identifies the three legal requirements for satisfying claim preclusion in any of its four letters to the United States. *See* Exhs. 6, 9, 15, and 16. This omission likely is due to Mueller's inability to satisfy those requirements if they were plainly stated.

F.3d at 283 (identifying the three requirements listed above and affirming dismissal based on the claim having been resolved in a prior lawsuit); *Barr*, 796 F.3d at 840 (identifying the three requirements listed above and affirming dismissal based claim splitting).

Mueller asserts a claim preclusion defense under both branches.[17] Under both branches, Mueller cannot satisfy the first two requirements: identity of the claim and identity of the parties, including those in privity with the original parties. Under the claim splitting branch, Mueller also cannot satisfy the third requirement: a final judgment on the merits.

a. <u>There is No Identity of Claim</u>

i. The Factual Allegations Giving Rise to the Injuries at the USS Lead Site are not Based on the Same, or Nearly the Same, Factual Allegations as those in the Midvale <u>Litigation</u>

"Two claims are one for purposes of res judicata if they are based on the same, or nearly the same, factual allegations." *Herrimann v. Cencom Cable Assocs. Inc.*, 999 F.2d 223, 226 (7th Cir. 1993), *quoted in Barr*, 796 F.3d at 840; *Adams v. City of Indianapolis*, 742 F.3d 720, 736 (7th Cir. 2014) ("Whether there is an identity of the cause of action depends on 'whether the claims comprise the same core of operative facts that give rise to a remedy'") (quoting *Matrix IV. Inc. v. Am. Nat'l Bank & Trust Co. of Chicago*, 649 F.3d 539, 547 (7th Cir. 2011)). By contrast, claims are independent of each other when the alleged injuries do not arise from the same core of operative facts and the harm occurred at different times. *Midwest Operating Eng'rs Welfare Fund, v. Cordova Dredge*, 147 F. Supp. 3d 724, 740 (N.D. Ill. 2015) (citing *Andresen v. Chrysler Corp.*, 99 F. 3d 846, 852-53 (7th Cir. 1996)).

The United States' claims in the Midvale Litigation and our claims in the USS Lead Litigation are not based on the same, or nearly the same, factual allegations. They are temporally and geographically distinct. Our claims in the Midvale Litigation involved two Superfund sites in Utah. The transactions that gave rise to the injury were the release and disposal of hazardous substances at those Utah sites. By contrast, the United States' claims in the USS Lead Litigation involve the USS Lead Superfund Site in East Chicago, Indiana. The transactions that give rise to the injury were the release and disposal of hazardous substances in East Chicago, Indiana. While CERCLA establishes the United States' right to secure response actions and costs at both the Midvale and USS Lead Sites, this right arises from completely separate underlying transactions and results in completely separate injuries: one in Utah and one in Indiana. The claims manifestly do not arise from "the same core of operative facts." *Adams*, 742 F.3d at 736.

Mueller's claim preclusion arguments and defenses rest on one overriding fallacy: that the relevant "transaction" for purposes of claim preclusion is the 1979 Asset Purchase

[17] First *Moscato* Letter at Section I.B (the argument under the first branch is from the bottom of page 7 through the middle of page 8; the argument under the second branch is from the middle of page 8 through the middle of page 13).

Agreement and the 1980 UV Liquidating Trust Agreement.[18] This is patently untrue: these agreements did not result in the injuries at either the USS Lead Site or the Midvale Site. Instead, the release and disposal of hazardous substances—at different times and different places—did.

Mueller's position conflates an element of the United States' theory of liability against one defendant (*i.e.*, that the UV Liquidating Trust succeeded to the liabilities of UV/USSRAM) with the *claims* that the United States asserted in its complaint in the Midvale Litigation (*i.e.*, that Sharon Steel, UV, and the UV Liquidating Trust were liable under CERCLA for response actions and costs at the Midvale Site). The two are not the same.

The logical extension of Mueller's argument would lead to an absurdity. It would mean that any time the United States sued a company under CERCLA to secure response actions or recover response costs at one Superfund site, the United States would also have to sue that company for liability at every other Superfund Site in the country where the company might also have liability. That is not the law. Neither Mueller nor any party to the Midvale Litigation has yet been subject to a claim involving the releases and disposals of hazardous substances at the USS Lead Site.

The first requirement of any claim preclusion defense—identity of the claim—is not met here.

ii. Mueller Misapplies the Doctrine of "Claim Splitting"

Mueller misapplies the doctrine of claim splitting. Mueller asserts that the United States cannot identify Mueller as a successor to UV/USSRAM in the USS Lead Litigation because the United States could have, but did not, identify Mueller as a successor to UV/USSRAM in the Midvale Litigation.

Mueller is correct that the United States did not claim that Mueller was a successor to UV/USSRAM in the Midvale Litigation. We did not need to. We had a straightforward theory of Mueller's liability: Mueller was the then-current owner and operator of the Midvale Sites. 42 U.S.C. § 9607(a)(1).

Claim splitting does not turn on whether arguments or liability theories could have been raised in a prior litigation. Rather, it turns on whether the "'allegations in [two lawsuits] are essentially the same.'" *Barr*, 796 F.3d at 840 (citing *Czarniecki v. City of Chicago*, 633 F.3d 545, 549 (7th Cir. 2011)) (brackets in original). If they are, the second suit is barred.

> [A] plaintiff cannot evade preclusion by 'identify[ing] *a slightly different cause of action* with one element different from those in the first, second, or third lawsuits between the same parties *arising from the same events*.'

Barr, 796 F.3d at 840 (emphasis added) (quoting *Czarniecki* 633 F.3d at 550).

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[18] *See* Exh. 6 at 9–10.

The causes of action in a lawsuit against Mueller involving the USS Lead are not "slightly different" from those in the Midvale Litigation. They are completely different. They do not "arise from the same events." They arise from events (*i.e.*, hazardous substance releases) that occurred at different times in different locations.

The Seventh Circuit's *Barr* case illustrates the proper application of "claim splitting." In *Barr*, a dismissed tenure-track professor filed a first complaint against her employer alleging unlawful retaliation under Title VII of the Civil Rights Act. That complaint was dismissed with prejudice for want of prosecution. Prior to dismissal, the professor filed a second complaint for both retaliation under Title VII and age discrimination under the Age Discrimination in Employment Act of 1967. The Seventh Circuit affirmed dismissal of the second complaint because the professor's second suit arose from the same events as the first suit and was just a slightly different cause of action. In this case, nothing analogous to the plaintiff's filing of the second complaint in the *Barr* case would arise if the United States filed a complaint against Mueller for the USS Lead Site.

b. There is no Identity of Nor Privity between the UV CD Defendants and Mueller

It is undisputed that Mueller is "identical to" and/or "in privity with" *one* of the defendants in the Midvale Litigation, namely, Sharon Steel.[19] However, Mueller's identity and/or privity with Sharon Steel is irrelevant because Mueller does not seek to be the beneficiary of limited covenant not to sue in the Sharon Steel CD. Rather, Mueller seeks to be the beneficiary of the Broad Covenant Not to Sue in the UV CD. Mueller, however, is neither "identical to" nor "in privity with" the defendants to the UV CD, namely, UV, the UV Liquidating Trust, and the Trustees.[20]

Mueller cannot and does not assert that it is "identical to" UV, the UV Liquidating Trust, or the Trustees (hereafter, the "UV CD Defendants"). Therefore, Mueller's claim preclusion defense must rest on it being "in privity with" one or more of the UV CD Defendants.[21]

In order to be in privity with a litigant in a prior lawsuit, the current litigant must show "a sufficiently close identity of interests" with the prior litigant. *Tice v. Am. Airlines*, 162 F.3d 966, 971 (7th Cir. 1998). One of the key factors in determining if a "privity" relationship exists is if

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[19] A non-party to a prior lawsuit can raise a claim preclusion defense to a current lawsuit even if it was not a party to the prior action provided it can show that it has a privity relationship with a litigant in the prior lawsuit. *Nevada v. United States*, 463 U.S. 110, 129 (1983).

[20] Only one defendant signed the UV CD: the UV Liquidating Trust. However, UV, the UV Liquidating Trust, and the Trustees all were expressly identified in the covenants not to sue in the UV CD and were the intended beneficiaries. Therefore, for the purposes of the covenants not to sue, the "defendants" to the UV CD were UV, the UV Liquidating Trust, and the Trustees.

[21] Mueller never plainly asserts that it was "in privity with" the UV CD Defendants in either its First or Second *Moscato* Letters. *See* Exhs. 6 and 9. However, the United States assumes that Mueller must be claiming to be in privity with one or more of the UV CD Defendants because that is an element of proof of the affirmative defense of claim preclusion.

the non-party to the prior lawsuit has a parallel interest with one of the original parties. *Id.* (*citing* Wright § 4457 (1998 Supp.) at 420).

Mueller has not provided any evidence or facts demonstrating that its interests and those of UV CD Defendants were "parallel." Indeed, Mueller cannot. Mueller and the UV CD Defendants had diametrically opposed interests. They filed cross-claims against each other on the issue of liability for the Midvale Sites.[22]

Mueller and the UV CD Parties also do not have "parallel" interests now. None of the UV CD Defendants are in existence any longer. They have no interests.

Mueller's status as a successor to the liability of UV/USSRAM does not create a privity relationship between Mueller and UV.[23] That would be true only if Mueller were a successor by virtue of the "mere continuation" theory of successor liability. *Russell v. SunAmerica Sec. Inc.*, 962 F.2d 1169 (5th Cir. 1992).[24] While Mueller cites the *Russell* for the broad proposition that all successors are entitled to the benefit of covenants not to sue running to their predecessors, the *Russell* holding is much narrower:

> [W]e hold that the relationship between [the predecessor] and the [successor] is close enough to justify the application of res judicata so as to bar a second suit based on the same cause of action as the first suit, particularly where, as here, ***the gravamen of the Plaintiffs' second suit is that the defendant*** in that suit ***is a mere continuation*** of the defendant in the first suit.

Id. at 1176 (emphasis added).

In the USS Lead Litigation, the United States will not assert that Mueller is a mere continuation of UV/USSRAM. Quite the contrary, we will assert that Mueller is a successor to UV/USSRAM's liability based on an express assumption of liability. The *Russell* holding is inapplicable. Mueller's reliance on it is misplaced.

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[22] *See* 1991 Annual Report of UV Liquidating Trust at 8 (Exhibit 10).

[23] First *Moscato* Letter at 8.

[24] "Mere continuation" successor liability applies when there is a common identity of stock, directors, and stockholders and when the predecessor ceases to exist after the transaction is complete. *Travis v. Harris Corp.*, 565 F.2d 443, 447 (7th Cir. 1977); *see also North Shore Gas,* 152 F.3d at 654. These factors justify holding a successor liable because they show a continuity and uniformity of corporate control. David J. Marchitelf, *Liability of Successor Corporation for Injury or Damage Caused by Predecessor, Based on Mere Continuation or Continuity of Enterprise Exceptions to Nonliability,* 13 A.L.R. 355 (2006) ("Since many courts consider common control of the successor and predecessor to be a highly significant consideration in favor of liability under the mere continuation . . . exception, a factor common to virtually all tests applied by courts is whether there was a continuation of stockholders, directors, and officers between the two entities"). These factors also support establishing a privity relationship.

Mueller's reliance on the *Russell* case also ignores the well-established principle that privity between parties is fact-specific inquiry that turns on an analysis of each party's specific interests. The diametrically-opposed interests between Mueller and UV in the Midvale Litigation are critical facts that belie Mueller's claim to be in privity with UV.

c. In the Midvale Litigation, Neither the UV CD nor the Sharon Steel CD was a Judgment on the Merits of Who Succeeded to the Liability of UV/USSRAM

Mueller's claim splitting argument fails to satisfy the third requirement for claim preclusion: a final judgment on the merits. While it is undisputed that there were two final judgments on the merits in the Midvale Litigation (the UV CD and the Sharon Steel CD), these final judgments were judgments on the *claims* in the complaint; they were not final judgments on any issue of law or fact.

The allegations in the Midvale complaint did not include any references to who succeeded to the liabilities of UV/USSRAM.[25] Therefore, even if the Consent Decrees were final judgments on issues of fact or law pled in the complaint, the Consent Decrees did not resolve the issue of succession to the liability of UV/USSRAM. *See* caselaw cited in Note 12, *supra.*

Indeed, the plain language of both the UV and Sharon Steel CDs refutes Mueller's claim that the Consent Decrees served as final judgments on the merits of any issue of fact or law:

> THEREFORE, ***without any adjudication of any issue of law or fact*** and upon the consent of the parties thereto, it is hereby ORDERED, ADJUDGED, and DECREED, as follows:

Exh. 7 at p. 8 (bold and italics added); Exh. 8 at p. 5 (bold and italics added). The UV CD further refutes Mueller's claim:

> ***No previous ruling of this Court*** in the Actions ***on any issue of law or fact shall be deemed to be binding*** upon the parties hereto ***for any purpose in any other action or legal proceeding of any type or kind.***

Exh. 7 at ¶ VI.I (bold and italics added). Similarly, nothing in the Sharon Steel CD addresses the question of successorship liability.

Mueller's claim splitting argument is really an "issue preclusion" argument intended to cause confusion.

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[25] *See* Exhibit 11 (Complaint and Seconded Amended Complaint in Midvale Litigation).

2. Mueller's Issue Preclusion Defense to CERCLA Liability at the USS Lead Site is Without Merit[26]

Mueller spends a significant amount of effort trolling the pleadings and transcripts of the Midvale Litigation to establish the following two propositions:

(1) In the Midvale Litigation, the United States took the position orally and in writing that the UV Liquidating Trust was liable under CERCLA as a successor to UV/USSRAM;

(2) By contrast, the United States' liability case against Mueller was based exclusively on Mueller's status as an owner/operator of the Midvale Sites; the United States never took the position that Mueller was liable as a successor to UV/USSRAM.

The United States concedes both of these points. Unfortunately, neither of them is legally significant for purposes of issue preclusion. Only if the Midvale court had held that Mueller *did not* succeed to the liabilities of UV/USSRAM would the United States now be precluded from asserting that Mueller did. The Midvale court, however, issued no such ruling.

a. Mueller's Succession to the Liability of UV/USSRAM was not "Actually Litigated and Resolved" in the Midvale Litigation

Issue preclusion applies to "an issue of fact or law actually litigated and resolved in a valid court determination essential to the prior judgment." *New Hampshire v. Maine*, 532 U.S. 742, 748–49 (2001). "[O]nce a court has decided an issue of fact or law necessary to its judgment, that decision may preclude relitigation of the issue in a suit on a different cause of action involving a party to the first case." *Allen v. McCurry*, 449 U.S. 90, 94 (1980); *Brown v. Felsen,* 442 U.S. 127, 139 n. 10 (1979) (issue preclusion only attaches to questions of fact or law "actually and necessarily decided in a prior suit"); *accord Montana v. United States*, 440 U.S. 147, 153 (1979) ("Under collateral estoppel, once an issue is actually and necessarily determined . . . that determination is conclusive in subsequent suits.").

Mueller's succession to the liability of UV/USSRAM was not "actually litigated and resolved" by the Midvale court. The issue was not "actually litigated" by the United States because we never claimed in the Midvale Litigation that Mueller succeeded to the liabilities of UV/USSRAM. And, while UV and Mueller cross-claimed against each other on the issue of who succeeded to UV/USSRAM's liabilities, those cross-claims were never "resolved." Mueller and UV settled the cross-claims without any decision. Thus, a decision on Mueller's succession to UV/USSRAM's liability was not "essential" to the resolution of the cross-claims.

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[26] Mueller styles this defense as "collateral estoppel." First *Moscato* Letter at 13–15 (Argument I.C). We use the term "issue preclusion" instead. We believe it is a more descriptive formulation of the underlying concept. We understand, however, that "issue preclusion" and "collateral estoppel" represent the same defense.

Because the Midvale Court did not render any judgment—one way or the other—on Mueller's succession to the liability of UV/USSRAM, issue preclusion does not bar the United States from asserting that Mueller is liable as a successor to UV/USSRAM now.

b. The Trust's Succession to the Liability of UV/USSRAM was not "Actually Litigated and Resolved" in the Midvale Litigation

Recognizing that the Midvale court never held that Mueller *was not* a successor to UV/USSRAM, Mueller instead claims that the Midvale court held that the UV Liquidating Trust *was*. Mueller then reiterates its false assertion that because the UV Liquidating Trust was the successor, Mueller could not be.

We already have demonstrated that *both* Mueller and the UV Liquidating Trust *could be* and *were* the successors to UV/USSRAM. *See infra* at Section I.B. Therefore, Mueller's contention that *either* Mueller *or* the UV Liquidating Trust was the successor—but not both—is wrong.

In any event, however, the Midvale court never "resolved" the issue of the Trust's succession to UV/USSRAM's liability. Such a decision was not "necessary": the case was settled by agreement of the parties before the Midvale court had to decide the matter.

Mueller relies on one short passage of the transcript of an oral argument hearing to claim that the Midvale court held that the Trust was the successor to UV/USSRAM. An unedited version of that transcript—unlike Mueller's heavily edited abstract—belies Mueller's claim.

At oral argument, the United States asked Judge Jenkins about the Trust's succession to UV/USSRAM's liability:

> Gov't: Excuse me, Your Honor. You have spoken on the question of successor liability, but your comments were directed to ARCO. I know Your Honor has, on two occasions before, considered the issue of successor liability with respect to the Trust.
>
> Judge: Yeah.
>
> Gov't: Did your honor want to express a conclusion today in that regard?[27]

Judge Jenkins demurred:

> Judge: Well, I've expressed my Conclusions in reference to the Trust, on prior occasions; ***and I have indicated that I am willing to discuss that***. There's

[27] *United States v. Sharon Steel, et al.*, Transcript of Oral Argument on Motions for Summary Judgment, Civ. No. 86-C-924J, 89-C-136J, at 170 (Aug. 14, 1990) (Exhibit 12) ("Oral Argument Transcript") (emphasis added).

> an effort to revisit that the third time; ***but I have indicated that we will revisit that at Pretrial if at all***.
>
> Generally I'd indicated, that in times past, that the shareholders' interests are residual interests. They get paid after all creditors get paid. Ordinarily, if we have assets that are transmuted into money, the money rides with the burden. It's not free money until we make sure that the creditors are taken care of.
>
> And that's essentially what we talked about before; ***but, and I didn't really feel constrained to deal with that again today, but I did promise people I would deal with that in context of Pretrial, and am willing –and am willing—to do that.***[28]

Taken as a whole, Judge Jenkins clearly did not make any determination about the Trust's succession to the liability of UV/USSRAM. Not once, but three times in that single passage, the Court reserved judgment on the issue of the Trust's liability for a later date:

(1) "And I have indicated that I am willing to discuss that."

(2) "But I have indicated that we will revisit that at Pretrial if at all"

(3) "I didn't feel constrained to deal with that again today, but I did promise people I would deal with that in the context of the Pretrial, and am willing—and am willing—to do that."

In the First *Moscato* Letter, Mueller selectively edits this passage of the transcript—omitting key sentences and adding a phrase that is not there—to give the Judge's words an air of finality that clearly does not exist (Mueller's addition is in bold and italics):

> Ben Fisherow specifically requested a ruling as to UV Trust's successor liability. He stated 'I know your honor has, on two occasions before, considered the issue of successor liability with respect to the Trust . . . Did your honor want to express a conclusion today in that regard?' Chief Judge Jenkins responded that he had 'expressed [his] Conclusions in reference to the Trust on prior occasions' ***and that the UV Trust succeeded to the liabilities of UV Industries because*** '[o]rdinarily, if we have assets that are transmuted into money, the money rides with the burden. It's not free money until we make sure that the creditors are taken care of.' He concluded: 'There's an effort to revisit that the third time; but I have indicated that we will revisit that at Pretrial, if at all.[29]

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[28] *Id.* at 170–71 (emphasis added).

[29] Exh. 6 at 14 (internal citations to the Oral Argument Transcript omitted).

Mueller's claim that Judge Jenkins found that the Trust succeeded to UV/USSRAM's liability is based on little more than wishful thinking. Judge Jenkins' actual words indicate nothing more than that, in ordinary circumstances, money from a liquidation is not distributed to shareholders until creditors are paid. Judge Jenkins did not make any statements regarding the Trust's position vis-à-vis UV/USSRAM's liability or whether that was an ordinary situation.

Even if Judge Jenkins indirectly opined on the Trust's succession to UV/USSRAM's liability, incidental remarks made by a judge do not give rise to issue preclusion. *Carter v. AMC, LLC,* 645 F.3d 849, 842 (7th Cir. 2011); *American Prairie Constr. Co. v. Hoich*, 594 F.3d 1015, 1022 (8th Cir. 2010); *Gentry v. Duckworth*, 65 F.3d 555, 560–61 (7th Cir. 1995); *United States v. Confederate Acres Sanitary Sewage and Drainage System, Inc.*, 935 F.2d 796, 799 (6th Cir. 1991).

Moreover, even if Judge Jenkins' statements were clear and definitive—which they were not—those statements would not be binding because the Midvale Litigation was resolved by a settlement prior to trial. In such circumstances, there is no "judgment" and certainly no "valid court determination essential to the judgment." *Schmieder v. Hall*, 421 F. Supp. 1208, 1216 n.10 (S.D. N.Y. 1976) ("Judge Holtzoff, who presided over the suit. . . in fact indicated during that proceeding that he felt [the claimant] had no title in the property, and simply was a 'straw'. . . . Obviously, since the action in that case was settled by stipulation, and never formally tried by Judge Holtzoff, his remarks are not binding") (citation omitted), *judgment aff'd* 545 F.2d 768 (2nd Cir. 1976); *see also Alexander v. National Fire Ins. of Hartford*, 454 F.3d 214, 224–25 (3rd Cir. 2006) (explaining that where a judge expressly declined to issue a definitive ruling on a matter . . . "there was no final definitive ruling on the subject that could have barred later relitigation").

Other evidence clearly demonstrates that Judge Jenkins never issued a ruling on the Trust's succession to UV/USSRAM's liabilities:

- In the Midvale Litigation, the UV Liquidating Trust filed a cross-claim against Mueller alleging, *inter alia*, that pursuant to the 1979 Asset Purchase and Liability Assumption Agreements, Mueller was liable as a successor to UV/USSRAM for the CERCLA cleanup of the Midvale Sites.[30] No decision on this issue was ever rendered by the Midvale Court[31] because the parties subsequently settled their claims instead.[32] If a decision on Mueller's or the Trust's successor liability had

[30] *See* Exh. 10 at 9–10 (1991) ("The Liquidating Trust asked the District Court to declare that, pursuant to the terms of an Agreement for Purchase of Assets and a related Instrument of Assumption of Liabilities, dated November 26, 1979, Sharon had assumed all the liabilities of UV . . . and that Sharon was liable to the Liquidating Trust for the full amount of any costs, expenses, damages, or other expenditures incurred by the Liquidating Trust in connection with the claims of the United States relating to the Tailings Site . . . . Sharon's cross-claims against the Liquidating Trust original sought . . . contribution or indemnification for the cost of any relief awarded to the United States with respect to CERCLA and RCRA claims against Sharon").

[31] *Id.* at 10.

[32] *Id.* at 13.

in fact been issued, it seems highly unlikely that the Trust would have claimed otherwise in an annual report to its unit holders.

- On October 15, 1990—some two months *after* the hearing on the Motions for Summary Judgment—Mueller entered into a separate settlement agreement with the UV Liquidating Trust to settle all pending claims between the Trust and Mueller, "including the claims filed by the Liquidating Trust in the Sharon Steel Bankruptcy Proceeding and the cross-claims pending by each against the other in the Midvale Tailings Site Superfund Litigation."[33] Pursuant to this agreement, Mueller agreed to pay the UV Liquidating Trust $7.5 million.[34] If Judge Jenkins had issued a judgment finding the Trust liable as the successor to UV/USSRAM, it seems implausible that Mueller would have paid the Trust, instead of the other way around.

Given the totality of these circumstances, Mueller's assertion that Judge Jenkins issued a decision finding that the Trust succeeded to UV/USSRAM's liabilities is wrong.

c. The Plain Language of the UV CD and Sharon Steel CD Refutes Mueller's Claim that the Court Issued a Judgment Finding that the Trust Was the Successor to UV/USSRAM

We previously identified the express language of the UV and Sharon Steel Consent Decrees which refutes Mueller's claim that the Midvale court held that the Trust succeeded to the liability of UV/USSRAM. *See* Section II.B.1.c, *supra* (Consent Decrees were issued "without any adjudication of any issue of law or fact"); ("No previous ruling of this Court . . . on any issue of law or fact shall be deemed to be binding . . . for any purpose in any other action or legal proceeding").

Mueller argues, however, that statements made by Judge Jenkins at a hearing on the entry of the Consent Decrees nullifies the express language of the Court's orders embodied in the two Consent Decrees.[35] We quote from Mueller's' First *Moscato* Letter because copies of the transcript of the hearing were not included in the attachments to the First or Second *Moscato* Letters:

> Judge Jenkins clarified that the language in the Consent Decree that says 'No previous Ruling of this Court in the Actions on any issue of Law or fact shall be deemed to be binding upon the Parties hereto for any purpose in any other Action or Legal Proceeding of any type or kind' does not 'contemplate that The Court in any way has withdrawn any Finding or any Opinion or any Order,

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[33] *Id.*

[34] *Id.*

[35] First *Moscato* Letter at 14.

> because I don't intend to do that . . . **They exist and they're for whatever value they have**.[36]

Mueller's quotation leaves out part of Judge Jenkins' actual statement. In light of Mueller's selective editing of the summary judgment transcript, we would need to review the actual transcript of this hearing before agreeing that this quotation represents an accurate view of what Judge Jenkins said.

However, John Moscato, counsel for the United States in the Eureka Mills matter, replied as follows to Mueller's assertion:

> In the November 13, 1990 proceedings regarding the motions to enter three pending decrees, the Court says that "one area that bothers me a little is the section of each [UV and ARC] decree that says, 'No previous ruling of this Court in the Actions on any issue of law or fact shall be deemed to be binding upon the parties hereto for any purpose in any other action or legal proceeding of any type or kind.'" After a brief explanation by Ben Fisherow, DOJ, that the language is intended to preserve the Trust's corporate defense, the Court notes that the clause applies to use in proceedings other than the present case and does not presume to require the Court to withdraw its rulings in the Midvale Litigation. See, Tr. 27 at l. 3–5. In light of that clarification, the Court then merely replies, 'Well, whatever We Found, however We've ruled, is a historic fact.' The Court then enters the decrees without caveat and without striking the above-discussed language. This supports one and only one conclusion – that while the Court would not withdraw its rulings, neither would the Court not bar the United States and UV and the Trust from contractually agreeing that any ruling in [the] Midvale Litigation would not bind either party in the future.

Letter dated April 19, 2010, from J. Moscato to D. Elliott at 10 (Exh. 13) (citations in footnotes to transcript are omitted) (emphasis in original).[37]

In any event, Judge Jenkins' statement does not support Mueller's position. Judge Jenkins' statement that his prior determinations "exist and they're for whatever value they have" makes the obvious explicit: the binding effect of his prior rulings should be governed by existing *res judicata* principles. We do not disagree. However, Judge Jenkins never rendered any decision on the successorship to UV/USSRAM's liability.

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[36] *Id.* (emphasis in original).

[37] As of the date of this letter, we have been unable to locate a copy of the transcript.

C. Mueller's Judicial Estoppel Defense to CERCLA Liability at the USS Lead Site is Without Merit[38]

Mueller claims that because the United States took the position in the Midvale Litigation that the Trust succeeded to the liabilities of UV/USSRAM, the United States is judicially estopped in the USS Lead Litigation from claiming that Mueller succeeded to those liabilities. This claim is without merit.

In the leading case on judicial estoppel, the Supreme Court laid out three requirements for judicial estoppel:

(1) "[A] party's later position must be 'clearly inconsistent' with its earlier position."[39]

(2) The party must have "succeeded in persuading a court to accept that party's earlier position."[40]

(3) "[T]he party seeking to assert an inconsistent position would derive an unfair advantage or impose an unfair detriment on the opposing party if not estopped."[41]

Mueller cannot satisfy any of these three requirements.

1. The United States' Current Position in the USS Lead Litigation is Not "Clearly Inconsistent" With our Position in the Midvale Litigation

There is *no* inconsistency—let alone a "*clear*" inconsistency—between the United States' position in the Midvale Litigation that the Trust succeeded to the liability of UV/USSRAM and our position in the USS Lead Litigation that Mueller did too. *Both* the Trust and Mueller can and do hold a common shared CERCLA liability as successors to UV/USSRAM. *See supra* Section I.B and Exh. 5 (Joint Brief in *NCR* case).

In order for judicial estoppel to apply, the United States would have had to assert that Mueller was *not* a successor to UV/USSRAM. That is the only position that is "clearly inconsistent" with our assertion now that Mueller *is* a successor to UV/USSRAM.

In fact, the United States never took *any* position in the Midvale Litigation about whether Mueller succeeded to the liabilities of UV/USSRAM. We did not have to. Mueller was directly liable as an owner/operator. Neither the United States nor any other plaintiff is required to raise two liability theories against a defendant when one will suffice. Silence on an issue is not "clearly inconsistent" with a later position on an issue.

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[38] Section II.C of this letter address Mueller's arguments at Section I.D of the First *Moscato* Letter at 15–17.

[39] *New Hampshire*, 532 U.S. at 750.

[40] *Id.*

[41] *Id.*

2. The United States Never Succeeded in Persuading the Midvale Court that Mueller Succeeded to UV/USSRAM's CERCLA Liabilities

The United States clearly never succeeded in persuading the Midvale Court that Mueller was *not* the successor to UV/USSRAM: we never took that position in the Midvale Litigation in the first place.

Moreover, the United States never succeeded in persuading the Midvale court that the Trust succeeded to UV/USSRAM's liability either. *See supra* Section II.B.2.b. Nevertheless, judicial estoppel would not apply even if the Midvale court had determined that the Trust succeeded to UV/USSRAM's liability. That determination is not inconsistent with Mueller's common, shared liability.

3. The United States Will Not Derive an Unfair Advantage over Mueller or Impose an Unfair Detriment on Mueller by Asserting that Mueller Succeeded to the Liability of UV/USSRAM

a. The United States Will Not Derive an Unfair Advantage

Mueller's judicial estoppel argument ignores the doctrine's foundation in equity. The United States will not obtain an unfair advantage over Mueller by advancing a CERCLA claim against it for liabilities at the USS Lead Site. The United States—which had no liability at the Midvale Site—was left holding more than $53 million in unreimbursed costs at Midvale, approximately 46% of all costs.[42] Mueller, by contrast, paid only $22 million, approximately 19%.

In addition, the same bankruptcy proceeding that created Mueller as the successor to Sharon Steel also created Mueller's subsidiary, MRRC. MRRC was radically underfunded for the purpose for which it was created: to fund CERCLA liabilities around the country.[43] MRRC now claims that it cannot contribute any money to the cleanup of the USS Lead Site, a cleanup that already has cost more than $40 million and will substantially increase by the time the cleanup is complete.

This is not a case where the United States seeks to recover twice for the same injury. *Cf. American Transp. Group, LLC v. California Cartage Co., LLC,* 168 F. Supp. 3d 1074, 1079–80 (N.D. Ill. 2016) (holding that it is unfair for a party to secure judgments against multiple defendants for the same injury without proving any kind of joint or derivative liability). Mueller has not yet paid any money to the United States for our CERCLA claims at the USS Lead Site.

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[42] Total costs at the Midvale Sites ultimately exceeded $114 million. Mueller paid $22 million; ARCO paid $21 million; and the Trust paid a little more than $18 million.

[43] We recognize that a Bankruptcy Court approved a Plan of Reorganization that radically underfunded MRRC. That may or may not have legal consequences. It does not speak to equity at all.

In fact, it is Mueller that would derive an unfair advantage over taxpayers and other potentially-responsible parties at the USS Lead Site if Mueller does not contribute to the cleanup. Other companies already have contributed more than $23 million (excluding their costs of transportation and disposal) for the cleanup of the USS Lead Site. The United States currently has more than $20 million in outstanding unreimbursed costs and more continue to accrue. All the while, Mueller has contributed nothing to the soil remediation and interior cleanups in residential areas of the Site.

In these circumstances, Mueller's claim that it would be unfairly burdened by being found liable for UV/USSRAM's CERCLA liability at the USS Lead Site rings hallow.

b. Mueller did not Detrimentally Rely on an Alleged Decision in the Midvale Litigation

Mueller did not detrimentally rely on the Midvale court's alleged decision that the Trust was the exclusive successor to UV/USSRAM's CERCLA liability. First, the Midvale court never issued such decision, making detrimental reliance impossible.

Second, the summary judgment hearing shows that the United States and Mueller reached a settlement of the United States' claims *before* the Court reached its alleged decision regarding the Trust. Mueller's counsel states on page 142 of the transcript:

> The United States and Sharon Steel Corporation [*i.e.*, Mueller] have reached a settlement, subject to your Honor's approval, of course, on both the Mill site Case and the Smelter Case; and we are also currently working very hard on settling our differences with UV.[44]

By contrast, the Court's alleged decision on the Trust's succession to UV/USSRAM's liability does not occur until pages 170 and 171, *after* Mueller's counsel had announced a settlement with the United States. Exh. 12 at 170–71. Therefore, it is impossible for Mueller's settlement with the United States to have been made in reliance on the court's determination that the Trust was the exclusive successor to UV/USSRAM's liability.

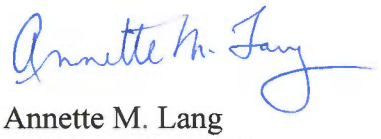
Third, Mueller entered into a separate settlement with the Trust requiring Mueller to pay the Trust $7.5 million, which amounts to over 40% of the Trust's $18 million payment to the United States. This transaction demonstrates that the Trust's liability as a successor to UV/USSRAM was not decided in the Midvale Litigation. Accordingly, Mueller's assertion that it was misled, justifying the application of judicial estoppel, is baseless.

[44] Exh. 12 at 142.

III. CONCLUSION

We hope that Mueller will begin to work with EPA and to engage with the existing PRPs to share the costs incurred and to be incurred to clean up the longstanding lead and arsenic contamination in the residential areas. We will talk soon.

Sincerely,



Annette M. Lang
Senior Counsel
Sparsh S. Khandeshi
Trial Attorney

Att.

cc: Marcy Toney
Steve Kaiser
Leo Chingcuanco

APPENDIX J

TO
Z2&3 INTERIOR UAO

Letter from E. Donald Elliott, Partner, Willkie Farr & Gallagher LLP, to John N. Moscato, Senior Counsel, Dep't of Justice (Feb. 18, 2010)

WILLKIE FARR & GALLAGHER LLP

1875 K Street, N.W.
Washington, DC 20006-1238

Tel: 202 303 1000
Fax: 202 303 2000

On the Record - Not a Privileged Settlement Communication

February 18, 2010

Via Electronic and U.S. Mail

Mr. John N. Moscato
Senior Counsel, Natural Resources Division
Environmental Enforcement Section
U.S. Department of Justice
1961 Stout Street, 8th Floor
Denver, CO 80294

Ms. Andrea Madigan and Steven B. Moores
Enforcement Attorneys
Legal Enforcement Program
U.S. EPA Region 8
1595 Wynkoop Street
Denver, CO 80202

Dear John, Andrea and Steven: Re: Eureka Mills Superfund Site

We do appreciate the open communications that we have had to date regarding a possible settlement, including Steven's letter of October 16, 2009 explaining EPA's legal theory, and the background materials re the production allocations sent with Andrea's letter of February 1, 2010, and our call yesterday. In that same spirit of open communication, we note that over 90% of the production volume that you've "allocated" to Mueller relates to some but not other mines located on the other side of the mountain that couldn't possibly be affecting the clean-up, or to sites that were not even owned or operated by Mueller's alleged predecessor, UV Industries. We really do feel that any claims against Mueller at this site based on anything other than the properties that it actually owned would be quite a stretch.

But as discussed by telephone, before plunging into a more detailed discussion of cost allocation, we feel that it is necessary to address certain threshold legal issues that we believe preclude any right to recovery by the United States for its response costs at the Eureka, Utah site against Mueller on account

of the past disposal activities of, or assumptions of liabilities for disposal, by UV Industries as opposed to Mueller itself.[1]

Mueller maintains that the government's CERCLA cost recovery claims against Sharon Steel/Mueller[2] at Eureka were already definitively resolved in *United States v. Sharon Steel, UV Industries, Inc, UV Industries, Inc., Liquidating Trust and Atlantic Richfield Company, Inc.*, (D. Utah, C.A. No. 86-C-924, filed Oct 10, 1986) (hereafter, "*U.S. v. Sharon, UV Industries, and the UV Trust*"). This case was originally occasioned by the government's cost recovery claims in connection with the Midvale, Utah Superfund site but it was ultimately resolved via a global settlement of all future CERCLA claims against both UV Industries and the UV Trust, which also had the effect of releasing Sharon/Mueller from any possible future claims at other sites predicated on the theory that Sharon/Mueller was the successor to the CERCLA obligations of UV Industries. Accordingly, the government's possible claims against Sharon/Mueller at Eureka that we have begun discussing with you were resolved twenty years ago in *U.S. v. Sharon, UV Industries, and the UV Trust.* Consequently, in parallel with further settlement discussions, we want to explore with you the proper procedure for getting closure on our position that the government is precluded from seeking to hold Sharon/Mueller liable for the past disposal practices of UV Industries, from which Sharon/Mueller bought certain assets and assumed certain liabilities in 1979.[3]

Your October 16, 2009 letter stating the government's preliminary legal position at Eureka, as well as our meeting in Denver on November 12, 2009, proceeded as if the government were writing on a clean slate to address for the first time the legal issue of what entity was the successor to the CERCLA liabilities of UV Industries. In fact, however, as explained below, that issue was already definitively resolved in litigation between the same parties in 1986 to 1990 in *U.S. v. Sharon, UV Industries, and the UV Trust*. As noted by both the government and the Court in that case, the proceeds from the sale to Sharon/Mueller went into the UV Trust, which in turn used them in part to pay the settlement for all of UV Industries' CERCLA liabilities in the 1986-1990 case. Your current claims are literally an attempt to recover twice from Sharon/Mueller for the same liabilities of UV Industries for which Sharon/Mueller already paid in 1990 through the conduit of the UV Trust.

The purpose of this letter is to summarize why the government's cost-recovery claims at Eureka (as well as any other CERCLA or RCRA sites around the country) against Sharon/Mueller for the past practices of UV Industries are barred as a matter of law. In addition to its strong contractual defense that we have already discussed with you that Sharon/Mueller could not have assumed the CERCLA

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[1] As indicated in my letter of April 6, 2009 to Mike Rudy and Steven Moores responding to your third information request, and reiterated yesterday and during our meeting in Denver on November 12, 2009, Mueller is amenable to considering making a settlement payment attributable to any disposal that may have occurred during its period of actual ownership of the site, although as noted in the same letter, we are aware of no such disposal *See* CERCLA §107(a)(2)(former owner/operator is only liable for disposal that occurred during its period of ownership).

[2] In 1991, Sharon Steel, which was a party to *U.S. v. Sharon, UV Industries, and the UV Trust*, merged into its wholly-owned subsidiary, Mueller Industries, Inc., with Mueller being the surviving corporation in the merger. Thus, Mueller succeeded to all of the rights of Sharon Steel, and for convenience we refer to them as Sharon/Mueller.

[3] Agreement for Purchase of Assets between Sharon Steel Corp. and UV Industries, Inc., Nov. 26, 1979.

liabilities of UV Industries in 1979 because CERCLA did not yet exist,[4] Mueller believes that four separate but related preclusion doctrines undeniably bar the government from coming back twenty years later for a "second bite at the apple" to re-litigate the issue of whether Sharon/Mueller or the UV Liquidating Trust is the legal successor to UV Industries for purposes of cost-recovery actions under CERCLA. Those legal doctrines of preclusion based on the 1986-1990 litigation in *U.S. v. Sharon, UV Industries, and the UV Trust* are (1) novation and release, (2) *res judicata*, (3) collateral estoppel, and (4) judicial estoppel. Each of them individually is sufficient to bar the government's claims, but collectively, they are over-whelming and simply cannot continue to be ignored.

In addition to the legalities, as a policy matter, the United States, the Department of Justice and EPA should voluntarily abide by their prior agreements to a global settlement of all the CERCLA liabilities of UV Industries, which was reached in good faith in *U.S. v. Sharon, UV Industries, and the UV Trust*. Sharon/Mueller should not be threatened with the additional expense of re-litigating issues correctly decided and settled twenty years ago.[5] Therefore, we respectfully request that you review the history with Main Justice and drop the CERCLA claims against Sharon/Mueller at Eureka voluntarily in light of the information about the past history of the UV successorship issue that we are now bringing to your attention in this letter and the accompanying documents.

If you are unwilling to drop the claims at Eureka voluntarily, then we would like to discuss with you the best method for getting a decision from a third party on the threshold legal issue whether a claim by the government that Sharon/Mueller is liable for past disposal by UV Industries is barred. At the end of this letter, we propose several possible procedural routes that we might agree on for getting a final resolution of these threshold legal issues. Again, however, we sincerely hope that it will not be necessary for either side to expend further resources re-litigating issues that were correctly decided and laid to rest twenty years ago after a four year period of discovery and litigation.

As we discussed when we met in Denver on November 12, 2009, this is a larger issue for our client than merely the costs at the Eureka site and therefore we are recommending that our client should work with you to find a way to obtain a clear resolution of this issue once and for all in this matter. We hope that this can be resolved by an agreement with you and Main Justice that the claims against UV

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[4] We note that the government made a similar argument to avoid the statute of limitations in *U.S. v. Sharon, UV Industries, and the UV Trust*:

> There is no question in this case that the cause of action of the United States under CERCLA did not accrue until after UV filed its article of dissolution with the Maine Secretary of State [on March 25, 1980]. Although the risk to public health and the injury to the environment at the Midvale Site occurred as soon as hazardous substances were released, the United States' cause of action under CERCLA obviously did not arise until after the date of enactment of the statute in December 1980.

Plaintiff United States of America's Memorandum of Law in Opposition to Motion of Defendant UV Industries, Inc. Liquidating Trust to Dismiss the Complaint as to UV Industries, Inc. at 27, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah Mar. 9, 1987) (emphasis added).

[5] *See generally Summers v. Earth Island Institute*, 555 U.S. __, 129 S. Ct. 1142 (2009) (a party lacks standing to sue on issue that it previously settled).

Industries and its successor for its past disposal practices were finally resolved by the global settlement of all such claims of the United States in *U.S. v. Sharon, UV Industries, and the UV Trust*. However, if we are not able to get a voluntary agreement on that, then we would like to at least agree with you on some other form of agreed dispute resolution or prompt, targeted judicial decision.

I. The U.S./EPA is Legally Precluded from Claiming Sharon/Mueller is the Successor to the CERCLA Liabilities of UV Industries.

A. The U.S. Released its Future Claims for Past Disposal by UV Industries, including those at Eureka, in the 1990 Case. The doctrine of *novation*, or settlement and release, precludes the government's cost-recovery claims at Eureka. In the 1990 *U.S. v. Sharon, UV Industries, and the UV Trust* settlement, the government specifically released UV Industries, Sharon/Mueller's alleged predecessor, as well as the actual legal successor to the CERCLA liabilities of UV Industries, the UV Trust, not only from CERCLA-related claims at Midvale but also from all other future sites, including the Eureka site.[6] This release was extremely broad, covering any future CERCLA claims at any site nationwide. While the agreement recited that the U.S. was presently unaware of any such claims at other sites, as part of the bargain for a global settlement, the U.S. explicitly assumed the risk that such claims might arise in the future, as they apparently now have at Eureka. Thus, even assuming *arguendo* that the government were correct in its creative new contractual arguments that Mueller/Sharon is the successor by contract to the CERCLA liabilities of UV Industries (which of course we controvert on contractual grounds), these claims were long-ago released by the government and cannot now be brought against Mueller.

"There is a significant body of law holding that successor liability does not attach if the predecessor's liability has been discharged or extinguished."[7] As a matter of law, a release of a predecessor also releases its alleged successor. The successor company and the predecessor company are by law considered the same entity for these purposes.[8] Many courts have held that the liability of the

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[6] UV Trust Partial Consent Decree at 20, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah. Sept. 17, 1990) ("By virtue of the payment of the amounts identified in . . . this Decree, the Trust and UV shall have finally and completely resolved all alleged liabilities of the Trust and UV to the United States for the matters covered by the Covenant Not to Sue in Section VII A. [regarding Superfund liability at Midvale and Superfund liability at North Dartmouth, Massachusetts] and are hereby released therefrom."). The government also explicitly took on the risk of any unknown liability in providing a global release. *See Id.* at 22-23 ("Beyond the matters addressed [in Section VII A.], the United States is unaware of any other claims against UV or the Trust which it now or in the future may assert on behalf of the Environmental Protection Agency pursuant to [the] Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9601 *et seq.* . . . . Accordingly, to allow for the orderly liquidation and termination of the Trust in accordance with the Consent Decree, the United States agrees not to assert any such claims in the future on behalf of the Environmental Protection Agency . . . or to otherwise object to or oppose the distribution of assets remaining in the Trust to the unitholders thereof") (emphasis added).

[7] *Robbins v. Physicians for Womens's Health, Inc.*, No. CV065002633, 2009 WL 5303887 *4 (Conn. Super. Ct. Dec. 7, 2009).

[8] Unless provided otherwise, a "resulting corporation succeeds to the powers, privileges, and property of the constituents or merged corporation." 19 AM. JUR. 2D § 2254 (citing *State of Tennessee v. Whitworth*, 117 U.S. 139 (1886)). Further, "all

successor is derivative. For example, the Seventh Circuit has stated "[w]hen a buyer of a business is liable as a successor for the torts of the seller, it is automatically liable for all the predecessor's torts. Its liability is not personal but vicarious."[9] As a result, where the predecessor has been released from a particular liability, its successor cannot be held responsible for that liability even if it was not specifically named in the release.[10] Thus, the release of UV Industries in *U.S. v. Sharon, UV Industries, and the UV Trust* also releases any and all alleged successors of UV Industries from claims relating to the released liabilities.

The principle that a full release of a predecessor also releases an alleged successor from having to pay for the same liabilities a second time has rarely been litigated. However, one case directly on point is *Russell v. SunAmerica Securities, Inc*.[11] There, the plaintiff had executed a release in prior litigation against SunAmerica's predecessor, Southmark Financial Services, Inc. SunAmerica later purchased the assets of Southmark. The plaintiff then attempted to bring a second lawsuit against SunAmerica, alleging that it was the successor to the liabilities of Southmark. The court granted summary judgment. The court first concluded that any liability would be derivative in nature, writing:

> Reason dictates that in an action such as this, where liability is sought to be imposed against a successor corporation for the torts of its predecessor, the successor's liability, if any, derives exclusively from and is coterminous with the liability to which the predecessor could have been subjected. Thus, SunAmerica can have no greater liability to plaintiffs than did Southmark.[12]

The court relied upon well-established doctrine in concluding that where the liability is derivative, the release of the primarily liable party also covers the derivatively liable party, even "'despite an attempted reservation of rights against the person secondarily liable.'"[13] Thus, because SunAmerica could not have liability beyond that which Southmark had, and Southmark's liability had been discharged by the release, the court concluded that the plaintiff could not maintain a cause of action against SunAmerica.[14]

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defenses which were open to the constituent company are likewise available to the consolidated corporation." 19 Am. Jur. 2d § 2256 (citing *Southern Steel Co. v. Hopkins,* 157 Ala. 175 (1908)).

[9] *Clark Equipment Co. v. Dial Corp.*, 25 F.3d 1384 (7th Cir. 1994); see also *Archer Daniels Midland Company v. Brunswick County*, 129 Fed. Appx. 16, 25 (4th Cir. 2005) ("A contractual successor stands in its predecessor's shoes for both rights and responsibilities.").

[10] *See Russell v. SunAmerica Securities, Inc.*, 1991 WL 352563 (S.D. Miss. 1991), *affirmed on other grounds by Russell v. SunAmerica Securities*, 962 F.2d 1169 (5th Cir. 1992).

[11] 962 F.2d 1169 (5th Cir. 1992), affirmed on narrower but applicable grounds at *Russell v. SunAmerica Securities, Inc.*, 962 F.2d 1169 (5th Cir. 1992), discussed in greater detail below.

[12] *Id.* at *2.

[13] *Id.* (quoting 76 C.J.S. Release § 50b (1976). A more recent edition of C.J.S. continues to include similar language regarding the effect of a release on a derivatively liable party at 76 C.J.S. § 63 (2007).

[14] *Id.* at *2.

These legal principles are fully applicable to CERCLA liability. *United States v. Atlantic Richfield Company* provides a clear example of a court treating a predecessor and a successor as the same entity when analyzing whether or not a party was previously released from CERCLA liability.[15] Thus, even if the government were able to assert[16] and prevail on its newly-minted legal theory that Mueller, not the UV Trust, is the successor to the CERCLA liabilities of UV Industries, Mueller still could not be held liable for the alleged environmental liabilities of UV Industries at Eureka because those claims were all released in 1990 in settlement of *U.S. v. Sharon, UV Industries, and the UV Trust.*

That result is also dictated by the specific contractual language in this case. Under the government's new contractual theory, in 1979, Mueller/Sharon allegedly assumed the CERCLA "liabilities" of UV Industries "as of the [1979] Closing Date," or the 1981 Quit Claim deed, but such "liabilities" did not arise at Eureka until 2000 when the government began spending response costs. But by then, any CERCLA "liabilities" of UV Industries relating to Eureka and all other sites were already explicitly discharged in exchange for the $11 million payment from the UV Trust as the successor to UV Industries in *U.S. v. Sharon, UV Industries, and the UV Trust*.[17] Even the government is not entitled to

[15] No. CV-89-39-BU-PGH, 1998 U.S. Dist. Lexis 23558 (D. Mont. Oct. 7, 1998). The court framed the issue as whether "it was the intent of the United States to release ARCO, as successor, from all liability arising from Anaconda Co.'s smeltering operations." *Id.* at *16. Although it concluded that there was not a viable release, it ended its opinion with the quote "The settlement agreement [between the government and Anaconda Co.] was supposed to end the interaction between ARCO and the government once and for all." *Id.* at *42. These quotes indicate that the court viewed the successor and predecessor as the same entity for purposes of the release.

[16] Note that we do not concede that the government has standing to enforce or advance its own interpretation of the 1979 Agreement. To the contrary, the government is precluded on independent grounds from asserting that Sharon/Mueller is liable by private contract for the CERCLA liabilities of UV Industries. This is because under the language of CERCLA, a private agreement is not effective to transfer CERCLA liability from one company to another, but is only an indemnity that is binding "between the parties." 42 U.S.C. Sec. 9607(e)(1) ("No Indemnification, hold harmless, or similar agreement or conveyance shall be effective to transfer from the owner or operator of any . . . facility or from any person who may be liable for a release or threat of release . . . to any other person . . . ."). Courts interpret Section 107(e) of CERCLA to mean "agreements to indemnify or hold harmless are enforceable *between the parties* but not against the government." *Smith Land & Improvement Corp. v. Celotex Corp.* , 851 F.2d 86, 89 (3d Cir. 1988), *cert. denied* , 488 U.S 1029 (1989) (*emphasis added*). Because the government is not a party to or third party beneficiary of the 1979 Agreement, it has no standing to sue to enforce its interpretation of the terms of that indemnity agreement, which could only be enforced by one of the parties to it. *AT&T Mobility v. National Ass'n for Stock Car Auto Racing, Inc.*, 494 F.3d 1356 (11th Cir. 2007) (holding that where a third party is neither a party to the contract nor an intended third party beneficiary of the contract, it lacks standing to sue on the contract because it cannot establish that it has suffered a legally cognizable injury in fact). Furthermore, the government cannot argue that Sharon/Mueller is liable for the CERCLA liabilities of UV Industries based solely on the 1979 Agreement, because this basis for liability does not fall within any of the four categories of liability set forth in the statute. *See* 42 U.S.C. § 9607(a)(1)-(4). As the Supreme Court of the United States held in *Burlington Northern and Santa Fe Railway Company v. United States*, CERCLA liability "may not extend beyond the limits of the statute itself." 129 S. Ct. 1870, 1879 (2009).

[17] UV Trust Partial Consent Decree at 22-23, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah. Sept. 17, 1990) (". . . the United States is unaware of any other claims against UV or the Trust which it now or in the future may assert on behalf of the Environmental Protection Agency pursuant to [the] Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9601 *et seq.* . . . . Accordingly, to allow for the orderly liquidation and termination of the Trust in accordance with the Consent Decree, the United States agrees not to assert any such claims

recover for the same "liabilities" twice -- once from the UV Trust in *U.S. v. Sharon, UV Industries, and the UV Trust*, and a second time in its threatened cost recovery action at Eureka against Sharon/Mueller under its new legal theory that Sharon/Mueller, rather than the UV Trust, as it previously contended, is actually the proper successor to the CERCLA "liabilities" of UV Industries.

The government has no independent cause of action against Sharon/Mueller at Eureka; Sharon was merely an interim owner that did not own the property at the time that the overwhelming majority of the disposal occurred. Rather, the United States on behalf of EPA now seeks to collect a second payment from Sharon/Mueller as an alleged successor to the CERCLA "liabilities" of UV Industries, but no such "liabilities" any longer exist because the government was already paid for them in 1990 and gave a full, global release to Sharon/Mueller's alleged predecessor, UV Industries. The release explicitly applied not only to the Midvale site but also to all future CERCLA sites.[18] It is binding on the government not only as a contractual matter, but also as a final judgment under the doctrine of *res judicata*, as we explain in the next section. By law, Sharon/Mueller gets the benefit of the judgment releasing UV Industries, because Sharon/Mueller is in privity with UV Industries by virtue of their connections, especially the government's claim that Sharon/Muller is liable as successor to UV Industries' liabilities.

In sum, even if the government's tortured contractual arguments were correct that somehow in 1979 (or 1981) Sharon/Mueller assumed liability for cost recovery claims that did not arise until the government began spending money at Eureka in 2000, the CERCLA liabilities of UV Industries no longer exist because they were explicitly discharged in 1990. The government is not without a remedy; to the contrary, it already received a substantial sum of money in 1990 from the actual legal successor to the liabilities of UV Industries: the UV Trust, in exchange for the global release of any CERCLA claims against UV Industries, which as a matter of law applies to its alleged successors, including Sharon/Mueller. The government simply has no legitimate basis to attempt to collect a second time on these previously-released claims.[19]

B. *Res Judicata* Precludes the U.S. from Contending at this late Date that Sharon/Mueller is the Successor to the CERCLA Liabilities of UV Industries. The government is also barred from contending that Sharon/Mueller is the successor to the liabilities of UV Industries based on the doctrine of *res judicata*, which applies here in two ways: (1) based on the global release of UV Industries; and (2) based also on the failure of the U.S. to allege a claim of successor liability against Sharon/Mueller in the prior case.

First, the government's attempt to assert CERCLA claims against Mueller as an alleged successor to UV Industries is barred by *res judicata* based upon the release of UV Industries in *U.S. v. Sharon, UV Industries, and the UV Trust* because it was entered as a final judgment by consent decree. Where a

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in the future on behalf of the Environmental Protection Agency . . . or to otherwise object to or oppose the distribution of assets remaining in the Trust to the unitholders thereof") (emphasis added).

[18] *Id.*

[19] As noted above, the payments made from the UV Trust included funds received from Sharon/Mueller.

plaintiff had previously agreed to a release of claims with a predecessor, it may not sue an alleged successor on the same claims under a theory that it was a different legal entity.[20] Courts have specifically held that a predecessor corporation and successor corporation are sufficiently related to be in privity for purposes of *res judicata*.[21] The law is well-established that a consent judgment is a final judgment on the merits of an action, satisfying the requirements for claim preclusion.[22] Thus, where a plaintiff enters into a consent decree with one corporate entity, releasing its claims against that entity, the plaintiff is also barred by the doctrine of *res judicata* from later asserting the same claims against the entity's alleged corporate successor.[23] Put differently, a defendant's liability "as a successor corporation is, if anything, derivative; that is, [the successor's] alleged liability . . . derives from that of [the predecessor], and if [the predecessor] is not liable to Plaintiffs, then [the successor] is likewise not liable."[24] Likewise, the government's 1990 release of UV Industries for any future CERCLA liability is a final judgment that, under the doctrine of *res judicata*, precludes the government from asserting these claims again against any alleged successor of UV Industries.

Second, even if there had not been an explicit release of UV Industries' CERCLA liabilities at Eureka in the *U.S. v. Sharon, UV Industries, and the UV Trust* settlement, the government would still be independently precluded by another branch of *res judicata* which prohibits "claim splitting" from asserting that Mueller/Sharon is liable as a successor by agreement to the CERCLA liabilities of UV Industries. This is because Sharon/Mueller was also named as a defendant in the *U.S. v. Sharon, UV Industries, and the UV Trust* case but the government did not assert in that case that Sharon/Mueller was liable as a successor by assumption agreement to the Superfund liabilities of UV Industries. On the contrary, the government only asserted claims against Sharon/Mueller in the 1986 case on the basis that Sharon was liable for its own activities as an owner/operator of the Midvale site.[25]

Under the merger branch of the *res judicata* doctrine (also known as the prohibition against "claim splitting"), a judgment is binding and conclusive on the parties not only on the legal theories that *were* advanced, but also on those growing out of the same transaction or series of transactions that *could* have been advanced but were not.[26] It is "well established that a party may not split a cause of action

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[20] 962 F.2d at 1172.
[21] *Id.* at 1176.
[22] *Id.* at 1173.
[23] *Id.* at 1176.
[24] *Id.* at 1174.
[25] The government set forth only one theory of liability in regard to Sharon during the *U.S. v. Sharon, UV Industries, and the UV Trust* proceeding, as follows: "Sharon has owned the site since its purchase in 1979. Sharon is thus liable, under section 107(a)(1) [of CERCLA], as a current owner of the facility." Plaintiff United States of America's Memorandum of Law in Support of Its Motion for Partial Summary Judgment As to Liability at 30, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah Mar. 30, 1990).
[26] RESTATEMENT (SECOND) OF JUDGMENTS § 24.1 (1982) ("When a valid and final judgment rendered in an action extinguishes the plaintiff's claim pursuant to the rules of merger or bar, the claim extinguished includes all rights of the plaintiff to remedies against the defendant with respect to all or any part of the transaction, or series of connected transactions, out of which the action arose."). *See also Allen v. McCurry*, 449 U.S. 90, 94 (1980) (citing *Cromwell v. County of Sac*, 94 U.S. 351, 352 (1876)) ("Under *res judicata*, a final judgment on the merits of an action precludes the parties or their privies from re-litigating issues that were or could have been raised in that action."). *Res Judicata*, or claim

into separate grounds of recovery and raise the separate grounds in successive lawsuits."[27] In other words, the government may not come back against a party to a prior case for a second bite at the apple just because it now asserts a different legal theory.[28] Allowing that would contravene a major function of *res judicata*, which is to "avoid piecemeal litigation of claims arising from the same events."[29] Here the crucial "events" in question are the determination of who is the "successor" to UV Industries, which includes but is not limited to the question of the proper interpretation of the assumption of liabilities in the 1979 Asset Purchase Agreement as part of an integrated series of transactions to dissolve UV Industries.

The "transaction or series of transactions" at issue in *U.S. v. Sharon, UV Industries, and the UV Trust* is exactly the same as is at issue at Eureka Mills, namely, the legal consequences for the CERCLA liabilities of UV Industries of the process by which UV Industries sold off its assets to various companies including Sharon/Mueller and then formed the UV Liquidating Trust with the proceeds in order to distribute those proceeds to creditors and former UV Industries stockholders. "What constitutes a 'transaction' or a 'series' is to be determined pragmatically considering whether the facts are related in time, space, origin, or motivation, and whether they form a convenient trial unit."[30] The agreements related to the selling and dissolution of UV Industries are clearly interrelated such that any claims related to the transfer of liability under these agreements should have been brought together. The 1979 Asset Purchase Agreement and the 1980 Assumption Agreement by the UV Trust were part of an integrated "series of transactions" to liquidate UV Industries. As stated by the government itself in *U.S. v. Sharon, UV Industries, and the UV Trust*, "The Trust contains assets derived from the sale of UV to Sharon."[31] The courts have also repeatedly recognized that the process by which UV Industries sold off all its assets and accumulated the proceeds in the UV Trust for the benefit of its unit-holders as

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preclusion, "reflect[s] the policy that once there has been a valid and final judgment, courts should not be required to adjudicate, nor parties to answer for, successive suits arising out of the same transaction. . . Finality and repose are the most significant policies underlying preclusion. . . Many jurisdictions now follow the 'transactional test' , described in the Restatement (Second) of Judgments, § 24, as extinguishing 'all rights of the plaintiff to remedies against the defendant with respect to all or any part of the transaction, or series of connected transactions, out of which the action arose.'" RICHARD L. MARCUS & EDWARD F. SHERMAN, COMPLEX LITIGATION: CASES AND MATERIALS ON ADVANCED CIVIL PROCEDURE 786-87 (4th Ed. 2004) (quoting RESTATEMENT (SECOND) OF JUDGMENTS § 24.1 (1982)).

[27] *Mars Inc. v. Nippon Conlux Kabushiki-Kaisha*, 58 F.3d 616, 619 (Fed. Cir. 1995) (citing RESTATEMENT (SECOND) OF JUDGMENTS § 24.2 (1982).

[28] GREGORY C. SISK & URBAN A. LESTER, LITIGATION WITH THE FEDERAL GOVERNMENT 411 (Am. Law Inst., 2d ed. 2006) ("The general application of *res judicata* or claim preclusion to the United States has never been in doubt. If a law suit between the United States and a party is concluded with a final judgment, the United States ordinarily is barred from reopening that dispute in a new lawsuit.")

[29] *See GE v. Deutz AG, 270 F.3d 144, 157-58 (3d Cir. 2001)*

[30] *King v. Union Oil Co.*, 117 F.3d 443, 446 (10th Cir. 1997).

[31] Plaintiff United States of America's Memorandum of Law in Reply to the Opposition of Defendant UV Industries, Inc. Liquidating Trust and UV Industries, Inc. to Plaintiff's Cross-Motion for Summary Judgment at 6, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah Sep. 11, 1989).

an integrated "series of transactions."[32] For example, in a case to which the United States was also a party and thus is bound, the Utah District Court found as a fact that "In 1979, to facilitate its dissolution, UV sold its assets to Sharon Steel. UV was dissolved in 1980."[33] This clearly indicates that the sale to Sharon, the satisfaction of creditors by the UV Trust from the proceeds, and then the dissolution and distribution of the remaining assets are a classic example of an integrated series of transaction for *res judicata* purposes.

Where two suits are "based upon the same connected series of transactions between [the parties] -- a grouping of interrelated contracts and agreements made during the course of an on-going business relationship" a second suit is barred.[34] Here, all the facts related to the transaction were known to the government at the time of the first suit and it could have argued in 1986 that Sharon/Mueller, not the UV Trust, was the successor to UV Industries' CERCLA liabilities; however, it chose not to. "When a person has alternative remedies in tort or for restitution he may in the same action apply for the two remedies alternatively and try them both out. On the other hand he may content himself from the outset with seeking only one remedy. In either case, judgment for the plaintiff for one of the remedies or against him with respect to the relief sought ordinarily extinguishes the entire claim."[35] In *U.S. v. Sharon, UV Industries, and the UV Trust*, relying on the same underlying agreements and transactions, the government failed to argue or preserve the argument that Mueller was the successor to UV Industries' CERCLA liabilities and is now barred from doing so.

The government's recent "discovery" of the 1981 quit claim deed does not change this result. The government was fully aware that the documentation for property transfers under the 1979 Agreement for Purchase of Assets were not recorded until 1981 when it took the legal positions that it took in *U.S. v. Sharon, UV Industries, and the UV Trust.*[36]

After notice and public comment, the Assistant Attorney General for Environment and Natural Resources signed a consent decree that was subsequently entered as a final judgment by the court reciting the government's official position that a different entity, the UV Trust, rather than

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[32] *UV Industries, and the UV Trust*, 681 F. Supp. 1492, 1493 (D. Utah 1987) ("In 1979 UV decided to liquidate its assets. Sharon Steel Corporation bought most of the assets, including the Midvale site. On March 25, 1980, UV, a Maine corporation, filed its articles of dissolution with the Maine Secretary of State.").

[33] *U.S. v. Sharon, UV Industries, and the UV Trust*, No. 86-C-0924J, 1989 U.S. Dist. LEXIS 19037 *11 n.1 (D. Utah May 17, 1989) ("In 1979, to facilitate its dissolution, UV sold its assets to Sharon Steel. UV was dissolved in 1980.").

[34] *Mademoiselle Knitwear, Inc. v. Liz Claiborne, Inc.*, 98 Civ. 3252(HB), 1999 U.S. Dist. LEXIS 8592 *15 (S.D.N.Y June 9, 1999) (holding that dismissal was warranted on *res judicata* grounds because both "the instant case and the proceedings before Judge Sweet are based upon the same connected series of transactions").

[35] RESTATEMENT (SECOND) OF JUDGMENTS § 25 cmt. g (1982).

[36] *See, e.g.*, Sharon Steel Corp. Partial Consent Decree at 9, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah. Aug. 21, 1990) ("Pursuant to an agreement dated November 26, 1979, Sharon Steel Corporation agreed to purchase from UV all of its assets, including approximately 260 acres of property which are part of the [Midvale] Tailings Site . . . Sharon Steel Corporation obtained title to the Tailings Site pursuant to a deed dated November 5, 1981.") (emphasis added).

Sharon/Mueller, was the legal successor to the CERCLA liabilities of UV Industries.[37] Thus, independent of the global release of UV Industries and regardless of how the language of that release is construed, the government is precluded from contending at this late date that Sharon/Mueller is responsible for the CERCLA liabilities of UV Industries as a successor because it did not advance that legal theory when it had the chance in 1986 in *U.S. v. Sharon, UV Industries, and the UV Trust*.

The government's decision not to claim that Sharon/Mueller was the successor to UV Industries in *U.S. v. Sharon, UV Industries, and the UV Trust* was a well-considered legal and policy decision. Legally, Sharon could not have assumed UV Industries' CERCLA liabilities because Sharon only agreed to assume UV Industries' liabilities as of the 1979 closing date, which was prior to the enactment of CERCLA.[38] In addition, the 1979 Purchase Agreement is governed by New York law which imposes a rigorous requirement that a contract demonstrate an "unmistakable intent" to indemnify or transfer liabilities before a court will enforce such an obligation.[39] It cannot possibly be argued that the language of the 1979 Purchase Agreement demonstrated an "unmistakable intent" to impose UV Industries' CERCLA liabilities on Sharon.

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[37] UV Trust Partial Consent Decree at 5, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah. Sept. 17, 1990) ("the United States alleges that the Trust has succeeded to the liabilities of UV"). The full context is quoted in the appendix and copies of the relevant pages are attached in the exhibits.

[38] Under the 1979 Purchase Agreement, Sharon agreed only to assume those liabilities of UV "as of the Closing Date". At the time of the Closing Date, which is a defined term under the agreement, the federal Comprehensive Environmental Response Compensation and Liability Act, 42. U.S.C. § 9601 *et.seq*.("CERCLA") had not been enacted. Thus, Sharon did not assume UV's CERCLA liability. The district court in *Georgia-Pacific v. International Paper Co.*, 533 F. Supp. 2d 246 (S.D.N.Y. July 16, 2008) was confronted with a contract almost identical in pertinent part to the agreement here, and after reviewing all of the appellate cases reached the same conclusion that the assumed liabilities did not include after-enacted CERCLA liabilities. Furthermore, in *U.S. v. Sharon, UV Industries, and the UV Trust*, the government survived a Motion to Dismiss on a statute of limitations issue by arguing that CERCLA claims could not have arisen until after CERCLA was enacted. *See* U.S. Opposition to Motion to Dismiss, *supra* note 4, at 27. In that case, the government argued that as a contractual matter, the after-enacted CERCLA liabilities of UV Industries were assumed by the UV Trust as an "unascertained" liability. Plaintiff United States of America's Memorandum in Response to the Motions for Reconsiderations and Summary Judgment on Behalf of Defendants UV Industries, Inc. Liquidating Trust and UV Industries, Inc., and in Support of its Cross Motion for Summary Judgment at p.22 fn.18, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah July 6, 1989) ("Although the language of the assumption instrument states that the Trust assumed UV's liabilities as of the date the agreement was executed, it goes on to provide that the Trust assumed liabilities that were "contingent" and not yet ascertained or accrued. But even if the language of the assumption agreement were not clear on the point, liability for the Midvale site must be included among the liabilities assumed by the Trust. . . Since the Trust stands in UV's shoes, and since UV -- if fully alive today -- could be held liable for the site, the Trust must be held accountable for that liability by virtue of having expressly assumed UV's liabilities.").

[39] The 1979 Purchase Agreement is "governed by and construed and enforced in accordance with the laws of the State of New York." New York law applies the rigorous requirement that a contract demonstrate an "unmistakable intent" to indemnify or transfer liabilities before a court will enforce such an obligation. *Haynes v. Kleinewefers*, 921 F.2d 453, 456 (2d Cir. 1990) (citing *Heimbach v. Metropolitan Transp. Auth.*, 75 N.Y.2d 387 (1990)). Thus "[w]hen a claim is made that a duty to indemnify is imposed by an agreement, that agreement must be strictly construed so as not to read into it any obligations the parties never intended to assume." *Id.*

The policy rationale for the government's decision to hold the UV Trust rather than Sharon/Mueller responsible for the CERCLA liabilities of UV Industries was explained in a 1989 brief filed by the United States in *U.S. v. Sharon, UV Industries, and the UV Trust,* as follows:

> "important equitable considerations . . . call for a finding of successorship [against the UV Trust]. . . . the [UV Trust's] unitholders are all people who have profited, or seek to profit, from UV's former business activities . . . . In these circumstances, it would be inequitable to allow the Trust, which holds the assets of UV's former directors and shareholders, to hide behind UV's dissolution and escape the obligation to contribute towards the clean-up of the Midvale site."[40]

In support of its equitable argument that the UV Trust, not Sharon/Mueller, had benefited economically from the past disposal practices of UV Industries,[41] the United States specifically cited an employment case that held that "the equities . . . favor successor liability [where] it is the successor who has benefited from the discriminatory employment practices of its predecessor."[42] Other federal courts have applied this same logic to hold liable as successors under CERCLA those who profited from past sub-standard disposal practices. For instance, the United States Court of Appeals for the Third Circuit held that:

> Congressional intent supports the conclusion that, when choosing between the taxpayers or a successor corporation, the successor should bear the cost. Benefits from use of the pollutant as well as savings resulting from the failure to use non-hazardous disposal methods inured to the original corporation, its successors, and their respective stockholders and accrued only indirectly, if at all, to the general public.[43]

Thus, the United States correctly decided in 1990 that the unit-holders of the UV Trust, not Sharon/Mueller, had benefited economically from the past disposal practices of UV Industries, and therefore, that the UV Trust, not Sharon/Mueller, should be held liable as the successor to UV industries based on these "important equitable considerations."

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[40] Plaintiff United States of America's Memorandum in Response to the Motions for Reconsideration and Summary Judgment on Behalf of Defendants UV Industries, Inc. Liquidating Trust and UV Industries, Inc., and in Support of its Cross Motion for Summary Judgment at 23-24, *U.S. v. Sharon, UV Industries, and the UV Trust,* C.A. No. 86-C-924 (D. Utah July 6, 1989) (emphasis added).

[41] Sharon/Mueller paid fair market value for the assets of UV Industries that it purchased in 1979. The purchase price could not possibly have been discounted because of the risks of a CERCLA clean-up, because CERCLA was not enacted until December, 1980. The U.S. rightly and successfully argued that the proceeds received by the UV Trust from Sharon/Mueller should be charged with the unsatisfied CERCLA liabilities of UV Industries.

[42] *Trujillo v. Longhorn Mfg. Co.*, 694 F.2d 221, 225 (10th Cir. 1982) (quoting *E.E.O.C. v. MacMillan Bloedel Containers, Inc.*, 503 F.2d 1086, 1092 (6th Cir. 1974)). The government cites *Trujillo* on page 23 and 24 of its July 6, 1989 Memorandum in Reponse to Motions for Reconsideration and Summary Judgment, *supra* note 31.

[43] *Smith Land & Improvement Corp. v. The Celotex Corp.*, 851 F.2d 86 (3d Cir. 1988) (citing *Oner II, Inc. v. E.P.A.*, 597 F.2d 184 (9th Cir. 1979)) (emphasis added).

Ben Fisherow, one of DOJ's top Superfund lawyers from Main Justice in Washington, came out to Utah to argue in person the government's Motion for Summary Judgment that the UV Trust should be held liable as the legal successor to the Superfund liabilities of UV Industries. Fisherow stated flatly on the record in open court the official position of the United States that: "all issues with respect to the Trust's liability under the Statute are resolved. The Trust is the successor to The United States Smelting, Mining & Refining Company which owned [and] operated this site for decades."[44]

This was not a passing reference. The United States, on behalf of EPA, *repeatedly* and *unequivocally* took the legal position over and over again in numerous official pleadings, legal memoranda and arguments collected in the Appendix to this letter that the UV Trust, not Sharon/Mueller, was the legal successor to the legal liabilities of UV Industries. For example, in one of its briefs the United States stated "The [UV] Trust is the successor to UV. The instrument of Assumption of Liabilities executed by the Trust is already before the Court and provides that the Trust assumed UV's liabilities." [45]

Based on this legal position, which was adopted by the Court in an oral ruling from the bench, the United States obtained a settlement payment of $11 million, which comprised approximately 60 percent of the assets of the UV Trust,[46] and in exchange gave *both* UV Industries and the UV Trust a complete and unconditional global release of all future civil CERCLA cost recovery claims at any and all sites and permitted the UV Trust to dissolve. [47] This settlement was subject to public notice and comment before it was approved by the court.

C. Collateral Estoppel Also Precludes the U.S. from Arguing that Sharon/Mueller, rather than the UV Trust, Succeeded to the Liabilities of UV Industries. Then-District Court Chief Judge Bruce S. Jenkins, who presided over *U.S. v. Sharon, UV Industries, and the UV Trust*, also ruled from the bench in favor of the United States' argument the UV Trust was the successor to the liabilities of

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[44] Transcript of Summary Judgment Hearing at 37-38, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah Aug. 14, 1990) (emphasis added).

[45] Reply of the United States of America to Defendants' Oppositions to the US Motion for Partial Summary Judgment and Answer in Opposition to Defendants' Cross-Motions for Summary Judgment at 17, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah June 22, 1990) (emphasis added). A compendium of statements of the position of the U.S. that the UV Trust, not Sharon/Mueller, was the legal successor to the CERCLA liabilities of UV Industries are provided in the **Appendix**.

[46] Defendant UV Industries, Inc. Liquidating Trust's Memorandum in Support of the United States' Conditional Motion to Enter Partial Consent Decree at 5, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah Nov. 7, 1990).

[47] UV Trust Partial Consent Decree at 22-23, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah. Sept. 17, 1990) ("the United States is unaware of any other claims against UV or the Trust which it now or in the future may assert on behalf of the Environmental Protection Agency pursuant to [the] Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9601 *et seq.* . . . . Accordingly, to allow for the orderly liquidation and termination of the Trust in accordance with the Consent Decree, the United States agrees not to assert any such claims in the future on behalf of the Environmental Protection Agency . . . or to otherwise object to or oppose the distribution of assets remaining in the Trust to the unitholders thereof") (emphasis added). Sharon/Mueller is not specifically named in the release of all future liabilities of UV Industries because the government wanted to maintain its ability to sue Sharon/Mueller at other sites for its own disposal activities and because at the time the government was not contending that Sharon/Mueller was liable as the successor to UV Industries.

UV Industries at the Hearing for the Motion for Summary Judgment. This finding was never vacated. On March 30, 1990 the United States moved for partial summary judgment as to the liability of the UV Trust as the successor to the CERCLA liabilities of UV Industries. At the hearing on the related motions Ben Fisherow specifically requested a ruling as to UV Trust's successor liability. He stated "I know your honor has, on two occasions before, considered the issue of successor liability with respect to the Trust. . . Did your honor want to express a conclusion today in that regard?"[48] Chief Judge Jenkins responded that he had "expressed [his] Conclusions in reference to the Trust, on prior occasions"[49] and that the UV Trust succeeded to the liabilities of UV industries because "[o]rdinarily, if we have assets that are transmuted into money, the money rides with the burden. It's not free money until we make sure that the creditors are taken care of."[50] He concluded: "There's an effort to revisit that the third time; but I have indicated that we will revisit that at Pretrial, if at all."

After the hearing on the motions for partial summary judgment the parties settled based on Chief Judge Jenkins's ruling. At the subsequent hearing on the entry on the consent decrees settling the case, Judge Jenkins clarified that the language in the Consent Decrees that says "No previous Ruling of this Court in the Actions on any issue of Law or fact shall be deemed to be binding upon the Parties hereto for any purpose in any other Action or Legal Proceeding of any type or kind" does not "contemplate that The Court in any way has withdrawn any Finding or any Opinion or any Order, because I don't intend to do that. . . <u>They exist and they're there for whatever value they have</u>."[51]

As a result of Chief Judge Jenkins' ruling granting the motion of the United States for Partial Summary Judgment against the UV Trust, and his later explicit refusal to vacate his prior rulings, there was a final partial summary judgment determining that the UV Trust is the successor to the CERCLA liabilities of UV Industries. Therefore, the government is now collaterally estopped from arguing that Mueller is the successor to the same liabilities. In the Tenth Circuit, collateral estoppel or issue preclusion requires:

> (1) the issue previously decided is identical to the one presented in the action in question, (2) the prior action has been finally adjudicated on the merits, (3) the party against whom the doctrine is invoked was a party to the prior adjudication, and (4) the party against whom the doctrine is raised had a full and fair opportunity to litigate the issue in the prior action."

Here, the issue of who was the successor to the CERCLA liabilities of UV Industries is identical to the one addressed by Chief Judge Jenkins in *U.S. v. Sharon, UV Industries, and the UV Trust* and the US was not only a party to the prior action but is the party that put forth the argument that the UV Trust rather than Sharon/Mueller was the successor to those liabilities.

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[48] Transcript of Summary Judgment Hearing at 170, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah Aug. 14, 1990).
[49] *Id.*
[50] *Id.* at 171.
[51] Transcript of Presentation of Consent Decrees Hearing at 26, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah Nov. 13, 1990).

Courts hold that while an order granting partial summary judgment may not be final and appealable for other purposes, "preclusion seems warranted so long as the court clearly intended to terminate all proceedings as to the claims or parties involved and no attempt to appeal was thwarted."[52] Here, the parties settled and the claim was dismissed. At that point the partial summary judgment order became final.[53] Furthermore, neither party appealed and the judge specifically refused to vacate any of his previous findings. The Supreme Court has held that where a party voluntarily forfeits its right to appeal "[t]he judgment is not unreviewable, but simply unreviewed by his own choice."[54]

D. Judicial Estoppel Precludes the U.S. from Contending that any Party Other than the UV Trust is the Successor to the CERCLA Liabilities of UV Industries. Even if the government's claims were not already precluded by release, *res judicata* and collateral estoppel, the fact that the United States previously maintained a legal position totally inconsistent with bringing a cost-recovery claim against Mueller at Eureka[55] and obtained substantial judicial relief based on that position in a different case involving the same agreements would be sufficient under the doctrine of *judicial estoppel* to preclude the United States from now taking a new and inconsistent position in subsequent litigation.

Judicial estoppel is a well-established equitable doctrine that holds that where a party assumes a certain position in a legal proceeding and succeeds, he may not thereafter, simply because his interests have changed, assume a contrary position.[56] This principle is especially strong if, as is clearly the case here, another party was prejudiced or relied upon the former position.[57] Although the settlement with Sharon/Mueller in *U.S. v. Sharon, UV Industries, and the UV Trust* was embodied in a separate Partial Consent Decree, there is no question that the settlements were all part of an integrated deal among all of the parties to resolve the government's claims and dismiss the case. In making its own settlement with the government, Sharon/Mueller clearly relied upon the government's position that the UV Trust, not Sharon/Mueller, was the successor to UV Industries and upon the global release from future claims involving UV Industries' past disposal practices in exchange for a substantial payment by the UV Trust as its successor. Courts do not hesitate to apply the doctrine of judicial estoppel against the

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[52] WRIGHT ET AL., FEDERAL PRACTICE & PROCEDURE: JURISDICTION 2D §4432, at p. 60 (2002); see also *Royal Ins. Co. of Am. v. Kirksville College of Osteopathic Med.*, 304 F.3d 804, 808 (8th Cir. 2002) (quoting WRIGHT ET AL., FEDERAL PRACTICE & PROCEDURE: JURISDICTION 2D §4432, at p. 60 (2002)).

[53] See *Royal Ins. Co. of Amer.*, 304 F.3d at 808 ("the parties settled, and the trespass claim was dismissed with prejudice. At that point, the partial summary judgment ruling became final.").

[54] *U.S. Bancorp Mortgage Co. v. Bonner Mall P'ship*, 513 U.S. 18, 25 (1994).

[55] The government must argue that the CERCLA liabilities of UV Industries either passed to Sharon/Mueller in 1979 or they were retained by the UV Trust. They could not be in both places at once. Of course, it is Mueller's position today, as it was the government's position in 1986-1990, that these liabilities were retained by the UV Trust.

[56] *New Hampshire v. Maine*, 532 U.S. 742, 749 (2001) (citing *Davis v. Wakelee*, 156 U.S. 680, 689 (1895)). The court's approval and entry of the consent decree satisfies the requirement that the government have succeeded in the position it took, under well-established precedent from the Supreme Court of the United States. *New Hampshire v. Maine*, 532 U.S. at 752.

[57] *Id.*

government in situations like this, in which the government is attempting to take a position inconsistent with its prior legal position simply to obtain a second recovery from a different party.[58]

E. The Partial Consent Decree with Sharon Does Not Waive Preclusion. As shown above, under four independent preclusion doctrines, novation, *res judicata*, collateral estoppel and judicial estoppel, any possible cost recovery claim against Mueller at Eureka relating to the past disposal activities of UV Industries was irrevocably eliminated by the government's well-considered and legally correct decision to take the strategic position for "important equitable reasons" in *U.S. v. Sharon, UV Industries, and the UV Trust* that the UV Trust was the successor to the CERCLA liabilities of UV Industries. Based upon that legal position, all of the parties, including Sharon/Mueller settled and the United States released any possible future claims against both the UV Trust and UV Industries in exchange for a substantial settlement payment from the UV Trust as the successor to UV Industries. There is nothing in the Partial Consent Decree with Sharon in *U.S. v. Sharon, UV Industries, and the UV Trust* that waives Sharon/Mueller's rights to rely on *res judicata*, collateral estoppel or other preclusion defenses based on these events in the prior litigation.

It is true that the separate Partial Consent Decree with Sharon/Mueller in *U.S. v. Sharon, UV Industries, and the UV Trust* settling the government's claim against Sharon/Mueller as an owner/operator of the Midvale site does state that the consent decree is intended only to "compromise and settle their disputes over Sharon Steel Corporation's potential liability for any and all costs, liabilities and damages arising out of or relating to the [Midvale] Sites"[59] and that "*[t]his Decree* shall have no effect" on other sites.[60] . However, that consent decree language does not in any way restore the government's right to make successor by contract claims against Sharon/Mueller for the past disposal activities of UV Industries at other sites, including Eureka. Any potential claims that Sharon/Mueller, rather than the UV Trust, was the legal successor to UV Industries had already been destroyed, not by "this" Partial Consent Decree settling the owner/operator claim against Sharon, but by the positions taken, as well as the positions not taken, by the U.S. previously in *U.S. v. Sharon, UV Industries, and the UV Trust*. It is widely held that the reservation of a right to litigate a claim must be express.[61] There was certainly no such express reservation here.[62]

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[58] *See, e.g., United States v. Sherwin-Williams,* 165 F. Supp. 2d 797, 810 (C.D. Ill. 2000).
[59] Sharon Steel Corp. Partial Consent Decree at 13, *U.S. v. Sharon, UV Industries, and the UV Trust,* C.A. No. 86-C-924 (D. Utah. Aug. 21, 1990).
[60] *Id.* at 28 (emphasis supplied).
[61] *See, e.g., Pactiv Corp. v. Dow Chem. Co.*, 449 F.3d 1227, 1231 (Fed. Cir. 2006) (for a party to "reserve the right to litigate a claim that would otherwise be barred by *res judicata*. . . that reservation must be express."); *D & K Properties Crystal Lake v. Mutual Life Insurance* Co., 112 F.3d 257, 260 (7th Cir.1997) ("To avoid a defense of *res judicata*, the claim would have to have been 'expressly' reserved").
[62] It can not be argued that the government was expressly reserving the right to litigate the issue of Sharon/Mueller's potential liability as a successor where this claim was not even raised in the suit. Furthermore, when the government wants to attempt to reserve a general defense of *res judicata* it knows how to do so. See *infra* note 50. Regardless, any attempt to reserve any claims in no way overcomes the principle that the release of a predecessor will release the successor. *See supra* pp. 4-6.

The government's successful litigating position in the prior case, rather than the consent decree with Sharon, extinguished any right that the government might otherwise have had to claim that Sharon/Mueller was the successor to the CERCLA liabilities of UV Industries. That had nothing to do with the Partial Consent Decree settling the entirely separate owner/operator claims against Sharon at the Midvale site. On the contrary, what destroyed the government's right to contend that Sharon/Mueller succeeded to the CERCLA liabilities of UV Industries was (1) giving a global release to UV Industries for its past disposal activities at all other future sites in a separate Partial Consent Decree, (2) failing to assert a cause of action against Sharon/Muller as an alleged successor by contract to UV Industries, and (3) taking the legal position for good and sufficient reasons that another entity, the UV Trust, was the legal successor to the CERCLA liabilities of UV Industries, and obtaining substantial compensation in reliance on that position and then allowing the UV Trust to dissolve and distribute its remaining assets.

The legal consequences of these legal positions taken by the United States in *U.S. v. Sharon, UV Industries, and the UV Trust* preclude re-litigating today the issues decided in 1990. These preclusions defenses are in no way affected by the language of the Partial Consent Decree settling entirely different legal claims with Sharon. That is clearly what the plain language of the Partial Consent Decree says when it says only that "*This Decree*" shall have no effect on the government's claims at other sites.

Moreover, unlike the Model Consent Decree, the consent decree with Sharon does not contain any waiver of the settling party's right to rely on *res judicata* and other preclusion doctrines.[63] At the time it entered into this Partial Consent Decree, Sharon had no need to secure a release of claims for liability as an alleged successor to UV Industries, because the government had already failed to allege or make this argument as to Sharon, and in any event, the earlier-entered Partial Consent Decree between the government and UV Industries contained a release that covered any such liabilities. Simply put, the government may not now try to distort the language of the separate and later-entered Partial Consent Decree with Sharon/ Mueller to try to restrict the scope and effect of either the litigating positions it took and failed to take in the case or limit the effect of its prior release of all CERCLA liabilities of UV Industries.

II. Possible Routes to a Definitive Resolution of the Threshold Issue that the Government is Barred from Advancing a New Legal Theory at this Late Date that Sharon/Mueller is the Successor to the CERCLA Liabilities of UV Industries.

[63] The Model Consent Decree at Sec. IX, par. 18, contains suggested language by which settling parties waive their rights to rely on *res judicata* and related doctrines based on the government's failure to assert all of its legal theories in a case. "In any subsequent administrative or judicial proceeding initiated by the United States for injunctive relief, recovery of response costs, or other relief relating to the Site, Settling Defendants shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, *res judicata*, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States in the subsequent proceeding were or should have been brought in the instant case." http://www.justice.gov/enrd/Model_CERCLA_Agreement_107.html IX. par. 18. This provision was NOT included in the Sharon Steel Partial Consent Decree in *U.S. v. Sharon, UV Industries, and the UV Trust*. Its omission strongly supports our argument that the parties did intend the government to be barred from a second bite at the apple -- as it would be automatically under the background law in the absence of an agreement to the contrary.

The simplest and most straight-forward route to obtaining a definitive determination that any cost-recovery claim against Mueller/Sharon based on the past disposal activities of UV Industries is barred by the prior proceedings in *U.S. v. Sharon, UV Industries, and the UV Trust* would be for DOJ and EPA to review the history and legal principles set out in this letter and write a letter to Mueller acknowledging that they agree with our legal conclusions. We hereby formally request DOJ and EPA to review the issues raised by this letter and give us a written ruling.

In the event that the United States does not agree with our conclusion that further Superfund and RCRA claims against Mueller growing out of the past disposal activities of UV Industries are precluded by the release and other proceedings in *U.S. v. Sharon, UV Industries, and the UV Trust* as outlined above, then we would request further discussions with you regarding how best to obtain a definitive resolution of that issue from a third party. Several possibilities have occurred to us, but we also solicit your suggestions:

1. A declaratory judgment action. *See, e.g. Penn Central Corp v. United States*. 814 F. Supp 1116 (Regional Rail Reorg. Ct. 1993); *In re Manville*, 139 B.R. 97, 105 (S.D.N.Y. 1992).

2. A motion for clarification in the court that entered the judgment in *U.S. v. Sharon, UV Industries, and the UV Trust* and retained jurisdiction over the consent decree. *See, e.g. Henderson v. State of Oregon*, 2006 WL 2818068, *52 (9th Cir. 2006).

3. Judicial review under the Administrative Procedure Act, and CERCLA §113(b), of EPA's ruling on the issues we have raised.

4. Arbitration, or another form of Alternative Dispute Resolution.

5. A settlement of cost recovery claims at Eureka, based on the possibility of some incidental disposal during Sharon/Mueller's period of ownership, that also acknowledges that the U.S. is barred from any further claims against Mueller as an alleged contractual successor for the past activities of UV Industries by the prior proceedings in *U.S. v. Sharon, UV Industries, and the UV Trust*.

We recognize that some of the above may not be consistent with the spirit of the tolling agreement between the parties, even if they are arguably consistent with its literal language.[64] Therefore, we are raising the issue with you now, well in advance of the expiration of the current tolling agreement May 31, 2010, so that we can discuss how best to proceed.

[64] The tolling agreement provides for "the Parties' mutual forbearance in filing claims" while it is in effect (¶7).

I look forward to discussing your thoughts re next steps with you on the call that we have scheduled for 9:30 a.m. your time on March 1.

Very truly yours,

E. Donald Elliott
Willkie Farr & Gallagher LLP
Counsel to Mueller Industries, Inc.

APPENDIX

During the *U.S. v. Sharon, UV Industries, and the UV Trust* case, the government repeatedly took the position that the UV Trust was the successor to UV Industries and was therefore liable for the actions of UV Industries. This position was emphasized repeatedly through the proceeding, as illustrated in the following examples:

(1) The government's 1990 brief in support of summary judgment emphasized its position that the UV Trust was the successor to the CERCLA liabilities of UV Industries as follows:

> The [UV] Trust is the successor to UV. The instrument of Assumption of Liabilities executed by the Trust is already before the Court and provides that the Trust assumed UV's liabilities . . . . where a party expressly assumes the liabilities of its predecessor, or succeeds to those liabilities through a merger, as . . . the Trust did here, it ought to be held accountable for those liabilities.[65]

(2) On July 6, 1989, the government argued in its memorandum docketed at #468 that "[t]he Trust is answerable for all liabilities and expenses of UV, including unascertained or contingent liabilities and expenses, and is obligated to pay those liabilities and expenses out of the assets held in trust."[66] The government quotes the assumption agreement between UV and the UV Trust, as follows:

> The Trust expressly assumed all debts, obligations, contracts and liabilities and expenses of UV as of the date [of the assumption], of any kind, character or description, direct or indirect, whether accrued, absolute, contingent, ascertained or otherwise, and whether asserted before or after such date to the extent not assumed and paid for by Sharon Steel Corporation . . . .[67]

(3) As the government noted later in the same document, this interpretation of the assumption of liabilities was supported by "important equitable considerations," because the unitholders of the UV Trust, as former stockholders and officers of UV Industries, were in a position to reap the financial rewards from UV Industries' prior history of disposal practices. As argued by the government:

> [There are] "important equitable considerations which call for a finding of successorship [against the UV Trust]. The beneficiaries of the Trust are, for the most part, former shareholders of UV. Those who are not nonetheless chose to acquire interests in a Trust

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[65] Reply of the United States of America to Defendants' Oppositions to the US Motion for Partial Summary Judgment and Answer in Opposition to Defendants' Cross-Motions for Summary Judgment at 17, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah June 22, 1990) (emphasis added).

[66] Plaintiff United States of America's Memorandum in Response to the Motions for Reconsiderations and Summary Judgment on Behalf of Defendants UV Industries, Inc. Liquidating Trust and UV Industries, Inc., and in Support of its Cross Motion for Summary Judgment at 11, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah July 6, 1989) (emphasis added).

[67] *Id*. at 21.

> that had as one of its stated purposes the payment of UV's corporate liabilities. On the whole, then, the unitholders [in the UV Trust] are all people who have profited, or seek to profit, from UV's former business activities. In addition, the Liquidating Trustees are all former directors of the corporation. As substantial unitholders, those former directors have gained significantly, and stand to gain further, from the distribution of the UV sale proceeds. In these circumstances, it would be inequitable to allow the Trust, which holds the assets of UV's former directors and shareholders, to hide behind UV's dissolution and escape the obligation to contribute towards the clean-up of the Midvale site.[68]

The government concluded its lengthy discussion on UV liability with the following statement:

"Because the Trust is charged with the burden of paying off UV's liabilities, the Trust is answerable now for remedying the environmental harm caused by UV."[69]

(4) As explained in oral argument by Ben Fisherow, a high ranking career DOJ lawyer on Superfund matters, "it can be said that all issues with respect to the Trust's liability under the Statute are resolved. The Trust is the successor to The United States Smelting, Mining & Refining Company which owned [and] operated this site for decades."[70] Mr. Fisherow was referring to UV Industries, Inc by its prior name.

(5) In response to Ben Fisherow's request for a ruling on the claim of the U.S. that the UV Trust was liable as the successor to UV Industries, District Court Chief Judge Bruce S. Jenkins stated on the record that "Generally . . . the shareholders' interests are residual interests. They get paid after all the creditors get paid. Ordinarily, if we have assets that are transmuted into money, the money rides with the burden. It's not free money until we make sure that the creditors are taken care of."[71]

(6) Also in the July 6, 1989 memorandum, at footnote 18, the government stated that:

> Although the language of the assumption instrument states that the Trust assumed UV's liabilities as of the date the agreement was executed, it goes on to provide that the Trust assumed liabilities that were "contingent" and not yet ascertained or accrued. But even if the language of the assumption agreement were not clear on this point, liability for the Midvale site must be included among the liabilities assumed by the Trust. Because CERCLA imposes liability retroactively, it gives rise to a claim for actions performed prior to the date on which the assumption agreement was executed. Since the Trust stands in UV's shoes, and since UV -- if fully alive today -- could be held liable for the

[68] *Id*. at 23-24 (emphasis added) (internal citations omitted).
[69] *Id.* at 26 (internal citations omitted).
[70] Transcript of Summary Judgment Hearing at 37-38, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah Aug. 14, 1990) (emphasis added).
[71] *Id*. at 171 (emphasis added).

> site, the Trust must be held accountable for that liability by virtue of having expressly assumed UV's liabilities.[72]

(7) Based on the Judge's oral ruling granting the government's motion for partial summary judgment that the UV Trust was the successor to the CERCLA liabilities of UV Industries,[73] the parties quickly reached a compromise settlement resolving the case. The government entered into a partial consent decrees with the UV Trust and UV Industries that included the government's position that "the Trust has succeeded to the liabilities of UV."[74] As pointed out above, in exchange for a substantial payment amounting to sixty percent of the Trust's assets, the government then gave a full release to both the UV Trust and UV Industries of any and all future liabilities under CERCLA not just at the Midvale site, but at all other future sites around the country, including Eureka:

> Beyond the matters addressed [in this Partial Consent Decree], the United States is unaware of any other claims against UV or the Trust which it now or in the future may assert on behalf of the Environmental Protection Agency pursuant . . . [CERCLA or other environmental statutes] . . . . Accordingly, to allow for the orderly liquidation and termination of the Trust in accordance with the Consent Decree, the United States agrees not to assert any such claims in the future on behalf of the Environmental Protection Agency . . . or to otherwise object to or oppose the distribution of assets remaining in the Trust to the unitholders thereof.[75]

The consent decree with UV industries and the UV Trust was approved and entered as a final judgment by the court on November 13, 1990.[76]

A separate but related partial consent decree with Sharon resolved the only claims that the government made against Sharon in the case, namely, that Sharon had owned and operated the Midvale sites during a period when disposal occurred. There was no claim made by the government anywhere during the extensive proceedings over four years that Sharon, as opposed to the UV Trust, succeeded to the CERCLA liabilities of UV Industries.

Relevant excepts from the documents quoted above, as well as other filings in *U.S. v. Sharon, UV Industries, and the UV Trust* cited in the letter, are attached as exhibits in chronological order.

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[72] Plaintiff United States of America's Memorandum in Response to the Motions for Reconsiderations and Summary Judgment on Behalf of Defendants UV Industries, Inc. Liquidating Trust and UV Industries, Inc., and in Support of its Cross Motion for Summary Judgment at 22 n.18, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah July 6, 1989) (internal citations omitted) (emphasis added).

[73] The independent *res judicata* effect of the Judge granting the government motion for summary judgment on this point is discussed *infra*.

[74] UV Trust Partial Consent Decree at 5, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah. Sept. 17, 1990) (emphasis added).

[75] *Id.* at 22-23 (emphasis added).

[76] Order Entering Partial Consent Decree Between the United States, the State of Utah and UV Industries, Inc., Liquidating Trust, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah Nov. 13, 1990).

APPENDIX K

TO
Z2&3 INTERIOR UAO

Appendix K: Letter from E. Donald Elliott, Partner, Willkie Farr & Gallagher LLP, to John N. Moscato, Senior Counsel, Dep't of Justice (Apr. 1, 2010)

WILLKIE FARR & GALLAGHER LLP

1875 K Street, N.W.
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Tel: 202 303 1000
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On the Record - Not a Privileged Settlement Communication

April 1, 2010

Via Electronic and U.S. Mail

Mr. John N. Moscato
Senior Counsel, Natural Resources Division
Environmental Enforcement Section
U.S. Department of Justice
1961 Stout Street, 8th Floor
Denver, CO 80294

Ms. Andrea Madigan and Steven B. Moores
Enforcement Attorneys
Legal Enforcement Program
U.S. EPA Region 8
1595 Wynkoop Street
Denver, CO 80202

Re: Eureka Mills Superfund Site

Dear John, Andrea and Steven:

Thank you for taking the time on March 1 to discuss our position that the government's CERCLA cost recovery claims against Sharon Steel/Mueller[1] at Eureka were already definitively resolved in *United States v. Sharon Steel, UV Industries, Inc, UV Industries, Inc., Liquidating Trust and Atlantic Richfield Company, Inc.*, (D. Utah, C.A. No. 86-C-924, filed Oct 10, 1986) (hereafter, "*U.S. v. Sharon, UV Industries, and the UV Trust*"). The purpose of this letter is to respond to the main points that you raised on the call regarding the preclusion arguments in our letter dated February 18, 2010.

[1] In 1991, Sharon Steel, which was a party to *U.S. v. Sharon, UV Industries, and the UV Trust*, merged into its wholly-owned subsidiary, Mueller Industries, Inc., with Mueller being the surviving corporation in the merger. Thus, Mueller succeeded to all of the rights of Sharon Steel, and for convenience we refer to them as Sharon/Mueller.

I. A Covenant Not to Sue and a Release Entered into by a Predecessor Both Discharge a Successor's Liability.

We understand you to be arguing that the language of the 1990 consent decree with UV and the UV Trust was a "covenant not to sue" rather than a "release." While we don't necessarily agree with your reading, even if you were correct, the distinction would not make a difference for purposes of our preclusion arguments.

While we agree that there are distinctions between a covenant not to sue and a release for some purposes, there is no difference in their effect in this case. Whether UV Industries' future CERCLA liabilities were discharged pursuant to either a covenant not to sue or pursuant to a release, both means would also discharge an alleged successor. As we stated in our February letter, "[t]here is a significant body of law holding that successor liability does not attach if the predecessor's liability has been discharged or extinguished."[2] The case law and secondary literature indicate that this applies equally, whether the liability has been discharged by a covenant not to sue or by a release. "A covenant not to sue, like a release, is a contract and it is also an affirmative defense to an action."[3] *Robbins* addressed a successor seeking to enforce a covenant not to sue that was entered into by its predecessor. The Court held that this was a valid defense, stating "[t]he Covenant Not to Sue discharged and extinguished the claim against Shoreline Obstetrics, the predecessor corporation. Therefore, there is no viable liability or claim against the successor corporations, Physicians for Women's Health and Women's Health."[4] Likewise, if Mueller is alleged to be a successor to UV Industries, it would benefit from the language in VII. B. of the Partial Consent Decree between the United States and UV Industries and the UV Trust in *U.S. v. Sharon, UV Industries, and the UV Trust*, regardless of whether it is read as a release or a covenant not to sue. This section states that the "United States agrees not to assert any such [CERCLA] claims in the future on behalf of the Environmental Protection Agency or the Department of the Interior or to otherwise object to or oppose the distribution of assets remaining in the Trust to the unitholders thereof."

II. *Res Judicata* Applies Even if the United States Became Aware of Additional Facts After the Initial Judgment

Regardless of whether the United States knew about any potential contamination in Eureka at the time of the initial 1990 Consent Decree, it is now barred from arguing that Sharon/Mueller is the successor to the liabilities of UV Industries. Courts focus on when the facts arose, rather than when the plaintiff

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[2] *Robbins v. Physicians for Womens's Health, Inc.*, No. CV065002633, 2009 WL 5303887 *4 (Conn. Super. Ct. Dec. 7, 2009).

[3] 66 Am. Jur. 2d Release § 4 (2002).

[4] *Robbins*, 2009 WL 5303887 *7. The court came to this conclusion despite the following language in the covenant not to sue: "This covenant not to sue does not effect claims against the Physicians for Women's Health LLC entities, which remain defendants in the pending action." The court reasoned that because the current lawsuit depended on Physicians for Women's Health's position as a successor, that language was not relevant.

discovered the facts, in determining whether the *res judicata* bar applies. While *res judicata* does not generally apply to actions based on facts occurring after the initial judgment, it does apply when it was only the plaintiff's *awareness* of the facts that came later. The Second Circuit clearly states:

> "*Res judicata* applies even where new claims are based on newly discovered evidence, unless the evidence was either fraudulently concealed or it could not have been discovered with due diligence. . . Plaintiff's discovery of additional facts following entry of summary judgment does not block the application of *res judicata*. The facts and events themselves arose prior to the filing of the original complaint -- it was only [Plaintiff's] awareness of these facts that came later."[5]

The Seventh Circuit explains this rule as follows: "Since all claims arose from the same factual context and since the appellants had sufficient knowledge to sue on one claim, they also had sufficient knowledge to sue on the rest of their claims. When a litigant files a lawsuit, the courts have a right to presume that he has done his legal and factual homework. It would undermine the basic policies protected by the doctrine of *res judicata* to permit the appellants to once again avail themselves of judicial time and energy while another litigant, who has yet to be heard even once, waits in line behind them."[6]

When the United States settled with UV Industries and Sharon in 1990 it knew that there were other properties at issue in the transaction between UV Industries, the UV Trust and Sharon.[7] It was the United States' responsibility to consider this when deciding to pursue the UV Trust as the successor to UV Industries' CERCLA liabilities. The argument that the United States only later became *aware* of the contamination at Eureka does not remove the *res judicata* bar, where the facts existed and could have been discovered prior to the 1990 judgment.

In fact, however, there is ample evidence from many sources that the United States was well-aware of the mining wastes in the Tintic area, long before EPA began its clean-up and certainly at the time that it settled with UV, the UV Trust and Sharon in 1990. For example, the Eureka mines were placed on the National Register of Historic Places in March 1979. The Centennial Eureka mine is listed with the following description of its significance: "The largest wood headframe in the district, purportedly with

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[5] *L-Tec Electronics Corp. v. Cougar Electronic Org., Inc.*, 198 F.3d 85, (2d Cir. 1999).
[6] *Car Carriers, Inc. v. Ford Motor Co.*, 789 F.2d 589, (7th Cir. 1986)
[7] *See* UV Trust Partial Consent Decree at 19, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah. Sept. 17, 1990) ("the State hereby releases and agrees to hold UV and the Trust harmless for . . . (ii) any and all other claims regarding environmental matters as to the Sites or any other sites, regardless of whether such claims exist at the effective date of this Decree or come into existence after such effective date.) This language demonstrates that the parties to the Consent Decree acknowledged that there were other sites at issue.

timbers from Norway. The Centennial-Eureka was also a large Tintic producer, originally known as the 'Blue Rick.'"[8] The description of the Eagle and Blue Bell Mine even specifically highlights a "dump": "The Eagle and Blue Bell represents an extensive remain of a 'surface plant,' sitting together with its ore dump."[9] Thus, the United States was effectively on inquiry notice that these sites involved historic abandoned mines and therefore contamination issues.

III. A Very Substantial Litigation Discount is Warranted Because of Mueller's Strong Preclusion Defenses.

After additional legal research into the points raised during our last call on March 1, we continue to believe and advise our client that Mueller has a very strong set of preclusion arguments, including *res judicata,* judicial and collateral estoppel. These arguments all work to legally bar the government from changing its prior position and now asserting that Mueller rather than the UV Trust is the successor to UV Industries' CERCLA liabilities.

Nonetheless, our client is prepared to make a good faith offer of settlement to avoid the expense and uncertainty of litigation after we have all visited the site in early May. We will, however, be building a substantial litigation discount into our offer to reflect our opinion that the claims of the United States are barred by the 1990 litigation, as well as by our contractual arguments relating to the Closing Date that we have previously communicated to you.

IV. Role of the State of Utah in Future Negotiations.

In advance of meeting for further negotiations, we also wish to call to your attention that the State of Utah not only released UV and the UV Trust in the 1990 settlement agreement, but also agreed to indemnify them and hold them harmless again any further claims for environmental clean-up at other sites.[10] Our legal research indicates that this type of "hold harmless" clause also inures to the benefit of Mueller as an alleged successor to UV and the UV Trust for liabilities relating to the past activities of UV Industries.[11] And of course, under CERCLA, such hold harmless agreements are binding and

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[8] http://pdfhost.focus.nps.gov/docs/NRHP/Text/79003481.pdf, located at http://nrhp.focus.nps.gov/natreghome.do;jsessionid=689B70CA892F94AD73C6110DF62F0048

[9] *Id.*

[10] UV Trust Partial Consent Decree at 19, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah. Sept. 17, 1990) ("the State hereby releases and agrees to hold UV and the Trust harmless for . . .(ii) any and all other claims regarding environmental matters as to the Sites or any other sites, regardless of whether such claims exist at the effective date of this Decree or come into existence after such effective date."). An agreement to hold harmless is one "in which one party agrees to indemnify the other. – Also termed *save-harmless agreement*. See INDEMNITY." BLACK'S LAW DICTIONARY 737 (7th ed. 1999).

[11] *See EEOC v. Outrigger Restaurant, Inc.*, No. 97-1189-CB-M, 2000 U.S. Dist. LEXIS 330 (S.D. Al. Jan. 10, 2000) (holding that Outrigger Restaurant was obligated to indemnify a successor, where Outrigger Restaurant had entered into an indemnification agreement with the predecessor). This is consistent with the general premise that "[a] contractual successor stands in its predecessor's shoes for both rights and responsibilities." *Archer Daniels Midland Company v. Brunswick*

enforceable among the parties, even though they do not bar the claims of the United States.[12] As negotiations go forward, we should consider whether to bring in the State of Utah as an interested third party, due to its obligation to hold harmless Sharon/Mueller if Sharon/Mueller is found to be a successor to UV.

Very truly yours,

E. Donald Elliott

E. Donald Elliott
Willkie Farr & Gallagher LLP
Counsel to Mueller Industries, Inc.

County, 129 Fed. Appx. 16, 25 (4th Cir. 2005). *See also* 6 AM. JUR. 2D *Assignments* § 47 (2005) ("The benefit of a contract provision requiring one party to 'indemnify, defend and save harmless' the other party from any 'liabilities' is assignable.")

[12] *See* 42 U.S.C. Sec. 9607(e)(1) ("No Indemnification, hold harmless, or similar agreement or conveyance shall be effective to transfer from the owner or operator of any . . . facility or from any person who may be liable for a release or threat of release . . . to any other person . . . .") Courts interpret Section 107(e) of CERCLA to mean "agreements to indemnify or hold harmless are enforceable *between the parties* but not against the government." *Smith Land & Improvement Corp. v. Celotex Corp.* , 851 F.2d 86, 89 (3d Cir. 1988), *cert. denied* , 488 U.S 1029 (1989) (*emphasis added*).

APPENDIX L

TO
Z2&3 INTERIOR UAO

Letter from E. Donald Elliott, Senior Of Counsel, Covington & Burling LLP, to Annette Lang, Senior Counsel, Dep't of Justice (Dec. 29, 2016)

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Settlement Communication – Protected by Fed. R. Evid. 408

December 29, 2016

Annette M. Lang
Senior Counsel
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Environment and Natural Resources Division
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Re: Factual Background of Minimal Connections of Arava Natural Resources Co., Inc. and Mueller Industries, Inc. to the U.S. Smelter and Lead Refinery Site in East Chicago, Indiana

Dear Annette:

As background for our meeting in Washington on January 5, 2017, we provide this brief overview of the very attenuated connection of our clients Arava Natural Resources Co., Inc. ("Arava") and Mueller Industries, Inc. ("Mueller") to what EPA calls Zone 2 of Operable Unit 1 of the "U.S. Smelter and Lead Refinery Site" in East Chicago, Indiana. (In fact, multiple smelters and lead sources other than USS Lead operated in the immediate area, some of which are closer to much of Zone 2 than USS Lead.).[1]

Allocation Percentages of Zone 2 Contamination Attributable to the USS Lead Site. I understand from our prior discussions that, despite many years and millions of dollars of study, to date EPA has still not determined what percentage of the lead in Zone 2 it believes is attributable to the operations of U.S.S. Lead Refinery, Inc., as opposed to the many other

[1] For the record, we are preserving all our defenses, including our position that incidental air deposition of lead particulate does not constitute disposal. *See Pakootas v. Teck Cominco Metals, Ltd.*, No. 15-35228, 2016 WL 4011196 15-35228 (9th Cir., July 27, 2016), *available at* https://cdn.ca9.uscourts.gov/datastore/opinions/2016/07/27/15-35228.pdf

sources in the area. In the absence of better data, for purposes of these discussions, we are willing to assume *arguendo* that perhaps 25% of the lead in Zone 2 came from operations at the USS Lead site as opposed to those other nearby sources; the actual number might be higher or lower and would vary from property to property. We are working to develop more accurate estimates, and as previously discussed, would welcome any data that EPA may have in this regard.

USS Lead Site History.
We understand that active operations involving lead at the USS Lead site occurred from 1905 to 1985, a period of approximately 80 years.

The 1905 to 1919 Period of Operations.
From 1905 to 1919, or 18.75% of the total period of operation, the site was operated by U.S. Metals Refining Co., whose current parent Cyprus Amax is alleged by EPA to be a successor and responsible for that period of operations. Thus, U.S. Metals Refining Co. and/or Cyprus Amax would seem to be liable for approximately 4.7% of the cost of cleaning-up Zone 2. (25% x 18.75% = 4.69%).[2] Our understanding is that to date they have made zero contribution toward cleaning up the area. This stands in stark contrast to the $16.5 million Mueller's affiliates USS Lead and MRRC have already spent, and the combined $13.5 million you have advised that Chemours and Atlantic Richfield will have spent by the end of 2016.

The 1920 to 1979 Period of Operations.
From 1920 to 1979, or 73.75% of the total period of operations, the site was operated by U.S.S. Lead Refinery, Inc., while it was a subsidiary of United States Smelting Refining and Mining Company, later renamed UV Industries ("UV"). As you know, in 1998, the Supreme Court specifically rejected EPA's position that parent companies are automatically liable for the clean-up obligations of their direct and lower tier subsidiaries, holding instead that parent companies become liable only if they become so involved in directing disposal operations at the site that they become "operators," or if traditional grounds otherwise exist for piercing the corporate veil, such as a failure to observe proper corporate formalities. *United States v. Bestfoods*, 524 U.S. 51 (1998) (copy attached as Exhibit 1 for convenience).

We have no reason to believe that UV would not be protected by the corporate veil regarding U.S.S. Lead Refinery, Inc.'s operations during the 73.75% of the period of operations when U.S.S. Lead Refinery, Inc. was owned by UV. Of course, if UV itself were protected by the corporate veil, Mueller and Arava would also be protected under any theory that somehow they had succeeded to UV's liabilities. In any event, that issue is now irrelevant because the United States litigated and settled all of its Superfund claims relating to UV's operations, including

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[2] In *Burlington Northern*, the Court approved the use of years of operations to allocate liability between PRPs under CERCLA. *Burlington N. & Santa Fe Ry. Co. v. United States*, 556 U.S. 599, 617-18 (2009).

those relating to the USS Lead site, for an $11 million payment in the *Midvale* case in 1990.[3] The issue of how to interpret the various documents and transactions relating to the assumption of UV's environmental liabilities was extensively litigated and definitively, correctly and conclusively resolved 26 years ago. It cannot now be reopened. For example, in arguments to the court in *Midvale*, your colleague Ben Fisherow of Main Justice flatly represented to the court the United States's position that "The [UV] Trust is the successor to The United States Smelting, Mining & Refining Company which owned [and] operated this site for decades."[4] Indeed, the court granted summary judgment to the United States on that basis. Accordingly, the doctrines of novation, *res judicata*, collateral estoppel and judicial estoppel all now preclude the United States and EPA from claiming that Mueller and Arava are responsible for UV's period of ownership, as is further explained in the attached Exhibit 2. That is because the United States and EPA have already recovered against another party for UV's period of ownership based on an inconsistent legal theory that the UV Liquidating Trust, rather than Sharon Steel Corp. ("Sharon Steel"), was the successor to the environmental liabilities of UV, including any possible claims relating to UV's period of ownership of the USS Lead site.

Separately, and in addition to the legal doctrines mentioned above, which are based on the position that the U.S. successfully took in the *Midvale* litigation, it is well established that the global settlement of all environmental claims with UV, Sharon Steel's alleged predecessor at the

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[3] *United States v. Sharon Steel Corporation, et al.*, Civil Action Nos. 86-C-924J and 89-C-136J ("the Midvale case"). The Midvale case was brought by the United States against Sharon Steel, UV Industries, the UV Liquidating Trust, and other parties in the 1980's in connection with the clean-up of the Midvale Property. In addition to settling and entering into a consent decree with Sharon Steel for the clean-up, the Government also entered into a global settlement in the form of a Partial Consent Decree with the UV Liquidating Trust that included the Government's allegation that "the Trust has succeeded to the liabilities of UV." This consent decree was approved and entered by the court on November 13, 1990. Under the terms of the consent decree, EPA received 60% of the UV Liquidating Trust's then-current assets (at least $11 million), as well as 60% of any future assets that came into the Trust. The basis for the settlement was the legal position of the United States that the UV Liquidating Trust, not Sharon Steel, was the successor to UV Industries for the environmental clean-up liabilities at all formerly owned UV sites. Shortly thereafter, on November 21, 1990, the bankruptcy court overseeing Sharon Steel's bankruptcy approved the Plan. As contemplated in the settlement agreement with the UV Liquidating Trust, EPA subsequently took no action to prevent the Trust from distributing its remaining assets and winding down its business after it paid numerous claims between 1980 and 1990 relating to the prior operations of UV.

[4] Transcript of Summary Judgment Hearing at line 24, page 37 to line 1, page 38, *U.S. v. Sharon, UV Industries, and the UV Trust*, C.A. No. 86-C-924 (D. Utah Aug. 14, 1990) (attached as Exhibit 4).

site, releases Sharon Steel/Mueller as UV's alleged successor from any liability.[5] The United States simply cannot recover twice for the same liability, and this same result applies regardless of whether the settlement is characterized as a release or a covenant not to sue. (See attached Exhibit 3.)

You have informed us orally that United States Smelting, Refining, and Mining Company itself briefly operated the site in 1919 and 1920, before the site was transferred to U.S.S. Lead Refinery, Inc. However, these same arguments as to why Sharon Steel is not liable for the environmental liabilities of UV would apply equally to UV's direct operation of the site. In any event, this brief period of operation would amount to only 0.3% of possible liability for the USS Lead site (25% x 1.25% = 0.3125%).

Sharon Steel's Brief Ownership of USS Lead while Operating (1979-1985).
In 1979, UV decided to sell off its assets and liquidate. Mueller's predecessor, Sharon Steel, bought about 40% of the assets of UV, including U.S.S. Lead Refinery, Inc., with the bulk of the assets being purchased by several other companies, and proceeds from those sales going into a trust ("The UV Liquidating Trust"). The UV Liquidating Trust eventually held $518 million and paid claims from 1980 to 1990, including the environmental clean-up claims of the United States.[6] As is standard for such asset sales, Sharon Steel and the other purchasers agreed to assume the existing debts of the businesses they bought "as of" the closing date, but the "unascertained" obligations of UV as of the 1979 closing date were assumed by the UV Liquidating Trust, not Sharon Steel.[7] Obviously, the CERCLA claims of the United States either did not exist "as of the closing date" because CERCLA had not yet been enacted, or at worst fall

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[5] *Foster v. Cone-Blanchard Machine Co.*, 460 Mich. 696, 706, 597 N.W.2d 506 (1999); *Syenergy Methods, Inc. v. Kelly Energy Systems, Inc.*, 695 F. Sup. 1362 (D.R.I. 1988); *Robbins v. Physicians for Women's Health, Inc.*, 2009 WL 503887 *4 (Ct. Super Ct, 2009); 66 AM. JUR. 2d § 4 (2002).

[6] The U.S. and EPA were on notice about contamination of the USS Lead site while the UV Liquidating Trust was still in existence and paying claims.

[7] The UV Industries Liquidating Trust Agreement provided that the Liquidating Trust assumed "all the liabilities and claims (including unascertained or contingent liabilities and expenses) of UV." UV Industries Liquidating Trust Agreement § 2.4 (Mar. 24, 1980). In the Midvale case, *United States v. Sharon, UV Industries, and the UV Trust*, No. 86-C-924 (D. Utah), the Government survived a motion to dismiss on a statute of limitations issue by arguing that CERCLA claims could not have arisen until after CERCLA was enacted. United States's Memorandum of Law in Opposition to Motion to Dismiss at 27, *United States v. Sharon*, No. 86-C-924 (D. Utah Mar. 9, 1987). The Government also argued that as a contractual matter, the CERCLA liabilities of UV Industries were assumed by the UV Trust as an "unascertained" liability. United States's Memorandum in Response to the Motions for Reconsideration and Summary Judgment at 22 n.18, *United States v. Sharon*, No. 86-C-924 (D. Utah July 6, 1989). *See* Exhibit 2 at 11 & nn.37 & 38.

into the "unascertained" bucket because even today, 37 years later, EPA still does not know how much it will cost to clean up Zone 2 or what proportion of the costs are attributable to the operations of USS Lead during UV's period of ownership.

However, the proper construction of those documents and transactions is no longer an open issue, because extensive litigation of these issues already occurred in the 1990 *Midvale* litigation discussed above, and the United States settled all its future CERCLA claims relating to UV's period of operations at all sites, including USS Lead. Those conclusions were correct, but even if they were not, the issues cannot now be reopened 26 years later.

The ownership of USS Lead by Sharon Steel, the predecessor of Mueller, constitutes at most six out of the 80 years that the site operated, or 7.5% of the total period of USS Lead's operations. Assuming again that USS Lead contributed 25% of the contamination in Zone 2, even on an unreasonable worst case basis, Mueller and Arava would potentially be exposed to liability for only 1.875% of the costs of cleaning up Zone 2. (25% x 7.5% = 1.875%) However, this percentage would have to be further discounted to reflect the defenses described below, including three levels of corporate veils.

The Sharon Steel Bankruptcy and Formation of MRRC.
In 1985, Sharon Steel defaulted on its bonds, and in April, 1987, went into bankruptcy. As part of the 1990 bankruptcy reorganization plan, certain of Sharon Steel's contaminated sites, including the USS Lead site, were transferred into an entity now called Mining Remedial Recovery Corporation ("MRRC"). MRRC was incorporated in 1987, two years after the USS Lead site ceased operating, and is a subsidiary of Arava, which in turn, is a subsidiary of Mueller. MRRC received the real property of those sites, their equipment, and certain related insurance assets, plus $7.85 million in cash from the reorganized Sharon Steel, now called Mueller Industries, Inc. Significantly, the bankruptcy court specifically found that MRRC was adequately capitalized if only $4 million of cash and certain insurance policies were transferred to it, but in fact an additional $3.85 million, for a grand total of $7.85 million actually paid.[8] Moreover, pursuant to the bankruptcy court's order, MRRC specifically assumed any liabilities of Sharon Steel/Mueller relating to the USS Lead and other sites transferred to MRRC under the bankruptcy plan. Critically, the United States was a party to the Sharon Steel bankruptcy proceedings and is therefore bound by all of the bankruptcy court's rulings on this issue.[9]

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[8] On November 20, 1990, the bankruptcy court approved Sharon Steel's Third Amended & Restated Plan of Reorganization, *In re Sharon Steel Corp.*, No. 87-00207E (Bankr. W.D. Pa. Sept. 27, 1990). The court's order specifically found that the entity that became MRRC will "be adequately capitalized and solvent and the sum of each of such entity's property, at a fair valuation, is greater than the sum of each such entity's debts." Order Confirming Third Amended & Restated Plan of Reorganization, *In re Sharon Steel Corp.*, No. 87-00207E (Bankr. W.D. Pa. Nov. 20, 1990), ¶ 40, at pages 17-18.

[9] *Adair v. Sherman*, 230 F.3d 890 (7th Cir. 2000).

Loans to USS Lead to Fund Environmental Remediation.
Subsequently, USS Lead has spent approximately $16.5 million dollars to date to clean-up the East Chicago site, including certain off site areas, but as far as we know, not in Zone 2. Most of this money was loaned to USS Lead by Arava and Mueller, who are now secured lenders specifically protected from liability relating to their loans by Section 101(20)(A) of CERCLA. In any event, it is well-settled that merely loaning money to a subsidiary, particularly as a "good Samaritan" so that it can clean-up contamination to protect public health and the environment, does not waive the protection of the corporate veil or subject the grandparent or great grandparent to liability.[10]

Corporate Veils.
Although, as detailed above, Arava and Mueller's worst case potential exposure for Zone 2 clean-up costs is limited to 1.875% of such costs, under *Bestfoods*, *supra*, Arava and Mueller are also entirely protected from liability by multiple levels of corporate veils: (1) from USS Lead to MRRC; (2) from MRRC to Arava; and (3) from Arava to Mueller.[11] As indicated in the attached affidavit from USS Lead's president, proper corporate formalities have been observed between these entities and we are aware of no basis for piercing even one of the three corporate veils. Affidavit of Michael Baum, Exhibit 5.

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[10] "Absent evidence that . . . loans were made for an improper purpose, financial assistance provided to a subsidiary by a parent does not support piercing the corporate veil." *United States v. Friedland*¸137 F. Supp. 2d 1077, 1091 (D. Colo. 2001) (CERCLA case); *see also, e.g.*, *Lowell Staats Min. Co., Inc. v. Pioneer Uravan, Inc.*, 878 F.2d 1259, 1263 (10th Cir. 1989) ("[Parent] will not be exposed to liability for the obligations of [subsidiary] when [parent] contributes funds to [subsidiary] for the purpose of assisting [subsidiary] in meeting its financial obligations and not for the purpose of perpetuating a fraud."); *Cambridge Electronics Corp. v. MGC Electronics, Inc.*, 227 F.R.D. 313, 329 (C.D. Cal. 2004) (shareholder loaning funds to a corporation is "inconsistent with an alter ego finding" and does not support piercing the corporate veil); *Teamsters Health & Welfare Fund v. World Transp., Inc.*, 499 F. Supp. 2d 499, 504 (E.D. Pa. 2003) (rejecting piercing the corporate veil where a defendant "in loaning the corporation large sums of money, acted like a good samaritan for the survival of the corporation"); *Interfaith Community Org. v. Honeywell Int'l, Inc.*, 215 F. Supp. 2d 482, 500 (D.N.J. 2002) (the fact that an entity is "a nonoperating entity with no revenue that relies solely on [a parent entity] for its financial survival" does not weigh in favor of piercing the corporate veil, because under those circumstances the parent is not "extracting funds" from the subsidiary).

[11] The case law establishes that where there are multiple layers of parent entities, a party seeking to access the assets of the ultimate parent "must pierce a succession of corporate veils" up to the ultimate parent. *Corrigan v. U.S. Steel. Corp.*, 467 F.3d 718, 725 (6th Cir. 2007).

Moreover, under *Bestfoods*, evidence in support of piercing the corporate veil would have to relate to the period during which disposal allegedly occurred, namely 1979 to 1985.[12] To date, EPA has brought to our attention no facts whatsoever relating to this period that would support piercing the corporate veil, or treating Arava or Mueller as owners or operators of the site, and we are aware of no such facts.

Mueller Brass Co.
You have also suggested orally that Mueller Brass Co. purportedly sent a small quantity of material to USS Lead. Mueller Brass Co. is separately incorporated as second tier subsidiary of Mueller Industries, Inc. Accordingly, the same corporate veil arguments discussed above would apply. But more fundamentally, Mueller Brass Co. did not "arrange for disposal" by selling valuable material to USS Lead for recycling.[13]

* * * *

As you know, the purpose of the Superfund funded with tax money was to pay for the orphan shares of defunct companies such as USS Lead at sites such as the East Chicago site. With 20/20 hindsight, the United States may regret its decision to make a global settlement with the UV Liquidating Trust in the *Midvale* case for $11 million for all of UV's legacy sites, or perhaps even its decision not to object to the capitalization of MRRC during the Sharon Steel bankruptcy. But disagreement with historical decisions does not justify now trying to obtain additional funding for the East Chicago lead cleanup from parties such as Arava and Mueller, who not only do not bear legal responsibility under established Supreme Court precedent, but who have also already voluntarily paid more than their fair share.

Based on this history, we respectfully suggest that EPA has no colorable basis to name Arava and/or Mueller as responsible parties on a unilateral administrative order to clean-up Zone 2 Clearly, EPA is on notice that both Mueller and Arava have abundant "sufficient cause" not to

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[12] It is black-letter law that whether to pierce the corporate veil is determined as of "the time of the transaction complained of." *Wm. Passalacqua Builders, Inc. v. Resnick Developers S., Inc.*, 933 F.2d 131, 138 (2d Cir. 1991); *Cont'l Bankers Life Ins. Co. v. Bank of Alamo*, 578 S.W.2d 625, 632 (Tenn. 1979) (same). *See also New York State Electric & Gas Corp. v. FirstEnergy Corp.*, 808 F. Supp. 2d 417, 499–500 (N.D.N.Y. 2011), *aff'd in part, vacated in part, remanded*, 766 F.3d 212 (2d Cir. 2014) (applying this rule to environmental pollution).

[13] To hold an entity liable as having "arranged for disposal . . . of hazardous substances" under 42 U.S.C. § 9607(a)(3) requires showing an "intentional step[]" to dispose of those substances; "[L]egitimate sale[s]" of "useful product[s]," do not qualify even if the "peripheral result" is some disposal of a hazardous substance, *Burlington Northern & Santa Fe Railway Co. v. United States*, 556 U.S. 599, 611, 612 (2009). The Seventh Circuit recently rejected a claim of arranger liability in *NCR Corp. v. George A. Whiting Paper Co.*, 768 F.3d 682 (7th Cir. 2014) in circumstances directly analogous to those of Mueller Brass. Copy attached as Exhibit 6.

comply with such an order under CERCLA § 106(b)(1), and EPA has provided no facts or legal theories whatsoever to suggest otherwise. No valid purpose would be served by naming these entities. Indeed, the only effect would be to redirect public scrutiny away from EPA for its handling of Zone 2 of the East Chicago site by blaming parties who are clearly not responsible under governing Supreme Court precedents, thereby unjustly making such parties targets for ancillary private litigation.

We look forward to our further discussions on January 5.

Very truly yours,

E. Donald Elliott
Thomas R. Brugato

cc: Steven Kaiser Office of Regional Counsel, Environmental Protection Agency-Region 5
Gary Wilkerson, Vice President, General Counsel and Secretary, Mueller Industries, Inc.
Chris Miritello, Deputy General Counsel, Mueller Industries, Inc.

APPENDIX M

TO
Z2&3 INTERIOR UAO

Letter from E. Donald Elliott, Senior Of Counsel, Covington & Burling LLP, to John N. Moscato, Senior Counsel, Dep't of Justice (Nov. 6, 2017)

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BY EMAIL to Annette.lang@usdoj.gov **AND U.S. MAIL**

November 6, 2017

Annette M. Lang
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Washington, DC 20044

Re: Response to DOJ's Letter Alleging Mueller CERCLA Liability at the East Chicago Superfund Site

Dear Annette:

We write in response to your letter of October 4, 2017 on behalf of Mueller Industries, Inc. ("Mueller"[1]) and Arava Natural Resources Co., Inc. We appreciate you setting forth the basis for your contentions that Mueller "succeeded to the CERCLA liability of UV/USSRAM" even before the statute was enacted by purchasing certain assets in 1979.[2] **The central fallacy in the government's argument is that it ignores that the 1979 purchase agreement is governed by New York law,[3] and that the New York courts, including the highest court of the state, have ruled that the language used did NOT transfer any such future, after-arising obligations.** *Grant-Howard Assocs. v. Gen. Housewares Corp.*, 472 N.E.2d 1 (N.Y. 1984); *Georgia-Pacific Consumer Prods., LP v. Int'l Paper Co.*, 566 F. Supp. 2d 246 (S.D.N.Y. 2008).

For purposes of brevity, we focus on responding to your arguments relating to the interpretation of the 1979 asset purchase agreement, which conclusively demonstrate that Sharon Steel, Inc. ("Sharon") did *not* assume from UV Industries, Inc. ("UV") the risk that pre-acquisition operations of USS Lead would later result in a claim for response costs under an after-enacted

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[1] We use the term "Mueller" to refer to reorganized Sharon Steel as well as Arava as indicated by context.

[2] We regret, however, that you have refused to disclose to us your basis for claiming that Mueller is responsible for the smaller portion of clean-up costs attributable to USS Lead's period of operation from 1979-1985 as a lower tier subsidiary of Mueller. This impedes the settlement process, as we are unable to evaluate the strength or weakness of your arguments, and we hope you will reconsider.

[3] Agreement for Purchase of Assets ¶ 19 (Nov. 26, 1979), Ex. 1 at ¶ 19.

statute.[4] We fully agree with your position that "Mueller indisputably is not a 'mere continuation' of UV/USSRAM," Letter at 11, and the corresponding implication that the 1979 asset purchase agreement and related assumption of liabilities is your lone basis for attempting to hold Mueller responsible for the debts of UV/USSRAM. Moreover, as discussed below, the government offers no basis whatsoever for assuming that USS Lead's clean-up obligations, even if had they existed in 1979, had become the debts of its parent UV/USSRAM by 1979 and were assumed by contract by Sharon, as at that time USS Lead was a going concern and capable of answering for its own debts.

There are too many factual omissions, incorrect legal assertions, and half-truths in the Government's October 4, 2017 letter to respond to them all. However, the following key points demonstrate that the Government's position is flat-out wrong:

1. **New York Law Is Clear that Claims for Future Superfund Response Costs Were NOT a Liability "as of" a Pre-Enactment Closing Date.** The transactional documents provided that Sharon as asset purchaser was only assuming liabilities "as of the closing date." New York case law is directly on point that the assumption of existing liabilities as of the closing date does NOT include after-enacted statutory liability for response costs that had not yet been incurred. *Georgia-Pacific Consumer Prods., LP v. Int'l Paper Co.*, 566 F. Supp. 2d 246 (S.D.N.Y. 2008); *Grant-Howard Assocs. v. Gen. Housewares Corp.*, 472 N.E.2d 1 (N.Y. 1984). Other cases addressing CERCLA all reach the same conclusion, and the Government cites no contrary authority addressing agreements with similar language. *State ex rel. Bellaire Sanitation, Inc. v. Gopher Oil Co.*, No. C8-94-225, 1994 WL 328631 (Minn. Ct. App. Sept. 16, 1994); *Gopher Oil Co. v. Bunker*, 84 F.3d 1047 (8th Cir. 1996); *United States v. Vermont Am. Corp.*, 871 F. Supp. 318 (W.D. Mich. 1994).

2. **New York Law Clearly Holds that Claims for Future Superfund Response Costs Are NOT a Contingent Liability.** The "contingent" liability language simply cannot bear the weight the Lang letter places on it. Enactment of a new statute creates a new liability; it is not a contingent liability. *Grant-Howard*, 472 N.E.2d at 3-4 (New York law). Indeed, a court has reached precisely that conclusion in the context of CERCLA: "On its face, defendants' argument seems to stretch the meaning of the word contingent. A contingent liability is defined as, 'One which is not now fixed and absolute, but which will become so in the case of the occurrence of some future and uncertain event.' BLACK'S LAW DICTIONARY, 321 (6th Ed. 1990). To say that the 'future event' may include the passage of a law creating the liability is pointless and illogical. A liability is nonexistent until it is created by law." *Chrysler Corp. v. Ford Motor Co.*, 972 F. Supp. 1097, 1108-09 (E.D. Mich. 1997).

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[4] For the record, we are preserving all our defenses and reserve the right to respond in the future to the various other arguments you advance in your letter. We are not doing so at this time because the contractual argument is dispositive in Mueller's favor.

3. **Multiple Contemporaneous Documents Support Mueller's Position, and Any Ambiguity Weighs Against the Government.** As described below, there are multiple contemporaneous transaction documents that indicate the parties did not intend Sharon to assume new obligations arising under after-enacted statutes, but in fact intended them to remain with UV and then go to the UV Liquidating Trust. To the extent the contractual language is ambiguous, these contemporaneous indications of the parties' intent are conclusive in Mueller's favor. Moreover, any ambiguity cuts *against* the government's current argument and must be resolved in Mueller's favor: New York law requires an "unmistakable intent" to transfer liabilities before a court will enforce such an obligation. *Haynes v. Kleinewefers*, 921 F.2d 453, 456 (2d Cir. 1990) (applying New York law, citing *Heimbach v. Metro. Transp. Auth.*, 553 N.E.2d 242 (N.Y. 1990)). Indeed, an alleged indemnification provision "must be strictly construed to avoid reading into it a duty which the parties did not intend to be assumed." *Hooper Assocs., Ltd. v. AGS Computers, Inc.*, 548 N.E.2d 903, 905 (N.Y. 1989); *see also Olin Corp. v. Consol. Aluminum Corp.*, 5 F.3d 10, 15 (2d Cir. 1993) (applying same standard in the CERCLA context).

4. **Federal Precedent Directly on Point Demonstrates that Under These Specific Agreements the UV Trust, NOT Sharon Steel/Mueller, Was and Is the Successor to the Superfund Liabilities of UV Industries**. In 1989-1990, the government successfully litigated the point that the Superfund liabilities of UV Industries under the very same documents at issue here were "unascertained" liabilities that went to the UV Liquidating Trust. *See* Plaintiff United States of America's Memorandum in Response to the Motions for Reconsideration and Summary Judgment on Behalf of Defendants UV Industries, Inc. Liquidating Trust and UV Industries, Inc., and in Support of its Cross Motion for Summary Judgment at 22 n.18, *United States v. Sharon, UV Industries, and the UV Trust*, No. 86-C-924J (D. Utah July 6, 1989). It won summary judgment, recovered $9.8 million and consented to the liquidation of the UV Trust in exchange for an increase of the payment to $11 million. The government's position was based on its considered (and correct) reading of the contract language, as well as the equitable policy judgment that the UV stockholders, who were the beneficiaries of the UV Liquidating Trust, had benefitted financially from the historic disposal policies of UV and its subsidiaries rather than the innocent purchaser of assets that had had nothing to do with disposal practices prior to 1979. That precedent is controlling here. [5]

5. **The Corporate Veil Between USS Lead and UV Industries**. Even assuming *arguendo* that all of the government's contractual arguments about the 1979 asset

[5] As you were one of the attorneys who represented the UV Trust in the Midvale case, I am sure you are aware that the government is now making many of the same arguments that the UV Trust made in 1989, and which were rejected by the Court. We stand by the preclusion arguments in our December 29, 2016 letter that the government is bound by its positions in the Midvale case despite its change in attorneys.

purchase are correct, and are not precluded by its inconsistent positions in the 1989 litigation, Sharon/Mueller would have only assumed the liabilities of *UV Industries, Inc.*, NOT its subsidiary USS Lead. The government's theory that purchasers of assets automatically succeed to Superfund liabilities related to all the assets they purchase was specifically rejected by the Supreme Court in *United States v. Bestfoods*, 524 U.S. 51 (1998) in favor of traditional tests for piercing the corporate veil.

I. The Plain Text of the Contract, the Governing Case Law, and Multiple Other Lines of Reasoning Compel the Conclusion That Sharon Did *Not* Assume UV's CERCLA Liabilities.

A. The Plain Language of the Contract Is Limited to Liabilities "as of the Closing Date," and Courts Have Held That This Type of Language In Pre-CERCLA Agreements Precludes Assumption of a CERCLA Liability That Did Not Yet Exist.

The contractual language provides that the "assumed liabilities" of UV that were assumed by Sharon were in relevant part limited to those "as of the Closing Date" in 1979:

> all debts, obligations, contracts and liabilities of the Seller ***as of the Closing Date*** of any kind character or description, direct or indirect, whether accrued, absolute, contingent or otherwise, except the Non-Assumed Liabilities as hereinafter defined . . . .

Agreement for Purchase of Assets ¶ 1(d) (Nov. 26, 1979) (emphasis added) (Exhibit 1).

The Instrument of Assumption of Liabilities used similar language, providing that Sharon assumed liabilities "as of the date hereof":

> all the debts, obligations, contracts and liabilities of UV ***as of the date hereof***, of any kind, character or description, direct or indirect, whether accrued, absolute, contingent or otherwise, and whether asserted before or after such date . . . .

Instrument of Assumption of Liabilities at 2 (Nov. 26, 1979) (emphasis added) (Exhibit 2).

The case law is quite clear that the "as of the Closing Date" language means that Sharon did *not* assume any liabilities under a later-enacted statute, such as CERCLA.

In *Georgia-Pacific Consumer Products, LP v. International Paper Co.*, 566 F. Supp. 2d 246 (S.D.N.Y. 2008), the court interpreted very similar language under New York law and held that after-enacted CERCLA liabilities were not within the scope of the assumption. There, the purchaser assumed:

> all of Federal's debts and liabilities of every kind, character or description, whether known or unknown, whether disclosed or undisclosed, whether accrued,

> absolute, contingent or otherwise, and whether or not reflected or reserved against in Schedules A or B to the Agreement and which are directly attributable to the New Jersey Operations, as the same exist on the date hereof, and does hereby agree to pay, perform and discharge, when due, all of the said debts and liabilities.

Id. at 249.

This language is nearly identical to that of the 1979 APA: the purchaser assumed "all . . . liabilities," including those of "every kind, character or description," and "contingent" liabilities – the very same language you rely on in arguing that Mueller assumed after-arising CERCLA liabilities. Yet the court found it quite clear that the purchaser's "assumption of liabilities did not include those arising under CERCLA, a later-enacted . . . law." *Id.* at 250. While you briefly mention the case in a footnote, the only distinguishing language you point to is the phrase "directly attributable to the New Jersey Operations, as the same exist on the date hereof." But the language the court obviously relied on was the "on the date hereof" language, which is effectively identical to that in the 1979 APA.

Substantial additional authority confirms this result, with courts regularly reaching the same conclusion as *Georgia-Pacific*. In *State ex rel. Bellaire Sanitation, Inc. v. Gopher Oil Co.*, No. C8-94-225, 1994 WL 328631 (Minn. Ct. App. Sept. 16, 1994), the court interpreted the following language, which is again nearly identical to that of the 1979 APA:

> *All liabilities* of the Company of any nature, whether accrued, absolute, contingent, or otherwise, *existing at closing*, to the extent not reflected or reserved against in full in the Company's financial statements or otherwise mentioned or excepted herein, * * * *arising out of transactions entered into, or any state of facts existing, prior to such date.*

Id. at *1 (emphasis and omission in original).

Once again, the court had no difficulty in concluding that an after-enacted state statute analogous to CERCLA was not within the scope of the assumed liabilities, because "[t]he qualifying phrase 'existing at closing' clearly limits Gopher State's liability," notwithstanding the fact that "[a]ll liabilities" of "any nature" including "contingent" liabilities were assumed. *Id.* The Eighth Circuit followed this decision, holding that CERCLA liabilities did not arise until "after the agreement" was entered into. *Gopher Oil Co. v. Bunker*, 84 F.3d 1047, 1052 (8th Cir. 1996).

A similar agreement was addressed in *United States v. Vermont American Corp.*, 871 F. Supp. 318 (W.D. Mich. 1994). There, the agreement provided that the buyer assumed, among other obligations, "[a]ll additional debts, obligations, and liabilities of the seller, whether or not matured and whether or not contingent, existing on the Closing date." *Id.* at 321. The court

found that because CERCLA was enacted after the agreement "as a matter of law . . . there is no question that the CERCLA liability was not a liability that existed on the closing date." *Id.*[6]

B. New York Case Law Further Supports the Conclusion that Future CERCLA Liabilities of USS Lead Were Not Assumed by Sharon Steel.

New York law, which governs interpretation of the 1979 APA agreement,[7] reinforces this CERCLA case law.

In *Grant-Howard Associates v. General Housewares Corp.*, 472 N.E.2D 1 (N.Y. 1984), the New York Court of Appeals considered a clause whereby the purchaser agreed to assume only those "obligations and liabilities" of the seller's business "which exist[ed] at the Closing Date," *id.* at 2. The seller brought suit, arguing that tort claims based on injuries which occurred after the sale were contingent liabilities which the buyer had assumed. The Court of Appeals rejected this argument because it concluded that the liabilities did not exist at the time of sale. The Court of Appeals recognized that "'contingency' invokes uncertain events," but held that "the uncertainty should be restricted to the success of asserting an existing claim, *rather than expanding it to include* [*an*] *altogether unpredictable event* . . . . Were plaintiffs' position to be adopted, a purchaser would be unable to meaningfully limit its liability . . . ." *Id.* at 3-4 (emphasis added). Precisely the same rationale applies to the 1979 APA, and requires concluding that the after-arising CERCLA obligations were not transferred to Sharon.

New York courts have also repeatedly held that "[a] court may not construe an agreement so that it is modified by a subsequent statutory enactment which changes the rights and obligations of the parties absent a clear expression in the contract that such is the parties' intention." *Huskission v. Sentry Ins.*, 123 A.D.2d 832, 833 (N.Y. App. Div. 2d Dep't 1986); *see also Travelers Indem. Co. v. Orange & Rockland Utilities, Inc.*, 73 A.D.3d 576, 577 (N.Y. App. Div. 1st Dep't 2010) ("[A] contract generally incorporates the state of the law in existence at the time of its formation . . . ."); *Pioneer Transp. Corp. v. Kaladjian*, 105 A.D.2d 698, 698 (N.Y App. Div. 2d Dep't 1984) ("In the absence of a clear expression in the contract that such is the parties' intention, a court may not construe an agreement so that it is modified by a subsequent statutory enactment which changes the rights and obligations of the parties.").

Moreover, to the extent there is ambiguity in the contract, that compels a conclusion that Sharon did *not* assume CERCLA liabilities. New York requires an "unmistakable intent" to

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[6] The one case reaching a contrary result is *A-C Reorganization Trust v. E.I. DuPont De Nemours & Co.*, No. 94-574, 1997 WL 381962 (E.D. Wis. Mar. 10, 1997). However, that court failed entirely to discuss the limiting language in the assumption agreement that limited the assumed liabilities to those that "exist at the closing date." *Id.* at *5. That unpublished decision has never been followed, and indeed the *Georgia-Pacific* court expressly declined to follow it, commenting on the decision's lack of "analysis." *Georgia-Pacific*, 566 F. Supp. 2d at 253.

[7] Ex. 1 at ¶ 19.

transfer liabilities before a court will enforce such an obligation. *Haynes v. Kleinewefers*, 921 F.2d 453, 456 (2d Cir. 1990) (applying New York law, citing *Heimbach v. Metro. Transp. Auth.*, 553 N.E.2d 242 (N.Y. 1990)). Indeed, an alleged indemnification provision "must be strictly construed to avoid reading into it a duty which the parties did not intend to be assumed." *Hooper Assocs., Ltd. v. AGS Computers, Inc.*, 548 N.E.2d 903, 905 (N.Y. 1989); *see also Olin Corp. v. Consol. Aluminum Corp.*, 5 F.3d 10, 15 (2d Cir. 1993) (applying same standard in the CERCLA context).

C. The Government's Alternative Interpretation of the "as of the Closing Date" Language Is Unsupported by Precedent and Incorrect.

Your attempt to distinguish the favorable case law – which deals with nearly identical language – rests on two paragraphs arguing that there is an outcome-determinative difference between language referring to "liabilities . . . existing as of the closing date" and "liabilities . . . as of the closing date." Letter at 5-6. That is wrong, and you cite no case law finding that the former language is *required* to limit assumed liabilities to those existing at the time of sale, nor any finding that the latter language is *sufficient* to transfer after-enacted CERCLA liabilities.[8]

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[8] All of the cases you cite in support of your position that Sharon assumed the future-arising CERCLA liabilities do not contain limitations to liabilities as of the closing date in the relevant contractual language, and so are entirely inapposite. *Peoples Gas Light & Coke Co. v. Beazer East, Inc.*, 802 F.3d 876, 881-82 (7th Cir. 2015) (release of "liability of any character" includes release of CERCLA liabilities); *Kerr-McGee Chem. Corp. v. Lefton Iron & Metal Co.*, 14 F.3d 321, 326-27 (7th Cir. 1994) (assumption of "any and all" liabilities relating to "pollution"); *E.I. Du Pont de Nemours & Co. v. United States*, 365 F.3d 1367, 1372 (Fed. Cir. 2004) (assumption of "any" losses arising out of certain conduct); *White Consol. Indus., Inc. v. Westinghouse Elec. Corp.*, 179 F.3d 403, 410 (6th Cir. 1999) (assumption of "[a]ll"' *unknown* liabilities); *Dent v. Beazer Materials & Servs.*, 156 F.3d 523, 534 (4th Cir. 1998) (assumption of "any and every claim"); *ALCOA v. Beazer E., Inc.*, 124 F.3d 551, 566 (3d Cir. 1997) (assumption of "all of the liabilities and obligations"); *Smithkline Beecham Corp. v. Rohm & Hass Co.*, 89 F.3d 154, 159 (3d Cir. 1996) (assumption of "[a]ll" liabilities arising out of pre-closing conduct); *Joslyn Mfg. Co. v. Koppers Co.*, 40 F.3d 750, 754 (5th Cir. 1994) (assumption of "all" liability relating to certain conduct); *United States v. Iron Mountain Mines, Inc.*, 987 F. Supp. 1233, 1241 (E.D. Cal. 1997) (assumption of "all of the liabilities"); *see also Marmon Grp., Inc. v. Rexnord, Inc.*, 822 F.2d 31, 33 (7th Cir. 1987) (reversing on procedural grounds, holding that the scope of the indemnity clause could not be determined at the motion to dismiss stage, but declining to opine about the clause's scope).

Indeed, two of the cases you cite (in addition to *Vermont American and Georgia-Pacific*) *support* the position that the assumption of liabilities as of the closing date does not include future-arising liabilities. In *Olin Corp. v. Consolidated Aluminum Corp.*, 5 F.3d 10 (2d Cir. 1993), the purchaser assumed "all liabilities" "as they exist on the Effective Time *or arise thereafter*," which the court held was language sufficient to encompass "future unknown" CERCLA liabilities, *id.* at 15-16 (emphasis added). The court relied on the "arise thereafter"

(continued...)

As a textual matter, an agreement to assume "liabilities of the Seller as of the closing date" would, in common usage, be understood to encompass those liabilities that existed (including in contingent or other form) as of the closing date. Your alternative reading, that the language "simply provides a cut-off date for the acts or omissions of UV/USSRAM that Mueller assumes liability for," Letter at 5, does not square with the text – had that been the intended position, then the agreement would have assumed all liabilities arising out of actions that took place *before* the closing date, not liabilities "as of" the closing date.

Indeed, the case law confirms that assumption of liabilities "as of" a date limits the assumption to liabilities that exist as of that date. For example, one court has held that the plain language of an assumption of liability "as of" a closing date means that "the agreement says that the [purchaser] agrees to assume only those liabilities in existence 'as of [the closing].'" *Alabama v. FDIC*, 840 F. Supp. 2d 1305, 1311 (M.D. Ala. 2012); *see also Fisher v. A.O. Smith Harvestore Prods., Inc.*, 145 A.3d 738, 751 (Pa. Super. 2016) (Dubow, J., concurring) (agreement to pay for "liabilities . . . as of the Closing Date" means that in order for the buyer "to assume a liability, the liability must exist as of the closing date"). You cite no authority in support of an opposite interpretation of the language "as of the closing date."

Finally, you argue that Mueller's interpretation would render the phrases "all," "any kind, character, or description," and "contingent" superfluous. That is not so: there can be contingent liabilities, and other forms of liabilities, "as of the closing date." Mueller's position is it did indeed assume "all" liabilities of "any kind," but *only* those existing "as of" the date of the asset sale. And, as discussed in the following section, liabilities created by an after-arising statute are not contingent. No word is being read out of the contract, nor is any word being rendered superfluous. Rather, the contract is simply being afforded its plain textual meaning.

D. Future CERCLA Liabilities Were Not Contingent Liabilities in 1979.

Your argument that Sharon Steel must have assumed the after-arising CERCLA liabilities because they were "contingent" liabilities at the time of sale is incorrect. Construing a "contingent" liability to encompass the enactment of a new law would inappropriately expand the meaning of the term. Indeed, the one case to squarely address this issue in the CERCLA context has rejected your interpretation. *Chrysler Corp. v. Ford Motor Co.*, 972 F. Supp. 1097 (E.D. Mich. 1997). There, the purchaser assumed "all liabilities . . . existing on the closing date of every nature whatsoever, whether absolute [or] contingent." *Id.* at 1108. The court found that CERCLA liabilities were not encompassed because the statute had not yet been enacted, and explained that the future enactment of a statute was not a "contingent" liability:

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language, and acknowledged that under New York law such a "clear and unmistakable intent" to indemnify or assume liabilities must exist. *Id*; *see also John S. Boyd Co. v. Boston Gas Co.*, 992 F.2d 401, 406-07 (1st Cir. 1993) (assumption of obligations "pertaining only to the existing business" and not "future" liabilities does not include CERCLA assumption of liabilities, even where the language indicates that "all the duties and liabilities" were assumed).

> On its face, defendants' argument seems to stretch the meaning of the word contingent. A contingent liability is defined as, 'One which is not now fixed and absolute, but which will become so in the case of the occurrence of some future and uncertain event.' BLACK'S LAW DICTIONARY, 321 (6th Ed. 1990). To say that the 'future event' may include the passage of a law creating the liability is pointless and illogical. A liability is nonexistent until it is created by law.

Id. at 1108-09. Precisely the same analysis applies to your attempt to broadly construe the term "contingent" in the 1979 APA to encompass liability stemming from after-enacted statutes.[9]

Other courts, including those of New York law, are in accord with this conclusion. As the Second Circuit has explained:

> There is a difference between a contingent liability and a plain 'contingency.' A contingent liability is one thing, a contingency, the happening of which may bring into existence a liability, is another, and a very different thing. In the former case there is a liability which will become absolute upon the happening of a certain event; in the latter there is none until the event happens. The difference is simply that which exists between a conditional debt or liability and none at all.

Bush v. Remington Rand, 213 F.2d 456, 462 (2d Cir. 1954) (internal quotation marks omitted). CERCLA's passage created new liability; it makes no sense to see it as an extant liability at the time of the 1979 Purchase Agreement that was triggered by the occurrence of a subsequent event.

Grant-Howard Associates v. General Housewares Corp., 472 N.E.2d 1 (N.Y. 1984), discussed above, also plainly held under New York law that "contingent" liabilities do not include liabilities based on events that occur after the transaction date, because "the uncertainty should be restricted to the success of asserting an existing claim, *rather than expanding it to include the altogether unpredictable event* . . . . Were plaintiffs' position to be adopted, a purchaser would be unable to meaningfully limit its liability . . . ." *Id.* at 3-4 (emphasis added).

Similarly, in *Climatrol Industries, Inc. v. Fedders Corp.*, 501 N.E.2d 292 (Ill. App. Ct. 1986), the court construed an agreement by which the buyer assumed "liabilities or obligations . . . of any nature, whether accrued, absolute, contingent or otherwise which exist on the Closing Date" – language effectively identical to that contained in the 1979 agreement, *id.* at 293. The court concluded that the agreement "unambiguously" covered "only those liabilities which existed on the closing date" and rejected an argument that tort claims accruing after the date of sale constituted contingent liabilities, *id.* at 294. To hold otherwise, the court concluded, would

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[9] Even if it were true that Sharon Steel assumed UV Industries' CERCLA liabilities, it would only have assumed the CERCLA liabilities of UV Industries itself, not UV's subsidiary, USS Lead. *See generally United States v. Bestfoods*, 524 U.S. 51 (1998).

mean the purchaser "assumed unlimited liabilities, despite its clear intention to assume only specifically disclosed liabilities." *Id.*; *see also Chigos v. Werner Co.*, No. 12-1350, 2014 WL 12596525, at *5 (M.D. Fla. Feb. 26, 2014) (rejecting expansive interpretation of contingent liability language in assumption of liability agreement because it would make it "difficult, if not impossible, for [the buyer] to have meaningfully limited the liability it was willing to assume, as it would have been practically impossible to forecast the scope of potential future claims").

Precisely the same reasoning applies to the 1979 APA. Sharon agreed to assume "contingent liabilities," but only those existing "as of" the closing date. Case law makes clear that contingent liability does not mean any subsequent imaginable liability, nor does it encompass after-enacted statutes.

E. Other Contemporary Agreements and Documents Demonstrate the Intent of the Parties to Transfer Only Liabilities Existing as of the Closing Date to Sharon.

Mueller submits that the ordinary, plain-language reading of the contractual language is that the liabilities assumed are only those as of the closing date, and the CERCLA liabilities plainly were not liabilities "as of the closing date," because the statute had not even been enacted. However, even if the 1979 agreement was viewed as ambiguous on this point, other contemporaneous agreements between the parties conclusively show that the parties did *not* contract for Sharon to assume UV Industries' future liabilities.[10]

First, a November 26, 1979 letter agreement between Sharon Steel and UV Industries – executed the same day as the asset purchase agreement – recites that under the asset purchase agreement "Sharon will purchase all of the assets and assume all of the liabilities of UV *existing on November 26, 1979*." Sharon Steel - UV Industries, Inc. Agreement (Nov. 26, 1979) (Exhibit 3).

Second, the contemporaneous 10-K filings of both UV Industries and Sharon Steel confirm that only liabilities existing as of the closing date were transferred. In the 10-K filing attaching the liquidating trust agreement, UV Industries, Inc. explained that the UV-Sharon agreement involved Sharon assuming "all of UV's debts, obligations, contracts and liabilities *existing on such date*." UV Industries FY 1979 10-K at 2 (emphasis added) (Exhibit 4). Sharon Steel articulated precisely the same understanding in its 10-K filing, noting that Sharon assumed "all of UV's liabilities (except for certain tax liabilities) *existing on such date*." Sharon Steel FY 1979 10-K Item 1 (emphasis added) (Exhibit 5).

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[10] While Mueller believes the contractual assumption of liabilities unambiguously excludes any assumption of CERCLA liabilities, this extrinsic evidence provides further support for that position and may be considered to the extent the "contract is ambiguous." *U.S. Fire Ins. Co. v. Gen. Reinsurance Corp.*, 949 F.2d 569, 574 (2d Cir. 1991).

Third, a March 24, 1980 contract between UV Industries, Inc. and the UV Liquidating Trust's trustees recites that the 1979 asset purchase agreement involved Sharon Steel's "assumption of substantially all of UV's debts, obligations, contracts and liabilities *existing on such date . . . .*" UV Industries – UV Liquidating Trust Agreement at 1 (Mar. 24, 1980) (emphasis added) (Exhibit 6). Thus, UV's own internal contractual documents demonstrate that only existing liabilities were transferred to Sharon.

Fourth, in the APA, UV represented and warranted as follows regarding its liabilities:

> The financial statements contained (i) in Seller's annual report on Form 10-K for the year ended December 31, 1978 and (ii) in Seller's Quarterly Report on Form 10-Q for the quarter ended September 30, 1979 ("Seller's Interim Statements") are true and complete in all material respects . . . and *fairly reflect the financial condition, assets and liabilities (whether accrued, absolute, contingent or otherwise) of the Seller and its Subsidiaries (as defined below) as of the dates thereof . . . .*

Ex. 1 ¶ 5.c. (emphasis added).

Accordingly, UV represented that its financial statements in its 10-K and 10-Q filings "fairly reflect" the "liabilities" of UV and its subsidiaries, "whether accrued, absolute, contingent or otherwise." But those filings do not contain <u>any</u> indication of environmental liabilities. Accordingly, because parallel language was used in this provision describing the liabilities of UV, and those liabilities did not include any CERCLA liabilities, that provides further evidence that the parties did not intend in the APA to transfer any post-enactment environmental liabilities to Sharon. *See* UV Industries, Inc., FY 1978 10-K at F-5 (April 05 1979) (listing only $6 million in long-term liabilities, and not discussing potential CERCLA liabilities) (Exhibit 7); *id.* at 13 ("The Company believes it is in material compliance with applicable environmental laws and regulations and is not aware of any ecological problems at any of its operations which are material to its business."); UV Industries, Inc., 10-Q at 7 (Nov. 14, 1979) ("Management does not know of any material contingent liability.") (Exhibit 8); *id.* at 2 (listing $33 million in "[d]eferred income taxes and other long-term liabilities," most of which are deferred income taxes, given that the 1978 10-K listed nearly $29 million in deferred incomes taxes, *see* Ex. 7 at F-5).

Indeed, the *Chrysler* court reached precisely that conclusion with respect to a similar agreement, explaining in support of its conclusion that a pre-CERCLA agreement did not transfer CERCLA liabilities that when the buyer "accepted responsibility for contingent liabilities existing on the date of closing, neither party understood those contingent liabilities to include environmental liabilities. No such liability was disclosed in [seller's] Annual Reports for the period." 972 F. Supp. at 1110.

F. The UV Liquidating Trust *Did* Assume UV Industries' After-Arising CERCLA Liabilities, as the Government Previously Argued.

In the *Midvale* litigation, the Government argued that the UV Liquidating Trust—and only the Trust—assumed UV's CERCLA liabilities.[11] In support, it relied on the assumption of liabilities agreement executed by the UV Liquidating Trust, which provided that the UV Liquidating Trust assumed:

> all debts, obligations, contract and liabilities and expenses of UV as of the date [of the assumption], of any kind, character or description, direct or indirect, whether accrued, absolute, contingent, ascertained or otherwise, and whether asserted before or after such date to the extent not assumed and paid for by Sharon Steel Corporation . . . .

Plaintiff United States of America's Memorandum in Response to the Motions for Reconsideration and Summary Judgment on Behalf of Defendants UV Industries, Inc. Liquidating Trust and UV Industries, Inc., and in Support of its Cross Motion for Summary Judgment at 21, *U.S. v. Sharon et al.*, No. 86-C-924J (D. Utah July 6, 1989) (alterations in original) (quoting UV Liquidating Trust assumption agreement) (Exhibit 9).[12]

Because the Trust assumed liabilities only "to the extent not assumed and paid for by Sharon Steel Corporation," the necessary implication of the Government's argument in the *Midvale* case that the UV Liquidating Trust was the successor to UV Industries is that Sharon Steel did *not* assume UV's CERCLA liabilities. That is because under the UV Liquidating Trust assumption agreement, the Liquidating Trust assumed only liabilities *not* assumed by Sharon Steel, and the Government successorship argument as to the UV Liquidating Trust was founded on the assumption of liabilities agreement.

Thus, while as a hypothetical matter it may be possible, as you suggest in your letter, for multiple entities to assume the same liability, the plain language of these agreements makes clear that the CERCLA liabilities could have gone *only* to one party, and the Government has already taken the (correct) position that those liabilities went to the Trust. *See* Reply of the United States to Defendants' Oppositions to the United States' Motion for Partial Summary Judgment and Answer in Opposition to Defendants' Cross-Motions for Summary Judgment at

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[11] *See, e.g.*, Transcript of Summary Judgment Hearing at 37:24-38:1, *U.S. v. Sharon et al.*, No. 86-C-924J (D. Utah Aug. 14, 1990) (Ben Fisherow representing to the court that "[t]he [UV] Trust is *the* successor to the United States Smelting, Mining & Refining Company which owned [and] operated this site for decades" (emphasis added)) (Exhibit 11).

[12] *See also* UV Industries, Inc. Liquidating Trust Agreement ¶ 2.4 (Exhibit 4) ("The Trustees hereby assume all of the liabilities and claims (including unascertained or contingent liabilities and expenses) of UV."

17, *U.S. v. Sharon et al.*, No. 86-C-924J (D. Utah June 21, 1990) ("The Trust is the successor to UV. The instrument of Assumption of Liabilities executed by the Trust . . . provides that the Trust assumed UV's liabilities.") (Exhibit 10).

G. It Would Be Inequitable to Try to Force Mueller, a Successor to an Innocent Purchaser of Assets (Sharon), to Pay for UV's CERCLA Liabilities.

Moreover, it would be fundamentally unfair to impose liability on Mueller for UV Industries' CERCLA liabilities: it was the UV Liquidating Trust and its stockholders, *not* Sharon Steel, that benefitted from any release of hazardous substances from the USS Lead facility before Sharon's purchase in 1979. *See Olin Corp. v. Consolidated Aluminum Corp.*, 5 F.3d 10, 16 (2d Cir. 1993) (noting the "very strong equitable argument" that it would be unfair to force an asset purchaser "to assume a liability that did not exist at the time of contract for conditions that it did not create").

Indeed, in the *Midvale* case one of the Government's arguments for holding the UV Liquidating Trust liable – characterized by the Government as an "important equitable consideration[]," – was that the Trust beneficiaries "are all people who have profited, or seek to profit, from UV's former business activities," and "have gained significantly, and stand to gain further, from the distribution of the UV sale proceeds." Ex. 9 at 23-24.

This argument was adopted by the *Midvale* court in ruling the on the Government's motion for summary judgment seeking to the hold UV Liquidating Trust liable. The Court explained that it had previously held the Trust was liable as a successor, and indicated that "if we have assets that are transmuted into money, the money rides with the burden" – meaning that the burden of UV's liabilities flowed with the money UV received from the sale of assets to Sharon, and thus flowed to the UV Liquidating Trust. *See* Tr. of Summary Judgment Hearing at 170:22-171:6 (Exhibit 11). The Government then settled with the UV Liquidating Trust and consented to its dissolution, in exchange for a payment of $11 million. *See* Partial Consent Decree at 22-23, *U.S. v. Sharon et al.*, No. 86-C-924J (D. Utah Nov. 15, 1990) (Exhibit 12); Tr. of Hearing on Presentation of Settlement Decrees at 8:15-18, *U.S. v. Sharon et al.*, No. 86-C-924J (D. Utah Nov. 13 1990) (government statement that "UV's settlement will bring 60 percent of the UV Trust's current assets, which are currently approximately $18 million, which nets us about 11 million") (Exhibit 13).

* * *

We note that you decline to discuss "UV/USSRAM's liability for USS Lead," Letter at 2 n.2, which appears to refer to your argument that the corporate veil between USS Lead and its parent entity may be pierced. You also declined to discuss any of your evidentiary basis for that contention in a subsequent phone call. We are surprised at your unwillingness to provide any information about this, particularly given that you apparently intend to seek to recover response costs from Mueller for conducting the review of USS Lead documents. In any event, we do not see how it is in anyone's interest to keep secret the government's basis for believing the

corporate veil can be pierced: that fosters neither goodwill nor settlement negotiations between Mueller, the Government, and the PRP group.

While we appreciate your making available for discussion portions of your legal position, we respectfully and strenuously disagree.

Very truly yours,

E. Donald Elliott
Thomas R. Brugato

cc: Steven Kaiser Office of Regional Counsel, Environmental Protection Agency-Region 5
Chris Miritello, Vice President, General Counsel and Secretary, Mueller Industries, Inc.

APPENDIX N

TO
Z2&3 INTERIOR UAO

104(e) Information Request Issued by EPA to USS Lead (May 25, 2017)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Norman Johnson, Vice President
U.S.S. Lead Refinery, Inc.
4780 Caterpillar Road Unit C
Redding, CA 96003

MAY 25 2017

Re: Supplemental Request for Information Pursuant to Section 104(e) of CERCLA for the U.S. Smelter and Lead Refinery Superfund Site, East Chicago, Indiana.

Dear Mr. Johnson:

The U.S. Environmental Protection Agency and U.S. Smelter and Lead Refinery, Inc. (USS Lead) have been corresponding with one another on issues arising out of the operations at the former USS Lead facility located at 5300 Kennedy Avenue, East Chicago, Indiana, since at least 1987. Previous correspondence has included EPA's formal requests for information in letters dated: January 26, 1987; March 27, 1991; September 22, 2005; December 12, 2006; and March 3, 2015. We appreciate USS Lead's prior responsiveness.

In response to previous requests for information, USS Lead has allowed EPA to review and copy information pertaining to the USS Lead facility, and USS Lead's former customers and material suppliers. This information allowed EPA to identify parties who may be potentially liable for either performing or funding the cleanup of contaminated soils.

EPA continues to develop a more complete understanding of USS Lead's operations at the East Chicago facility. As you are aware, in response to EPA's March 3, 2015 information request, EPA reviewed and made copies of some of the documents stored at USS Lead's warehouse in Redding, California.

By this letter, EPA is formally requesting additional access to approximately 350 specific boxes of USS Lead records at the Redding warehouse. As with EPA's prior review, we would examine the records in California and copy them as warranted.

We encourage you to give this matter your immediate attention and request that you provide a complete, accurate and truthful response to the enclosed questions (Enclosure C) within fifteen (15) calendar days of your receipt of this letter. A list of the boxes EPA is interested in is also included (Enclosure D). Instructions and Definitions (Enclosures A and B, respectively) as well as a Declaration (Enclosure E) also have been enclosed to assist you with completing your response. EPA would like to undertake its record review within forty-five (45) days of receiving your response to this information request.

Section 104(e)(2) of CERCLA, 42 U.S.C. § 9604(e)(2), gives EPA information gathering authority that allows EPA to require persons to furnish information or documents relating to:

(a) The identification, nature and quantity of materials which have been or are generated, treated, stored or disposed of at facility or transported to facility;

(b) The nature or extent of a release or threatened release of a hazardous substance or pollutant or contaminant at or from a facility; and

(c) Information relating to the ability of a person to pay for or to perform a cleanup.

While EPA seeks your cooperation in this investigation, compliance with this request for information is required by law. Please note that false, fictitious or fraudulent statements or representations may subject you to civil or criminal penalties under federal law.

Some of the information EPA is requesting may be considered by you to be confidential. Please be aware that you may not withhold the information upon that basis. If you wish EPA to treat the information confidentially, you must advise EPA of that fact by following the procedures outlined in Enclosure A, including the requirement for supporting your claim for confidentiality.

If you have information about other parties who may have information that may assist the agency in its investigation of the Sites or may be responsible for the contamination at the Sites, that information should be submitted within the time frame noted above.

This request for information is not subject to the approval requirements of the Paperwork Reduction Act of 1995, 44 U.S.C. § 3501 et seq.

Your response to this request for information should be mailed to:

Steve Kaiser (C-14J)
U.S. Environmental Protection Agency, Region 5
Office of Regional Counsel
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

If you have additional questions about the history of the Site, the nature of the environmental conditions at the Sites or the status of cleanup activities, please visit EPA's website https://www.epa.gov/uss-lead-superfund-site. You also may contact Steve Kaiser, Assistant Regional Counsel at (312) 353-3804, or kaiser.steven@epa.gov.

We appreciate and look forward to your prompt response to this Information Request.

Sincerely,

Marcy Toney, Section Chief
Office of Regional Counsel

Enclosures

A Instructions
B Definitions
C Requests
D Box List
E Declaration

Enclosure A
Information Request
USS Lead Site

INSTRUCTIONS

1. Answer Each Question Completely. You must provide a separate answer to each question and subpart set forth in this Information Request. Incomplete, evasive, or ambiguous answers shall constitute failure to respond to this Information Request and may subject you to the penalties set out in the cover letter.

2. Response Format and Copies. Provide the responses to this Information Request and copies of all requested documents either electronically or on paper (hard copy). Your submission, whether electronic or hard copy, must include an index that lists all the responsive documents provided, and that indicates where each document is referenced in the written response, and to which question or questions each document is responsive.

Any documents you determine to be Confidential Business Information ("CBI") must be segregated out and submitted in a separate folder or on a separate compact disc ("CD"). These documents must be clearly marked as "Confidential Business Information."

If providing your response electronically, it must be submitted on a CD in Portable Document Format ("PDF") and comply with the following requirements:

(a) CBI and personal privacy information ("PII") should be provided on separate media (e.g., a separate CD) and marked as such to ensure information is appropriately handled.

(b) All documents originally smaller than 11 by 17 inches can be submitted electronically; any documents originally larger than 11 by 17 inches must be submitted in hard copy.

(c) Electronic PDF files must be text-searchable.

(d) The document index must clearly identify any single electronic document which has been separated into multiple electronic files (because of size limitation or otherwise) and each component file that comprises the full document.

3. Number Each Answer. Number each answer with the number of the question to which it corresponds.

4. Provide the Best Information Available. You must provide responses to the best of your ability, even if the information sought was never put down in writing or if the written documents are no longer available. You should seek out responsive information from current and former employees/agents. Submission of cursory responses when other responsive information is available to the Respondent will be considered noncompliance with this Information Request.

5. Identify Information Sources. For each question, identify all persons and documents you relied on for your answer.

6. Confidential Information. You must provide the information requested even though you may contend that it includes confidential information or trade secrets. You may assert a confidentiality claim covering part or all of the information requested, pursuant to 42 U.S.C. §§ 9604(e)(7)(E) and (F), and 40 C.F.R. § 2.203(b). All information claimed to be confidential should be contained on separate sheet(s) and should be clearly identified as "trade secret," "proprietary" or "company confidential". Your confidentiality claim should be supported by the submission of information consistent with 40 C.F.R. Part 2. Information covered by a confidentiality claim will be disclosed by the EPA only to the extent, and only by means of the procedures, provided in 40 C.F.R. §§ 2.201-2.311. If no such claim accompanies the information received by the EPA, it may be made available to the public by the EPA without further notice to you.

You should also provide a redacted version of the same document that removes all CBI and PII from the document. This redacted version of the document should remove all information that you claim is CBI or PII. Since all the CBI and PII is removed, this redacted version is not subject to the procedures of 40 C.F.R. Part 2. The EPA may make this redacted version available to the public without further notice to you.

7. Disclosure to the EPA Contractor. Information that you submit in response to this Information Request may be disclosed by the EPA to authorized representatives of the United States, pursuant to 40 C.F.R. § 2.310(h), even if you assert that all or part of it is confidential business information. The EPA may provide this information to its contractors for the purpose of organizing and/or analyzing the information contained in the responses to this Information Request. If you are submitting information that you assert is entitled to treatment as confidential business information, you may comment on this intended disclosure within twenty (20) business days of receiving this Information Request.

8. Personal Privacy Information. Personnel and medical files, and similar files the disclosure of which to the general public may constitute an invasion of privacy, should be segregated from your responses, included on separate sheet(s), and marked as "Personal Privacy Information." You should note, however, that unless prohibited by law, the EPA may disclose this information to the general public without further notice to you.

9. Objections. While you may object to certain questions in this Information Request, you must provide responsive information notwithstanding those objections. To object without providing responsive information may subject you to the penalties set out in the cover letter.

10. Privilege. If you claim that any document responsive to this Information Request is a communication for which you assert that a privilege exists for the entire document, identify (see Definitions) the document and provide the basis for asserting the privilege. For any document for which you assert that a privilege exists for a portion of it, provide the portion of the document for which you are not asserting a privilege, identify the portion of the document for which you are asserting the privilege, and provide the basis for such an assertion. Please note that regardless of the assertion of any

privilege, any facts contained in the document that are responsive to the Information Request must be disclosed in your response.

11. Declaration. You must complete the enclosed declaration, in hard copy with an original signature, certifying the accuracy of all statements in your response.

Enclosure B
Information Request
USS Lead Site

DEFINITIONS

1. The terms “agreement” and “arrangement” means every separate contract, transaction, or invoice, between two or more persons, whether written or oral.

2. The terms “and” and “or” shall be construed either disjunctively or conjunctively, as necessary, to bring within the scope of this request any information which might otherwise be construed to be outside its scope.

3. The terms “document” and “documents” mean any method of recording, storing or transmitting information. “Document” includes, but is not limited to:

(a) writings of any kind, including, but not limited to, any of the following:

i. letters, memoranda, fax transmittals;
ii. meeting minutes, telephone records, notebooks;
iii. agreements and contracts;
iv. reports to shareholders, management, or government agencies;
v. transportation manifests;
vi. copies of any document;

(b) any film, photograph, or sound recording on any type of device;

(c) any blueprints or drawings; and

(d) attachments to, or enclosures with, any document.

4. The term “facility” shall have the same definition as that contained in Section 101(9) of CERCLA, and includes (a) any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft, or (b) any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any vessel.

5. The term “identify” means, with respect to a natural person, to set forth: (a) the person’s full name; (b) present or last known business and home addresses and telephone numbers; and (c) present or last known employer (include full name and address) with job title, position or business.

6. The term “identify” means, with respect to a corporation, partnership, business trust or other entity, to set forth: (a) its full name; (b) complete street address; (c) legal form (e.g., corporation,

partnership); (d) the state under whose laws the entity was organized; and (e) a brief description of its business.

7. The term "identify" means, with respect to a document, to provide: (a) its customary business description (e.g., letter, invoice); (b) its date; (c) its number if any (e.g., invoice or purchase order number); (d) the identity of the author, addressee, and/or recipient; and (e) a summary of the substance or the subject matter. Alternatively, Respondent may provide a complete copy of the document.

8. The term "person" shall have the same definition as that contained in Section 101(21) of CERCLA, and includes an individual, firm corporation, association, partnership, consortium, joint venture, U.S. government, State, municipality, commission, political subdivision of a State or any interstate body.

9. The term "property" means any interest in real or personal property whatsoever, including fee interests, leases, licenses, rental and mineral rights.

10. The term "you" or "Respondent" means U.S. Smelter and Lead Refinery, Inc..

Enclosure C
Information Request
USS Lead Site

REQUESTS

1. Please provide times and dates within the forty-five (45) day period after your response to this request is due when representatives of EPA may have access to documents and/or records that are contained in the specific boxes identified on Enclosure D that are located in USS Lead's warehouse in Redding, California, for the purpose of inspecting and/or copying all such documents and/or records. The inspection of the records and potential copying likely will take more than one day; therefore, please provide dates of access on continuous days for as many one week periods as possible.

2. Identify all persons consulted in the preparation of the answers to this request for information.

Enclosure D
List of Requested Boxes
USS Lead Site

BOX LIST

106	662	708	861	1004	1181	1378	1460	1499	1537	1628
120	663	709	863	1005	1182	1379	1461	1503	1538	1630
336	666	710	866	1008	1183	1380	1462	1504	1539	1631
363	667	711	868	1009	1184	1381	1465	1505	1540	1632
378	668	712	869	1010	1185	1382	1466	1506	1541	1633
489	669	713	870	1011	1186	1385	1467	1507	1542	1761
628	670	714	872	1012	1187	1386	1468	1508	1543	1813
629	671	716	875	1013	1188	1397	1469	1509	1544	1835
630	672	717	876	1017	1189	1412	1470	1510	1553	1845
631	673	722	878	1020	1191	1419	1473	1511	1554	2285
632	674	723	879	1022	1208	1422	1474	1512	1555	2351
633	675	724	882	1025	1209	1424	1475	1513	1556	2397
634	677	725	899	1028	1222	1425	1476	1514	1557	2414
635	679	727	901	1029	1239	1428	1477	1515	1559	2742
636	680	731	911	1044	1280	1429	1478	1516	1562	2803
637	682	733	921	1045	1281	1432	1479	1517	1563	2825
638	683	739	931	1046	1282	1433	1481	1518	1566	2827
639	685	740	932	1047	1283	1435	1482	1519	1567	2848
640	686	743	956	1048	1286	1436	1483	1520	1568	2868
641	688	744	965	1088	1291	1437	1484	1521	1569	2869
642	689	745	970	1115	1297	1438	1485	1522	1570	2877
644	691	746	972	1127	1298	1439	1486	1524	1596	2878
645	692	747	974	1137	1301	1440	1487	1525	1597	3286
646	694	748	975	1164	1302	1441	1488	1526	1602	3794
647	695	750	980	1170	1303	1442	1489	1527	1607	3824
649	696	751	983	1172	1304	1447	1490	1529	1608	4247
650	697	765	984	1173	1305	1449	1491	1530	1611	4250
653	698	769	990	1174	1306	1452	1492	1531	1614	4267
654	699	813	991	1175	1307	1454	1493	1532	1615	5277
655	701	827	992	1176	1315	1455	1494	1533	1616	5343
657	702	848	995	1178	1338	1456	1496	1534	1621	5581
658	703	849	1000	1179	1345	1457	1497	1535	1624	5584
660	707	855	1001	1180	1369	1459	1498	1536	1625	

Enclosure E
Information Request
USS Lead Site

DECLARATION

I declare under penalty of perjury that I am authorized to respond on behalf of the Respondent and that the foregoing is complete, true, and correct.

Executed on _____, 2017.

_____
Signature

_____
Type or Print Name

_____
Title

APPENDIX O

TO
Z2&3 INTERIOR UAO

104(e) Information Request Issued by EPA to USS Lead (Mar. 3, 2015)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

MAR 03 2015

REPLY TO THE ATTENTION OF:

SC-5J

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Norman Johnson, Vice President
U.S.S. Lead Refinery, Inc.
4780 Caterpillar Road Unit C
Redding, CA 96003

Re: Supplemental Request for Information Pursuant to Section 104(e) of CERCLA for the U.S. Smelter and Lead Refinery Superfund Site, East Chicago, Indiana.

Dear Mr. Johnson:

The U. S. Environmental Protection Agency (EPA) and U.S.S. Lead Refinery, Inc. (USS Lead) have been corresponding with one another on issues arising out of the operations at the former USS Lead facility located at 5300 Kennedy Avenue, East Chicago, Indiana, since at least 1987. Previous correspondence has included formal requests for information by EPA in letters dated: January 26, 1987; March 27, 1991; September 22, 2005; and December 12, 2006. USS Lead has been forthcoming in its responses to these requests for information, and EPA and the public have benefited from the information provided by USS Lead.

In response to previous requests for information, USS Lead has allowed EPA to review and copy information pertaining to the USS Lead facility, USS Lead's former customers and material suppliers. This information has allowed EPA to identify parties who may be potentially liable for the either performing or funding the cleanup of contaminated soils.

At this time, EPA is continuing to develop a more complete understanding of USS Lead's operations at the USS Lead facility, of its customer base, and of its suppliers. In a letter to Mr. Steinwurtzel dated April 24, 2014, Annette Lang, an attorney for the U.S. Department of Justice, inquired about access to "approximately 400 boxes of documents" in the custody of USS Lead that relate to the USS Lead Site. On April 25, 2014, Mr. Steinwurtzel responded to this inquiry noting that "there are approximately 1,200 boxes of USS Lead records which are currently located in Redding, California."

The purpose of this letter is to formally request, pursuant to the authority granted EPA in Section 104(e) of CERCLA, 42 U.S.C. § 9604(e)(2), access to these approximately 1,200 boxes of USS Lead records. EPA believes that these records contain information that pertains to one or more of the following:

(A) The identification, nature, and quantity of materials which have been generated, treated, stored, or disposed of at a vessel or facility or transported to a vessel or facility;

(B) The nature or extent of a release or threatened release of a hazardous substance or pollutant or contaminant at or from a vessel or facility; or

(C) Information relating to the ability of a person to pay for or to perform a cleanup."

EPA and DOJ understand that because of the condition of the records it is preferable to examine the records in Redding, California and to copy them there if any copying is warranted. The government would like to undertake this record review within sixty (60) days after USS Lead's response to this request is due.

We encourage you to give this matter your immediate attention. Enclosure 1 is a summary of the information that EPA has about the Site and of the Agency's activities at the Site. Enclosure 2 contains an Information Request. Please provide complete and truthful responses to this Information Request within 15 days of your receipt of this letter. Instructions to guide you in the preparation of your response are in Enclosure 3. Definitions of the terms used in this Information Request and in the Questions are set forth in Enclosure 4.

You may consider confidential the information that EPA is requesting. Under CERCLA, you may not withhold information that you consider confidential; but you may ask EPA to treat the information as confidential. To request that the Agency treat your information as confidential, you must follow the procedures outlined in Enclosure 5, including the requirement that you support your claim for confidentiality.

CERCLA gives EPA the authority to assess the threats to human health and the environment posed by contaminated sites and to clean up those sites. Under Section 104(e)(2) of CERCLA, 42 U.S. C. § 9604(e)(2), EPA has information-gathering authority that allows the Agency to require persons and corporations to furnish information or documents. Enclosure 6 is a summary of EPA's legal authority.

Compliance with this Information Request is mandatory. The Superfund statute provides that failure to answer the questions fully and truthfully and within the prescribed time frame can result in an enforcement action and penalties. Other statutes provide that the submission of false, fictitious statements, or misrepresentations can result in sanctions.

EPA has the authority to use the information that it requests in an administrative, civil, or criminal action.

This Information Request is not subject to the approval requirements of the Paperwork Reduction Act of 1995, 44 U.S.C. § 3501 *et seq*.

Return your response to EPA within fifteen (15) days of your receipt of this letter to:

Michael Rafati, Enforcement Specialist
U.S. Environmental Protection Agency
Superfund Division, Enforcement and Compliance Assurance Branch
77 W. Jackson Blvd., SE-5J
Chicago, IL 60604-3590

If you have any legal questions, please call Steven P. Kaiser. Associate Regional Counsel at (312) 353-3804, e-mail kaiser.steven@epa.gov. If there are technical questions about this Site, call Michael Berkoff, Remedial Project Manager at (312) 353-8983, e-mail berkoff.michael@epa.gov.

We appreciate your assistance and look forward to your prompt response to this Information Request.

Sincerely,

Evette L. Jones, Acting Chief
Enforcement and Compliance Assurance Branch

Enclosures

1. Site History
2. Requests for Information
3. Instructions
4. Definitions
5. Confidential Business Information
6. Legal Authority
7. Small Business Administration Fact Sheet

cc: Robert Steinmurtzel

Enclosure 1

SITE HISTORY ELEMENTS

This information request concerns the U.S. Smelter and Lead Refinery, Inc. (USS Lead) Superfund Site in East Chicago, Indiana (the Site).

In 1985, the Indiana Department of Environmental Management (IDEM) determined that lead particles from neighboring industrial sources had contaminated soils within the residential portion of the Site. The lead contaminated soils in the residential portion of the Site may pose a risk to human health and the environment. Wetlands are also located within the portion of the Site formerly occupied by USS Lead.

In 2008, EPA added the Site to the National Priorities List. The Site is comprised of two Operable Units: Operable Unit 1 (OU1) and Operable Unit 2 (OU2). On November 30, 2012, EPA issued a Record of Decision for OU1 of the Site, which sets forth a strategy for addressing the contaminated soils in OU1.

In October 2014, the United States District Court for the Northern District of Indiana entered a Consent Decree between the United States, on behalf of EPA, the State of Indiana, on behalf of IDEM, Atlantic Richfield Company, and E.I. du Pont de Nemours and Company. The Consent Decree contains the terms pursuant to which the parties will address contaminated soils in Zones 1 and 3 of OU1 of the Site. Work has begun pursuant to the terms of the Consent Decree.

EPA and DOJ are continuing work to address Zone 2 of OU1 (OU1 is comprised of three Zones) as well as OU2 of the Site, which includes the former USS Lead facility and groundwater beneath the entire Site. This information request is a part of that process.

Enclosure 2

REQUESTS FOR INFORMATION

1. Please provide times and dates within the sixty (60) day period after your response to this request is due when a representative of EPA may have access to documents and/or records that pertain to the USS Lead facility in East Chicago, Indiana, between 1920 and 1985, for the purpose of inspecting and/or copying all such documents and/or records. The inspection of the records and potential copying likely will take more than one day; therefore, please provide dates of access on continuous days for as many one week periods as possible.

2. Identify all persons consulted in the preparation of the answers to these questions.

Enclosure 3

INSTRUCTIONS

1. Answer each of the questions in this Information Request separately.

2. Precede each answer with the number of the question to which it corresponds.

3. In answering each question, identify all persons and contributing sources of information.

4. The relevant time period for this request is 1920 to 1985.

5. Although EPA seeks your cooperation in this investigation, CERCLA requires that you respond fully and truthfully to this Information Request. False, fictitious, or fraudulent statements or misrepresentations may subject you to civil or criminal penalties under federal law. Section 104 of CERCLA, 42 U.S.C. § 9604, authorizes EPA to pursue penalties for failure to comply with that Section, or for failure to respond adequately to requests for submissions of required information.

6. You must supplement your response to EPA if, after submission of your response, additional information should later become known or available. Should you find at any time after the submission of your response that any portion of the submitted information is false or misrepresents the truth, you must notify EPA as soon as possible.

7. For any document submitted in response to a question, indicate the number of the question to which it responds.

8. You must respond to each question based upon all information and documents in your possession or control, or in the possession or control of your current or former employees, agents, contractors, or attorneys. Information must be furnished regardless of whether or not it is based on your personal knowledge, and regardless of source.

9. Your response must be accompanied by the following statement, or one that is substantially equivalent:

   I certify under penalty of law that this document and all enclosures were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

The individual who prepared the response or the responsible corporate official acting on behalf of the corporation must sign and date the statement, affidavit, or certification. Include the corporate official's full title.

10. If any of the requested documents have been transferred to others or have otherwise been disposed of, identify each document, the person to whom it was transferred, describe the circumstances surrounding the transfer or disposition, and state the date of the transfer or disposition.

11. All requested information must be provided notwithstanding its possible characterization as confidential information or trade secrets. If desired, you may assert a business confidentiality claim by means of the procedures described in Enclosure 5.

Enclosure 4

DEFINITIONS

1. As used in this letter, words in the singular also include the neutral, and words in the masculine gender also include the feminine, and vice versa.

2. The term ***person*** as used herein includes in the plural as well as the singular any natural person, firm, contractor, unincorporated association, partnership, corporation, trust or governmental entity, unless the context indicates otherwise.

3. The term ***"USS Lead facility"*** shall mean the U.S.S. Lead Refinery, Inc. facility that operated at 5300 Kennedy Avenue, East Chicago, Indiana.

4. The terms ***hazardous substance*** shall have the same definition as that contained in Section 101 (14) of CERCLA, including any mixtures of such hazardous substances with any other substances, including petroleum products.

5. The terms ***pollutant*** or **contaminant** shall have the same definition as that contained in Section 101(33) of CERCLA, and includes any mixtures of such pollutants and contaminants with any other substances.

6. The term ***release*** shall have the same definition as that contained in Section 101(22) of CERCLA, and means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance, pollutant, or contaminant.

7. The term ***identify*** means, with respect to a natural person, to set forth the person's full name, present or last known business address, and business telephone number; present or last known home address, and home telephone number; and present or last known job title, position, or business.

8. The term ***identify*** means, with respect to a corporation, partnership, business, trust or other association or business entity (including a sole proprietorship), to set forth its full name, address, legal form (e.g., corporation, partnership, etc.), organization, if any, and a brief description of its business.

9. The term ***identify*** means, with respect to a document, to provide its customary business description, its date, its number, if any (invoice or purchase order number), the identity of the author, addressor, addressee and/or recipient, and the substance or the subject matter.

10. All terms not defined herein will have their ordinary meaning, unless such terms are defined in CERCLA, RCRA, 40 C.F.R., Part 300 or 40 C.F.R., Part 260-280, in which case the statutory or regulatory definitions will apply.

Enclosure 5

CONFIDENTIAL BUSINESS INFORMATION

You may consider some of the information confidential that the U.S. Environmental Protection Agency (EPA or Agency) is requesting. You cannot withhold information or records upon that basis. The Regulations at 40 C.F.R. Part 2, Section 200 *et seq* require that EPA affords you the opportunity to substantiate your claim of confidentiality before the Agency makes a final determination on the confidentiality of the information.

You may assert a business confidentiality claim covering part or all of the information requested, in the manner described by 40 C.F.R. 2.203(b). Information covered by such a claim will be disclosed by EPA only to the extent and only by means of the procedures set forth in 40 C.F.R. Part 2, Subpart B. (See 41 Federal Register 36902 *et seq.* (September 1, 1976); 43 Federal Register 4000 *et seq.* (December 18, 1985).) If no such claim accompanies the information when EPA receives it, the information may be made available to the public by the Agency without further notice to you. Please read carefully these cited regulations, together with the standards set forth in Section 104(e)(7) of Comprehensive Environmental Response Compensation Liability Act (CERCLA); because as stated in Section 104(e)(7) (ii), certain categories of information are not properly the subject of a claim of confidential business information.

If you wish the EPA to treat the information or record as "confidential," you must advise EPA of that fact by following the procedures described below, including the requirement for supporting your claim of confidentiality. To assert a claim of confidentiality, you must specify which portions of the information or documents you consider confidential. Please identify the information or document that you consider confidential by page, paragraph, and sentence. You must make a separate assertion of confidentiality for each response and each document that you consider confidential. Submit the portion of the response that you consider confidential in a separate, sealed envelope. Mark the envelope "confidential, and identify the number of the question to which it is the response.

For each assertion of confidentiality, identify:

1. The period of time for which you request that the Agency consider the information confidential, e.g., until a specific date or until the occurrence of a specific event;

2. The measures that you have taken to guard against disclosure of the information to others;

3. The extent to which the information has already been disclosed to others and the precautions that you have taken to ensure that no further disclosure occurs;

4. Whether EPA or other Federal agency has made pertinent determination on the confidentiality of the information or document. If an agency has made such a determination, enclose a copy of that determination;

5. Whether disclosure of the information or document would be likely to result in substantial harmful effects to your competitive position. If you believe such harm would result from any disclosure, explain the nature of the harmful effects, why the harm should be viewed as substantial, and the causal relationship between disclosure and the harmful effect. Include a description of how a competitor would use the information; and

6. Whether you assert that the information is voluntarily submitted as defined by 40 C.F.R. 2.201(I). If you make this assertion, explain how the disclosure would tend to lessen the ability of EPA to obtain similar information in the future; and

7. Any other information that you deem relevant to a determination of confidentiality.

Please note that pursuant to 40 C.F.R. 2.208(e), the burden of substantiating confidentiality rests with you. EPA will give little or no weight to conclusory allegations. If you believe that facts and documents necessary to substantiate confidentiality are themselves confidential, please identify them as such so that EPA may maintain their confidentiality pursuant to 40 C.F.R. 2.205(c). If you do not identify this information and documents as "confidential," your comments will be available to the public without further notice to you.

Enclosure 6

DESCRIPTION OF LEGAL AUTHORITY

The Federal Superfund law (the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. Section 9601, *et seq.* (commonly referred to as **CERCLA** or **Superfund**) gives EPA the authority to, among other things: 1) assess contaminated sites, 2) determine the threats to human health and the environment posed by each site; and 3) clean up those sites.

Under Section 104(e)(2) of CERCLA, 42 U.S.C. § 9604 (e)(2), EPA has broad information gathering authority which allows EPA to require persons to furnish information or documents relating to:

A. The identification, nature, and quantity of materials which have been or are generated, treated, stored, or disposed of at a vessel or facility, or transported to a vessel or facility;

B. The nature or extent of a release or threatened release of a hazardous substance or pollutant or contaminant at/or from a vessel or facility;

C. The ability to pay the costs of the clean-up.

Compliance with this Information Request is mandatory. Failure to respond fully and truthfully to each question within this Information Request and within the prescribed time frame can result in an enforcement action by EPA pursuant to Section 104(e)(5) of CERCLA. This Section also authorizes an enforcement action with similar penalties if the recipient of the Request does not respond and does not justify the failure to respond. Other statutory provisions (18 U.S.C. § 1001) authorize separate penalties if the responses contain false, fictitious or fraudulent statements. EPA has the authority to use the information requested in this Information Request in an administrative, civil or criminal action.

EPA United States Environmental Protection Agency

Office of Enforcement and Compliance Assurance (2201A)
EPA-300-F-11-006 June 2011

U.S. EPA Small Business Resources Information Sheet

The United States Environmental Protection Agency provides an array of resources, including workshops, training sessions, hotlines, websites and guides, to help small businesses understand and comply with federal and state environmental laws. In addition to helping small businesses understand their environmental obligations and improve compliance, these resources will also help such businesses find cost-effective ways to comply through pollution prevention techniques and innovative technologies.

EPA's Small Business Websites

Small Business Environmental Homepage - www.smallbiz-enviroweb.org

Small Business Gateway - www.epa.gov/smallbusiness

EPA's Small Business Ombudsman - www.epa.gov/sbo or 1-800-368-5888

EPA's Compliance Assistance Homepage
www.epa.gov/compliance/assistance/business.html

This page is a gateway to industry and statute-specific environmental resources, from extensive web-based information to hotlines and compliance assistance specialists.

EPA's Compliance Assistance Centers
www.assistancecenters.net

EPA's Compliance Assistance Centers provide information targeted to industries with many small businesses. They were developed in partnership with industry, universities and other federal and state agencies.

Agriculture
www.epa.gov/agriculture/

Automotive Recycling
www.ecarcenter.org

Automotive Service and Repair
www.ccar-greenlink.org or 1-888-GRN-LINK

Chemical Manufacturing
www.chemalliance.org

Construction
www.cicacenter.org or 1-734-995-4911

Education
www.campuserc.org

Food Processing
www.fpeac.org

Healthcare
www.hercenter.org

Local Government
www.lgean.org

Metal Finishing
www.nmfrc.org

Paints and Coatings
www.paintcenter.org

Printed Wiring Board Manufacturing
www.pwbrc.org

Printing
www.pneac.org

Ports
www.portcompliance.org

U.S. Border Compliance and Import/Export Issues
www.bordercenter.org

Hotlines, Helplines and Clearinghouses
www.epa.gov/epahome/hotline.htm

EPA sponsors many free hotlines and clearinghouses that provide convenient assistance regarding environmental requirements. Some examples are:

Antimicrobial Information Hotline
info-antimicrobial@epa.gov or 1-703-308-6411

Clean Air Technology Center (CATC) Info-line
www.epa.gov/ttn/catc or 1-919-541-0800

Emergency Planning and Community Right-To-Know Act
www.epa.gov/superfund/resources/infocenter/epcra.htm or 1-800-424-9346

EPA Imported Vehicles and Engines Public Helpline
www.epa.gov/otaq/imports or 734-214-4100

National Pesticide Information Center
www.npic.orst.edu/ or 1-800-858-7378

National Response Center Hotline - to report oil and hazardous substance spills
www.nrc.uscg.mil or 1-800-424-8802

Pollution Prevention Information Clearinghouse (PPIC)
www.epa.gov/opptintr/ppic or 1-202-566-0799

Safe Drinking Water Hotline
www.epa.gov/safewater/hotline/index.html or 1-800-426-4791

Stratospheric Ozone Protection Hotline
www.epa.gov/ozone or 1-800-296-1996

Toxic Substances Control Act (TSCA) Hotline
tsca-hotline@epa.gov or 1-202-554-1404

Wetlands Information Helpline
www.epa.gov/owow/wetlands/wetline.html or 1-800-832-7828

State and Tribal Web-Based Resources

State Resource Locators
www.envcap.org/statetools

The Locators provide state-specific contacts, regulations and resources covering the major environmental laws.

State Small Business Environmental Assistance Programs (SBEAPs)
www.smallbiz-enviroweb.org

State SBEAPs help small businesses and assistance providers understand environmental requirements and sustainable business practices through workshops, trainings and site visits. The website is a central point for sharing resources between EPA and states.

EPA's Tribal Compliance Assistance Center
www.epa.gov/tribalcompliance/index.html

The Center provides material to Tribes on environmental stewardship and regulations that might apply to tribal government operations.

EPA's Tribal Portal
www.epa.gov/tribalportal/

The Portal helps users locate tribal-related information within EPA and other federal agencies.

EPA Compliance Incentives

EPA provides incentives for environmental compliance. By participating in compliance assistance programs or voluntarily disclosing and promptly correcting violations before an enforcement action has been initiated, businesses may be eligible for penalty waivers or reductions. EPA has two such policies that may apply to small businesses:

EPA's Small Business Compliance Policy
www.epa.gov/compliance/incentives/smallbusiness/index.html

This Policy offers small businesses special incentives to come into compliance voluntarily.

EPA's Audit Policy
www.epa.gov/compliance/incentives/auditing/auditpolicy.html

The Policy provides incentives to all businesses that voluntarily discover, promptly disclose and expeditiously correct their noncompliance.

Commenting on Federal Enforcement Actions and Compliance Activities

The Small Business Regulatory Enforcement Fairness Act (SBREFA) established a SBREFA Ombudsman and 10 Regional Fairness Boards to receive comments from small businesses about federal agency enforcement actions. If you believe that you fall within the Small Business Administration's definition of a small business (based on your North American Industry Classification System designation, number of employees or annual receipts, as defined at 13 C.F.R. 121.201; in most cases, this means a business with 500 or fewer employees), and wish to comment on federal enforcement and compliance activities, call the SBREFA Ombudsman's toll-free number at 1-888-REG-FAIR (1-888-734-3247), or go to their website at www.sba.gov/ombudsman.

Every small business that is the subject of an enforcement or compliance action is entitled to comment on the Agency's actions without fear of retaliation. EPA employees are prohibited from using enforcement or any other means of retaliation against any member of the regulated community in response to comments made under SBREFA.

Your Duty to Comply

If you receive compliance assistance or submit a comment to the SBREFA Ombudsman or Regional Fairness Boards, you still have the duty to comply with the law, including providing timely responses to EPA information requests, administrative or civil complaints, other enforcement actions or communications. The assistance information and comment processes do not give you any new rights or defenses in any enforcement action. These processes also do not affect EPA's obligation to protect public health or the environment under any of the environmental statutes it enforces, including the right to take emergency remedial or emergency response actions when appropriate. Those decisions will be based on the facts in each situation. The SBREFA Ombudsman and Fairness Boards do not participate in resolving EPA's enforcement actions. Also, remember that to preserve your rights, you need to comply with all rules governing the enforcement process.

EPA is disseminating this information to you without making a determination that your business or organization is a small business as defined by Section 222 of the Small Business Regulatory Enforcement Fairness Act or related provisions.

APPENDIX P

TO
Z2&3 INTERIOR UAO

Original Z2&3 Interior UAO (Excluding Appendices)

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5

IN THE MATTER OF: U.S. Smelter and Lead Refinery, Inc. Site in East Chicago, Lake County, Indiana Atlantic Richfield Company, The Chemours Company FC, LLC, E. I. du Pont de Nemours and Company, Mueller Industries, Inc., United States Metals Refining Company, and U.S.S. Lead Refinery, Inc., Respondents. Proceeding under Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. § 9606(a).	CERCLA Docket No. V-W-18-C-002 **UNILATERAL ADMINISTRATIVE ORDER FOR INTERIOR REMOVAL ACTIONS IN ZONE 2 AND ZONE 3 OF OPERABLE UNIT 1 OF THE U.S. SMELTER AND LEAD REFINERY, INC. SUPERFUND SITE**

TABLE OF CONTENTS

I. JURISDICTION AND GENERAL PROVISIONS

1. This Administrative Order ("Z2&3 Interior UAO") is issued under the authority vested in the President of the United States by Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act, (CERCLA), 42 U.S.C. § 9606(a). This authority was delegated to the Administrator of the United States Environmental Protection Agency ("EPA") by Executive Order No. 12580, 52 Fed. Reg. 2923 (Jan. 23, 1987), and further delegated to the Regional Administrators by EPA Delegation Nos. 14-14A and 14-14B. On May 11, 1994, this authority was further redelegated by the Regional Administrator of EPA Region 5 to the Superfund Division Director of Region 5 by EPA Regional Delegation No. 14-14B.

2. This Z2&3 Interior UAO pertains to property located at the U.S. Smelter and Lead Refinery Inc., Site in East Chicago, Lake County, Indiana (the "USS Lead Site" or the "Site"). This Z2&3 Interior UAO requires Respondents to conduct removal actions (specifically, "Z2&3 Interior Sampling and Cleaning Work") to abate an imminent and substantial endangerment to the public health or welfare or the environment that may be presented by the actual or threatened release of hazardous substances at or from the Site.

3. EPA has notified the State of Indiana (the "State") of this action pursuant to Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

II. PARTIES BOUND

4. This Z2&3 Interior UAO applies to and is binding upon Respondents and their successors and assigns. Any change in ownership or control of the Site or change in the corporate or partnership status of a Respondent, including, but not limited to, any transfer of assets or real or personal property, shall not alter Respondents' responsibilities under this Z2&3 Interior UAO.

5. Respondents are jointly and severally liable for implementing all activities required by this Z2&3 Interior UAO. Compliance or noncompliance by any Respondent with any provision of this Z2&3 Interior UAO shall not excuse or justify noncompliance by any other Respondents. No Respondent shall interfere in any way with performance of the Z2&3 Interior Work in accordance with this Z2&3 Interior UAO by any other Respondent. In the event of the insolvency or other failure of any Respondent to implement the requirements of this Z2&3 Interior UAO, the remaining Respondents shall complete all such requirements.

6. Respondents shall provide a copy of this Z2&3 Interior UAO to each contractor hired to perform the Z2&3 Interior Work required by this Z2&3 Interior UAO and to each person representing any Respondents with respect to the Site or the Z2&3 Interior Work, and shall condition all contracts entered into hereunder upon performance of the Z2&3 Interior Work in conformity with the terms of this Z2&3 Interior UAO. Respondents or their contractors shall provide written notice of the Z2&3 Interior UAO to all subcontractors hired to perform any portion of the Z2&3 Interior Work required by this Z2&3 Interior UAO. Respondents shall nonetheless be responsible for ensuring that their contractors and subcontractors perform the Z2&3 Interior Work in accordance with the terms of this Z2&3 Interior UAO.

III. DEFINITIONS

7. Unless otherwise expressly provided in this Z2&3 Interior UAO, terms used in this Z2&3 Interior UAO that are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Z2&3 Interior UAO or in appendices to or documents incorporated by reference into this Z2&3 Interior UAO, the following definitions shall apply:

a. "Action Memorandum–4th Amendment" or "Fourth Amendment" shall mean the document titled "Action Memorandum–4th Amendment" transmitted by EPA Region 5 to EPA Headquarters on October 24, 2016, and signed by the Assistant Administrator of the Office of Land and Emergency Management of the U.S. Environmental Protection Agency on October 28, 2016. The Fourth Amendment is attached as Appendix F.

b. "Action Memorandum–5th Amendment" or "Fifth Amendment" shall mean the document titled "Action Memorandum–5th Amendment" transmitted by EPA Region 5 to EPA Headquarters on February 28, 2017, and signed by the Acting Assistant Administrator of the Office of Land and Emergency Management of the U.S. Environmental Protection Agency on March 14, 2017. The Fifth Amendment is attached as Appendix G.

c. "Affected Property" shall mean all real property at the Site and any other real property where EPA determines, at any time, that access is needed to implement the Z2&3 Interior Sampling and Cleaning Work.

d. "ARC" shall mean Atlantic Richfield Company.

e. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601-9675.

f. "Chemours" shall mean The Chemours Company FC, LLC.

g. "Day" or "day" shall mean a calendar day. In computing any period of time under this Z2&3 Interior UAO, where the last day would fall on a Saturday, Sunday, or federal or State holiday, the period shall run until the close of business of the next working day.

h. "DuPont" shall mean E. I. du Pont de Nemours and Company.

i. "Effective Date" shall mean the effective date of this Z2&3 Interior UAO as provided in Section VIII.

j. "Efficacy Sampling" shall mean sampling performed after each indoor cleaning and re-cleaning to ensure that those cleanings are effective.

k. "EPA" shall mean the United States Environmental Protection Agency and its successor departments, agencies, or instrumentalities.

l. “EPA Hazardous Substance Superfund” shall mean the Hazardous Substance Superfund established by the Internal Revenue Code, 26 U.S.C. § 9507.

m. “IDEM” shall mean the Indiana Department of Environmental Management and any successor departments or agencies of the State.

n. “Interest” shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually on October 1 of each year, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year. Rates are available online at https://www.epa.gov/superfund/superfund-interest-rates.

o. “Interior Screening Level” shall mean 316 milligrams per kilogram (mg/kg) for lead and 26 mg/kg for arsenic.

p. “Mueller” shall mean Mueller Industries, Inc.

q. “NCP” or “National Contingency Plan” shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

r. “OU1” or “Operable Unit 1” shall mean the surface and subsurface soil of the area located inside the red highlighted boundaries on Appendix B. OU1 is generally bounded on the north by East Chicago Avenue; on the east by Parrish Avenue; on the south by East 151st Street/149th Place; and on the west by the Indiana Harbor Canal.

s. “OU2” or “Operable Unit 2” shall mean groundwater associated with the Site as well as the surface soil, subsurface soil, and sediments located inside the blue highlighted boundaries on Appendix A. The area within the blue highlighted boundaries on Appendix B consists of approximately 79 acres, is commonly known as 5300 Kennedy Avenue, and is generally bounded on the north by the Indiana Harbor Belt Railroad; on the east by Kennedy Avenue; on the south and west by the Grand Calumet River; and on the northwest by the Indiana Harbor Canal.

t. “Owner” shall mean a person who owns the Affected Property that a residence is located on.

u. “Paragraph” or “¶” shall mean a portion of this Z2&3 Interior UAO identified by an Arabic numeral and/or an upper or lower case letter.

v. “Parties” shall mean EPA and Respondents.

w. “Personally Identifiable Information” or “PII” means “Personally Identifiable Information” as defined in 2 C.F.R. § 200.79 and EPA’s Privacy Policy, and generally includes information that can be used to distinguish, trace, or identify an individual’s identity, including personal information which is linked or linkable to an individual. Personally Identifiable Information includes but is not limited to names, addresses, GPS coordinates,

telephone numbers, fax numbers, email addresses, social security numbers, or labels (including, e.g., character strings linked with real estate depicted in maps or assigned to sampling data) or other personal information that can be linked to an individual. EPA's Privacy Policy is available at https://www.epa.gov/privacy/epa-policy-21510-privacy-policy.

x. "RCRA" shall mean the Resource Conservation and Recovery Act, also known as the Solid Waste Disposal Act, 42 U.S.C. §§ 6901-6992.

y. "Record of Decision" or "ROD" shall mean the EPA Record of Decision relating to Operable Unit 1 at the Site signed on November 30, 2012, by the Director of the Superfund Division, EPA Region 5, or his/her delegate, and all attachments thereto.

z. "Resident" shall mean a person who resides in a residence located on Affected Property. A "Resident" can be either an Owner or a Resident Lessee.

aa. "Resident Lessee" shall mean a person who resides in a residence located on Affected Property, does not own the Affected Property, but, along with the Owner of the Affected Property, has the authority to grant access to the interior of the residence.

bb. "Respondents" shall mean Atlantic Richfield Company, The Chemours Company FC, LLC, E. I. du Pont de Nemours and Company, Mueller Industries, Inc., United States Metals Refining Company, and U.S.S. Lead Refinery, Inc.

cc. "Section" shall mean a portion of this Z2&3 Interior UAO identified by a Roman numeral.

dd. "Site" or "USS Lead Site" shall mean the U.S. Smelter and Lead Refinery, Inc. Superfund Site in East Chicago, Lake County, Indiana, and depicted generally on the map included with Appendix B. The Site includes both OU1 and OU2.

ee. "State" shall mean the State of Indiana.

ff. "Supervising Contractor" shall mean the principal contractor retained by Respondents to supervise and direct the implementation of the Z2&3 Interior Sampling and Cleaning Work under this Z2&3 Interior UAO.

gg. "Transfer" shall mean to sell, assign, convey, lease, mortgage, or grant a security interest in, or where used as a noun, a sale, assignment, conveyance, or other disposition of any interest by operation of law or otherwise.

hh. "United States" shall mean the United States of America and each department, agency, and instrumentality of the United States, including EPA.

ii. "USMR" shall mean United States Metals Refining Company.

jj. "USS Lead" shall mean U.S.S. Lead Refinery, Inc.

kk. "Waste Material" shall mean: (a) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (b) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); (c) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27), or under Indiana Code § 13-11-2-205; (d), any "hazardous material" under Indiana Code § 13-11-2-96(b); and (e) any "hazardous waste" under Indiana Code § 13-11-2-99(c).

ll. "Z1" or "Zone 1" shall mean the surface and subsurface soil found in an area located inside the yellow highlighted boundaries on Appendix C and labeled as "Zone 1." Zone 1 is generally bounded: (1) on the north by the northern boundary of the Carrie Gosch Elementary School and a line extending eastward from that boundary to the eastern edge of a north/south utility right of way that runs parallel to McCook Avenue north of East 149th Place; (2) on the east by: (i) the eastern-most edge of a north/south utility right of way that runs parallel to McCook Avenue until East 149th Place, and (ii) McCook Avenue between East 149th Place and 151st Street; (3) on the south by East 151st Street; and (4) on the west by the Indiana Harbor Canal.

mm. "Z2" or "Zone 2" shall mean the surface and subsurface soil found in an area located inside the yellow highlighted boundaries on Appendix C and labeled as "Zone 2." Zone 2 is generally bounded: (1) on the north by Chicago Avenue; (2) on the east, by the eastern edge of the railroad right of way that runs principally north and south and is labeled on Appendix C as "Elgin Joliet and Eastern Rlwy"; (3) on the south by East 151st Street; and (4) on the west by: (i) the Indiana Harbor Canal between Chicago Avenue and the northern boundary of the Carrie Gosch Elementary School; (ii) the eastern-most edge of a north/south utility right of way that runs parallel to McCook Avenue until East 149th Place, and (iii) McCook Avenue between East 149th Place and 151st Street.

nn. "Z3" or "Zone 3" shall mean the surface and subsurface soil found in an area located inside the yellow highlighted boundaries on Appendix C and labeled as "Zone 3." Zone 3 is generally bounded: (1) on the north by Chicago Avenue; (2) on the east by Parrish Avenue; (3) on the south by the northern edge of the railroad right of way located generally to the south of East 149th Place and labeled on Appendix C as "Elgin Joliet and Eastern Rlwy"; and (4) on the west by the eastern edge of the railroad right of way that runs principally north and south and is labeled on Appendix C as "Elgin Joliet and Eastern Rlwy." The triangular plot of land bounded by several railroad spurs in the southeastern portion of the area labeled Zone 3 on Appendix C is a part of Zone 3.

oo. "Z2&3 Interior Data Management" shall mean those activities undertaken by Respondents to develop, manage, and implement proper data management for the data generated in implementing this Z2&3 Interior UAO.

pp. "Z2&3 Interior Excluded Residences" shall mean the residences on the final list that EPA develops and provides to Respondents pursuant to Paragraph 4.14(a)(2) of the Z2&3 Interior SOW.

qq. "Z2&3 Interior Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States incurs after the Effective Date of this

Z2&3 Interior UAO in monitoring and supervising Respondents' performance of the Z2&3 Interior Work to determine whether such performance is consistent with the requirements of this Z2&3 Interior UAO, including costs incurred in reviewing deliverables submitted pursuant to this Z2&3 Interior UAO, as well as costs incurred in overseeing implementation of this Z2&3 Interior UAO, including, but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, and Department of Justice costs.

rr. "Z2&3 Interior Cleaning Residence" shall mean a residence in Zone 2 or Zone 3 where:

(1) The interior of the residence has not previously been cleaned; and

(2) The results of Z2&3 Interior Sampling Work in one or more areas of the residence reveal lead contamination in indoor dust in excess of 316 ppm and/or arsenic contamination in indoor dust in excess of 26 ppm.

Provided, however, that a residence that satisfies the definition of "Z2&3 Interior Cleaning Residence" may later become a "Z2&3 Interior Excluded Residence" if access for cleaning cannot be secured.

ss. "Z2&3 Interior Cleaning Work" shall mean all activities undertaken by Respondents pursuant to this Z2&3 Interior UAO to develop and implement one or more plans for the purpose of cleaning the interior of residences in Zones 2 and/or 3.

tt. "Z2&3 Interior Sampling and Cleaning Work" shall mean the Z2&3 Interior Sampling Work and the Z2&3 Interior Cleaning Work.

uu. "Z2&3 Interior Sampling Residence" shall mean a residence in Zone 2 or 3 where:

(1) The interior of the residence has not previously been sampled;

(2) Soil in one or more of the yards associated with the residence had lead and/or arsenic in concentrations that qualified the yard(s) for remediation and restoration and all such remediation and restoration (excluding the 30-day maintenance period) has been completed; and

(3) The residence is habitable.

A residence that satisfies the definition of "Z2&3 Interior Sampling Residence" may later become a "Z2&3 Interior Excluded Residence" if access for sampling cannot be secured. A residence may satisfy the definition of "Z2&3 Interior Sampling Residence" even it is uninhabited.

vv. "Z2&3 Interior Sampling Work" shall mean all activities undertaken by Respondents pursuant to this Z2&3 Interior UAO to develop and implement one or more plans for the purpose of sampling and screening the interior of residences in Zones 2 and/or 3. The sampling shall include: (i) sampling dust in the interior of a residence for lead and arsenic

contamination; (ii) screening the interior of a residence for the presence of lead-based paint; and (iii) Efficacy Sampling to ensure that cleanings are effective.

ww. "Z2&3 Interior SOW" or "Z2&3 Interior Statement of Work" shall mean the document describing the activities Respondents must perform to implement the Z2&3 Interior Sampling and Cleaning Work pursuant to this Z2&3 Interior UAO, as set forth in Appendix A, and any modifications made thereto in accordance with this Z2&3 Interior UAO.

xx. "Z2&3 Interior UAO" or "Z2&3 Interior Unilateral Administrative Order" shall mean this Unilateral Administrative Order and all appendices attached hereto. In the event of conflict between this Z2&3 Interior UAO and any appendix, this Z2&3 Interior UAO shall control.

yy. "Z2&3 Interior Work" shall mean all activities and obligations Respondents are required to perform under this Z2&3 Interior UAO, except those required by Section XIV (Retention of Records). "Z2&3 Interior Work" encompasses the definition of "Z2&3 Interior Sampling and Cleaning Work" but also includes all other requirements of this Z2 Interior UAO (*e.g.*, Access to Information) except for Retention of Records.

IV. FINDINGS OF FACT

8. EPA hereby makes the following findings of fact:

a. Pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, EPA placed the Site on the National Priorities List (NPL), set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on April 9, 2009, 74 Fed. Reg. 16,126–34.

b. The Site consists of two Operable Units: OU1 and OU2, both defined above. OU1 has been further divided into three zones: Zone 1 (Z1), Zone 2 (Z2), and Zone 3 (Z3), also defined above.

c. In response to a release or a substantial threat of a release of hazardous substances at or from OU1 of the Site, EPA commenced, in June 2009, a Remedial Investigation and Feasibility Study (RI/FS) of OU1 of the Site pursuant to 40 C.F.R. § 300.430.

d. EPA completed a Remedial Investigation (RI) Report and a Feasibility Study ("FS") Report of OU1 in June 2012.

e. Pursuant to Section 117 of CERCLA, 42 U.S.C. § 9617, EPA published notice of the completion of the FS for OU1 and of the proposed plan for remedial action for OU1 on July 12, 2012, in a major local newspaper of general circulation. EPA provided an opportunity for written and oral comments from the public on the proposed plan for remedial action. A copy of the transcript of the public meeting is available to the public as part of the administrative record upon which the Director of the Superfund Division, EPA Region 5, based the selection of the response action for OU1.

f. The decision by EPA on the remedial action to be implemented at OU1 of the Site is embodied in a final Record of Decision (ROD), executed on November 30, 2012, on

which the State has given its concurrence. The ROD includes a responsiveness summary to the public comments. Notice of the final plan was published in accordance with Section 117(b) of CERCLA, 42 U.S.C. § 9617(b).

g. By Consent Decree entered on October 28, 2014, EPA and certain of the Respondents reached an agreement regarding remedial design and remedial action (RD/RA) in Zones 1 and 3 of OU1 of the Site. RD/RA work under the 2014 Consent Decree commenced in November 2014. In the summer of 2016, EPA suspended RD/RA work in Zone 1 because of a possible change in the intended future use of the properties in Zone 1. EPA is undertaking an Addendum to the FS as it applies to Zone 1. EPA continues RD/RA work in Zone 3 pursuant to the 2014 Consent Decree.

h. Data results from indoor dust sampling that took place in Zone 1 in the summer and fall of 2016 revealed that 110 out of 269 residences within that Zone exceeded EPA's 316 mg/kg screening level for lead for indoor living spaces.

i. On October 28, 2016, EPA issued Action Memorandum–4th Amendment for the Site. On March 14, 2017, EPA issued Action Memorandum–5th Amendment for the Site. The Fourth and Fifth Amendments authorized, *inter alia*, certain interior removal actions in residences in Zones 2 and 3, including (i) sampling indoor dust for lead and arsenic (ii) screening indoor paint for lead, and (iii) interior cleanings to remove dust with lead above 316 mg/kg and arsenic above 26 mg/kg. In the fall of 2016, EPA undertook indoor dust sampling in Zones 2 and 3.

j. On March 16, 2017, EPA and certain of the Respondents entered into an Administrative Settlement Agreement and Order on Consent ("Z2&3 ASAOC") regarding, *inter alia*, interior removal actions at properties in Zones 2 and 3 where remediation work consistent with the ROD is substantially complete. EPA's practice is to sample and, if necessary, clean residences at a property only after any necessary remediation consistent with the ROD has been performed at that property, to ensure that if any recontamination of the interiors is identified after the cleaning, it cannot be attributed to soil contamination at the property.

k. EPA has performed interior sampling both independent of and pursuant to the Z2&3 ASAOC. As of December 8, 2017, the interior of 67 out of 118 residences sampled in Zones 2, and 60 out of 104 residences sampled in Zone 3 had results above the screening level of 316 mg/kg for lead and 26 mg/kg for arsenic.

l. As of December 1, 2017, EPA has cleaned the interior of 54 residences in Zone 2 and 36 residences in Zone 3.

m. Lead is a hazardous substance, as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14). The Agency for Toxic Substances and Disease Registry (ATSDR) has determined that exposure to lead presents human health risks. Lead exposure via inhalation and/or ingestion can have detrimental effects on almost every organ and system in the human body. Exposure may occur from direct ingestion of soil in yards, soil tracked indoors (house dust), and inhalation of fugitive dust. Lead can cause a variety of health problems to people who are exposed to it. Potential human receptors include residents, with a particular

concern for children six years of age and under and pregnant or nursing women. Children are at greatest risk from the toxic effects of lead. Initially, lead travels in the blood to the soft tissues (heart, liver, kidney, brain, etc.). Then, it gradually redistributes to the bones and teeth where it tends to remain. Children exposed to high levels of lead have exhibited nerve damage, liver damage, colic, anemia, brain damage, and death. The most serious effects associated with markedly elevated blood lead levels include neurotoxic effects such as irreversible brain damage.

n. Arsenic is a hazardous substance, as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14). ATSDR has determined that exposure to arsenic presents human health risks. Ingesting very high levels of arsenic can result in death. Exposure to lower levels can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, damage to blood vessels, and a sensation of "pins and needles" in hands and feet. Ingesting or breathing low levels of inorganic arsenic for a long time can cause a darkening of the skin and the appearance of small "corns" or "warts" on the palms, soles, and torso. Skin contact with inorganic arsenic may cause redness and swelling. Several studies have shown that ingestion of inorganic arsenic can increase the risk of skin cancer and cancer in the liver, bladder, and lungs. Inhalation of inorganic arsenic can cause increased risk of lung cancer. The Department of Health and Human Services (DHHS) and the EPA have determined that inorganic arsenic is a known human carcinogen (ATSDR, Chemical Abstract Services [CAS] # 7440-38-2], August 2007).

V. CONCLUSIONS OF LAW AND DETERMINATIONS

9. Based on the Findings of Fact set forth above, and the administrative record, EPA has determined that:

a. The U.S. Smelter and Lead Refinery, Inc. Superfund Site is a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

b. The Former USS Lead Facility is a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. § 9601(9). The Former USS Lead Facility is a part of the Site.

c. The property and former manufacturing plants located at 5215 Kennedy Avenue in East Chicago, Indiana, previously owned and/or operated by Respondent E. I. du Pont de Nemours and Company ("Former DuPont Facility") and currently owned and/or operated by Respondent The Chemours Company FC, LLC, is a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

d. The property and former manufacturing plants previously located in Zone 1 of OU1 of the Site ("Former Anaconda Facility") and previously owned and/or operated by predecessors of Respondent Atlantic Richfield Company is a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. § 9601(9). The Former Anaconda Facility is a part of the Site.

e. Each Respondent is a "person" as defined by Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

f. Each Respondent is a liable party under one or more provisions of Section 107(a) of CERCLA, 42 U.S.C. § 9607(a).

(1) From 1920 to the present, Respondent U.S.S. Lead Refinery, Inc. ("USS Lead") has been an "owner" and/or "operator"—as defined by Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and within the meaning of Sections 107(a)(1) and (a)(2) of CERCLA, 42 U.S.C. § 9607(a)(1), (a)(2)—of the Former USS Lead Facility at which hazardous substances were disposed of and from which there were releases of hazardous substances.

(2) Respondent Mueller Industries, Inc. ("Mueller") is liable as a successor to two companies: (i) United States Smelting Refining and Mining Company, which later changed its name to UV Industries, Inc. ("UV/USSRAM"); and (ii) Sharon Steel Corporation ("Sharon Steel").

i. UV/USSRAM was one or more of the following:

a. From 1919 to 1920, a person who, at the time of disposal of hazardous substances, "owned" and/or "operated"—within the meaning of Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2)—the Former USS Lead Facility at which hazardous substances were disposed of and from which there were releases of hazardous substances.

b. For some or all of the time between 1920 and 1979, a person who "operated"—within the meaning of Section 101(20) of CERCLA, 42 U.S.C. §§ 9601(20), and Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2)—the Former USS Lead Facility at which hazardous substances were disposed of and from which there were releases of hazardous substances.

c. A parent company who, for some or all of the time between 1920 and 1979, is indirectly liable, under a corporate veil piercing theory, for the acts of its subsidiary, USS Lead (which is liable as described in Paragraph 9.f(1) above).

d. For some or all of the time between 1920 and 1979, a person who arranged with USS Lead for the disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances at the Former USS Lead Facility, within the meaning of Section 107(a)(3) of CERCLA, 42 U.S.C. § 9607(a)(3).

ii. Sharon Steel, for some or all of the time between 1979 and 1985, was a person who "operated"—within the meaning of Section 101(20) of CERCLA, 42 U.S.C. §§ 9601(20),

and Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2)—the Former USS Lead Facility at which hazardous substances were disposed of and from which there were releases of hazardous substances.

(3) Respondent Atlantic Richfield Company is liable as a successor to: (i) one or more persons, including Anaconda Lead Products Company, International Lead Refining Company, and International Smelting and Refining Company, who, at the time of disposal of hazardous substances, "owned" and/or "operated"—within the meaning of Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2)—the Former Anaconda Facility at which hazardous substances were disposed of and from which there were releases of hazardous substances; and/or (ii) one or more persons, including Anaconda Lead Products Company, International Lead Refining Company, and International Smelting and Refining Company, who arranged with USS Lead for the disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances at the Former USS Lead Facility, within the meaning of Section 107(a)(3) of CERCLA, 42 U.S.C. § 9607(a)(3).

(4) Respondent E. I. du Pont de Nemours and Company is a person who: (i) at the time of disposal of hazardous substances, "owned" and/or "operated"—within the meaning of Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2)—the Former DuPont Facility at which hazardous substances were disposed of and from which there were releases of hazardous substances to the Site; and/or (ii) arranged with USS Lead for the disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances at the Former USS Lead Facility, within the meaning of Section 107(a)(3) of CERCLA, 42 U.S.C. § 9607(a)(3).

(5) Respondent The Chemours Chemical Company FC, LLC, is liable as a successor to E. I. du Pont de Nemours and Company (which is liable as described in Paragraph 9.f(4) above).

(6) Respondent United States Metals Refining Company is a person who at the time of disposal of hazardous substances, "owned" and/or "operated"—within the meaning of Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2)—the Former USS Lead Facility at which hazardous substances were disposed of and from which there were releases of hazardous substances.

g. The lead and arsenic contamination found in the interior of residences in Zones 2 and 3, as identified in the Findings of Fact above, includes "hazardous substances" as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), and also includes "pollutants or contaminants" that may present an imminent and substantial danger to public health or welfare under Section 104(a)(1) of CERCLA, 42 U.S.C. § 9604(a)(1).

h. The conditions described in Paragraph 8.k of the Findings of Fact above constitute an actual or threatened "release" of a hazardous substance from the facility as defined by Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

i. The conditions at the Site may constitute a threat to public health or welfare or the environment, based on the factors set forth in Section 300.415(b)(2) of the NCP. These factors include, but are not limited to, actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances; this factor is present at the Site due to the existence of lead and arsenic in the interior of residences at levels above the Interior Screening Level.

j. EPA determined in the Fourth and Fifth Amendments that the conditions described in Paragraph 8.k of the Findings of Fact may constitute an imminent and substantial endangerment to the public health or welfare or the environment because of an actual or threatened release of a hazardous substance from the facility within the meaning of Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

k. The removal actions required by this Z2&3 Interior UAO are necessary to protect the public health, welfare, or the environment.

VI. Z2&3 INTERIOR WORK ORDER

10. Based upon the Findings of Fact, Conclusions of Law and Determinations set forth above, and the administrative record, Respondents are hereby ordered to comply with all provisions of this Z2&3 Interior UAO and any modifications to this Z2&3 Interior UAO, including all appendices to this Z2&3 Interior UAO and all documents incorporated by reference into this Z2&3 Interior UAO.

VII. OPPORTUNITY TO CONFER

11. No later than 5 days after this Z2&3 Interior UAO is signed by the Regional Administrator or his/her delegatee, Respondents may, in writing, (a) request a conference with EPA to discuss this Z2&3 Interior UAO, including its applicability, the factual findings and the determinations upon which it is based, the appropriateness of any actions Respondents are ordered to take, or any other relevant and material issues or contentions that Respondents may have regarding this Z2&3 Interior UAO, or (b) notify EPA that they intend to submit written comments or a statement of position in lieu of requesting a conference.

12. If a conference is requested, Respondents may appear in person or by an attorney or other representative. Any such conference shall be held no later than 5 days after the conference is requested. Any written comments or statements of position on any matter pertinent to this Z2&3 Interior UAO must be submitted no later than 5 days after the conference or, if Respondents do not request a conference, within 15 days after this Z2&3 Interior UAO is signed. This conference is not an evidentiary hearing, does not constitute a proceeding to challenge this Z2&3 Interior UAO, and does not give Respondents a right to seek review of this Z2&3 Interior UAO. Any request for a conference or written comments or statements should be submitted to:

Steven Kaiser
Office of Regional Counsel
Region 5, US EPA
77 West Jackson Blvd. (C-14J)
Chicago, IL 60604-3590
kaiser.steven@epa.gov
(312) 353-3804

Leonardo Chingcuanco
Office of Regional Counsel
Region 5, US EPA
77 West Jackson Blvd. (C-14J)
Chicago, IL 60604-3590
chingcuanco.leonardo@epa.gov
(312) 886-7236

VIII. EFFECTIVE DATE

13. This Z2&3 Interior UAO shall be effective 5 days after the Z2&3 Interior UAO is signed by the Regional Administrator or his/her delegatee unless a conference is requested or notice is given that written materials will be submitted in lieu of a conference in accordance with Section VII (Opportunity to Confer). If a conference is requested or such notice is submitted, this Z2&3 Interior UAO shall be effective on the 10th day after the day of the conference, or if no conference is requested, on the 5th day after written materials, if any, are submitted, unless EPA determines that the Z2&3 Interior UAO should be modified based on the conference or written materials. In such event, EPA shall notify Respondents, within the applicable period between the effective date and either receipt of written materials or the day of the conference, that EPA intends to modify the Z2&3 Interior UAO. The modified Z2&3 Interior UAO shall be effective 5 days after it is signed by the Regional Administrator or his/her delegatee.

IX. NOTICE OF INTENT TO COMPLY

14. On or before the Effective Date, each Respondent shall notify EPA in writing of Respondent's irrevocable intent to comply with this Z2&3 Interior UAO. Such written notice shall be sent to EPA as provided in Paragraph 12. Each Respondent's written notice shall describe, using facts that exist on or prior to the Effective Date, any "sufficient cause" defense asserted by such Respondent under Sections 106(b) and 107(c)(3) of CERCLA, 42 U.S.C. §§ 9606(b) and 9607(c)(3). The absence of a response by EPA to the notice required by this Paragraph shall not be deemed to be acceptance of any Respondent's assertions. Failure of any Respondent to provide such notice of intent to comply within this time period shall, as of the Effective Date, be treated as a violation of this Z2&3 Interior UAO by such Respondent.

X. DESIGNATION OF PROJECT COORDINATOR, ON-SCENE COORDINATOR, AND SUPERVISING CONTRACTOR

15. **Coordination and Supervision**

a. **Project Coordinators and On-Scene Coordinators.**

(1) Respondents' Project Coordinator and Alternate Project Coordinator must have sufficient technical expertise to coordinate the Z2&3 Interior Sampling and Cleaning Work. Respondents' Project Coordinator and Alternate Project Coordinator may not be an attorney representing any Respondent in this matter and may not act as the Supervising Contractor. Respondents' Project Coordinator and Alternate Project Coordinator may assign other representatives, including other contractors, to assist in coordinating the Z2&3 Interior Sampling and Cleaning Work.

(2) EPA has designated Jacob Hassan, Daniel Haag, Timothy Drexler, and Sarah Rolfes of the Region 5 Superfund Division as its On-Scene Coordinators (OSCs). EPA will notify Respondents of a change of its designated OSCs. Communications between Respondents and EPA, and all documents concerning the activities performed pursuant to this Z2&3 Interior UAO, shall be directed to the OSCs in accordance with Section XVIII (Notices and Submissions). The OSCs shall be responsible for overseeing Respondents' implementation of this Z2&3 Interior UAO. The OSCs shall have the authority vested in a Remedial Project Manager (RPM) and OSCs by the NCP, including the authority to halt, conduct, or direct any Z2&3 Interior Work required by this Z2&3 Interior UAO, or to direct any other response action when s/he determines that conditions at the Site constitute an emergency situation or may present a threat to public health or welfare or the environment. Absence of the OSCs from the Site shall not be cause for stoppage or delay of Z2&3 Interior Work.

(3) Respondents' Project Coordinator(s) shall communicate with EPA's OSCs regularly.

(4) Communications between Respondents and EPA, and all documents concerning the activities performed pursuant to this Z2&3 Interior UAO, shall be directed to the Project Coordinator and Alternate Project Coordinator. Receipt by Respondents' Project Coordinator or Alternate Project Coordinator of any notice or communication from EPA relating to this Z2&3 Interior UAO shall constitute receipt by all Respondents.

b. **Supervising Contractor.** Respondents' proposed Supervising Contractor must have sufficient technical expertise to supervise the Z2&3 Interior Sampling and Cleaning Work and a quality assurance system that complies with ASQ/ANSI E4:2014 "Quality management systems for environmental information and technology programs – Requirements with guidance for use" (American Society for

Quality, February 2014). Respondents shall submit a copy of the proposed contractor's Quality Management Plan (QMP). The QMP should be prepared in accordance with "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01/002, Reissued May 2006) or equivalent documentation as determined by EPA.

c. **Procedures for Disapproval/Notice to Proceed**.

(1) Respondents shall designate, and notify EPA, within 10 days after the Effective Date, of the names, titles, contact information, and qualifications of the Respondents' proposed Project Coordinator, Alternate Project Coordinator, and Supervising Contractor, whose qualifications shall be subject to EPA's review for verification based on objective assessment criteria (e.g., experience, capacity, technical expertise) and that they do not have a conflict of interest with respect to the project.

(2) EPA shall issue notices of disapproval and/or authorizations to proceed regarding the proposed Project Coordinator, Alternate Project Coordinator, and Supervising Contractor, as applicable. If EPA issues a notice of disapproval, Respondents shall, within 15 days, submit to EPA a list of supplemental proposed Project and Alternate Project Coordinators and/or Supervising Contractors, as applicable, including a description of the qualifications of each. EPA shall issue a notice of disapproval or authorization to proceed regarding each supplemental proposed coordinator/alternate coordinator and/or contractor. Respondents may select any coordinator/contractor covered by an authorization to proceed and shall, within 7 days, notify EPA of Respondents' selection.

(3) Respondents may change their Project Coordinator and/or Supervising Contractor, as applicable, by following the procedures of 15.c(1) and 15.c(2).

XI. Z2&3 INTERIOR SAMPLING AND CLEANING WORK TO BE PERFORMED

16. Respondents shall perform, at a minimum, all actions necessary to implement the Z2&3 Interior Sampling and Cleaning Work consistent with the Z2&3 Interior SOW. The required Z2&3 Interior Sampling and Cleaning Work is set forth in detail in Paragraphs 4.2–4.8 of the Z2&3 Interior SOW.

17. For any regulation or guidance referenced in the Z2&3 Interior UAO or the Z2&3 Interior SOW, the reference will be read to include any subsequent modification, amendment, or replacement of such regulation or guidance. Such modifications, amendments, or replacements apply to the Z2&3 Interior Sampling and Cleaning Work only after Respondents receive notification from EPA of the modification, amendment, or replacement.

18. **Zone 2 and Zone 3 Interior Sampling and Cleaning Work Plan and Implementation**

a. Within 60 days after the EPA's Notice of Authorization to Proceed regarding the Supervising Contractor, Respondents shall submit to EPA for review and approval a draft work plan for performing the Z2&3 Interior Sampling and Cleaning Work (the "Z2&3 Interior WP") in accordance with the Z2&3 Interior SOW. The submission shall be made to EPA's OSCs pursuant to Section XVIII (Notices and Submissions). The draft Z2&3 Interior WP shall provide a description of, and an expeditious schedule for, the Z2&3 Interior Sampling and Cleaning Work required by this Z2&3 Interior UAO.

b. Any non-compliance with any EPA-approved plans, reports, specifications, schedules, or other deliverables shall be considered a violation of the requirements of this Z2&3 Interior UAO. Determinations of non-compliance shall be made by EPA. Approval of the Z2&3 Interior WP shall not limit EPA's authority under the terms of this Z2&3 Interior UAO to require Respondents to conduct activities consistent with this Z2&3 Interior UAO to accomplish the Z2&3 Interior Sampling and Cleaning Work outlined in this Section.

XII. PROPERTY REQUIREMENTS

19. **Agreements Regarding Access and Non-Interference**.

a. Substance of Agreement. Respondents shall, with respect to any Z2&3 Interior Sampling Residence and Z2&3 Interior Cleaning Residence, use "best efforts," as defined in ¶ 21, to secure an agreement, enforceable by Respondents and EPA, providing EPA, Respondents, and their representatives, contractors, and subcontractors with access at all reasonable times to such Z2&3 Interior Sampling Residence and to such Z2&3 Interior Cleaning Residence to conduct any activity regarding this Z2&3 Interior UAO, including those activities listed in Paragraph 20 (Access Requirements).

b. Signatories to Access Agreements.

(1) Single Family Homes. Respondents shall use best efforts to secure an access agreement from the Owner. If the Resident is different from the Owner, Respondents shall use best efforts to secure an access agreement from both the Owner and the Resident Lessee.

(2) Multi-Family Homes/Apartments. Respondents shall use best efforts to secure an access agreement from both the Owner and each Resident Lessee.

c. Respondents shall provide a copy of such access agreement(s) to EPA.

20. **Access Requirements.** Respondents may use an access agreement that is substantially in the form of the access agreement attached as Appendix F. Use of such an access agreement shall satisfy the requirements of this Paragraph. If Respondents do not use an access agreement substantially in the form of access agreement attached as Appendix F, the following is

a list of activities for which access is required regarding the Z2&3 Interior Sampling Residence and Z2&3 Interior Cleaning Residence:

a. Performing the Z2&3 Interior Work;

b. Monitoring the Z2&3 Interior Work;

c. Verifying any data or information submitted to EPA;

d. Conducting investigations regarding contamination at or near the Site;

e. Obtaining samples;

f. Assessing the need for, planning, implementing, or monitoring response actions;

g. Assessing implementation of quality assurance and quality control practices as defined in the approved QAPP;

h. Implementing the Z2&3 Interior Work pursuant to the conditions set forth in Section XVII (Enforcement/Work Takeover); and

i. Assessing Respondents' compliance with the Z2&3 Interior UAO.

21. **Best Efforts**. As used in this Section and the Z2&3 Interior SOW, "best efforts" means the efforts that a reasonable person in the position of Respondents would use so as to achieve the goal in a timely manner, including the cost of employing professional assistance to secure access agreements, as required by this Section. If Respondents are unable to accomplish what is required through "best efforts," they shall confer with EPA pursuant to Paragraphs 4.4(b)(3), 4.5(b)(2), and 4.7(b)(2) of the Z2&3 Interior SOW, as applicable, and include a description of the steps taken to secure access. If EPA deems it appropriate, it may assist Respondents or take independent action in obtaining such access. EPA reserves the right to seek payment from Respondents for all costs, including cost of attorneys' time, incurred by the United States in obtaining such access.

22. In the event of any Transfer of any Z2&3 Interior Sampling Residence or any Z2&3 Interior Cleaning Residence, unless EPA otherwise consents in writing, Respondents shall continue to comply with their obligations under this Z2&3 Interior UAO, including their obligation to secure access.

23. Notwithstanding any provision of this Z2&3 Interior UAO, EPA retains all of its access authorities and rights including enforcement authorities related thereto under CERCLA, RCRA, and any other applicable statute or regulations.

XIII. ACCESS TO INFORMATION

24. Respondents shall provide to EPA, upon request, copies of all records, reports, documents, and other information (including records, reports, documents, and other information

in electronic form) (hereinafter referred to as "Records") within Respondents' possession or control or that of their contractors or agents relating to Z2&3 Interior Work or to the implementation of this Z2&3 Interior UAO, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information regarding the Z2&3 Interior Work. Respondents shall also make available to EPA, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Z2&3 Interior Work.

25. **Privileged and Protected Claims**

a. Respondents may assert that all or part of a Record requested by EPA is privileged or protected as provided under federal law, in lieu of providing the Record, provided Respondents comply with Paragraph 25.b, and except as provided in Paragraph 25.c.

b. If Respondents assert a claim of privilege or protection, they shall provide EPA with the following information regarding such Record: its title; its date; the name, title, affiliation (e.g., company or firm), and address of the author, of each addressee, and of each recipient; a description of the Record's contents; and the privilege or protection asserted. If a claim of privilege or protection applies only to a portion of a Record, Respondents shall provide the Record to EPA in redacted form to mask the privileged or protected portion only. Respondents shall retain all Records that they claim to be privileged or protected until EPA or a court determines that such Record is privileged or protected.

c. Respondents may make no claim of privilege or protection regarding: (1) any data regarding the Site, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, radiological, or engineering data, or the portion of any other Record that evidences conditions at or around the Site; or (2) the portion of any Record that Respondents are required to create or generate pursuant to this Z2&3 Interior UAO.

26. **Business Confidential Claims**. Respondents may assert that all or part of a Record provided to EPA under this Section or Section XIV (Retention of Records) is business confidential to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Respondents shall segregate and clearly identify all Records or parts thereof submitted under this Z2&3 Interior UAO for which Respondents assert business confidentiality claims. Records that Respondents claim to be confidential business information will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies Records when they are submitted to EPA, or if EPA has notified Respondents that the Records are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such Records without further notice to Respondents.

27. **Personally Identifiable Information**

a. In the course of implementing this Z2&3 Interior UAO, Respondents shall receive from EPA and shall generate themselves written and/or electronic materials that contain Personally Identifiable Information. Respondents shall keep PII confidential and not disclose it

to other persons or entities except as required by law, court order or other lawful process that protects disclosure to the public of PII. Respondents shall take all necessary and appropriate measures to maintain the confidentiality of PII and to retain written or electronic materials in a secure manner.

b. Respondents may share PII with agents and contractors of theirs who are responsible for assisting in the implementation of this Z2&3 Interior UAO provided that any such person with whom such information is shared either: (i) is specifically made aware of, and, prior to receiving the information, agrees in writing with Respondents to comply with the substantive requirements of ¶ 27.a as if he/she were a Respondent; or (ii) already has executed a confidentiality agreement with the Respondent that is broad enough to cover PII.

c. PII otherwise admissible, discoverable or subject to subpoena in any proceeding shall not be rendered inadmissible, non-discoverable or not subject to subpoena because of its coverage under this Z2&3 Interior UAO.

d. In the event that Respondents conclude in good faith that applicable law, a subpoena or other lawful process, or a court order, requires disclosure of PII to a third party, Respondents shall provide, as far as is practicable, advance written notice to EPA of the intent to disclose, including a description of the applicable law or a copy of the subpoena, process or order requiring disclosure. Respondents shall not disclose any Personally Identifiable Information sooner than one day following provision of such written notice, unless required by law or order of a court.

e. Each Respondent shall promptly report to EPA breaches of PII, unauthorized disclosures or releases, and/or system vulnerability (to the extent known). Any disclosure of PII in contravention of this Z2&3 Interior UAO shall not result in a waiver of the claim of confidentiality, except as provided by law.

28. Notwithstanding any provision of this Z2&3 Interior UAO, EPA retains all of its information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

XIV. RETENTION OF RECORDS

29. During the pendency of this Z2&3 Interior UAO and for a minimum of 10 years after EPA provides Certification of the Completion of the Z2&3 Interior Sampling and Cleaning Work under ¶ 4.14 of the Z2&3 Interior SOW, each Respondent shall preserve and retain all non-identical copies of Records (including Records in electronic form) now in its possession or control, or that come into its possession or control, that relate in any manner to its liability under CERCLA with respect to the Site, provided, however, that Respondents who are potentially liable as owners or operators of the Site must retain, in addition, all Records that relate to the liability of any other person under CERCLA with respect to the Site. Each Respondent must also retain, and instruct its contractors and agents to preserve, for the same period of time specified above, all non-identical copies of the last draft or final version of any Records (including Records in electronic form) now in its possession or control or that come into its possession or control that relate in any manner to the performance of the Z2&3 Interior Work, provided,

however, that each Respondent (and its contractors and agents) must retain, in addition, copies of all data generated during performance of the Z2&3 Interior Work and not contained in the aforementioned Records required to be retained. Each of the above record retention requirements shall apply regardless of any corporate retention policy to the contrary.

30. At the conclusion of this document retention period, Respondents shall notify EPA at least 90 days prior to the destruction of any such Records, and, upon request by EPA, and except as provided in Paragraph 25, Respondents shall deliver any such Records to EPA.

31. Each Respondent certifies individually that, to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed, or otherwise disposed of any Records (other than identical copies) relating to its potential liability regarding the Site since notification of potential liability by EPA and that it has fully complied with any and all EPA requests for information regarding the Site pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927.

XV. COMPLIANCE WITH OTHER LAWS

32. Nothing in this Z2&3 Interior UAO limits Respondent's obligations to comply with the requirements of all applicable state and federal laws and regulations, except as provided in Section 121(e) of CERCLA, 42 U.S.C. § 9621(e), and 40 C.F.R. §§ 300.400(e) and 300.415(j). In accordance with 40 C.F.R. § 300.415(j), all on-site actions required pursuant to this Z2&3 Interior UAO shall, to the extent practicable, as determined by EPA, considering the exigencies of the situation, attain applicable or relevant and appropriate requirements (ARARs) under federal environmental or state environmental or facility siting laws. Respondents shall include ARARs selected by EPA in the Z2&3 Interior SOW.

33. No local, state, or federal permit shall be required for any portion of the Z2&3 Interior Work conducted entirely on-site (i.e., within the areal extent of contamination or in very close proximity to the contamination and necessary for implementation of the Z2&3 Interior Work) including studies, if the action is selected and carried out in compliance with Section 121 of CERCLA, 42 U.S.C. § 9621. Where any portion of the Z2&3 Interior Work that is not on-site requires a federal or state permit or approval, Respondents shall submit timely and complete applications and take all other actions necessary to obtain and to comply with all such permits or approvals. This Z2&3 Interior UAO is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

XVI. PAYMENT OF Z2&3 INTERIOR RESPONSE COSTS

34. On a periodic basis, EPA will send Respondents a bill requiring payment of all Z2&3 Interior Response Costs incurred by the United States regarding this Z2&3 Interior UAO that includes an Itemized Cost Summary. Respondents shall, within 30 days, make full payment of the amount billed, in accordance with ¶¶ 35 and 36.

35. Respondents shall make payment by Fedwire EFT, referencing the Site/Spill ID number. The Fedwire EFT payment must be sent as follows:

Federal Reserve Bank of New York
ABA = 021030004
Account = 68010727
SWIFT address = FRNYUS33
33 Liberty Street
New York NY 10045
Field Tag 4200 of the Fedwire message should read
"D 68010727 Environmental Protection Agency"

36. All payments must include *all* of the following references: (1) Site/Spill ID Number 053J; (2) the EPA docket number for this matter; and (3) Z2&3 Interior UAO. At the time of payment, Respondents shall send notice that payment has been made to EPA and the EPA Cincinnati Finance Office in accordance with Section XVIII (Notices and Submissions). All notices must also include *all* of the following references: (1) Site/Spill ID Number 053J; (2) the EPA docket number for this matter; and (3) Z2&3 Interior UAO.

37. **Interest**. In the event that the payments for Z2&3 Interior Response Costs are not made within 30 days after Respondents' receipt of a written demand requiring payment, Respondents shall pay Interest on the unpaid balance. The Interest on Z2&3 Interior Response Costs shall begin to accrue on the date of the written demand and shall continue to accrue until the date of payment. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to EPA by virtue of Respondents' failure to make timely payments under this Section. Respondents shall make all payments under this Paragraph in accordance with ¶¶ 35 and 36.

XVII. ENFORCEMENT/WORK TAKEOVER

38. Any willful violation, or failure or refusal to comply with any provision of this Z2&3 Interior UAO may subject Respondents to civil penalties of up to $53,907 per violation per day, as provided in Section 106(b)(1) of CERCLA, 42 U.S.C. § 9606(b)(1), and the Civil Monetary Penalty Inflation Adjustment Rule, 81 Fed. Reg. 43,091, 40 C.F.R. Part 19.4. In the event of such willful violation, or failure or refusal to comply, EPA may carry out the required actions unilaterally, pursuant to Section 104 of CERCLA, 42 U.S.C. § 9604, and/or may seek judicial enforcement of this Z2&3 Interior UAO pursuant to Section 106 of CERCLA, 42 U.S.C. § 9606. Respondents may also be subject to punitive damages in an amount up to three times the amount of any costs incurred by the United States as a result of such failure to comply, as provided in Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3).

XVIII. NOTICES AND SUBMISSIONS

39. All approvals, consents, deliverables, modifications, notices, notifications, objections, proposals, reports, and requests specified in this Z2&3 Interior UAO must be in writing unless otherwise specified. Whenever, under this Z2&3 Interior UAO, notice is required to be given, or a report or other document is required to be sent, by one Party to another, it must be directed to the person(s) specified below at the address(es) specified below. Any Party may change the person and/or address applicable to it by providing notice of such change to all Parties. All notices under this Section are effective upon receipt, unless otherwise specified.

Except as otherwise provided, notice to a Party by email (if that option is provided below) or by regular mail in accordance with this Section satisfies any notice requirement of the Z2&3 Interior UAO regarding such Party.

As to EPA:

Director, Superfund Division
Region 5, US EPA
77 W. Jackson Blvd. (SR-6J)
Chicago, IL 60604-3590

Jacob Hassan
On-Scene Coordinator
Region 5, US EPA
77 W. Jackson Blvd. (SE-5J)
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Steven Kaiser
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77 West Jackson Blvd. (C-14J)

	Chicago, IL 60604-3590 kaiser.steven@epa.gov (312) 353-3804 Leonardo Chingcuanco Office of Regional Counsel Region 5, US EPA 77 West Jackson Blvd. (C-14J) Chicago, IL 60604-3590 chingcuanco.leonardo@epa.gov (312) 886-7236
As to the Regional Financial Management Officer:	Chief, Program Accounting and Analysis Section United States Environmental Protection Agency Region 5, MF-10J 77 West Jackson Blvd. Chicago, IL 60604-3590
As to EPA Cincinnati Finance Center	EPA Cincinnati Finance Center 26 W. Martin Luther King Dr. Cincinnati, OH 45268 cinwd_acctsreceivable@epa.gov

40. Respondents shall submit all deliverables in the manner specified in Section 6 of the Z2&3 Interior SOW.

XIX. RESERVATIONS OF RIGHTS BY EPA

41. Nothing in this Z2&3 Interior UAO shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants, or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing in this Z2&3 Interior UAO shall prevent EPA from seeking legal or equitable relief to enforce the terms of this Z2&3 Interior UAO, from taking other legal or equitable action as it deems appropriate and necessary, or from requiring Respondents in the future to perform additional activities pursuant to CERCLA or any other applicable law. EPA reserves the right to bring an action against Respondents under Section 107 of CERCLA, 42 U.S.C. § 9607, for recovery of any response costs incurred by the United States related to this Z2&3 Interior UAO or the Site and not paid by Respondents pursuant to this Z2&3 Interior UAO.

XX. OTHER CLAIMS

42. By issuance of this Z2&3 Interior UAO, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondents. The United States or EPA shall not be deemed a party to any contract entered into

by Respondents or their directors, officers, employees, agents, successors, representatives, assigns, contractors, or consultants in carrying out actions pursuant to this Z2&3 Interior UAO.

43. Nothing in this Z2&3 Interior UAO constitutes a satisfaction of or release from any claim or cause of action against Respondents or any person not a party to this Z2&3 Interior UAO, for any liability such person may have under CERCLA, other statutes, or common law, including but not limited to any claims of the United States under Sections 106 and 107 of CERCLA, 42 U.S.C. §§ 9606 and 9607.

44. Nothing in this Z2&3 Interior UAO shall be deemed to constitute preauthorization of a claim within the meaning of Section 111(a)(2) of CERCLA, 42 U.S.C. § 9611(a)(2), or 40 C.F.R. § 300.700(d).

45. No action or decision by EPA pursuant to this Z2&3 Interior UAO shall give rise to any right to judicial review, except as set forth in Section 113(h) of CERCLA, 42 U.S.C. § 9613(h).

XXI. INSURANCE

46. No later than 15 days before commencing any on-site Z2&3 Interior Work, Respondents shall secure, and shall maintain for the duration of this Z2&3 Interior UAO, commercial general liability with limits of liability of $1 million per occurrence, automobile liability insurance with limits of liability of $1 million per accident, and umbrella liability insurance with limits of liability of $5 million in excess of the required commercial general liability and automobile liability limits, naming EPA as an additional insured with respect to all liability arising out of the activities performed by or on behalf of Respondents pursuant to this Z2&3 Interior UAO. Within the same time period, Respondents shall provide EPA with certificates of such insurance and a copy of each insurance policy. Respondents shall submit such certificates and copies of policies each year on the anniversary of the Effective Date. In addition, for the duration of the Z2&3 Interior UAO, Respondents shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing Z2&3 Interior Work on behalf of Respondents in furtherance of this Z2&3 Interior UAO. If Respondents demonstrate by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in a lesser amount, then, with respect to that contractor or subcontractor, Respondents need provide only that portion of the insurance described above which is not maintained by such contractor or subcontractor. Respondents shall ensure that all submittals to EPA under this Paragraph identify the U.S. Smelter and Lead Refinery, Inc. Superfund Site, East Chicago, Indiana, and the EPA docket number for this action.

XXII. MODIFICATION

47. If circumstances warrant, an OSC may modify, in writing or by oral direction, the Z2&3 Interior SOW or any plan or schedule submitted pursuant to this Z2&3 Interior UAO of the Z2&3 Interior SOW. Any oral modification will be memorialized by EPA in writing within 30 days, but shall have as its effective date the date of the OSC's oral direction. Any other

requirements of this Z2&3 Interior UAO may be modified in writing by signature of the Superfund Division Director for Region 5. All modifications under this Paragraph must be consistent with the Fourth and Fifth Amendments to the Action Memorandum.

48. If Respondents seek permission to deviate from the Z2&3 Interior SOW or any approved deliverable or schedule, Respondents' Project Coordinator shall submit a written request to EPA for approval outlining the proposed modification and its basis. Respondents may not proceed with the requested deviation until receiving approval from the OSC pursuant to Paragraph 47.

49. No informal advice, guidance, suggestion, or comment by the OSCs or other EPA representatives regarding reports, plans, specifications, schedules, or any other writing submitted by Respondents shall relieve Respondents of their obligation to obtain any formal approval required by this Z2&3 Interior UAO or the Z2&3 Interior SOW, or to comply with all requirements of this Z2&3 Interior UAO and the Z2&3 Interior SOW, unless it is formally modified.

XXIII. DELAY IN PERFORMANCE

50. Respondents shall notify EPA of any delay or anticipated delay in performing any requirement of this Z2&3 Interior UAO. Such notification shall be made by telephone and email to the OSCs within 48 hours after Respondents first knew or should have known that a delay might occur. Respondents shall adopt all reasonable measures to avoid or minimize any such delay. Within 7 days after notifying EPA by telephone and email, Respondents shall provide to EPA written notification fully describing the nature of the delay, the anticipated duration of the delay, any justification for the delay, all actions taken or to be taken to prevent or minimize the delay or the effect of the delay, a schedule for implementation of any measures to be taken to mitigate the effect of the delay, and any reason why Respondents should not be held strictly accountable for failing to comply with any relevant requirements of this Z2&3 Interior UAO. Increased costs or expenses associated with implementation of the activities called for in this Z2&3 Interior UAO is not a justification for any delay in performance.

51. Any delay in performance of this Z2&3 Interior UAO that, in EPA's judgment, is not properly justified by Respondents under the terms of Paragraph 50 shall be considered a violation of this Z2&3 Interior UAO. EPA shall notify Respondents of any such violation. Any delay in performance of this Z2&3 Interior UAO shall not affect Respondents' obligations to fully perform all obligations under the terms and conditions of this Z2&3 Interior UAO. If EPA determines that a delay in performance of this Z2&3 Interior UAO is properly justified, EPA shall, in writing, inform Respondents of that determination and the revised deadline.

XXIV. ADDITIONAL REMOVAL ACTIONS

52. If EPA determines that additional removal actions not included in an approved plan are necessary to protect public health, welfare, or the environment, EPA will notify Respondents of that determination and will either modify this Z2&3 Interior UAO or issue a new order to address any additional removal actions. Any modification to this Z2&3 Interior UAO

under this Paragraph shall be consistent with the Fourth or Fifth Amendment to the Action Memorandum.

XXV. ADMINISTRATIVE RECORD

53. EPA has established an administrative record that contains the documents that form the basis for the issuance of this Z2&3 Interior UAO, including, but not limited to, the Fourth and Fifth Amendments. EPA will make the administrative record available for review at the EPA Region 5 Superfund Record Center located 77 W. Jackson Blvd., Chicago, IL 60604. A copy of the administrative record is also available for viewing at https://www.epa.gov/uss-lead-superfund-site.

XXVI. APPENDICES

54. The following appendices are attached to and incorporated into this Z2&3 Interior UAO:

a. Appendix A: Z2&3 Interior SOW

b. Appendix B: Map of USS Lead Site OU1 and OU2

c. Appendix C: Map of USS Lead Site OU1 – Zones 1, 2, and 3

d. Appendix D: Action Memorandum–Fourth Amendment

e. Appendix E: Action Memorandum–Fifth Amendment

f. Appendix F: Form of Interior Access Agreement

XXVII. SEVERABILITY

55. If a court issues an order that invalidates any provision of this Z2&3 Interior UAO or finds that Respondents have sufficient cause not to comply with one or more provisions of this Z2&3 Interior UAO, Respondents shall remain bound to comply with all provisions of this Z2&3 Interior UAO either not invalidated or not determined to be subject to a sufficient cause defense by the court's Z2&3 Interior UAO.

It is so ORDERED.

BY: _____ DATE: 10/14/2019

for Margaret M. Guerriero
Acting Division Director, Superfund Division
Region 5
U.S. Environmental Protection Agency

APPENDIX A

TO
Z2&3 INTERIOR UAO

Z2&3 INTERIOR SOW

UNILATERAL ADMINISTRATIVE ORDER

STATEMENT OF WORK FOR INTERIOR REMOVAL ACTION IN ZONE 2 AND ZONE 3 OF OPERABLE UNIT 1 OF THE USS LEAD SUPERFUND SITE

City of East Chicago, Lake County, State of Indiana

EPA Region 5

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1. INTRODUCTION

1.1 Background and Scope of the Zone 2 and Zone 3 Interior Statement of Work

(a) Background.

(1) This Statement of Work forms a part of the Unilateral Administrative Order (Z2&3 Interior UAO) for the continued implementation of interior removal activities at Zone 2 and Zone 3 of Operable Unit 1 of the U.S. Smelter and Lead Refinery, Inc. Superfund Site (Site) in East Chicago, Indiana, consistent with both the Action Memorandum–4th Amendment (hereinafter "Fourth Amendment") and the Action Memorandum–5th Amendment (hereinafter "Fifth Amendment"), which were signed by the Assistant Administrator of the Office of Land and Emergency Management of the U.S. Environmental Protection Agency on October 28, 2016, and March 14, 2017, respectively. This document shall be referred to as the "Z2&3 Interior Statement of Work" or the "Z2&3 Interior SOW."

(2) Operable Unit 1. EPA has divided the Site into two operable units: Operable Unit 1 (OU1) and Operable Unit 2 (OU2). OU1 consists generally of a residential neighborhood in East Chicago, Indiana, commonly known as the Calumet neighborhood. OU1 has been further divided into three zones: Zone 1 (Z1), Zone 2 (Z2), and Zone 3 (Z3). The definition and boundaries of OU1 and Zones 1, 2, and 3 are set forth in Section III ("Definitions") of the Z2&3 Interior UAO.

(3) Operable Unit 2. OU2 consists a 79-acre parcel of land that formerly housed the lead refining and smelting operations of U.S. Smelter and Lead Refinery Inc. (Former USS Lead Facility), as well as the groundwater associated with both OU1 and the Former USS Lead Facility. The definition of OU2 is set forth in the Definitions Section of the Z2&3 Interior UAO.

(b) Scope. This Z2&3 Interior SOW applies to the Z2&3 Interior Sampling and Cleaning Work, as that term is defined in the Z2&3 Interior UAO.

(c) Z2&3 Interior Sampling and Cleaning Work.

(1) Authorization and Applicability. In the Fourth and Fifth Amendments, EPA authorized certain removal actions in the interior of residences in Zones 2 and 3. These actions include sampling indoor dust for lead and arsenic, screening indoor paint for lead, and cleaning the interior of homes where the lead in the dust equals or exceeds 316 ppm and/or the arsenic in the dust equals or exceeds 26 ppm. The Fourth and Fifth Amendment also authorized re-cleaning of the interior of residences where a loading rate of 25 $\mu g/ft^2$ for lead or 36 $\mu g/ft^2$ for arsenic was not met after the initial or

any subsequent cleaning, unless sampling results indicate that lead-based paint may be present in the residence.

(2) Z2&3 Interior Sampling and Cleaning Work: Responsibilities. Respondents will be responsible for implementing the Z2&3 Interior Sampling and Cleaning Work. EPA will support Respondents in implementing the Z2&3 Sampling and Interior Work consistent with ¶ 4.11.

(d) Respondents will implement their activities consistent with the Z2&3 Interior UAO; this Z2&3 Interior SOW; the applicable parts of the Fourth and Fifth Amendments; all plans approved by EPA pursuant to the Z2&3 Interior UAO and this Z2&3 Interior SOW; any additional written direction provided by EPA; the *National Contingency Plan*; the *Superfund Lead-Contaminated Residential Sites Handbook*, August 2003 ("*Lead Handbook*"); and the documents and guidance identified in Section 9 of this Z2&3 Interior SOW.

1.2 Structure of the Z2&3 Interior SOW

- Section 2 (Community Involvement) sets forth EPA's and Respondents' responsibilities for community involvement.
- Section 3 has been intentionally left blank.
- Section 4 (Z2&3 Interior Sampling and Cleaning Work) sets forth requirements regarding the implementation of the Z2&3 Interior Sampling and Cleaning Work, including primary deliverables related to completion of the Z2&3 Interior Sampling and Cleaning Work.
- Section 5 (Reporting) sets forth Respondents' reporting obligations.
- Section 6 (Deliverables) describes the content of the supporting deliverables and the general requirements regarding Respondents' submission of, and EPA's review of, approval of, comment on, and/or modification of, the deliverables.
- Section 7 (Schedules) sets forth the schedule for submitting the primary deliverables, specifies the supporting deliverables that must accompany each primary deliverable, and sets forth the schedule of milestones regarding the completion of the Z2&3 Interior Sampling and Cleaning Work.
- Section 8 (State Participation) addresses providing documents to the State.
- Section 9 (References) provides a list of references, including URLs.

1.3 The terms used in this Z2&3 Interior SOW that are defined in CERCLA, in regulations promulgated under CERCLA, or in the Z2&3 Interior UAO, have the meanings assigned to them in CERCLA, in such regulations, or in the Z2&3 Interior UAO, except that the term "Paragraph" or "¶" means a paragraph of the Z2&3 Interior SOW, and the term "Section" means a section of this Z2&3 Interior SOW, unless otherwise stated.

2. COMMUNITY INVOLVEMENT

2.1 Community Involvement Responsibilities

(a) EPA has the lead responsibility for developing and implementing community involvement activities at the Site. Previously, EPA developed a Community Involvement Plan (CIP) for the Site. Pursuant to 40 C.F.R. § 300.435(c), EPA shall review the existing CIP and determine whether it should be revised to describe further public involvement activities during the Z2&3 Interior Sampling and Cleaning Work that are not already addressed or provided for in the existing CIP.

(b) If requested by EPA, Respondents shall participate in community involvement activities, including participation in (1) the preparation of information regarding the Z2&3 Interior Sampling and Cleaning Work for dissemination to the public, and (2) public meetings that may be held or sponsored by EPA to explain activities at or relating to the Site. Respondents' support of EPA's community involvement activities may include providing initial submissions and updates of deliverables to any Community Advisory Groups or other entity to provide them with a reasonable opportunity for review and comment. EPA may describe in its CIP Respondents' responsibilities for community involvement activities. All community involvement activities conducted by Respondents at EPA's request are subject to EPA's oversight.

(c) **Respondents' CI Coordinator**. Within 30 days of the Effective Date, Respondents shall designate and notify EPA of Respondents' Community Involvement Coordinator (Respondents' CI Coordinator). Respondents may hire a contractor for this purpose. Respondents' notice must include the name, title, and qualifications of the Respondents' CI Coordinator. Respondents' CI Coordinator is responsible for providing support regarding EPA's community involvement activities, including coordinating with EPA's CI Coordinator regarding responses to the public's inquiries about the Site.

3. THIS SECTION INTENTIONALLY BLANK

4. Z2&3 INTERIOR SAMPLING AND CLEANING WORK

4.1 Z2&3 Interior Sampling and Cleaning Work Plan. Respondents shall submit a Z2&3 Interior Sampling and Cleaning Work Plan (Z2&3 Interior WP) for EPA approval that includes:

(a) A proposed Z2&3 Interior Sampling and Cleaning Work Schedule in Gantt chart format;

(b) The deliverables or a schedule for the deliverables identified in Paragraph 6.7;

(c) A list of key contractor personnel who will provide support during the Z2&3 Interior Sampling and Cleaning Work; and

(d) A schedule of deliverables to be provided during the Z2&3 Interior Sampling and Cleaning Work.

4.2 Z2&3 Interior Sampling and Cleaning Work. Respondents shall conduct the Z2&3 Sampling and Cleaning Work in accordance with the Z2&3 Interior WP. At a minimum, the Z2&3 Interior WP shall include, and Respondents shall conduct, the activities identified in Paragraphs 4.3 through 4.8 of this Z2&3 Interior SOW.

4.3 Z2&3 Interior Sampling and Cleaning Work: Access.

(a) Form of Access Agreement. As set forth in the Z2&3 Interior UAO, Respondents may use an access agreement substantially in the form attached as Appendix F to the Z2&3 Interior UAO or may develop their own access agreement. Regardless, the access agreement shall include access for interior sampling and for response actions based on sampling results.

(b) Relevant Persons for Purposes of Securing Access and Providing Notification of Sampling Results. The following are the "Relevant Persons" for purposes of securing access and providing notification of sampling results:

(1) For Single Family Homes. The Owner and, if the Resident is different from the Owner, the Resident Lessee.

(2) For Multi-Family Homes/Apartments. Both the Owner and each Resident Lessee.

(c) Access Issues Related to Residences where the Resident is different from the Owner. For those residences where the Resident is different from the Owner, Respondents shall confer with EPA if either: (i) a conflict arises between an Owner and a Resident Lessee over access for any activity required by this Z2&3 Interior SOW; or (ii) a Resident is responsive to requests for access for any activity required by this Z2&3 Interior SOW but the Owner is non-responsive.

4.4 Z2&3 Interior Sampling Work: Initial Sampling.

(a) Residences Covered. Respondents shall implement the Z2&3 Interior Sampling Work at those residences in Zones 2 and 3 that meet the definition of "Z2&3 Interior Sampling Residence" where Respondents secure access.

(b) Timing.

(1) Zone 2.

(i) At the same time as, or as soon as reasonably possible after, performing a pre-construction walkthrough for exterior soil excavation work at a property, Respondents shall contact each Relevant Person identified in Paragraph 4.34.4(b) to secure access.

(ii) As soon as reasonably possible after completing exterior restoration activities at a property (excluding the 30-day maintenance period), Respondents shall contact each Resident whose residences they have secured access to and offer to schedule and perform the initial interior sampling of the residence.

(2) Zone 3. EPA shall notify Respondents when EPA has completed restoration activities (excluding the 30-day maintenance period) at a property. As soon as reasonably possible after that notification, Respondents shall contact each Relevant Person identified in Paragraph 4.34.4(b) to secure access. At the same time as trying to secure access from each Relevant Person, Respondents shall offer to each Resident to schedule and perform the interior sampling of the residence.

(3) Best Efforts. Respondents shall use best efforts to contact each Relevant Person identified in Paragraph 4.34.4(b) to secure access. Respondents shall also use best efforts to schedule the interior sampling with each Resident. Respondents shall keep a log of those efforts. No less than once a month commencing in the first month after the first restoration (excluding the 30-day maintenance period) of a property in Zone 2 or 3 is complete, Respondents and EPA shall confer about issues relating to communications, securing access, and scheduling sampling. The frequency of these communications may be increased at the request of either the Respondents or EPA. These conferences may be held in conjunction with the conferences related to cleaning identified in ¶ 4.5(b)(2) and re-cleaning identified in ¶ 4.7(b)(2).

(c) Activities Covered. Respondents shall conduct all Z2&3 Interior Sampling Work in accordance with the approved Indoor Dust and Lead-Based Paint Sampling Plan described in ¶ 6.7(d).

(d) Results Letters to Relevant Persons. No later than 7 days after receiving the final, verified interior sampling results for a residence, Respondents shall notify each Relevant Person identified in Paragraph 4.3(b), in writing, of the results. If Respondents do not have the final, verified interior sampling results for a residence within 21 days of taking those samples, Respondents shall notify each Relevant Person identified in Paragraph 4.3(b), in writing, of the delay.

4.5 Z2&3 Interior Cleaning Work.

(a) Residences Covered. Respondents shall implement the Z2&3 Interior Cleaning Work at those residences in Zones 2 and 3 that meet the definition of "Z2&3 Interior Cleaning Residence" where the Respondents secure access. Respondents shall implement the Z2&3 Interior Cleaning Work at a Z2&3 Interior Cleaning Residence even if lead-based paint is identified during the lead-based paint screening phase of the initial interior sampling event.

(b) Timing.

(1) Respondents shall offer to schedule and perform an interior cleaning to a Resident when Respondents notify the Resident of their final, verified interior sampling results.

(2) Best Efforts. Respondents shall use best efforts to communicate directly with a Resident after sending the initial offer to clean with the sample results notification letter. Respondents shall keep a log of those efforts. No less than once a month commencing in the first month after the first interior sampling results are received by Respondents, Respondents and EPA shall confer about issues relating to communications, securing access, and scheduling cleanings. The frequency of these communications may be increased at the request of either the Respondents or EPA. These conferences may be held in conjunction with the conferences related to sampling identified in ¶ 4.4(b)(3) and re-cleaning identified in ¶ 4.7(b)(2).

(c) Activities Covered. Respondents shall conduct all Z2&3 Interior Cleaning Work in accordance with the approved the Indoor Cleaning Plan described in ¶ 6.7(c).

4.6 Z2&3 Interior Sampling Work: Efficacy Sampling.

(a) Standard. Interior cleanings and re-cleanings are effective if the loading rate for floors after the cleaning is below 25 $\mu g/ft^2$ for lead and below 36 $\mu g/ft^2$ for arsenic.

(b) Residences Covered. Respondents shall implement Efficacy Sampling at all residences in Zone 2 and Zone 3 that have undergone interior cleaning or re-cleaning.

(c) Timing. Respondents shall conduct Efficacy Sampling as soon as they complete the interior cleaning of a residence. If Respondents are not able to complete Efficacy Sampling within 14 days of completing the cleaning, Respondents shall confer with EPA.

(d) Activities Covered. Respondents shall conduct all Efficacy Sampling in accordance with the approved Indoor Dust and Lead-Based Paint Sampling Plan described in ¶ 6.7(d).

(e) Results Letters to Relevant Persons. No later than 7 days after receiving all final, verified Efficacy Sampling results for a residence, Respondents shall notify each Relevant Person identified in Paragraph 4.3(b), in writing, of the results. If Respondents do not have the final, verified Efficacy Sampling results for a residence within 21 days of taking those samples, Respondents shall notify each Relevant Person identified in Paragraph 4.3(b), in writing, of the delay.

4.7 Z2&3 Interior Cleaning Work: Re-Cleanings.

(a) Residences Covered. Respondents shall re-clean the interior of a residence if the results of the Efficacy Sampling after the interior cleaning or re-cleaning shows a loading rate for floors at or above 25 µg/ft^2 for lead or 36 µg/ft^2 for arsenic; provided however, that Respondents are not required to re-clean any residence where the initial sampling indicated that lead-based paint may be present.

(b) Timing.

(1) Respondents shall offer to schedule and perform an interior re-cleaning to a Resident when Respondents notify a Resident in writing of their final, verified Efficacy Sampling results.

(2) Best Efforts. Respondents shall use best efforts to communicate directly with a Resident after sending the initial offer to re-clean with the Efficacy Sampling results. Respondents shall keep a log of those efforts. No less than once a month commencing in the first month after the first re-cleaning becomes necessary, Respondents and EPA shall confer about issues relating to communications, securing access, and scheduling cleanings and re-cleanings. The frequency of these communications may be increased at the request of either the Respondents or EPA. These conferences may be held in conjunction with the conferences related to sampling identified in ¶ 4.4(b)(3) and cleaning identified in ¶ 4.5(b)(2).

(c) Activities Covered. Respondents shall conduct all interior re-cleanings in accordance with the approved Indoor Cleaning Plan described in ¶ 6.7(c). Pursuant to that Indoor Cleaning Plan, Respondents shall be required to re-clean only those areas and associated areas of the residence where the loading rate for floors exceeded 25 µg/ft^2 for lead or 36 µg/ft^2 for arsenic. Respondents are not required to re-clean any residence where the initial sampling indicated that lead-based paint may be present.

4.8 Transport and Disposal. Respondents shall transport and dispose of any Waste Material generated by the Z2&3 Interior Sampling and Cleaning Work consistent with ¶ 4.13 of this Z2&3 Interior SOW.

4.9 Independent Quality Assurance Team. Respondents shall notify EPA of Respondents' designated Independent Quality Assurance Team (IQAT). The Supervising Contractor may perform this function or Respondents may hire a third party for this purpose. Respondents' notice must include the names, titles, contact information, and qualifications of the members of the IQAT. The IQAT will have the responsibility to determine whether Z2&3 Interior Sampling and Cleaning Work are of expected quality and conforms to applicable plans and specifications.

4.10 Meetings and Inspections

(a) **Pre-implementation Conference**. Respondents shall hold a conference with EPA and others as directed by EPA, prior to beginning any Z2&3 Interior Sampling

Work. Respondents shall prepare minutes of that meeting and shall distribute the minutes to all Parties.

(b) **Periodic Meetings**. During the Z2&3 Interior Sampling and Cleaning Work, Respondents shall conduct regular progress meetings to which EPA, and others as directed or determined by EPA, will be invited to discuss performance issues. Respondents shall distribute an agenda and list of attendees to all Parties prior to each meeting. Respondents shall prepare minutes of the meetings and shall distribute the minutes to all Parties. The meetings required by ¶¶ 4.3(c)(3), 4.4(b)(2), and 4.6(b)(2) may be integrated into these meetings.

(c) **Inspections**

(1) EPA or its representative shall conduct periodic inspections of the Z2&3 Interior Sampling and Cleaning Work. At EPA's request, the Supervising Contractor or other designee shall accompany EPA or its representative during inspections.

(2) Upon notification by EPA of any deficiencies in the Z2&3 Interior Sampling and Cleaning Work, Respondents shall take all necessary steps to correct the deficiencies and/or bring the Z2&3 Interior Sampling and Cleaning Work into compliance with the approved Z2&3 Interior WP. If applicable, Respondents shall comply with any schedule provided by EPA in its notice of deficiency.

4.11 EPA Support

(a) Respondents may refer any questions or comments from the public regarding the Site to the EPA's On-Scene Coordinator, the EPA CI Coordinator, or any other person designated by EPA.

(b) Upon request by Respondents' Project Coordinator or Supervising Contractor, an EPA On-Scene Coordinator will:

(1) Conduct pre-cleaning walkthroughs of individual properties with Respondents' employees and/or contractors;

(2) Conduct post-cleaning walkthroughs of individual properties with Respondents' employees and/or contractors; and

(3) Conduct additional walkthroughs of individual properties with Respondents' employees and/or contractors, as practicable.

4.12 Emergency Response and Reporting

(a) **Emergency Response and Reporting**. If any event occurs during performance of the Z2&3 Interior Sampling and Cleaning Work that causes or threatens to cause a release of Waste Material on, at, or from the Site and that either constitutes an

emergency situation or that may present an immediate threat to public health or welfare or the environment, Respondents shall: (1) immediately take all appropriate action to prevent, abate, or minimize such release or threat of release; (2) immediately notify the authorized EPA officer (as specified in ¶ 4.12(c)) orally; and (3) take such actions in consultation with the authorized EPA officers and in accordance with all applicable provisions of the Health and Safety Plan, the Emergency Response Plan, and any other deliverable approved by EPA under the Z2&3 Interior SOW. In the event that Respondents fail to take appropriate response action as required by this Paragraph, and EPA takes such action instead, EPA reserves the right to pursue cost recovery.

(b) **Release Reporting**. Upon the occurrence of any event during performance of the Z2&3 Interior Sampling and Cleaning Work that Respondents are required to report pursuant to Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA), 42 U.S.C. § 11004, Respondents shall immediately notify the authorized EPA officer orally.

(c) The "authorized EPA officers" for purposes of immediate oral notifications and consultations under ¶ 4.12(a) and ¶ 4.12(b) are the designated OSCs or the Emergency Response Section, Region 5, U.S. Environmental Protection Agency (if none of the OSCs are available), which is at (312) 353-2318.

(d) For any event covered by ¶ 4.12(a) and ¶ 4.12(b), Respondents shall: (1) within 14 days after the onset of such event, submit a report to EPA describing the actions or events that occurred and the measures taken, and to be taken, in response thereto; and (2) within 30 days after the conclusion of such event, submit a report to EPA describing all actions taken in response to such event.

(e) The reporting requirements under ¶ 4.12 are in addition to the reporting required by CERCLA § 103 or EPCRA § 304.

4.13 Off-Site Shipments

(a) Respondents may ship hazardous substances, pollutants, and contaminants from the Site to an off-Site facility only if they comply with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondents will be deemed to be in compliance with CERCLA § 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if Respondents obtain a prior determination from EPA that the proposed receiving facility for such shipment is acceptable under the criteria of 40 C.F.R. § 300.440(b).

(b) Respondents may ship Waste Material from the Site to an out-of-state waste management facility only if, prior to any shipment, they provide notice to the appropriate state environmental official in the receiving facility's state and to the EPA Project Coordinator. This notice requirement will not apply to any off-Site shipments when the total quantity of all such shipments does not exceed 10 cubic yards. The notice must include the following information, if available: (1) the

name and location of the receiving facility; (2) the type and quantity of Waste Material to be shipped; (3) the schedule for the shipment; and (4) the method of transportation. Respondents also shall notify the state environmental official referenced above and the EPA Project Coordinator of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-state facility. Respondents shall provide the notice after the award of the contract for the Z2&3 Interior Sampling and Cleaning Work and before the Waste Material is shipped.

(c) Respondents may ship Investigation Derived Waste (IDW) from the Site to an off-Site facility only if they comply with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), 40 C.F.R. § 300.440, EPA's *Guide to Management of Investigation Derived Waste*, OSWER 9345.3-03FS (Jan. 1992), and any IDW-specific requirements contained in the ROD. Wastes shipped off-Site to a laboratory for characterization, and RCRA hazardous wastes that meet the requirements for an exemption from RCRA under 40 CFR § 261.4(e) shipped off-site for treatability studies, are not subject to 40 C.F.R. § 300.440.

4.14 Certification of Completion of Z2&3 Interior Sampling and Cleaning Work

(a) Definitions.

(1) The "Cleanup Standards" for the Z2&3 Interior Sampling and Cleaning Work are:

(i) For residences where interior cleaning has not been performed, Interior Screening Levels below 316 mg/kg and 26 mg/kg for lead and arsenic, respectively.

(ii) For residences where interior cleaning has been performed, a loading rate for floors below 25 $\mu g/ft^2$ for lead and 36 $\mu g/ft^2$ for arsenic.

(2) "Z2&3 Interior Excluded Residences."

(i) Prior to scheduling a Z2&3 Interior Sampling and Cleaning Work Completion Meeting pursuant to Paragraph 4.14(b) of this Z2&3 Interior SOW, Respondents must secure a final list of the Z2&3 Interior Excluded Residences from EPA. The development of the list of Z2&3 Interior Excluded Residences shall take place as follows.

(ii) **No Access.** If, after the exercise of best efforts, Respondents cannot gain access to a residence to take interior samples or perform an interior cleaning, Respondents shall confer with EPA pursuant to ¶¶ 4.4(b)(3), 4.5(b)(2), and 4.7(b)(2), as applicable. If EPA agrees that Respondents shall not be required to undertake further efforts, EPA may undertake efforts to secure access. If EPA

secures the necessary access, Respondents shall thereafter perform the Z2&3 Interior Sampling Work and/or the Z2&3 Interior Cleaning Work, as applicable. If EPA does not secure access, this residence shall be placed on the preliminary list of Z2&3 Interior Excluded Residences.

(iii) **Lead Based Paint Present.** If, after conducting interior sampling at a residence, Respondents determine that lead-based paint may be present in the residence, Respondents shall keep a log of such residences and periodically provide that log to EPA.

(iv) **Cleanup Standards Cannot Be Met.** If, after conducting an interior cleaning at a residence, Respondents determine that the Cleanup Standard in ¶ 4.14(a)(1)(ii) cannot be met at a particular residence, Respondents shall notify EPA. EPA may elect to conduct sampling or screenings and/or perform cleanings at any residence to determine that either the Cleanup Standards cannot be met or that lead-based paint may be present in the residence. EPA reserves the right to seek cost recovery for any costs incurred by EPA under this ¶ 4.14(a)(2)(iv). If neither EPA nor Respondents can achieve the Cleanup Standard, then the residence shall be placed on the preliminary list of Z2&3 Interior Excluded Residences.

(v) No later than six months prior to Respondents' expected date of final demobilization of the Z2&3 Interior Cleaning Work, Respondents shall notify EPA of their expected date of final demobilization and will regularly update that expected date in the monthly Progress Reports submitted pursuant to ¶ 5.1.

(vi) By no later than 30 days after the notification in ¶ 4.14(a)(2)(v), EPA will finalize the preliminary list of Z2&3 Interior Excluded Residences and provide it to the Respondents. Thereafter, EPA and Respondents will informally discuss the list. By no later than 30 days prior to Respondents' expected date of final demobilization of the Z2&3 Interior Cleaning Work, EPA will provide to Respondents a final list of the "Z2&3 Interior Excluded Residences." The residences on this list shall constitute the "Z2 Interior Excluded Residences."

(vii) At such time as EPA provides Respondents with the final list of Z2&3 Interior Excluded Residences, Respondents' obligations to perform Z2&3 Interior Sampling and Cleaning Work at the Z2&3 Interior Excluded Residences shall cease under the Z2&3 Interior UAO and this Z2&3 Interior SOW. After Respondents complete any remaining Z2&3 Interior Sampling and Cleaning Work at any non-Z2&3 Interior Excluded Residences (if any), Respondents

may schedule a Z2&3 Interior Sampling and Cleaning Work Completion Meeting.

(b) **Z2&3 Interior Sampling and Cleaning Work Completion Meeting**. The Z2&3 Interior Sampling and Cleaning Work is "Complete" for purposes of this ¶ 4.14 when it has been fully performed and the Cleanup Standards have been achieved at all Z2&3 Interior Sampling Residences and all Z2&3 Interior Cleaning Residences, except the Z2&3 Interior Excluded Residences. Respondents shall schedule a meeting for the purpose of obtaining EPA's Certification of Completion of Z2&3 Interior Sampling and Cleaning Work. The meeting must be attended by Respondents and EPA and/or their representatives.

(c) **Z2&3 Interior Sampling and Cleaning Work Completion Report.** Following the meeting, Respondents shall submit a Z2&3 Interior Sampling and Cleaning Work Report to EPA requesting EPA's Certification of the Completion of the Z2&3 Interior Sampling and Cleaning Work. The report must: (1) include a certification by Respondents' Project Coordinator that the Z2&3 Interior Sampling and Cleaning Work are complete; (2) contain initial interior sampling results and Efficacy Sampling results to demonstrate that the Cleanup Standards have been achieved at all Z2&3 Interior Sampling Residences and Z2&3 Interior Cleaning Residences that are not included on the final list of Z2&3 Interior Excluded Residences; and (3) be certified in accordance with ¶ 6.5 (Certification).

(d) **EPA Notice of Deficiencies.** If EPA concludes that the Z2&3 Interior Sampling and Cleaning Work is not Complete, EPA shall so notify Respondents. EPA's notice must include a description of any deficiencies. EPA's notice may include a schedule for addressing such deficiencies or may require Respondents to submit a schedule for EPA approval. Respondents shall perform all activities described in the notice in accordance with the schedule.

(e) If EPA concludes, based on the initial or any subsequent Z2&3 Interior Sampling and Cleaning Work Completion Report requesting Certification of Z2&3 Interior Sampling and Cleaning Work Completion, that the Z2&3 Interior Sampling and Cleaning Work is Complete, EPA shall so certify to the Respondents. This certification will constitute the Certification of the Completion of the Z2&3 Interior Sampling and Cleaning Work for purposes of the Z2&3 Interior UAO. Issuance of the Certification of the Completion of the Z2&3 Interior Sampling and Cleaning Work will not affect Respondents' remaining obligations under the Z2&3 Interior UAO.

5. REPORTING

5.1 Progress Reports. Commencing with the month following the Effective Date of the Z2&3 Interior UAO and until EPA certifies the Z2&3 Interior Sampling and Cleaning Work Completion, Respondents shall submit progress reports to EPA on a monthly basis, or as otherwise requested by EPA. The reports must cover all activities that took place during the prior reporting period, including:

(a) The actions that have been taken toward achieving compliance with the Z2&3 Interior UAO;

(b) A summary of all results of sampling, tests, and all other data received or generated by Respondents;

(c) A description of all deliverables that Respondents submitted to EPA;

(d) A description of all activities relating to Z2&3 Interior Sampling and Cleaning Work that are scheduled for the next six weeks;

(e) An updated Z2&3 Interior Sampling and Cleaning Work Schedule (if that schedule has been modified), together with information regarding percentage of completion, delays encountered or anticipated that may affect the future schedule for implementation of the Z2&3 Interior Sampling and Cleaning Work, and a description of efforts made to mitigate those delays or anticipated delays;

(f) A description of any modifications to the work plans or other schedules that Respondents have proposed or that have been approved by EPA; and

(g) A description of all activities undertaken in support of the Community Involvement Plan during the reporting period and those to be undertaken in the next six weeks.

5.2 Notice of Progress Report Schedule Changes. If the schedule for any activity described in the Progress Reports, including activities required to be described under ¶ 5.1(d), changes, Respondents shall notify EPA of such change at least 7 days before performance of the activity.

6. DELIVERABLES

6.1 Applicability. Respondents shall submit deliverables for EPA approval or for EPA comment as specified in this Z2&3 Interior SOW. If neither is specified, the deliverable does not require EPA's approval or comment. Paragraphs 6.2 (In Writing) through 6.4 (Technical Specifications) apply to all deliverables. Paragraph 6.5 (Certification) applies to any deliverable that is required to be certified. Paragraph 6.6 (Approval of Deliverables) applies to any deliverable that is required to be submitted for EPA approval.

6.2 In Writing. All deliverables under this Z2&3 Interior SOW must be in writing unless otherwise specified.

6.3 General Requirements for Deliverables. All deliverables must be submitted by the deadlines in the Z2&3 Interior Sampling and Cleaning Work Schedule. Respondents shall submit all deliverables in electronic form. Technical specifications for sampling and monitoring data and spatial data are addressed in ¶ 6.4. All other deliverables shall be submitted to EPA in the electronic form specified by the EPA OSC. If any deliverable

includes maps, drawings, or other exhibits that are larger than 8.5" by 11", Respondents shall also provide EPA with paper copies of such exhibits.

6.4 Technical Specifications

(a) Sampling and monitoring data should be submitted in standard Regional Electronic Data Deliverable (EDD) format. Respondents shall consult with one or more of the OSCs prior to transmitting sampling and monitoring data in order to be advised of the EDD format that the data should be transmitted in. Other delivery methods may be allowed if electronic direct submission presents a significant burden or as technology changes.

(b) Spatial data, including spatially-referenced data and geospatial data, should be submitted: (1) in the ESRI File Geodatabase format; and (2) as unprojected geographic coordinates in decimal degree format using North American Datum 1983 (NAD83) or World Geodetic System 1984 (WGS84) as the datum. If applicable, submissions should include the collection method(s). Projected coordinates may optionally be included but must be documented. Spatial data should be accompanied by metadata, and such metadata should be compliant with the Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata and its EPA profile, the EPA Geospatial Metadata Technical Specification. An add-on metadata editor for ESRI software, the EPA Metadata Editor (EME), complies with these FGDC and EPA metadata requirements and is available at https://edg.epa.gov/EME/.

(c) Each file must include an attribute name for each site unit or sub-unit submitted. Consult http://www.epa.gov/geospatial/geospatial-policies-and-standards for any further available guidance on attribute identification and naming.

(d) Spatial data submitted by Respondents does not, and is not intended to, define the boundaries of the Site.

6.5 Certification. All deliverables that require compliance with this ¶ 6.5 must be signed by the Respondents' Project Coordinator, or other responsible official of Respondents, and must contain the following statement:

> I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

6.6 Approval of Deliverables

(a) **Initial Submissions**

(1) After review of any deliverable that is required to be submitted for EPA approval under the Z2&3 Interior UAO or this Z2&3 Interior SOW, EPA shall: (i) approve, in whole or in part, the submission; (ii) approve the submission upon specified conditions; (iii) disapprove, in whole or in part, the submission; or (iv) any combination of the foregoing.

(2) EPA also may modify the initial submission to cure deficiencies in the submission if: (i) EPA determines that disapproving the submission and awaiting a resubmission would cause substantial disruption to the Z2&3 Interior Sampling and Cleaning Work; or (ii) previous submission(s) have been disapproved due to material defects and the deficiencies in the initial submission under consideration indicate a bad faith lack of effort to submit an acceptable deliverable.

(b) **Resubmissions**. Upon receipt of a notice of disapproval under ¶ 6.6(a) (Initial Submissions), or if required by a notice of approval upon specified conditions under ¶ 6.6(a), Respondents shall, within 14 days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the deliverable for approval. After review of the resubmitted deliverable, EPA may: (1) approve, in whole or in part, the resubmission; (2) approve the resubmission upon specified conditions; (3) modify the resubmission; (4) disapprove, in whole or in part, the resubmission, requiring Respondents to correct the deficiencies; or (5) any combination of the foregoing.

(c) **Implementation**. Upon approval, approval upon conditions, or modification by EPA under ¶ 6.6(a) (Initial Submissions) or ¶ 6.6(b) (Resubmissions), of any deliverable, or any portion thereof: (1) such deliverable, or portion thereof, will be incorporated into and enforceable under the Z2&3 Interior UAO; and (2) Respondents shall take any action required by such deliverable, or portion thereof.

6.7 Supporting Deliverables. Respondents shall submit each of the following supporting deliverables for EPA approval as part of the Z2&3 Interior WP, except as specifically provided. Respondents shall develop the deliverables in accordance with all applicable regulations, guidances, and policies (see Section 9 (References)). Respondents shall update each of these supporting deliverables as necessary or appropriate during the course of the Z2&3 Interior Sampling and Cleaning Work, and/or as requested by EPA. For those documents which EPA will make available to Respondents, EPA will separately provide instructions to Respondents on how to access a secure website which has those documents.

(a) **Health and Safety Plan**. The Health and Safety Plan (HASP) describes all activities to be performed to protect on site personnel and area residents from physical, chemical, and all other hazards posed by the Z2&3 Interior Sampling and Cleaning Work. Respondents shall develop the HASP in accordance with EPA's Emergency Responder Health and Safety and Occupational Safety and

Health Administration (OSHA) requirements under 29 C.F.R. §§ 1910 and 1926. The HASP should cover activities during the Z2&3 Interior Sampling and Cleaning Work and be updated to cover activities after completion of the Z2&3 Interior Sampling and Cleaning Work. EPA does not approve the HASP, but will review it to ensure that all necessary elements are included and that the plan provides for the protection of human health and the environment. EPA shall make an example HASP that EPA developed for the residential areas of the USS Lead Site available to Respondents**.**

(b) **Emergency Response Plan**. The Emergency Response Plan (ERP) must describe procedures to be used in the event of an accident or emergency at the Site (for example, power outages, water impoundment failure, treatment plant failure, slope failure). The ERP must include:

(1) Name of the person or entity responsible for responding in the event of an emergency incident;

(2) Plan and date(s) for meeting(s) with the local community, including local, State, and federal agencies involved in the cleanup, as well as local emergency squads and hospitals;

(3) Spill Prevention, Control, and Countermeasures (SPCC) Plan (if applicable), consistent with the regulations under 40 C.F.R. Part 112, describing measures to prevent, and contingency plans for, spills and discharges;

(4) Notification activities in accordance with ¶ 4.12(b) (Release Reporting) in the event of a release of hazardous substances requiring reporting under Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA), 42 U.S.C. § 11004; and

(5) A description of all necessary actions to ensure compliance with ¶ 4.12 in the event of an occurrence during the performance of the Z2&3 Interior Sampling and Cleaning Work that causes or threatens a release of Waste Material from the Site that constitutes an emergency or may present an immediate threat to public health or welfare or the environment.

EPA shall make an example ERP that EPA developed for the residential areas of the USS Lead Site available at to Respondents.

(c) **Indoor Cleaning Plan**. The Indoor Cleaning Plan (ICP) addresses all interior cleaning and re-cleaning activities. The ICP must be written so that a cleaning team unfamiliar with the project would be able to perform the interior cleanings. The ICP must include:

(1) Procedures for documenting the conditions of residences both immediately before and immediately after any interior cleaning;

(2) Description of security measures to prevent unauthorized access to any residences being cleaned; and

(3) Procedures for managing waste.

The ICP must be substantially similar to EPA's *Site Work Plan: Interior Remedial Cleaning – Zone 2*, which EPA shall make available to Respondents, unless otherwise directed by EPA.

(d) **Indoor Dust and Lead-Based Paint Sampling Plan**. The Indoor Dust and Lead-Based Paint Sampling Plan (ISP) addresses all sample collection activities, including Efficacy Sampling. The ISP must be written so that a field sampling team unfamiliar with the project would be able to gather the samples and field information required. The ISP must include:

(1) Procedures for assessing the concentration of lead and arsenic present in indoor dust in a residence;

(2) Procedures for assessing by XRF whether lead-based paint may be a source of recontamination; and

(3) Procedures for assessing the effectiveness of any interior cleaning, including visual inspection, and for determining whether the loading rate for floors after any interior cleaning is below 25 $\mu g/ft^2$ for lead and 36 $\mu g/ft^2$ for arsenic.

The ISP must be substantially similar to EPA's *Abbreviated Sampling and Analysis Plan for the USS Lead Site*, which EPA shall make available to Respondents, unless otherwise directed by EPA.

(e) **Quality Assurance Project Plan**. The Quality Assurance Project Plan (QAPP) augments the ISP and addresses sample analysis and data handling regarding the Z2&3 Interior Sampling and Cleaning Work. The QAPP must include a detailed explanation of Respondents' quality assurance, quality control, and chain of custody procedures for all treatability, design, compliance, and monitoring samples. Respondents shall develop the QAPP in accordance with *EPA Requirements for Quality Assurance Project Plans*, QA/R-5, EPA/240/B-01/003 (Mar. 2001, reissued May 2006); *Guidance for Quality Assurance Project Plans*, QA/G-5, EPA/240/R 02/009 (Dec. 2002); and *Uniform Federal Policy for Quality Assurance Project Plans*, Parts 1-3, EPA/505/B-04/900A though 900C (Mar. 2005). The QAPP also must include procedures:

(1) To ensure that EPA and its authorized representative have reasonable access to laboratories used by Respondents in implementing the Z2&3 Interior Sampling and Cleaning Work (Respondents' Labs);

(2) To ensure that Respondents' Labs analyze all samples submitted by EPA pursuant to the QAPP for quality assurance monitoring;

(3) To ensure that Respondents' Labs perform all analyses using EPA-accepted methods (i.e., the methods documented in *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis*, ILM05.4 (Dec. 2006); *USEPA Contract Laboratory Program Statement of Work for Organic Analysis*, SOM01.2 (amended Apr. 2007); and *USEPA Contract Laboratory Program Statement of Work for Inorganic Superfund Methods (Multi-Media, Multi-Concentration)*, ISM01.2 (Jan. 2010)) or other methods acceptable to EPA;

(4) To ensure that Respondents' Labs participate in an EPA-accepted QA/QC program or other program QA/QC acceptable to EPA;

(5) For Respondents to provide split samples and/or duplicate samples to EPA upon request;

(6) For EPA to take any additional samples that it deems necessary;

(7) For EPA to provide to Respondents, upon request, split samples and/or duplicate samples in connection with EPA's oversight sampling; and

(8) For Respondents to submit to EPA all sampling and tests results and other data in connection with the implementation of the Z2&3 Interior Sampling and Cleaning Work.

EPA shall make an example QAPP that EPA developed for interior sampling and cleaning work at the USS Lead Site available to Respondents**.**

(f) **Resident Communication Plan.** The Resident Communication Plan (RCP) addresses outreach to residents by Respondents and their employees, contractors, and representatives. The RCP must include:

(1) Procedures for securing access agreements for the Z2&3 IRA;

(2) Procedures for scheduling interior sampling and interior cleaning activities with residents;

(3) Procedures for notifying owners and residents, in writing, of the final interior sampling results and their meanings; and

(4) Description of materials to be provided to owners and residents whose residences may contain lead-based paint, based on final interior sampling results. EPA shall provide those materials to Respondents.

EPA shall make an example RCP that EPA developed for interior sampling and cleaning work at the USS Lead Site available to Respondents**.**

(g) **Addendum to the Data Management Plan.** EPA shall make EPA's current Data Management Plan for residential areas of the USS Lead Site available to

Respondents. Respondents shall prepare an Addendum to the Data Management Plan (ADMP) that shall describe the information that Respondents shall collect during the Z2&3 Interior Sampling and Cleaning Work and how Respondents shall collect and manage that information so that it is compatible with EPA's data management practices.

(1) For field activities, the ADMP must include requirements to use the appropriate iForm (or equivalent) to record dust sampling information for initial sampling and Efficacy Sampling.

(2) The flow chart on Page 4 of the current Data Management Plan identifies data that must be exported to Scribe (which is a software program for managing environmental data). For data that must be exported to Scribe, the ADMP must include requirements to:

(i) Re-create digital forms for field data entry (i.e., using iForms or equivalent);

(ii) Ensure that export data from digital forms can be imported to Scribe without adjustments to Scribe (stated otherwise, ensure that comma-separated values (CSV) files are able to be imported to Scribe without adjustments to Scribe);

(iii) QA/QC CSV exports for iForms (or equivalent) to ensure information entered is correct/valid;

(iv) Update the field version of Scribe by subscribing to the updated version of Scribe.NET;

(v) Upload CSV files into field version of Scribe for creation of chain of custody (COC) for submission of samples;

(vi) Export the COC XML files from Scribe;

(vii) Email the CSV files from the digital forms and the COC XML files to the database administrator; and

(viii) Backup all CSV and COC XML files submitted to the database administrator.

EPA will work with Respondents during their development of the ADMP and the necessary digital forms.

7. SCHEDULES

7.1 Applicability and Revisions. All deliverables and tasks required under this Z2&3 Interior SOW must be submitted or completed by the deadlines or within the time durations listed in the Z2&3 Interior Sampling and Cleaning Work Schedule set forth

below. Respondents may submit proposed revised Z2&3 Interior Sampling and Cleaning Work Schedules for EPA approval. Upon EPA's approval, the revised Z2&3 Interior Sampling and Cleaning Work Schedules supersede the Z2&3 Interior Sampling and Cleaning Work Schedule set forth below, and any previously-approved Z2&3 Interior Sampling and Cleaning Work Schedules.

7.2 Z2&3 Interior Sampling and Cleaning Work Schedule

	Description of Deliverable / Task	**¶ Ref.**	**Deadline (the dates are "not later than") ("days" is calendar days)**
1	Z2&3 Interior WP	4.1	60 days after EPA's Notice of Authorization to Proceed regarding the Supervising Contractor under ¶ 15(c)(2) of the Z2&3 Interior UAO
2	Designate IQAT (either a third party or the Supervising Contractor)	4.9	30 days after EPA's Notice of Authorization to Proceed regarding the Supervising Contractor under ¶ 15(c)(2) of the Z2&3 Interior UAO
3	Pre-Implementation Conference	4.10(a)	60 days after EPA's Notice of Authorization to Proceed regarding the Supervising Contractor under ¶ 15(c)(2) of the Z2&3 Interior UAO
4	Start of Z2&3 Interior Sampling and Cleaning Work Implementation		Per approved Z2&3 Interior Sampling and Cleaning Work Schedule and consistent with the timing requirements of ¶¶ 4.4(b)(1) (interior sampling for residences in Zone 2); 4.4(b)(2) (interior sampling for residences in Zone 3); 4.5(b)(2) (interior cleaning); 4.6(c) (Efficacy Sampling); and 4.7(b) (re-cleaning)
5	Completion of Z2&3 Interior Sampling and Cleaning Work		Per approved Z2&3 Interior Sampling and Cleaning Work Schedule
6	Z2&3 Interior Sampling and Cleaning Work Completion Meeting	4.14(b)	60 days after Completion of Z2&3 Interior Sampling and Cleaning Work
7	Z2&3 Interior Sampling and Cleaning Work Completion Report	4.14(c)	60 days after the Z2&3 Interior Sampling and Cleaning Work Completion Meeting

8. STATE PARTICIPATION

8.1 Respondents shall, at any time they send a deliverable to EPA, send a copy of such deliverable to the State in care of:

Doug Petroff
Project Manager, Federal Programs
Indiana Dep't of Environmental Management

100 North Senate Ave.
IGCN – 11th Floor
Indianapolis, IN 46204

EPA shall, at any time it sends a notice, authorization, approval, disapproval, or certification to Respondents, send a copy of such document to the State.

9. REFERENCES

9.1 The following regulations and guidance documents, among others, apply to the Z2&3 Interior Sampling and Cleaning Work. Any item for which a specific URL is not provided below is available on one of the two EPA Web pages listed in ¶ 9.2:

(a) A Compendium of Superfund Field Operations Methods, OSWER 9355.0-14, EPA/540/P-87/001a (Aug. 1987).

(b) CERCLA Compliance with Other Laws Manual, Part I: Interim Final, OSWER 9234.1-01, EPA/540/G-89/006 (Aug. 1988).

(c) CERCLA Compliance with Other Laws Manual, Part II, OSWER 9234.1-02, EPA/540/G-89/009 (Aug. 1989).

(d) Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, OSWER 9355.5-01, EPA/540/G-90/001 (Apr.1990).

(e) Guidance on Expediting Remedial Design and Remedial Actions, OSWER 9355.5-02, EPA/540/G-90/006 (Aug. 1990).

(f) Guide to Management of Investigation-Derived Wastes, OSWER 9345.3-03FS (Jan. 1992).

(g) Permits and Permit Equivalency Processes for CERCLA On-Site Response Actions, OSWER 9355.7-03 (Feb. 1992).

(h) National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule, 40 C.F.R. Part 300 (Oct. 1994).

(i) Guidance for Scoping the Remedial Design, OSWER 9355.0-43, EPA/540/R-95/025 (Mar. 1995).

(j) Remedial Design/Remedial Action Handbook, OSWER 9355.0-04B, EPA/540/R-95/059 (June 1995).

(k) EPA Guidance for Data Quality Assessment, Practical Methods for Data Analysis, QA/G-9, EPA/600/R-96/084 (July 2000).

(l) Comprehensive Five-year Review Guidance, OSWER 9355.7-03B-P, 540-R-01-007 (June 2001).

(m) Guidance for Quality Assurance Project Plans, QA/G-5, EPA/240/R-02/009 (Dec. 2002).

(n) Superfund Lead-Contaminated Residential Sites Handbook, OSWER 9285.7-50 (Aug. 2003).

(o) Institutional Controls: Third Party Beneficiary Rights in Proprietary Controls (Apr. 2004).

(p) Quality management systems for environmental information and technology programs - Requirements with guidance for use, ASQ/ANSI E4:2014 (American Society for Quality, February 2014).

(q) Uniform Federal Policy for Quality Assurance Project Plans, Parts 1-3, EPA/505/B-04/900A though 900C (Mar. 2005).

(r) Superfund Community Involvement Handbook, SEMS 100000070 (January 2016), http://www.epa.gov/superfund/community-involvement-tools-and-resources.

(s) EPA Guidance on Systematic Planning Using the Data Quality Objectives Process, QA/G-4, EPA/240/B-06/001 (Feb. 2006).

(t) EPA Requirements for Quality Assurance Project Plans, QA/R-5, EPA/240/B-01/003 (Mar. 2001, reissued May 2006).

(u) EPA Requirements for Quality Management Plans, QA/R-2, EPA/240/B-01/002 (Mar. 2001, reissued May 2006).

(v) USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, ILM05.4 (Dec. 2006).

(w) USEPA Contract Laboratory Program Statement of Work for Organic Analysis, SOM01.2 (amended Apr. 2007).

(x) EPA National Geospatial Data Policy, CIO Policy Transmittal 05-002 (Aug. 2008), http://www.epa.gov/geospatial/geospatial-policies-and-standards and http://www.epa.gov/geospatial/epa-national-geospatial-data-policy.

(y) Principles for Greener Cleanups (Aug. 2009), http://www.epa.gov/greenercleanups/epa-principles-greener-cleanups.

(z) USEPA Contract Laboratory Program Statement of Work for Inorganic Superfund Methods (Multi-Media, Multi-Concentration), ISM01.2 (Jan. 2010).

(aa) Close Out Procedures for National Priorities List Sites, OSWER 9320.2-22 (May 2011).

(bb) Recommended Evaluation of Institutional Controls: Supplement to the "Comprehensive Five-Year Review Guidance," OSWER 9355.7-18 (Sep. 2011).

(cc) Construction Specifications Institute's MasterFormat 2012, available from the Construction Specifications Institute, http://www.csinet.org/masterformat.

(dd) Updated Superfund Response and Settlement Approach for Sites Using the Superfund Alternative Approach, OSWER 9200.2-125 (Sep. 2012)

(ee) Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites, OSWER 9355.0-89, EPA/540/R-09/001 (Dec. 2012).

(ff) Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites, OSWER 9200.0-77, EPA/540/R-09/02 (Dec. 2012).

(gg) EPA's Emergency Responder Health and Safety Manual, OSWER 9285.3-12 (July 2005 and updates), http://www.epaosc.org/_HealthSafetyManual/manual-index.htm

(hh) Broader Application of Remedial Design and Remedial Action Pilot Project Lessons Learned, OSWER 9200.2-129 (Feb. 2013).

(ii) Groundwater Remedy Completion Strategy: Moving Forward with the End in Mind, OSWER 9200.2-144 (May 2014).

(jj) Guidance for Management of Superfund Remedies in Post Construction, OLEM 9200.3-105 (Feb. 2017), https://www.epa.gov/superfund/superfund-post-construction-completion.

9.2 A more complete list may be found on the following EPA Web pages:

Laws, Policy, and Guidance: http://www.epa.gov/superfund/superfund-policy-guidance-and-laws

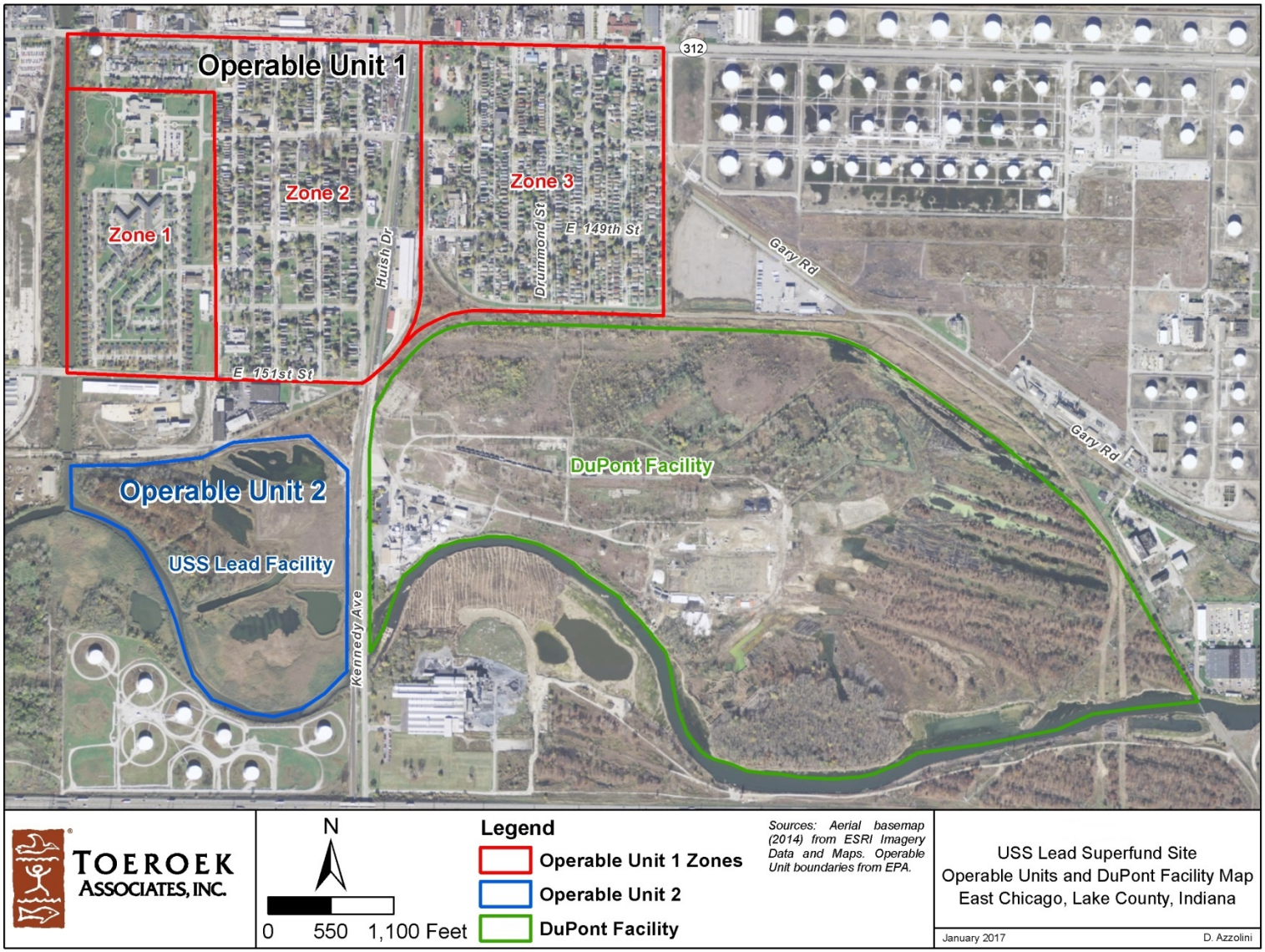
Test Methods Collections: http://www.epa.gov/measurements/collection-methods

9.3 For any regulation or guidance referenced in the Z2&3 Interior UAO or Z2&3 Interior SOW, the reference will be read to include any subsequent modification, amendment, or replacement of such regulation or guidance. Such modifications, amendments, or replacements apply to the Z2&3 Interior Sampling and Cleaning Work only after Respondents receive notification from EPA of the modification, amendment, or replacement.

APPENDIX B

TO
Z2&3 INTERIOR UAO

MAP OF USS LEAD SITE OU1 AND OU2

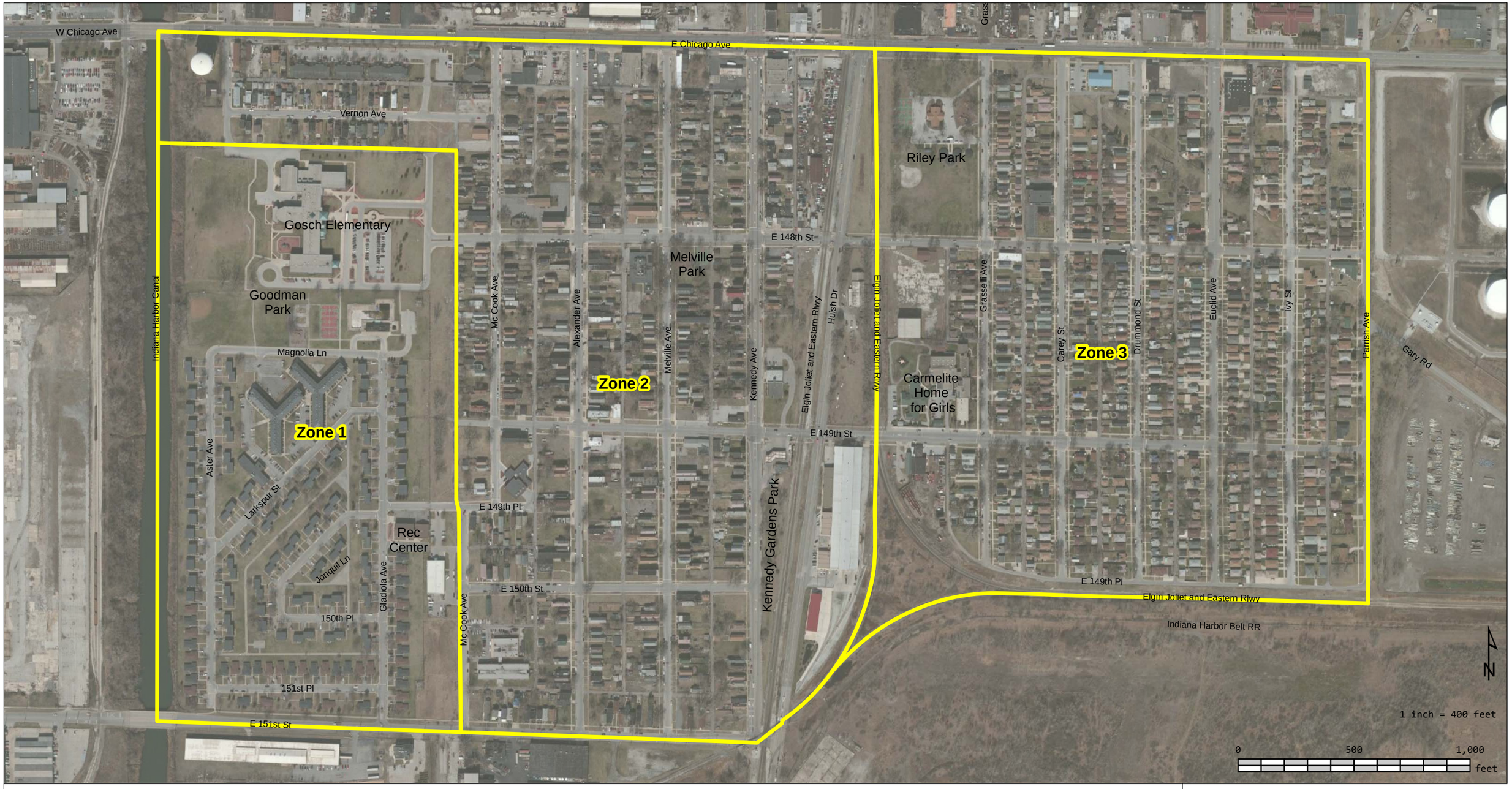


APPENDIX B: USS Lead Superfund Site Operable Units 1 and 2

APPENDIX C

TO
Z2&3 INTERIOR UAO

MAP OF USS LEAD SITE
OU1 – ZONES 1, 2, AND 3



Zone

Basemap source: Esri

US SMELTER & LEAD REFINERY
LAKE COUNTY, EAST CHICAGO, INDIANA

APPENDIX C

OU1 ZONES

EPA REGION 5 RAC 2 | REVISION 0 | JULY 2014

SulTRAC

APPENDIX D

TO
Z2&3 INTERIOR UAO

ACTION MEMORANDUM
FOURTH AMENDMENT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

OCT 24 2016

REPLY TO THE ATTENTION OF:

MEMORANDUM

SUBJECT: **ACTION MEMORANDUM – 4th AMENDMENT:** Request for a Change in Scope and Ceiling Increase for the Time-Critical Removal Action at the U.S. Smelter and Lead Refinery Site, East Chicago, Lake County, Indiana (Site ID # 053J)

FROM: Douglas Ballotti, Acting Director
Superfund Division

THRU: Reggie Cheatham, Office Director
Office of Emergency Management (OEM)

TO: Mathy Stanislaus, Assistant Administrator
Office of Land and Emergency Management

I. PURPOSE

The purpose of this Action Memorandum Amendment is to request and document your approval, consistent with Section 104(c)(1)(A) of CERCLA, 42 U.S.C. Section 9604 (c)(1)(A), to Change the Scope of the Response and for a Ceiling Increase for the time-critical removal action at portions of the U.S. Smelter and Lead Refinery Site (the Site) residential area defined as Zone 2 of Operable Unit 1 (OU1), in East Chicago, Lake County, Indiana (see Figure 2). The sought increase of $13,870,506 would raise the project ceiling for the time-critical removal action from $26,397,542 to $40,268,048

The Change of Scope of the Response and Ceiling Increase is necessary as the previous Action Memoranda approved on January 22, 2008, August 13, 2008, September 12, 2011, and October 13, 2016 (Attachments IX, X, XI, XII), were for the excavation and proper disposal of lead-contaminated soils from residential parcels in OU1, Zones 1, 2 and 3, indoor cleanup of lead contaminated dust inside of residences in Zone 1, and temporary relocation of residents in the West Calumet Housing Complex (WCHC) in Zone 1. Subsequent soil data collected in Zone 2 during the remedial design (RD) phase in order to implement EPA's Remedial Action as set forth in the Record of Decision (November 2012), found lead and arsenic concentrations in surface soils (0-6") in a number of residential yards above EPA screening criteria.

Response actions are necessary in Zone 2 of OU1 to mitigate threats to public health, welfare, and the environment posed by the release and/or threatened release of uncontrolled hazardous substances at the Site. This removal involves (1) the excavation and proper disposal of lead

and/or arsenic contaminated soils from residential parcels in Zone 2, and (2) testing for lead and/or arsenic contaminated dust in residential homes if requested by the home owner and, if necessary, removal of the contaminated dust.

Conditions existing at the Site present a threat to public health and the environment and meet the criteria for initiating a removal action under 40 CFR § 300.415(b) of the National Contingency Plan (NCP). The U.S. Environmental Protection Agency (EPA or the Agency) documented elevated levels of lead and arsenic in surface soil in residential parcels at the Site. Lead and arsenic are hazardous substances as defined by Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

There are no nationally significant or precedent setting issues associated with the Change of Scope sought in this Action Memorandum to the extent it seeks approval for the excavation of soils. Testing at the owner's request and the removal of lead and/or arsenic contaminated dust in residential homes may set a precedent. The Site is on the National Priorities List (NPL).

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID: IND047030226
RCRA ID: IND047030226
STATE ID: None
Category: Time-Critical Removal

A. Site Description

1. Removal Site Evaluation

The Indiana Department of Environmental Management (IDEM) sampled some of the residential parcels to the north of the U.S. Smelter and Lead Refinery, Inc. (U.S.S. Lead) facility in 1985. This area is now known as Operable Unit 1 of the Site. IDEM found elevated lead levels in these residential yards. In September of 1985, the Indiana State Board of Health found the U.S.S. Lead facility in violation of state law and stated that the lead-contaminated soils within the facility boundaries may pose a risk to human health and the environment. IDEM referred the U.S.S. Lead facility, but not the area now known as Operable Unit 1, to EPA for cleanup.

From 1993 through 2006, EPA's Resource Conservation and Recovery Act (RCRA) Corrective Action program oversaw the remediation and management of lead-contaminated soils within the boundaries of the U.S.S. Lead facility, currently referred to as Operable Unit 2 (OU2). On November 18, 1993, EPA and U.S.S. Lead entered into an Administrative Order on Consent (AOC) pursuant to Section 3008(h) of RCRA. The AOC required U.S.S. Lead to implement interim measures, including site stabilization and construction of a corrective action management unit (CAMU) to contain contaminated soils and slag and to conduct a Modified RCRA Facility Investigation at the U.S.S. Lead facility, OU2. The CAMU covers approximately 10 acres and is surrounded by a subsurface slurry wall. Excavation and construction of the CAMU was conducted in two phases and completed between August and September 2002. Slag generated from the blast-furnace operations was routinely placed by U.S.S. Lead in piles on the southern

portion of the property near the banks of the Grand Calumet River. The cleanup of slag was described in the Interim Stabilization Measures Work Plan prepared by ENTACT, LLC and was completed during the third quarter of 2002.

As part of a RCRA Corrective Action in 2003 and 2006, EPA conducted soil sampling in the residential neighborhood to the north located in OU1 of the U.S.S. Lead Site. In the investigation of late July and early August 2003, 83 residential parcels within OU1 were sampled and analyzed for lead using a Niton X-ray fluorescence (XRF) instrument. Soils from 43 locations (52 percent) exceeded the 400 milligrams per kilogram (mg/kg) residential soil screening criterion for lead. In 2006, EPA's Field Environmental Decision Support (FIELDS) team supplemented the work performed in 2003 by collecting additional data from 14 parcels sampled in 2003 to (1) assess whether the top-most soils (zero to one inch below ground surface (bgs)) had elevated lead concentrations relative to deeper soils (one to six inches bgs), (2) collect and compare composite samples to individual samples to assess whether composite samples accurately represented the concentrations in residential yards and parks, and (3) compare lead concentrations in the fine and coarse fractions of sieved samples to evaluate whether lead was preferentially distributed in the fine-grain sizes. These sampling results showed some yards in OU1 to have high levels of lead contamination with the highest sample containing lead at 3,000 mg/kg. The RCRA Corrective Action program looked at the possible source of the lead contamination and determined it was from various industrial sources. The RCRA Corrective Action program referred OU1—the off-site contamination from the U.S.S. Lead facility—and other industrial sources to the Superfund Program in 2004; the remainder of OU2—the on-site contamination—was referred in 2006.

Consistent with the OSWER Publication 9285.7-50 *Superfund Lead-Contaminated Residential Sites Handbook* (Handbook) (2003), the Superfund Program used a tiered approach to prioritize which homes needed to be cleaned up first. Residential parcels with lead concentrations in surface soil at or greater than 1,200 mg/kg were the highest priority for immediate action under a time-critical removal action. Residential parcels with lead concentrations in surface soil below 1,200 mg/kg, but above 400 mg/kg would be addressed through remedial actions. EPA does not consider the 1,200 mg/kg concentration as an action level for removal actions, but this level does provide an alternative to running the Integrated Exposure Uptake Biokinetic (IEUBK) model with limited data to determine if the site poses an urgent threat. On January 22, 2008, EPA signed the original action memorandum to conduct a time-critical removal action in OU1 to address known parcels with lead levels in surface soil exceeding 1,200 mg/kg. These parcels had been identified as part of the RCRA Corrective Action residential investigation. The EPA identified 15 private parcels that contained soil with lead concentrations exceeding 1,200 mg/kg in the top six inches of soil. On June 9, 2008, the EPA initiated the time-critical removal action to address the 15 residential parcels with lead levels exceeding 1,200 mg/kg. On August 13, 2008, the EPA amended the original action memorandum to increase the project ceiling by $511,950 for a total of $984,060. The EPA was able to obtain access agreements and remediate only 13 of the 15 parcels. The removal action was completed on November 18, 2008. In total, 1,838 tons of lead-contaminated soil were removed and disposed of at an approved landfill.

A Remedial Investigation (RI) was conducted from 2009 through 2010 to collect additional soil data in OU 1 which consists of Zone 1, Zone 2, and Zone 3. As a result of the sampling, EPA

discovered an additional 14 areas within OU1 with lead levels exceeding the removal action level of 1,200 mg/kg. On September 11, 2011, EPA signed the second amendment to the original action memorandum which increased the total project ceiling to $1,928,460. On October 11, 2011, EPA started the time-critical removal action involving lead-contaminated soil removals at five West Calumet Housing Complex (WCHC) addresses (located in Zone 1) and nine other residential parcels outside the WCHC. In addition, two parcels that were not remediated during the previous removal action in 2008 because of access issues were remediated during this removal action. The removal action was completed on December 9, 2011. In total, 1,913 additional tons of lead-contaminated soil were removed and disposed of at an approved landfill as a result of the 2011 removal activities.

In November 2012, EPA issued a Record of Decision (ROD) for Operable Unit 1 (OU1) of the Site. OU1 has been divided into 3 separate zones for implementation of the remedy (Zones 1, 2, and 3). OU1 contains residential yards contaminated with lead and arsenic at levels that pose a threat to human health through ingestion, inhalation and direct contact. EPA's selected remedy for OU1 addresses these risks from exposure to contaminated soils through the excavation and off-site disposal of lead or arsenic contaminated soils. The remedial action levels (RALs) for OU1 are 400 mg/kg for lead at residential parcels, 800 mg/kg for lead at industrial/commercial parcels, and 26 mg/kg for arsenic at both residential and industrial/commercial parcels.

From November 2014 through April 2015, EPA conducted more extensive soil sampling within Zone 1 as part of the remedial design process for OU1 and completed remedial designs for Zone 1 in October 2015. Zone 1 includes approximately 118 separate "parcels," including 111 parcels in the WCHC, three right-of-way parcels, and a school, park, recreation center, and maintenance facilities. EPA sampled all parcels in Zone 1 except a narrow strip of land on the east bank of the Indiana Harbor Canal. In May 2016, EPA received validated sampling results which revealed lead concentrations in soil up to 24 inches in depth ranged from non-detect (ND) to 91,100 mg/kg for lead. Arsenic concentrations ranged from ND to 3,530 mg/kg (See Attachment V – Summary of OU1 RD Soil Sampling Results). Within Zone 1, a total of 117 parcels exceeded the removal management level (RML) for lead of 400 mg/kg for residential soil and 61 parcels exceeded the RML for arsenic of 68 mg/kg. Each of the parcels that exceeded the RML for arsenic also exceeded the RML for lead. Sample results from surface soils (0-6") indicated that lead concentrations at 13 parcels in the WCHC exceed 5,000 mg/kg with concentrations up to 45,000 mg/kg.

Beginning in July 2016, EPA began conducting more extensive soil sampling within Zone 2 as part of the RD process for OU1. Zone 2 includes approximately 590 separate "parcels." Most of these parcels are residential parcels, though there are some commercial/industrial parcels. In September 2016, EPA received validated sampling results from 48 parcels which revealed lead concentrations in surface soil (0-6 inches below ground surface) at values ranging from 38.3 to 2,120 mg/kg. Arsenic concentrations ranged from 4.3 to 111 mg/kg (See Attachment V – Summary of OU1 RD Soil Sampling Results). Ten sampled parcels had surface soil lead concentrations above 1,200 mg/kg and 40 of 48 parcels exceed the RML for lead of 400 mg/kg for residential surface soil. Two parcels exceeded the 68 mg/kg RML for arsenic (111 and 78.1 mg/kg in surface soil). One parcel that exceeded the RML for arsenic also exceeded the RML for lead in soil.

On July 29, 2016, EPA initiated in-house sampling for dust collection in Zone 1 to determine lead concentrations in homes given the elevated levels of lead in surface soils within the WCHC and the likelihood that lead contaminated soil/dust was being tracked or blown into the housing units. EPA prioritized homes for sampling based on the likelihood that they would have elevated lead levels in indoor dust, based on elevated lead concentrations in yards and elevated blood lead level (BLL) records associated with those residences. As of September 28, 2016, EPA has received validated results from 154 residences. Concentrations ranged from 3.9 to 32,000 mg/kg for lead fines and 0.12J (J means the associated value is the approximate concentration) to 880 mg/kg for arsenic fines. Results from indoor dust from the first 154 homes indicate 69 parcels exceed the EPA screening level of 316 mg/kg for lead for indoor living spaces (See Attachment VII – Indoor Dust Screening Criteria for Lead).

On August 12, 2016, EPA began cleaning the inside of residences in the WCHC to remove lead contaminated dust. A combination of HEPA vacuums and wet cleaning are used to remove lead dust from ceilings, floors, carpets, walls, drapes, accessible ductwork, furnace, and furniture. As of October 3, 2016, EPA has cleaned approximately 113 out of 334 occupied units. Residents were temporarily relocated during the cleaning process and clearance sampling conducted as necessary to document efficacy of cleaning.

The Indiana State Department of Health (ISDH) accompanied EPA into 14 of the initial 42 residences in Zone 1 and conducted a separate inspection for compliance with lead paint abatement policies. Wipe samples were collected from floors, interior window sills, and window troughs and compared to HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (2012 Edition)(40 $\mu g/ft^2$-floors, 250 $\mu g/ft^2$- window sills, and 400 $\mu g/ft^2$– window trough). Wipe samples from six of the 14 units sampled were above the respective lead dust clearance standards (see Attachment VIII - Indiana State Department of Health Wipe Sample Results). Lead based paint was not found by ISDH in any of the inspected units.

The Agency for Toxic Substances and Disease Registry (ATSDR) is working with the East Chicago Health Department (ECHD), which is conducting an ongoing exposure investigation of blood lead in the WCHC. The following is a summary of the findings from screenings of children living in the WCHC, which is derived both from historical data and from the on-going blood lead testing campaign being conducted by ECHD:

- From the most recent ECHD testing in summer 2016, 18 out of 94 (19%) tested children from the WCHC under age six were identified with elevated blood lead (EBL) levels (> 5 µg/dL) based on capillary (finger stick) measurements.

- From 2014 through 2015, 26% of children under age seven tested at the WCHC were identified with EBL levels, with the highest measurement at 33 µg/dL in a one-year-old child. Within the same period, the census tract that includes all of the children from the WCHC (Zone 1) and part of Zone 2 had an EBL incidence rate of 22%. By comparison, the EBL rates for the two adjacent census tracts were 9% and 11%.

- The ATSDR Exposure Investigation conducted in the West Calumet neighborhood in 1997 showed a 35% EBL incidence rate, which was defined at that time as greater than 10 µg/dL.

These observations by ATSDR across almost 20 years demonstrate a consistent pattern of elevated blood lead levels in young children living in OU1. Given that the ISDH Lead Inspectors found no lead-based paint in recently sampled units within the WCHC, it is likely that exposure to soil-based lead contamination in the WCHC and portions of Zone 2 is a primary cause of elevated blood lead levels in children there.

2. Physical Location

The U.S.S. Lead Site lies approximately 18 miles southeast of Chicago, Illinois, in East Chicago, Indiana (Figure 1). The Site consists of the former U.S.S. Lead facility located at 5300 Kennedy Avenue, East Chicago, Indiana (designated as Operable Unit 2 (OU2)) and the residential area to the north and northeast (defined as OU1). OU1 is bound by East Chicago Avenue on the north, East 151st Street/149th Place on the south, the Indiana Harbor Canal on the west, and Parrish Avenue on the east. OU1 includes about 1200 homes, a small number of parks, open space as a part of the railroad right-of-way, schools, and public buildings. For the purpose of implementing the remedial action (RA) in OU1, EPA has divided OU1 into three distinct geographic areas (Zones 1, 2, and 3). This removal action is taking place in OU1 Zone 2. Zone 2 is adjacent to and directly east of Zone 1 and is generally bordered: (1) on the north by East Chicago Avenue; (2) on the east by Joliet, Elgin Railroad; (3) on the south by East 151st Street; and (4) on the west by the East Chicago Public Housing Complex, the Carrie Gosch Elementary School, and the Harbor Canal.

The EPA conducted an EJ analysis for the Site (see Attachment I). Screening of the surrounding area was conducted using Region 5's EJ Screen Tool. Region 5 has reviewed environmental and demographic data for the area surrounding the U.S.S. Lead Site and has determined there is high potential for EJ concerns at this location.

3. Site Characteristics

OU1 includes about 1,200 homes, a small number of parks, open space as a part of the railroad right-of-way, schools, and public buildings. OU1 is primarily a residential area, which includes commercial and light industrial areas. Some parcels in the residential area in Zones 1, 2 and 3 have levels of lead above EPA's RML of 400 mg/kg and arsenic above the RML of 68 mg/kg.

United States Geological Survey (USGS) historical aerial photographs from 1939, 1951, 1959, and 2005 show OU1 over time. Review of these aerial photographs indicates that most of the residential neighborhoods within the Site west of the railroad tracks were built before 1939. By 1951, approximately 75 to 80 percent of the homes were built; by 1959, most of the homes east of the railroad tracks had also been built. These photographs also show that the International Smelting and Refining Company, a subsidiary of the Anaconda Copper Company (whose successor in interest is now the Atlantic Richfield Company [ARC]) occupied the area where the WCHC is currently located (Zone 1 in the southwest portion of OU1) prior to 1946. Title records indicate that the East Chicago Housing Authority constructed the WCHC on the former Anaconda Copper Mining Company/International Smelting and Refining Company site between 1970 and 1973.

The U.S.S. Lead facility was a primary and secondary smelter of lead in the East Chicago, Indiana area. It began operations around 1906 and ended operations in 1985. From about 1920 until 1973, the facility was a primary smelter of lead. This included a refining process to create high quality lead free of bismuth. From 1973 until its closure in 1985, the facility was a secondary smelter and a reprocessor of car batteries. The secondary refinery operations included: battery breaking with tank treatment of spent battery acid at a rate of 16,000 gallons per day; baghouse dust collection with storage in on-site waste piles of up to 8,000 tons of flue dust; and blast furnace slag disposal, which was deposited in the wetland adjacent to and along the southern boundary of the facility. The blast-furnace baghouse collected approximately 300 tons of baghouse flue dust per month during maximum operating conditions. Some of the flue dust escaped the baghouse capture system and was deposited by the wind within the boundaries of OU1. Secondary lead recovery operations ceased in 1985.

In addition to the U.S.S. Lead facility operation, other industrial operations have managed or processed lead and other metals and are sources of contamination in OU1. Immediately east of the U.S.S. Lead facility and south of Zone 3 is the former DuPont site (currently leased and operated by W.R. Grace & Co., Grace Davison). One of the processes that historically took place at the DuPont site was the manufacturing of a lead arsenate pesticide. In 2015, DuPont spun off certain assets and liabilities to a newly created company, The Chemours Company FC, LLC (Chemours). Chemours is now the owner of the former DuPont facility.

North of the former U.S.S. Lead facility stood two smelter operations, which processed lead and other metals. A 1930 Sanborn map identifies the operations as Anaconda Lead Products and International Lead Refining Company (referred to as the former Anaconda facility). Anaconda Lead Products was a manufacturer of white lead and zinc oxide and the International Lead Refining Company was a metal refining facility. These facilities consisted of a pulverizing mill, white lead storage areas, a chemical laboratory, a machine shop, a zinc oxide experimental unit building and plant, a silver refinery, a lead refinery, a baghouse, and other miscellaneous buildings and processing areas. The International Lead Refining Company was a subsidiary of the Anaconda Copper Mining Company. Title to the property in Zone 1 was held between 1934 and 1946 by International Lead Smelting and Refinery Company. International Lead Smelting and Refinery Company acquired titled to the property in Zone 1 in 1934 from International Lead Refining Company, which had acquired title in 1912.

The residential area that comprises Zone 2 has been contaminated by aerial deposition of windblown contaminants from the U.S.S. Lead facility, the Anaconda Copper Mining Company/International Lead Smelting and Refinery Company facility, and the DuPont/Chemours facility. The focus of this time-critical removal action is Zone 2, which has approximately 590 residential parcels.

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

The threat is presented by the presence of lead and arsenic-contaminated soil in residential yards and potential lead and arsenic contaminated dust within the residences in Zone 2. The presence of lead and arsenic in outdoor soils and potentially in indoor dust at concentrations above health

screening values provides a constant source of exposure for individuals both outside and while in the home. Lead and arsenic are hazardous substances as defined by section 101(14) of CERCLA. *See* 40 C.F.R. § 302.4. Nearby lead processing operations caused extensive lead and arsenic contamination in soils throughout the Site. The removal is responding to actual and potential outdoor lead and arsenic contamination, as well as potential indoor contamination caused by the migration of lead and arsenic contaminated soil from outdoors to indoors (like the source of contamination found in Zone 1). The presence of elevated lead and arsenic levels in surface soils and potential presence of lead and arsenic in indoor dust in Zone 2 makes this a time-critical removal action.

Exposure may occur from direct ingestion of soil in yards, soil tracked indoors, or house dust; and inhalation of fugitive dust. Potential human receptors include residents, including children six years of age and under, and pregnant or nursing women.

Lead exposure via inhalation and/or ingestion can have detrimental effects on almost every organ and system in the human body. Exposure may occur from direct ingestion of soil in yards, soil tracked indoors, or house dust; and inhalation of fugitive dust. Lead can cause a variety of health problems to people who are exposed to it. Potential human receptors include residents, including children six years of age and under, and pregnant or nursing women. Children are at greatest risk from the toxic effects of lead. Initially, lead travels in the blood to the soft tissues (heart, liver, kidney, brain, etc.). Then, it gradually redistributes to the bones and teeth where it tends to remain. Children exposed to high levels of lead have exhibited nerve damage, liver damage, colic, anemia, brain damage, and death. The most serious effects associated with markedly elevated blood lead levels include neurotoxic effects such as irreversible brain damage.

Ingesting very high levels of arsenic can result in death. Exposure to lower levels can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, damage to blood vessels, and a sensation of "pins and needles" in hands and feet. Ingesting or breathing low levels of inorganic arsenic for a long time can cause a darkening of the skin and the appearance of small "corns" or "warts" on the palms, soles, and torso. Skin contact with inorganic arsenic may cause redness and swelling. Several studies have shown that ingestion of inorganic arsenic can increase the risk of skin cancer and cancer in the liver, bladder, and lungs. Inhalation of inorganic arsenic can cause increased risk of lung cancer. The Department of Health and Human Services (DHHS) and the EPA have determined that inorganic arsenic is a known human carcinogen (ATSDR, Chemical Abstract Services [CAS] # 7440-38-2], August 2007).

5. NPL status

The U.S.S. Lead Site consisting of both the former U.S.S. Lead facility (OU2) and the West Calumet neighborhood to the north (OU1) was listed as a Superfund site on the national priorities list (NPL) on April 8, 2009. EPA began the RI for OU1 on June 26, 2009. During December 2009 and August 2010, EPA contractors sampled yards in residential areas and background locations. In June 2012, EPA completed a preliminary investigation and study to determine the level and extent of lead and arsenic contamination within OU1 and proposed a remedy. In November 2012, after considering comments received from the City and IDEM,

EPA outlined the long-term permanent cleanup plan in a Record of Decision for OU1. The EPA has completed the remedial designs for work in Zone 1 and Zone 3 and is in the process of completing the remedial design for Zone 2.

6. Maps, pictures and other graphic representations

Maps include:

Figure 1 – USS Lead and Lead Refinery, E. Chicago, IN. Location Map
Figure 2 – OU1 Zones 1, 2, and 3– Location Map

B. Other Actions to Date

1. Previous actions

On January 22, 2008, EPA signed the original action memorandum to conduct a time-critical removal action in OU1 to address known parcels with lead levels exceeding the removal action limit of 1,200 mg/kg. These parcels were identified based on sampling data collected during the RCRA Corrective Action investigation. That removal action began on June 9, 2008, and involved the excavation and off-site disposal of lead contaminated soil from 13 residential parcels. On August 13, 2008, EPA amended the original action memorandum to increase the project ceiling in order to complete the ongoing, time-critical removal action. In total, 1,838 tons of lead-contaminated soil were removed and disposed of at an approved landfill. Excavated areas were backfilled with clean fill and seeded. This removal action was completed on September 25, 2008, and the final Pollution Report was issued on November 18, 2008.

On September 12, 2011, EPA signed an action memorandum to conduct a time-critical removal action in Zones 1, 2, and 3 of OU1 to address 16 parcels (including the 2 that were missed in 2008) with lead levels exceeding the removal action limit of 1,200 mg/kg. These parcels were identified based on sampling data collected during the RI. This removal action began on October 24, 2011, and involved the excavation and off-site disposal of lead contaminated soil from 16 residential parcels. In total, 1,913 tons of lead-contaminated soil were removed and disposed of at an approved landfill. Excavated areas were backfilled with clean fill and seeded. This removal action was completed on December 9, 2011, and the final Pollution Report was issued on December 15, 2011.

2. Current actions

On July 11, 2016, EPA started remedial action activities to cover bare soils with wood mulch within the WCHC to minimize fugitive dust, direct contact and potential migration of soil with elevated lead levels. The mulching work was completed on July 22, 2016, although maintenance of the mulch cover is ongoing as part of the remedial work associated with the implementation of the ROD for OU1.

On July 29, 2016, EPA initiated in-house sampling for dust collection in Zone 1 to determine lead concentrations in homes. As of September 28, 2016, EPA has received validated results

from 154 residences. Concentrations ranged from 3.9 to 32,000 mg/kg for lead fines and 0.12J (J means value is estimate) to 880 mg/kg for arsenic fines (See Attachment VI – Summary of Indoor Dust Sampling Results). Data results from indoor dust from the first 154 homes indicate 69 parcels exceed the EPA screening level of 316 mg/kg for lead for indoor living spaces (See Attachment VII – Indoor Dust Screening Criteria).

ISDH conducted a separate inspection of fourteen of the identified residential units for compliance with lead paint abatement policies. Lead-based paint was not found in any of the inspected units. On August 12, 2016, EPA began cleaning (under October 13, 2016 USS Lead action memo for Zone 1) the inside of all occupied (approximately 334) units within the WCHC, all of which are or have the potential to be contaminated with lead contaminated dust above the risk-based screening criteria for indoor dust from industrial activities. A combination of HEPA vacuums and wet cleaning are used to remove lead dust from ceilings, floors, carpets, walls, drapes, accessible ductwork, furnace, and furniture. As of October 3, 2016, approximately 113 out of 334 occupied units have been cleaned. Residents were temporarily relocated during the indoor cleaning period.

C. State and Local Authorities' Roles

1. State and Local Actions to Date

On August 24, 2016, Rex Osborn, Federal Programs Section Chief with IDEM, sent an email indicating the State of Indiana does not have the financial resources to eliminate the threat posed by lead-contaminated soil in yards and dust within the residences or to fund temporary relocations. Neither the State of Indiana nor the City of East Chicago have taken or have the capacity to take action to abate the immediate threat.

2. Potential for Continued State/Local Response

The EPA is working with ATSDR, the East Chicago Health Department, the Indiana State Department of Health, and City of East Chicago elected officials to provide information to the public. EPA is coordinating discussions with stakeholders regarding the elevated levels of lead and arsenic in soil and EPA's plans to address this issue. Neither the state nor local officials have the resources to conduct the necessary cleanup of the indoor dust contamination or to provide for the temporary relocation of residents.

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

The conditions at Zone 2 of the U.S.S. Lead Site present a threat to the public health or welfare and the environment and meet the criteria for a time-critical removal action as provided for in the NCP, 40 C.F.R. § 300.415(b)(1), based on the factors in 40 C.F.R. § 300.415(b)(2). These factors include, but are not limited to, the following:

§ 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;

Beginning in July 2016, EPA began conducting more extensive soil sampling within Zone 2 as part of the RD process for OU1. Zone 2 includes approximately 590 separate parcels. Most of these parcels are residential parcels, though there are some commercial/industrial parcels. In September 2016, EPA received validated sampling results from 48 parcels in Zone 2 which revealed lead concentrations in surface soil (0-6 inches below ground surface) at values ranging from 38.3 to 2,120 mg/kg. Arsenic concentrations ranged from 4.3 to 111 mg/kg (See Attachment V – Summary of OU1 RD Soil Sampling Results). Ten sampled parcels had surface soil lead concentrations above 1,200 mg/kg and 40 of 48 parcels exceed the RML for lead of 400 mg/kg for residential surface soil. Two parcels exceeded the 68 mg/kg RML for arsenic (111 and 78.1 mg/kg in surface soil). One parcel that exceeded the RML for arsenic also exceeded the RML for lead in soil.

Data results from indoor dust from the first 154 homes sampled in Zone 1 indicate 69 properties exceed the EPA screening level of 316 mg/kg for lead for indoor living spaces. EPA is currently addressing exposure to lead contaminated soil in yards and indoor dust in Zone 1. High lead concentrations in indoor dust are a risk to human health, particularly for children under the age of six (i.e., inhalation, ingestion). A recent blood lead study conducted by ECHD found that children in the WCHC and part of Zone 2 are at an increased risk for lead exposure (22% at or above 5 µg/dL compared to the national average of 2.5%).

Lead is a hazardous substance, as defined by Section 101(14) of CERCLA. The effects of lead are the same whether it enters the body through breathing or swallowing. Lead can affect almost every organ and system in the body. The main target for lead toxicity is the nervous system, both in adults and children. Long-term exposure of adults can result in decreased performance in some tests that measure functions of the nervous system. It may also cause weakness in fingers, wrists, or ankles. Lead exposure also causes small increases in blood pressure, particularly in middle-aged and older people and can cause anemia. Exposure to high lead levels can severely damage the brain and kidneys in adults or children and ultimately cause death. In pregnant women, high levels of exposure to lead may cause miscarriage. High-level exposure in men can damage the organs responsible for sperm production.

Arsenic is a hazardous substance under CERCLA and may be ingested or inhaled by residents living at the Site. Acute (short-term) high-level inhalation exposure to arsenic dust or fumes has resulted in gastrointestinal effects (nausea, diarrhea, abdominal pain); central and peripheral nervous system disorders have occurred in workers acutely exposed to inorganic arsenic. Chronic (long-term) inhalation exposure to inorganic arsenic in humans is associated with irritation of the skin and mucous membranes and effects in the brain and nervous system. Chronic oral exposure to elevated levels of inorganic arsenic has resulted in gastrointestinal effects, anemia, peripheral neuropathy, in humans. Chronic exposure by the inhalation route, has been shown to cause a form of skin cancer and also to cause bladder, liver, and lung cancer. EPA has classified inorganic arsenic as a human carcinogen.

§ 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;

As stated in the previous paragraphs, surface soils in Zone 2 where found to be contaminated with lead and arsenic above the EPA screening levels.

Residents living in Zone 2 may cause the high levels of lead and arsenic to migrate into other areas including inside the home by walking through and tracking in, gardening, play, and other residential activities, especially in areas where the soil does not have any cover. Other means of migration may include routine construction activities.

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

There is a threat of release from high winds dispersing surface particulate matter containing lead, resulting in exposure to children and adults who reside within the Site. Grass cover is generally lighter in the early spring and fall, allowing more potential of tracking contaminated soil into the home. Rain or thundershowers may cause the outdoor lead to migrate via surface runoff. The use of an air conditioner during the hot summer months or the running of a furnace during the winter would also result in the migration of indoor dust.

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

At this time, no local or state agency has the resources to respond to the immediate threat.

IV. EXEMPTION FROM STATUTORY LIMITS

Section 104(c) of CERCLA, as amended by the Superfund Amendments and Reauthorization Act (SARA), limits a Federal response action to 12 months and $2 million unless response actions meet emergency and/or consistency exemptions. Documentation for the aforementioned exemptions are provided in the U.S.S. Lead Action Memorandum-Third Amendment approved on October 13, 2016.

V. ENDANGERMENT DETERMINATION

Given the Site conditions, the nature of the known and suspected hazardous substances on-site, and the potential exposure pathways described in Sections II and III above, actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response actions selected in this Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment.

VI. PROPOSED ACTIONS

The response actions described in this memorandum directly address actual or potential releases of hazardous substances on Site, which may pose an imminent and substantial endangerment to public health, or welfare, or the environment.

The proposed action involves excavation and removal of lead and arsenic-contaminated soil at residential parcels within Zone 2 with surficial soil concentrations at or above 1,200 mg/kg for lead and/or the removal management level (RML) of 68 mg/kg for arsenic, and indoor dust sampling and cleaning upon the request of residents and owners. The response actions are consistent with the (OSWER) Publication 9285.7-50 *Superfund Lead-Contaminated Residential Sites Handbook* (Handbook) (2003), where the Superfund Program uses a tiered approach to prioritize which homes needed to be cleaned up first. Residential parcels with lead concentrations in surface soil at or greater than 1,200 mg/kg would be the highest priority for immediate action under a time-critical removal action. Excavated areas will be backfilled to original grade with clean soil and the yards restored as closely as practicable to its pre-removal condition.

Approximately 590 Zone 2 parcels will be sampled during the remedial design process. For cost accounting purposes, EPA anticipates the scope of this removal action in Zone 2 to include approximately 132 residential parcels that are at or greater than 1,200 mg/kg for lead and/or 68 mg/kg for arsenic based on historical and the latest remedial design validated data from Zone 2.

Removal activities associated with the excavation of lead and arsenic contaminated soil from residential yards in Zone 2 will include:

1. Development of site plans, including a Work Plan, Sampling Plan/QAPP, site-specific HASP, and Emergency Contingency Plan;

2. Development of an air monitoring plan and conduct dust control measures to ensure worker and public health protection;

3. Provision for site security measures as necessary;

4. Excavation of soil at residential parcels where lead is equal to or exceeds 1,200 mg/kg and/or arsenic exceeds 68 mg/kg as determined by EPA's RD sampling. Soil will be excavated to a depth of approximately two feet bgs, to eliminate any direct contact and inhalation threats. Excavated material that fails toxicity characteristic leaching procedure (TCLP) for lead may be treated with a fixation agent prior to disposal. Excavation will cease if lead and/or average arsenic concentrations are less than 400 mg/kg for lead and 26 mg/kg for arsenic.

5. Collection and analysis of confirmation samples from the bottom of each excavation. If lead levels below 400 mg/kg or arsenic levels below 26 mg/kg cannot be achieved at an excavation depth of approximately two feet bgs, excavation will cease and a visible barrier will be placed at the bottom of the excavation to alert the property owner of the existence of high levels of lead and/or arsenic. In such instances and consistent with the record of

decision, institutional controls (ICs) will be implemented as part of the remedial action to ensure the users of the property are not exposed to the contaminants of concern in soil;

6. Replacement of excavated soil with clean soil, including 6 inches of top soil to maintain the original grade. Each yard will be restored as close as practicable to its pre-removal condition. Once the parcels are sodded or seeded, removal site control of the sod or seed, including, watering, fertilizing, and cutting, will be conducted for 30 days. After the initial 30 day period, property owners will be responsible for the maintenance of their own yards. The aforementioned work shall be documented in a Work Plan;

7. Transportation and disposal off-site of any hazardous substances, pollutants and contaminants at a CERCLA-approved disposal facility in accordance with EPA's Off-Site Rule (40 CFR § 300.440);

8. Performance of any other response actions to address any release or threatened release of a hazardous substance, pollutant or contaminant that the EPA On-Scene Coordinator (OSC) determines may pose an imminent and substantial endangerment to the public health or the environment; and

9. Conduct an evaluation to determine if soil excavation activities result in a release of lead scale particles from lead service lines into the drinking water supply. This sampling will be conducted from parcels being excavated in the fall of 2016. Data will be evaluated prior to the 2017 construction season to determine if construction activities impact drinking water quality. Bottled water and water filters will be provided during and after the soil excavation activities as necessary during the evaluation period. Based on findings from the 2016 evaluation, a determination will be made on whether the provision of bottled water and water filters should continue beyond the evaluation period. (Note: This evaluation is being conducted at the request of the Agency for Toxic Substances and Disease Registry, see memo from Mark Johnson to Doug Ballotti dated October 24, 2016.)

Data results in Zone 1 from indoor dust from the first 154 homes sampled indicate 69 parcels exceed the EPA screening level of 316 mg/kg for lead for indoor living spaces. Given the significant number of indoor samples that indicated action is needed and the threat posed by high concentrations of lead in soil in adjacent outdoor areas, and the consistent pattern of EBL levels in children less than 6 years of age living in WCHC and portions of Zone 2, EPA, at the request of the residents and homeowners, will vacuum sample indoor dust for lead and arsenic. EPA will clean the inside of residences that are above the risk-based screening criteria of 316 mg/kg for lead and 100 mg/kg arsenic for indoor dust from industrial-related activities. In general, the indoor cleanup process will involve four basic steps: (1) collection of indoor dust vacuum samples (in homes previously not sampled), (2) possible temporary relocation of residents, (3) removal of contaminated indoor dust from floors and carpeting, and cleaning of accessible HVAC systems and filter replacement (4) Post cleaning clearance sampling; and (5) the return of occupants to their residence if temporarily relocated. A combination of HEPA vacuums and/or wet cleaning will be used to remove contaminated dust from floors, carpeting and HVAC systems. Replacement of carpets/mats may be considered on a case by case basis if cleaning mechanisms fail to remove lead and arsenic dust below cleanup criteria.

Removal activities associated with indoor sampling, evaluation, and removal of contaminated dust in homes in Zone 2 will include:

1. Development of a Work Plan and Site Specific Health and Safety Plan;

2. Development and implementation of an air monitoring/sampling plan for the work zone and Site;

3. Continuation of indoor dust and other sampling as determined necessary;

4. Provision for Site security, as directed by the OSC;

5. Development of a relocation plan to address, if necessary, the temporary relocation of residents during the cleaning process;

6. Performance of interior dust cleanup activities as specified in the Site Work Plan;

7. Transportation and disposal off-site of any hazardous substances, pollutants and contaminants at a CERCLA-approved disposal facility in accordance with EPA's Off-Site Rule (40 CFR § 300.440); and

8. Performance of any other response actions to address any release or threatened release of a hazardous substance, pollutant or contaminant that the EPA On-Scene Coordinator (OSC) determines may pose an imminent and substantial endangerment to the public health or the environment.

The Action Memorandum and supporting documentation follow the April 2002 Superfund Response Actions: Temporary Relocations Implementation Guidance, particularly in considering residents' needs, property security, dealing with resident's stress and disruptions, and explaining benefits. Consistent with EPA's guidance on temporary relocations (2002), Sec. IV.A ("Making the Relocation Decision"), temporary relocation at the Site is justified during the cleaning process by the following factor:

- Efficiency of response action: temporary relocation minimizes concerns about noise, property access, and other restrictions on the hours or types of response activities that may be conducted at the Site.

The removal actions will be conducted in a manner not inconsistent with the NCP.

The threats posed by uncontrolled substances considered hazardous meet the NCP criteria listed at § 300.415(b), and the response actions proposed herein are consistent with any long-term remedial actions which may be required.

Off-Site Rule

All hazardous substances, pollutants, or contaminants removed off-site pursuant to this removal action for treatment, storage, and disposal shall be treated, stored, or disposed of at a facility in compliance, as determined by EPA, with the EPA Off-Site Rule, 40 C.F.R. § 300.440.

1. Contribution to remedial performance

The proposed action should not impede future remedial performance.

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

Not Applicable

3. Applicable or relevant and appropriate requirements (ARARs)

All applicable or relevant and appropriate requirements (ARARs) will be complied with to the extent practicable. On August 18, 2016, EPA sent an e-mail to Rex Osborn of IDEM asking for any State of Indiana ARARs that may apply. IDEM provided both Action and Chemical specific state ARARs in a letter dated August 26, 2016. EPA will consider and implement the submitted ARARs as appropriate.

Project Schedule

The time-critical removal actions will require approximately 528 working days to complete.

B. Removal Project Ceiling Estimate – Extramural Costs:

The detailed cleanup contractor cost is presented in Attachment 1 and the Independent Government Cost Estimate is presented in Attachment IV. Estimated project costs are summarized below:

REMOVAL ACTION PROJECT CEILING ESTIMATE

Extramural Costs	**Current Ceiling**	**Proposed Increase**	**Proposed Ceiling**
Regional Removal Allowance Costs:			
Total Cleanup Contractor Costs (This cost category includes estimates for ERRS, subcontractors, Notices to Proceed, and Interagency Agreements with Other Federal Agencies and 20% Contingency)	$18,875,702	$10,133,755	$29,009,457
Other Extramural Costs Not Funded from the Regional Allowance:			
Total START, including multiplier costs	$3,122,250	$1,425,000	$4,547,250
. Subtotal	.	.	.
Subtotal Extramural Costs	$21,997,952	$11,558,755	$33,556,707
Extramural Costs Contingency (20% of Subtotal, Extramural Costs rounded to nearest thousand for Proposed Increase)	$4,399,590	$2,311,751	.
TOTAL REMOVAL ACTION PROJECT CEILING	**$26,397,542**	**$13,870,506**	**$40,268,048**

The response actions described in this memorandum directly address the actual or threatened release of hazardous substances, pollutants, or contaminants at the Site which may pose an imminent and substantial endangerment to public health or welfare or to the environment. These response actions do not impose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

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

Given the Site conditions, the nature of the hazardous substances and pollutants or contaminants documented in Zone 2 of OU1, and the potential exposure pathways to nearby populations described in Section II and Section III, above, actual or threatened releases of hazardous substances and pollutants or 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, welfare, or the environment.

VIII. OUTSTANDING POLICY ISSUES

None

IX. ENFORCEMENT

For administrative purposes, information concerning the enforcement strategy for this Site is contained in the Confidential Enforcement Addendum.

The total EPA costs of this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be $68,457,330[1].

($40,268,048+ $2,000,000) + (61.96% x $42,268,048) = $68,457,330

[1] 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 direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgement 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.

X. RECOMMENDATION

This decision document, along with the Action Memorandum signed on January 22, 2008, and the Action Memorandum Amendments signed on August 13, 2008, September 12, 2011, and October 13, 2016 represents the selected removal action for the U.S. Smelter and Lead Refinery Site, Zone 2, OU1, East Chicago, Lake County, Indiana. It was developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for the Site (Attachment II). Conditions at OU1, Zone 2 meet the NCP Section 300.415(b) criteria for a removal action and the CERCLA Section 104(c) emergency exemption from the $2 million and 12-month limitation. The total removal action project ceiling, if approved, will be $40,268,048 of which as much as $33,770,398 may be used from the removal allowance. I recommend your approval of the proposed removal action. You may indicate your decision by signing below.

APPROVE _____ DATE: 10/28/16
Assistant Administrator Office of Land and Emergency Management

DISAPPROVE _____ DATE: _____
Assistant Administrator Office of Office of Land and Emergency Management

Enforcement Addendum

Figures:

Figure 1 – USS Lead and Lead Refinery, E. Chicago, IN. Location Map
Figure 2 – OU1 Zones 1, 2, and 3– Location Map

Attachments:

I. Environmental Justice Analysis
II. Administrative Record Index
III. Detailed Cleanup Contractor Estimate
IV. Independent Government Cost Estimate
V. Summary of OU1 RD Soil Sampling Results
VI. Indoor Dust Screening Criteria for Lead
VII. Indoor Dust Screening Criteria for Arsenic
VIII. Third Amended Action Memorandum dated October 13, 2016

cc: Brian Schlieger, U.S. EPA, 5104A/B517F **(Schlieger.Brian@epa.gov)**
Lindy Nelson, U.S. DOI, **w/o Enf. Addendum (Lindy_Nelson@ios.doi.gov)**
Rex Osborn, IDEM **w/o Enf. Addendum (rosborn@idem.in.gov)**

BCC PAGE HAS BEEN REDACTED

NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

ENFORCEMENT ADDENDUM

HAS BEEN REDACTED – TWO PAGES

ENFORCEMENT CONFIDENTIAL

NOT SUBJECT TO DISCOVERY

FOIA EXEMPT

NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

Figure 1
Site Location
USS Smelter and Lead Refinery , East Chicago, IN

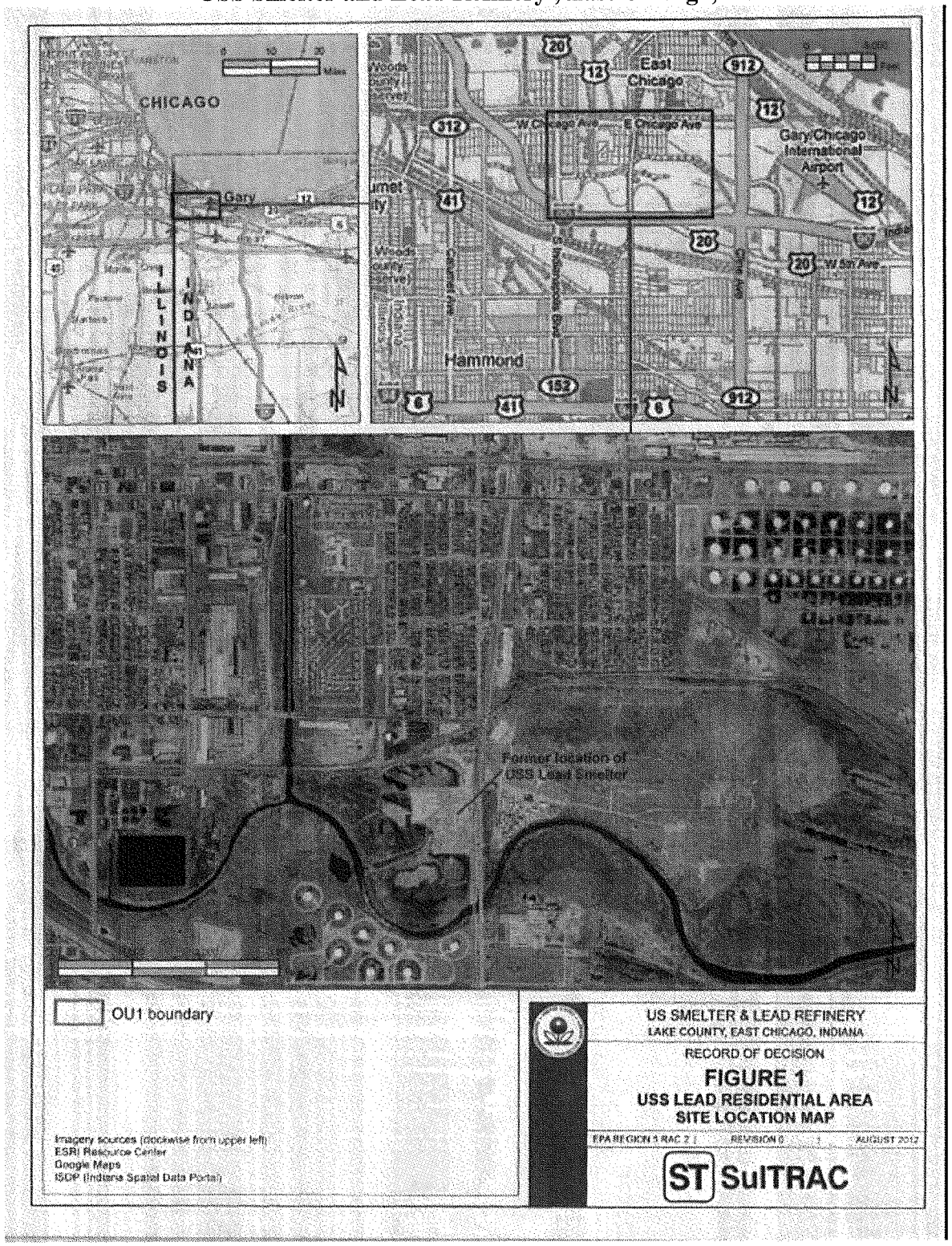
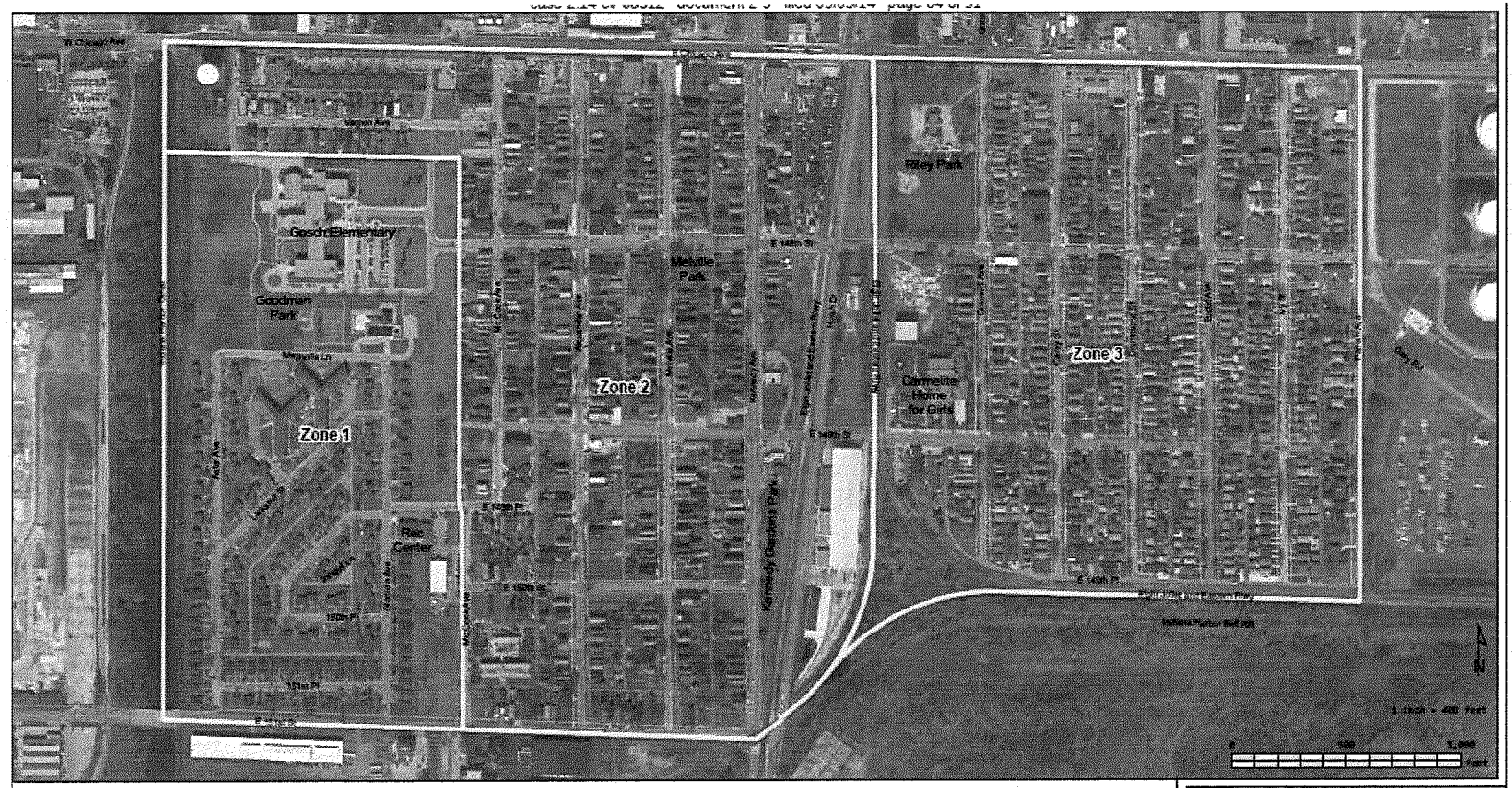


FIGURE 2
Zone 2/OU1 MAP
U.S. Smelter and Lead Refinery Site, East Chicago, Lake County, Indiana



ATTACHMENT I

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ENVIRONMENTAL JUSTICE ANALYSIS
FOR
U.S. SMELTER AND LEAD REFINERY SITE, EAST CHICAGO, LAKE COUNTY, INDIANA

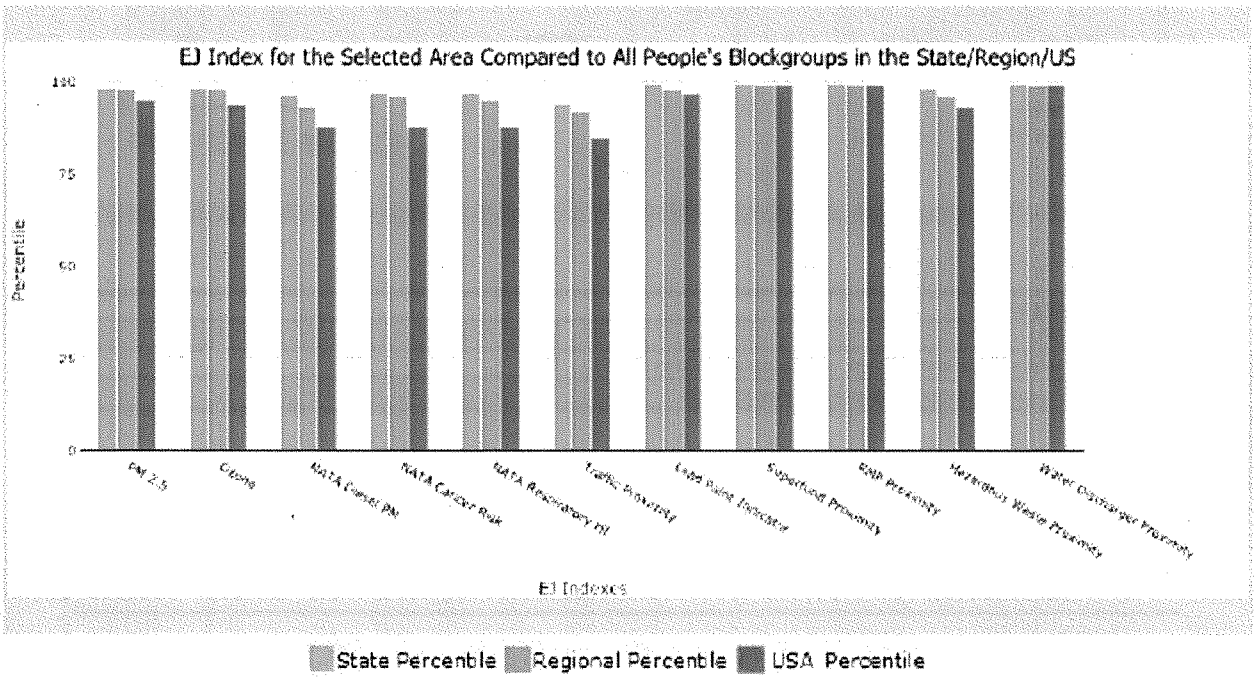
EJSCREEN Report (Version 2016)

0.5 mile Ring Centered at 41.623974,-87.469228, INDIANA, EPA Region 5

Approximate Population: 2,455

Input Area (sq. miles): 0.79

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	98	98	95
EJ Index for Ozone	98	98	94
EJ Index for NATA* Diesel PM	96	93	88
EJ Index for NATA* Air Toxics Cancer Risk	97	96	88
EJ Index for NATA* Respiratory Hazard Index	97	95	88
EJ Index for Traffic Proximity and Volume	94	92	85
EJ Index for Lead Paint Indicator	99	98	97
EJ Index for Superfund Proximity	99	99	99
EJ Index for RMP Proximity	99	99	99
EJ Index for Hazardous Waste Proximity	98	96	93
EJ Index for Water Discharger Proximity	99	99	99

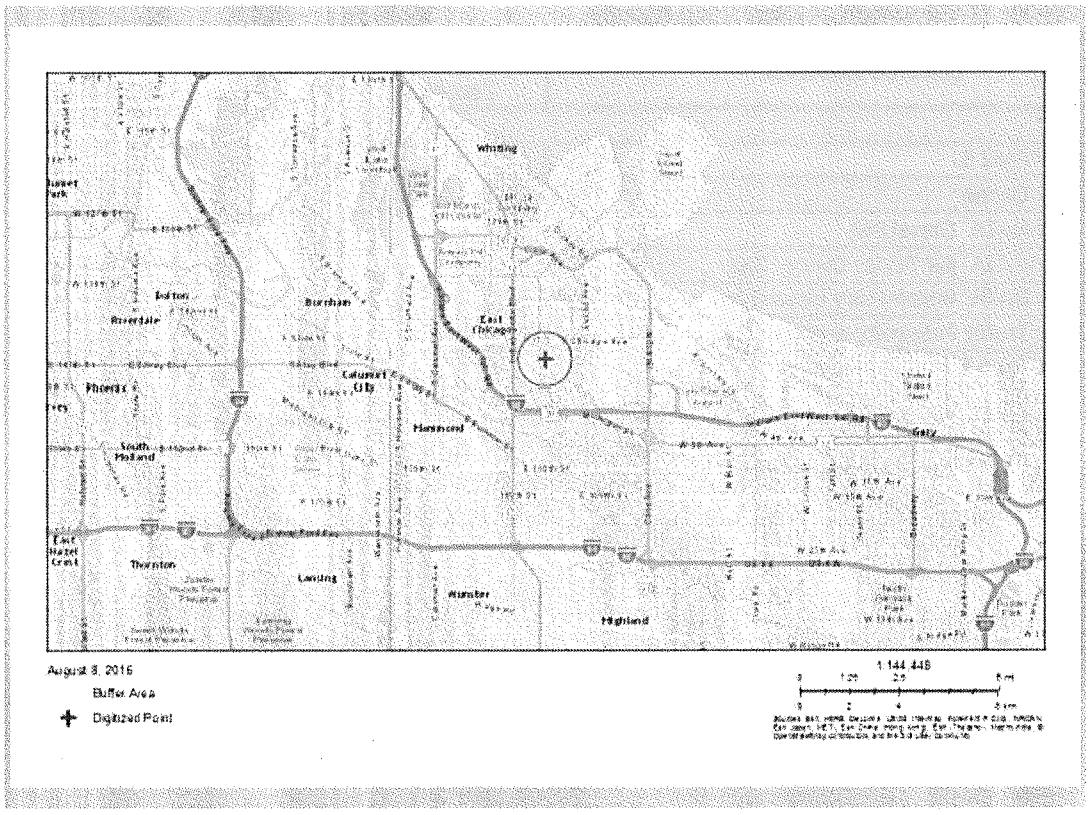


This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

EJSCREEN Report (Version 2016)

0.5 mile Ring Centered at 41.623974,-87.469228, INDIANA, EPA Region 5

Approximate Population: 2,455
Input Area (sq. miles): 0.79



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0
National Pollutant Discharge Elimination System (NPDES)	0

EJSCREEN Report (Version 2016)

0.5 mile Ring Centered at 41.623974,-87.469228, INDIANA, EPA Region 5

Approximate Population: 2,455

Input Area (sq. miles): 0.79

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	11.7	11	98	10.6	86	9.32	93
Ozone (ppb)	48.8	51.2	11	50.3	21	47.4	52
NATA* Diesel PM (µg/m³)	0.86	0.835	57	0.931	50-60th	0.937	50-60th
NATA* Cancer Risk (lifetime risk per million)	32	34	38	34	<50th	40	<50th
NATA* Respiratory Hazard Index	1.5	1.4	61	1.7	<50th	1.8	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	240	250	73	370	70	590	65
Lead Paint Indicator (% Pre-1960 Housing)	0.65	0.36	82	0.39	77	0.3	84
Superfund Proximity (site count/km distance)	1.5	0.16	99	0.12	99	0.13	99
RMP Proximity (facility count/km distance)	4.3	0.52	99	0.51	99	0.43	99
Hazardous Waste Proximity (facility count/km distance)	0.09	0.044	91	0.069	78	0.072	77
Water Discharger Proximity (facility count/km distance)	2.9	0.34	99	0.31	99	0.31	99
Demographic Indicators							
Demographic Index	84%	27%	99	29%	97	36%	96
Minority Population	92%	19%	98	24%	94	37%	91
Low Income Population	77%	35%	95	33%	95	35%	95
Linguistically Isolated Population	5%	2%	87	2%	83	5%	70
Population With Less Than High School Education	22%	12%	84	11%	87	14%	78
Population Under 5 years of age	10%	6%	81	6%	83	6%	81
Population over 64 years of age	8%	14%	23	14%	23	14%	27

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

ATTACHMENT II

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMEDIAL ACTION

ADMINISTRATIVE RECORD
FOR THE
U.S. SMELTER AND LEAD SITE
EAST CHICAGO, LAKE COUNTY, INDIANA

UPDATE 4
OCTOBER 2016
SEMS ID:

NO.	SEMS ID	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	424362	8/1/03	U.S. EPA	File	Superfund Lead Contaminated Residential Sites Handbook	124
2	424349	3/1/04	Geochemical Solutions	USS Lead	Final USS Lead Modified RCRA Facility Investigation (MRFI) Report (Draft: Text Only)	46
3	308202	3/1/04	Geochemical Solutions	USS Lead	Final USS Lead Modified RCRA Facility Investigation (MRFI) Report (Draft)	878
4	315595	11/18/08	Micke, F., U.S. EPA	Distribution List	Pollution Report (POLREP) #3 - Final	3
5	424390	8/31/09	Weston Solutions	U.S. EPA	Federal OSC Report, Revision 1, CERCLA Removal Action	44
6	413853	11/1/11	Micke, F., U.S. EPA	Distribution List	Pollution Report (POLREP) #1 - Initial - USS Lead-2	5
7	418177	11/16/11	Micke, F., U.S. EPA	Distribution List	Pollution Report (POLREP) #2 - USS Lead-2	6
8	418526	12/15/11	Micke, F., U.S. EPA	Distribution List	Pollution Report (POLREP) #3 - USS Lead-2	6

9	424434-424435	6/1/12	SulTRAC	U.S. EPA	Remedial Investigation Report (Final) for the U.S. Smelter and Lead Refinery Superfund Site w/ Appendices A-D (***Portions of this document have been redacted***)	9086
10	928966	7/1/12	U.S. Dept. of Housing and Urban Development	File	Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing	874
11	929468	7/23/13	Del Toral, M., Porter, A., and Schock, M., U.S. EPA	File	Journal Article: "Detection and Evaluation of Elevated Lead Release from ServiceLines: A Field Study"	8
12	928964	7/1/16	SulTRAC	U.S. EPA	Data Evaluation Report for Sampling Conducted During 2014-2015 - USS Lead Residential Area (Text, Figures, and Tables)	101
13	928955	8/8/16	Johnston, M., U.S. EPA	Ribordy, M., U.S. EPA	Email re: Blood Lead Level Summary for Action Memo	2
14	928958	8/10/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report - USS Lead Indoor Dust Samples from July 29 - August 4, 2016	35
15	928957	8/11/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report - USS Lead Indoor Dust Samples from August 5, 2016	11
16	928959	8/12/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report - USS Lead Indoor Dust Samples from August 8, 2016	10
17	928960	8/16/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report - USS Lead Indoor Dust Samples from August 9, 2016	9
18	928969	8/16/16	King, J., Indiana State Department of Health	File	Lead Risk Assessment Reports for 14 Properties (***Portions of this document have been redacted***)	382
19	928968	8/18/16	Johnson, M., ATSDR	Ribordy, M., U.S. EPA	Email re: USS Lead - Updated Summary Table (***Portions of this document have been redacted***)	4
20	928961	8/24/16	Osborn, R., IDEM	Ribordy, M., U.S. EPA	Email re: Lack of State Resources to Conduct Removal	2

21	928962	8/26/16	Petroff, D., IDEM	Ribordy, M., U.S. EPA	Letter re: Applicable or Relevant and Appropriate Requirements (ARARs)	3
22	929439	9/14/16	Caudill, M., ATSDR	Ribordy, M., U.S. EPA	Email re: Blood Lead Level Statements for Your Records	1
23	929469	10/7/16	Johnson, M., ATSDR	Ballotti, D., U.S. EPA	Memo re: Evaluation of Release of Lead from Water Service Lines and Temporary Use of Water Filters	2
24	-	-	Ballotti, D., U.S. EPA	Stanislaus, M., U.S. EPA	Action Memorandum re: Request for an Exemption from the $2 Million and 12-month Statutory Limits, Change in Scope of the Response and Ceiling Increase for the Time-Critical Removal Action at the U.S. Smelter and Lead Refinery Site (***PENDING***)	-

ATTACHMENT III

DETAILED CLEANUP CONTRACTOR ESTIMATE

HAS BEEN REDACTED – TWO PAGES

NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

ATTACHMENT IV

INDEPENDENT GOVERNMENT COST ESTIMATE

HAS BEEN REDACTED – FOUR PAGES

NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

ATTACHMENT V

SUMMARY OF OU1 RD SOIL SAMPLING RESULTS FOR ZONE 2

HAS BEEN REDACTED – TWELVE PAGES

NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

ATTACHMENT VI

US Smelter and Lead Refinery Site Dust Screening Level for Lead

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
9311 GROH ROAD
GROSSE ILE, MI 48138

MEMORANDUM

SUBJECT: Development of an Indoor Dust Screening Criteria for the USS Lead Site

FROM: Keith Fusinski, PhD Toxicologist US EPA
Superfund Division, Remedial Response Branch #1, Remedial Response Section #1

TO: Jim Mitchell, On-Scene Coordinator US EPA
Superfund Division, Emergency Response Branch #2, Emergency Response Section #4

AND

Kristina Behnke, On-Scene Coordinator US EPA
Superfund Division, Emergency Response Branch #2, Emergency Response Section #3

DATE: 8/10/2016

The Integrated Exposure Uptake Biokinetic (IEUBK) model used by the US Environmental Protection Agency (USEPA) uses the concentration of indoor dust as a key parameter to evaluate risks to children from lead in soil. EPA separates dust into fine (≤150 µm) and coarse (>150 µm) fractions. It has been shown that the fine particle size is the fraction that is most likely to adhere to children's hands and be ingested. In addition, more recent information also indicates that there is a potential for enrichment of lead in smaller sized particles and increased bioavailability (USEPA 2016). Using only the fine particle size concentration for screening can improve the accuracy of exposure and risk calculations in lead risk assessments.

The IEUBK model (version 1.1 Build 11) was used to determine an indoor dust screening level for lead. The default assumption in the model is that the concentration of lead in indoor dust is 70% of the concentration of lead in outdoor soil (Brattin and Griffin - 2011). US EPA recommends that lead concentrations in residential soil do not exceed 400 parts per million (ppm) in soil.

The modeling was performed using default inputs from the IEUBK model for diet, drinking water, air concentration and bioavailability. The IEUBK model was run using 400 ppm for lead in soil and modeled children 0 to 84 months of age. The calculated screening level to protect this population from a current US EPA acceptable blood lead level of 10 µg/dL is **316 ppm** of lead in

dust. This concentration should be used when evaluating the fine particle size fraction of lead dust contamination.

REFERENCES

Brattin and Griffin - 2011 - William Brittin. Susan Griffin. Evaluation of the Contribution of Lead in Soil to Lead in Dust at Superfund Sites. Human and Ecological Risk Assessment: An International journal Vol. 17, Iss. 1, 2011.

USEPA 2016 - OLEM Directive 9200.1-128. Recommendations for Sieving Soil and Dust Samples at Lead Sites for Assessment of Incidental Ingestion.

Attachment VII

US Smelter and Lead Refinery Site Dust Screening Level for Arsenic

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
9311 GROH ROAD
GROSSE ILE, MI 48138

MEMORANDUM

SUBJECT: Development of an Indoor Dust Arsenic Screening Criteria for the USS Lead Site

FROM: Keith Fusinski, PhD Toxicologist US EPA
Superfund Division, Remedial Response Branch #1, Remedial Response Section #1

TO: Jim Mitchell, On-Scene Coordinator US EPA
Superfund Division, Emergency Response Branch #2, Emergency Response Section #4

AND

Kristina Behnke, On-Scene Coordinator US EPA
Superfund Division, Emergency Response Branch #2, Emergency Response Section #3

DATE: 9/20/2016

The US EPA determines probability of a non-cancer detrimental health effect to occur by calculating a hazard quotient (HQ). The HQ is a ratio of a single substance exposure level over a specified period of time to a reference dose of the same substance derived from a similar exposure period. It is recommended that the HQ of an exposure to a chemical of concern be below or equal to 1 which is the level at which no adverse human health effects are expected to occur. For cancer risk, the U.S. EPA recommends a screening level that would equate to a one in a million ($1x10^{-6}$) or greater lifetime risk of developing cancer from exposure to a contaminated site. However, rates up to 1 in 10,000 ($1x10^{-4}$) can be considered acceptable. The Office of Land and Emergency Management (OLEM) recommends removal management levels (RMLs) be set at an excess lifetime cancer risk (ELCR) of 1 in 10,000 or a non-cancer HQ of 3, whichever is most protective.

Per the direction of the EPA Lead Technical Review Workgroup, the Regional Screening Level (RSL) calculator was used to determine the "clearance" level for arsenic in dust at the USS Lead site. The calculator was set to determine arsenic concentrations based upon RMLs over a lifetime exposure of 24 hours a day, for 350 days per year, for 26 years (6 as child/20 as adult). With the ingestion rate of 100 mg/day of dust for all receptors (General Population Upper Percentile -EPA Exposure Factors Handbook 2011).

This results in a "clearance" level of **100 mg of arsenic/kg of dust**. Any concentrations of arsenic below this level is within our acceptable risk range or below it.

ATTACHMENT VIII

THIRD AMENDEDACTION MEMORANDUM
DATED OCTOBER 13, 2016

APPENDIX E

TO
Z2&3 INTERIOR UAO

ACTION MEMORANDUM
FIFTH AMENDMET

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

MAR 06 2017

REPLY TO THE ATTENTION OF:

MEMORANDUM

SUBJECT: **ACTION MEMORANDUM – 5th AMENDMENT:** Request for a Change in Scope and Ceiling Increase for the Time-Critical Removal Action at the U.S. Smelter and Lead Refinery Site, East Chicago, Lake County, Indiana (Site ID # 053J)

FROM: Margaret M. Guerriero, Acting Director
Superfund Division

THRU: Reggie Cheatham, Office Director
Office of Emergency Management (OEM)

TO: Barry Breen, Acting Assistant Administrator
Office of Land and Emergency Management

I. PURPOSE

The purpose of this Action Memorandum Amendment is to request and document your approval, consistent with Section 104(c)(1)(A) of CERCLA, 42 U.S.C. Section 9604 (c)(1)(A), to change the scope of the response and for a ceiling increase for the time-critical removal action at portions of the U.S. Smelter and Lead Refinery Site (the Site) residential area defined as Zone 2 and Zone 3 of Operable Unit 1 (OU1), in East Chicago, Lake County, Indiana (see Figure 2). The sought increase of $2,983,985 would raise the project ceiling for the time-critical removal action from $40,268,048 to $43,252,033.

Indoor data collected as a part of cleanup actions in Zones 2 and 3 found lead and arsenic concentrations in indoor dust samples above the screening criteria established for the Site. Response actions are necessary in Zones 2 and 3 to mitigate threats to public health, welfare, and the environment posed by the release and/or threatened release of uncontrolled hazardous substances at the Site. This removal action is twofold. It involves testing for lead and/or arsenic contaminated dust in residential homes located within Zones 2 and 3 where excavation of lead- or arsenic-contaminated soils has already taken place, or where EPA has been specifically requested to perform sampling by a resident. If dust in homes contains concentrations of lead or arsenic above the site-specific screening levels, and those homes had exterior soils that required remediation, contaminated dust will be removed from those homes. It also involves excavating soils in properties in Zone 2 that are eligible for time-critical removal actions based on criteria outlined in OSWER Publication 9285.7-50 *Superfund Lead-Contaminated Residential Sites*

Handbook (Lead Handbook) (2003) that were not previously considered in the fourth amendment to the action memorandum.

A change of scope of the response and ceiling increase is necessary as the previous Action Memoranda approved on January 22, 2008, August 13, 2008, September 12, 2011, October 13, 2016, and October 28, 2016 (Attachments IX, X, XI, XII, XIII), were for the excavation and proper disposal of lead-contaminated soils from residential parcels in OU1, Zones 1, 2 and 3; indoor cleanup of lead contaminated dust inside of residences in Zones 1 and 2; and temporary relocation of residents in the West Calumet Housing Complex (WCHC) in Zone 1 and residents in Zone 2. They did not address indoor cleanup of lead contaminated dust inside of residences in Zone 3. Further, for residences in Zones 2 and 3, the site-specific interior dust screening level for arsenic has been revised downward from 100 mg/kg to 26 mg/kg.

A change of scope is also necessary to further define the prioritization of Zone 2 properties for time-critical removal actions for the excavation of exterior soil to include properties with lead concentrations in surface soils at or greater than 400 mg/kg where a member of a sensitive population resides (children up to age 7 and/or pregnant women) and properties with lead concentrations at or greater than 400 mg/kg at any depth down to 24 inches bgs where a child with blood lead levels at or greater than 10 µg/dL lives.

Conditions existing at the Site in Zone 2 and Zone 3 present a threat to public health and the environment and meet the criteria for initiating a removal action under 40 CFR § 300.415(b) of the National Contingency Plan (NCP). The U.S. Environmental Protection Agency (EPA or the Agency) documented elevated levels of lead and arsenic in surface soil in residential parcels at the Site in Zones 1, 2 and 3. Lead and arsenic are hazardous substances as defined by CERCLA § 101(14). The EPA has also documented elevated levels of lead and arsenic in dust found within residences located within Zones 1, 2 and 3 of the Site.

There are no nationally significant or precedent setting issues associated with the Change of Scope sought in this Action Memorandum as it seeks approval only for the sampling and removal of lead and/or arsenic contaminated dust in residential homes in Zone 3 and for the inclusion of soil removals in Zone 2 where sensitive populations live. EPA has previously issued Action Memoranda for the sampling and removal of lead and/or arsenic contaminated dust in residential homes in Zone 1 and Zone 2, and performing time-critical removal actions at contaminated properties with sensitive populations is consistent with OSWER Publication 9285.7-50 *Superfund Lead-Contaminated Residential Sites Handbook* (Lead Handbook) (2003). The Site is on the National Priorities List (NPL) and has been since April of 2009.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID: IND047030226
RCRA ID: IND047030226
STATE ID: None
Category: Time-Critical Removal

A. Site Description

1. Removal Site Evaluation

The Indiana Department of Environmental Management (IDEM) sampled some of the residential parcels to the north of the U.S. Smelter and Lead Refinery, Inc. (U.S.S. Lead) facility in 1985. This area, known locally as the Calumet neighborhood, is now known as Operable Unit 1 of the Site. IDEM found elevated lead levels in these residential yards. In September of 1985, the Indiana State Board of Health found the U.S.S. Lead facility in violation of state law and stated that the lead-contaminated soils within the facility boundaries may pose a risk to human health and the environment. IDEM referred the U.S.S. Lead facility, now known as Operable Unit 2 or OU2, to EPA for cleanup but did not refer for cleanup the area now known as Operable Unit 1.

From 1993 through 2006, EPA's Resource Conservation and Recovery Act (RCRA) Corrective Action program oversaw the remediation and management of lead-contaminated soils within the boundaries of OU2, the U.S.S. Lead facility. On November 18, 1993, EPA and U.S.S. Lead entered into an Administrative Order on Consent (AOC) pursuant to Section 3008(h) of RCRA. The AOC required U.S.S. Lead to implement interim measures, including site stabilization and construction of a corrective action management unit (CAMU) to contain contaminated soils and slag and to conduct a Modified RCRA Facility Investigation at the U.S.S. Lead facility, OU2. The CAMU now covers approximately 10 acres and is surrounded by a subsurface slurry wall. Excavation and construction of the CAMU was conducted in two phases and completed between August and September 2002. Slag generated from the U.S.S. Lead facility's blast-furnace operations was routinely placed in piles on the southern portion of OU2 near the banks of the Grand Calumet River. The cleanup of slag was described in the Interim Stabilization Measures Work Plan prepared by ENTACT, LLC and was completed during the third quarter of 2002.

As part of a RCRA Corrective Action in 2003 and 2006, EPA conducted soil sampling in the residential neighborhood to the north located in what is now referred to as OU1 of the U.S.S. Lead Site. In the investigation of late July and early August 2003, 83 residential parcels within OU1 were sampled and analyzed for lead using a Niton X-ray fluorescence (XRF) instrument. Soils from 43 locations (52 percent) exceeded the 400 milligrams per kilogram (mg/kg) residential soil screening criterion for lead. In 2006, EPA's Field Environmental Decision Support (FIELDS) team supplemented the work performed in 2003 by collecting additional data from 14 parcels sampled in 2003 to (1) assess whether the top-most soils (zero to one inch below ground surface (bgs)) had elevated lead concentrations relative to deeper soils (one to six inches bgs), (2) collect and compare composite samples to individual samples to assess whether composite samples accurately represented the concentrations in residential yards and parks, and (3) compare lead concentrations in the fine and coarse fractions of sieved samples to evaluate whether lead was preferentially distributed in the fine-grain sizes. These sampling results showed some yards in OU1 to have high levels of lead contamination with the highest sample containing lead at a concentration of 3,000 mg/kg. The RCRA Corrective Action program looked at the possible source of the lead contamination and determined it was from various industrial sources. The RCRA Corrective Action program referred OU1—the off-site contamination from the U.S.S. Lead facility and other industrial sources - to the Superfund Program in 2004; the remainder of OU2—the on-site contamination—was referred in 2006.

Consistent with the Lead Handbook, the Superfund Program prioritized which homes needed to be cleaned up first based on the above-referenced sampling results. Specifically, residential parcels with lead concentrations in surface soils (0-6 inches) at or above 1,200 mg/kg were given priority. EPA does not consider the 1,200 mg/kg concentration as an action level for removal actions but this level does provide an alternative to running the Integrated Exposure Uptake Biokinetic (IEUBK) model with limited data to determine if the site poses an urgent threat.

On January 22, 2008, EPA signed the original action memorandum to conduct a time-critical removal action in OU1 to address known parcels with lead levels in surface soil that exceeded 1,200 mg/kg. These parcels had been identified as part of the RCRA Corrective Action residential investigation. The EPA identified 15 private parcels that contained soil with lead concentrations that exceeded 1,200 mg/kg in the top six inches of soil. On June 9, 2008, the EPA initiated the time-critical removal action to address the 15 residential parcels with lead levels that exceeded 1,200 mg/kg. On August 13, 2008, the EPA amended the original action memorandum to increase the project ceiling by $511,950 for a total of $984,060. The EPA was able to obtain access agreements and remediate 13 of the 15 parcels; two parcels were not remediated. The removal action was completed on November 18, 2008. In total, 1,838 tons of lead-contaminated soil were removed and disposed of at an approved landfill.

A Remedial Investigation (RI) was conducted from 2009 through 2010 to collect additional soil data in OU1, which EPA later divided for implementation of the remedy into Zone 1, Zone 2, and Zone 3. As a result of the sampling, EPA discovered an additional 14 areas within OU1 with lead levels that exceeded the removal action level of 1,200 mg/kg. On September 11, 2011, EPA signed the second amendment to the original action memorandum, which increased the total project ceiling to $1,928,460. On October 11, 2011, EPA started the time-critical removal action involving lead-contaminated soil removals at five West Calumet Housing Complex (WCHC) addresses (located in Zone 1) and nine other residential parcels outside the WCHC. In addition, two parcels that were not remediated during the previous removal action in 2008 because of access issues were remediated during this removal action. The removal action was completed on December 9, 2011. In total, 1,913 additional tons of lead-contaminated soil were removed and disposed of at an approved landfill as a result of the 2011 removal activities.

In November 2012, EPA issued a Record of Decision (ROD) for Operable Unit 1 (OU1) of the Site. EPA has divided OU1 into 3 separate zones for implementation of the remedy (Zones 1, 2, and 3). Residential yards within OU1 are contaminated with lead and arsenic at levels that pose a threat to human health through ingestion, inhalation and direct contact. EPA's selected remedy for OU1 addresses these risks from exposure to contaminated soils through the excavation and off-site disposal of lead or arsenic contaminated soils. The remedial action levels (RALs) for OU1 are 400 mg/kg for lead at residential parcels, 800 mg/kg for lead at industrial/commercial parcels, and 26 mg/kg for arsenic at both residential and industrial/commercial parcels.

ZONE 1 ACTIONS

From November 2014 through April 2015, EPA conducted more extensive soil sampling within Zone 1 as part of the remedial design process for OU1. EPA completed remedial designs for Zone 1, the WCHC, in the summer of 2016 Zone 1 includes approximately 118 separate

"parcels," including 111 parcels in the WCHC, three right-of-way parcels, and a school, park, recreation center, and maintenance facilities. EPA sampled all parcels in Zone 1 except a narrow strip of land on the east bank of the Indiana Harbor Canal. In May 2016, EPA received validated sampling results, which revealed lead concentrations in soil up to 24 inches in depth ranged from non-detect (ND) to 91,100 mg/kg for lead. Arsenic concentrations ranged from ND to 3,530 mg/kg (See Attachment V – Summary of OU1 RD Soil Sampling Results). Within Zone 1, a total of 117 parcels exceeded the removal management level (RML) for lead of 400 mg/kg for residential soil and 61 parcels exceeded the RML for arsenic of 68 mg/kg. Each of the parcels that exceeded the RML for arsenic also exceeded the RML for lead. Sample results from surface soils (0-6") indicated that lead concentrations at 13 parcels in the WCHC exceed 5,000 mg/kg with concentrations up to 45,000 mg/kg.

On July 29, 2016, EPA initiated in-house sampling for dust collection in the WCHC in Zone 1 to determine lead concentrations in homes. EPA was concerned about the elevated levels of lead in surface soils within the WCHC and the likelihood that lead contaminated soil/dust was being tracked or blown into the housing units. EPA prioritized homes for sampling based on residency of sensitive populations and the lead concentration in the soils of the yard. The prioritization process included homes occupied by a child with an elevated blood lead level (EBLL) as determined by reference to records from Indiana State Department of Health (ISDH), and homes with elevated soil lead concentrations in their yards. As of January 9, 2017, EPA had received validated results from 269 residences. Concentrations ranged from 3.9 to 32,000 mg/kg for lead fines and 0.077J (J means the associated value is the approximate concentration) to 880 mg/kg for arsenic fines. Indoor dust results from 110 out of the 269 sampled residences exceeded the EPA screening level of 316 mg/kg for lead for indoor living spaces (See Attachment VII – Indoor Dust Screening Criteria for Lead).

Lead Inspectors from the Indiana State Department of Health (ISDH) accompanied EPA into 28 of the initial 42 residences in Zone 1 and conducted a separate inspection for compliance with lead paint abatement policies. Wipe samples were collected from floors, interior window sills, and window troughs and compared to HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (2012 Edition) (40 $\mu g/ft^2$ - floors, 250 $\mu g/ft^2$ - window sills, and 400 $\mu g/ft^2$ - window trough). Wipe samples from six of the initial 14 units sampled were above the respective lead dust clearance standards (see Attachment VIII - Indiana State Department of Health Wipe Sample Results). Evidence of lead based paint was not found by ISDH in any of the Zone 1 inspected units based on X-Ray fluorescence (XRF) screening of painted surfaces. EPA contractors performed side by side XRF screening of painted surfaces and compared their results with the ISDH's findings; EPA's findings were consistent with the findings of ISDH. Following this comparison, EPA contractors continued screening properties with an XRF.

On August 12, 2016, EPA began to clean the inside of residences in the WCHC to remove lead contaminated dust. A combination of HEPA vacuums and wet cleaning were used to remove lead dust from ceilings, floors, carpets, walls, drapes, accessible ductwork, furnace, and furniture. As of November 7, 2016, EPA had cleaned approximately 270 out of 334 occupied units. Residents were temporarily relocated during the cleaning process and clearance sampling was conducted as necessary to document the efficacy of the cleaning.

The Agency for Toxic Substances and Disease Registry (ATSDR) is working with the East Chicago Health Department (ECHD), which is conducting an ongoing exposure investigation of blood lead levels of residents in the WCHC. The following is a summary of the findings from screenings of children living in the WCHC, which is derived from both historical data and the on-going blood lead testing campaign being conducted by ECHD:

- From the most recent ECHD testing in summer 2016, 18 out of 94 (19%) tested children from the WCHC under age six were identified with elevated blood lead (EBL) levels (> 5 µg/dL) based on capillary (finger stick) measurements.

- From 2014 through 2015, 26% of children under age seven tested at the WCHC were identified with EBL levels, with the highest measurement at 33 µg/dL in a one-year-old child. Within the same period, the census tract that includes all of the children from the WCHC (Zone 1) and part of Zone 2 had an EBL incidence rate of 22%. By comparison, the EBL rates for the two adjacent census tracts were 9% and 11%.

- The ATSDR Exposure Investigation conducted in the West Calumet neighborhood in 1997 showed a 35% EBLL incidence rate, which was defined at that time as greater than 10 µg/dL.

These observations by ATSDR, ISDH, and ECHD across almost 20 years demonstrate a consistent pattern of elevated blood lead levels in young children living in OU1. Given that the ISDH Lead Inspectors found no lead-based paint in recently sampled units within the WCHC, it is likely that exposure to soil-based lead contamination in the WCHC and portions of Zone 2 is a principle cause of elevated blood lead levels in children there.

ZONE 2 ACTIONS

Beginning in July 2016, EPA began conducting more extensive soil sampling within Zone 2 as part of the RD process for OU1. Zone 2 includes approximately 590 separate "parcels." Most of these parcels are residential parcels, though there are some commercial/industrial parcels and some of the residential parcels contain multi-family residences. As of February 7, 2017, EPA has sampled 499 properties in Zone 2, of which 404 properties have results that exceed the RALs for lead (400 mg/kg) and/or arsenic (26 mg/kg). The concentrations in surface soils range from 13 to 17,500 mg/kg for lead and 2.2 to 210 mg/kg arsenic.

In the fourth amendment to the action memorandum, EPA defined priority properties as those with surface (0 – 6 inches) soil values for lead at or above 1,200 mg/kg or arsenic at or above 68 mg/kg. Of the properties that exceeded the RMLs, 47 properties were deemed priorities.

Beginning on November 1, 2016, EPA performed removal actions to excavate and dispose of contaminated soil from those properties where lead and/or arsenic contamination in the top six inches exceeded 1,200 mg/kg or 68 kg/mg, respectively. During the fall 2016 construction season, EPA performed removal actions at 17 properties in Zone 2, including the 10 properties initially identified when the fourth amendment to the action memorandum was signed.

As a part of the larger USS Lead Site response and in conjunction with the 17 soil removal actions performed in the fall of 2016, EPA conducted interior dust sampling in residences at those properties (some properties are multiunit residences) to determine whether contaminated dust was present at concentrations that exceed screening levels established for arsenic and lead based on the August 10, 2016 (lead) and December 13, 2016 (arsenic) recommendations of the EPA-Region 5 toxicologist and in consultation with ATSDR. Dust sampling was conducted in high traffic areas of the interior of a residence to evaluate if contamination has been tracked into the home and whether it may pose a potential health risk. The lead based paint screening procedures, conducted by EPA contractors, were also used at a few homes in Zones 2 and 3 as a part of the interior dust sampling process.

Indoor dust sampling was offered to all Zone 2 priority properties where EPA had performed exterior soil remediation. EPA sampled 30 residences in Zone 2 for dust and identified 15 residences with lead or arsenic levels above the site specific screening values. Interior cleanings were conducted at 14 of those residences (one property owner deferred cleaning to Spring 2017).

ZONE 3 ACTIONS

On October 2, 2016, EPA initiated excavation activities in Zone 3. The excavation activities were performed consistent with the terms of a Consent Decree entered into in 2014 by the federal government, State of Indiana and certain private entities. Property specific design drawings prescribed dig depths for each property based on sampling data generated during the remedial design process. As of December 14, 2016, EPA had completed excavations at 37 priority properties and 1 park (Riley Park) in Zone 3. The work included excavation of the contaminated soil and its replacement with clean dirt fill, topsoil, and sod.

As in Zone 2, EPA offered to perform indoor sampling at all properties in Zone 3 that had their soil remediated. The lead based paint screening procedures, conducted by EPA contractors, were also used at a few homes in Zone 3 as a part of the interior dust sampling process. As of January 9, 2017, 36 priority residences in Zone 3 have had interior dust sampling completed and have validated data. Laboratory results indicated 17 residences exceed the interior dust screening levels of 316 mg/kg for lead and/or 26 mg/kg for arsenic (See Attachment V – Summary of OU1 Interior Dust Sampling Results for Zone 3). This exceedance rate is consistent with the exceedance rates in both Zones 1 and 2. To date, EPA has identified one residence in Zone 3 as having lead based paint inside the structure. EPA intends to perform additional lead based paint screenings during future sampling events.

2. Physical Location

The U.S.S. Lead Site lies approximately 18 miles southeast of Chicago, Illinois, in East Chicago, Indiana (Figure 1). The Site consists of the former U.S.S. Lead facility located at 5300 Kennedy Avenue, East Chicago, Indiana (designated as Operable Unit 2 (OU2)) and the residential area to the north and northeast (defined as OU1). OU1 is bound by East Chicago Avenue on the north, East 151st Street/149th Place on the south, the Indiana Harbor Canal on the west, and Parrish Avenue on the east. OU1 includes about 1200 homes, a small number of parks, open space as a part of the railroad right-of-way, schools, and public buildings. For the purpose of implementing

the remedial action (RA) in OU1, EPA has divided OU1 into three distinct geographic areas (Zones 1, 2, and 3). The actions authorized by this fifth amendment are taking place in OU1, Zones 2 and 3. Zone 2 is generally bordered: (1) on the north by Chicago Avenue; (2) on the east, by Elgin, Joliet Railroad; (3) on the south by East 151st Street; and (4) on the west by: (i) the Indiana Harbor Canal between Chicago Avenue and the northern boundary of the Carrie Gosch Elementary School; (ii) the eastern-most edge of a north/south utility right of way that runs parallel to McCook Avenue until East 149th Place, and (iii) McCook Avenue between East 149th Place and 151st Street. Zone 3 is adjacent to and directly east of Zone 2 and is generally bordered: (1) on the north by East Chicago Avenue; (2) on the east by Parrish Ave; (3) on the south by East 149st Street; and (4) on the west by the Elgin, Joliet Railroad.

The EPA conducted an EJ analysis for the Site (see Attachment I). Screening of the surrounding area was conducted using Region 5's EJ Screen Tool. Region 5 has reviewed environmental and demographic data for the area surrounding the U.S.S. Lead Site and has determined there is high potential for EJ concerns at this location.

3. Site Characteristics

OU1 includes about 1,200 homes, a small number of parks, open space as a part of the railroad right-of-way, schools, and public buildings. OU1 is primarily a residential area, which includes commercial and light industrial areas. Some parcels in the residential area in Zones 1, 2 and 3 have levels of lead in soils above EPA's RML of 400 mg/kg and arsenic above the RML of 68 mg/kg. Indoor dust sampling of residential properties in OU1 has lead and arsenic dust values above the site specific screening level.

United States Geological Survey (USGS) historical aerial photographs from 1939, 1951, 1959, and 2005 show OU1 over time. Review of these aerial photographs indicates that most of the residential neighborhoods within the Site west of the railroad tracks were built before 1939. By 1951, approximately 75 to 80 percent of the homes were built; by 1959, most of the homes east of the railroad tracks had also been built. These photographs also show that the International Smelting and Refining Company, a subsidiary of the Anaconda Copper Company (whose successor in interest is now the Atlantic Richfield Company [ARC]) occupied the area where the WCHC is currently located (Zone 1 in the southwest portion of OU1) prior to 1946. Title records indicate that the East Chicago Housing Authority constructed the WCHC on the former Anaconda Copper Mining Company/International Smelting and Refining Company site between 1970 and 1973.

The U.S.S. Lead facility was a primary and secondary smelter of lead. It began operations around 1906 and ended operations in 1985. From about 1920 until 1973, the facility was a primary smelter of lead but also conducted secondary smelting operations. The primary smelting operations included a refining process to create high quality lead free of bismuth. From 1973 until its closure in 1985, the facility was exclusively a secondary smelter. The secondary refinery operations included: battery breaking with tank treatment of spent battery acid at a rate of 16,000 gallons per day; baghouse dust collection with storage in on-site waste piles of up to 8,000 tons of flue dust; and blast furnace slag disposal, which was deposited in the wetland adjacent to and along the southern boundary of the facility (OU2). The blast-furnace baghouse

collected approximately 300 tons of baghouse flue dust per month during maximum operating conditions. Some of the flue dust escaped the baghouse capture system and was deposited by the wind within the boundaries of OU1. Secondary lead recovery operations ceased in 1985.

In addition to the U.S.S. Lead facility operation, other industrial operations have managed or processed lead and other metals and are likely sources of contamination in OU1. Immediately east of the U.S.S. Lead facility and south of Zone 3 is the former DuPont site (currently leased and operated by W.R. Grace & Co., Grace Davison). One of the processes that historically took place at the DuPont site was the manufacturing of a lead arsenate pesticide. In 2015, DuPont spun off certain assets and liabilities to a newly created company, The Chemours Company FC, LLC (Chemours). Chemours is now the owner of the former DuPont facility.

North of the former U.S.S. Lead facility stood two lead processing operations, which processed lead and other metals. A 1930 Sanborn map identifies the operations as Anaconda Lead Products and International Lead Refining Company (referred to as the former Anaconda facility). Anaconda Lead Products was a manufacturer of white lead and zinc oxide and the International Lead Refining Company was a metal refining facility. These facilities consisted of a pulverizing mill, white lead storage areas, a chemical laboratory, a machine shop, a zinc oxide experimental unit building and plant, a silver refinery, a lead refinery, a baghouse, and other miscellaneous buildings and processing areas. The International Lead Refining Company was a subsidiary of the Anaconda Copper Mining Company. Title to the property in Zone 1 was held between 1934 and 1946 by International Lead Smelting and Refinery Company. International Lead Smelting and Refinery Company acquired titled to the property in Zone 1 in 1934 from International Lead Refining Company, which had acquired title in 1912.

The residential area that comprises Zones 2 and 3 has been contaminated by the deposition of contaminants from the U.S.S. Lead facility, Anaconda Copper Mining Company/International Lead Smelting and Refinery Company facility, and DuPont/Chemours facility. The focus of this time-critical removal action is two-fold: The first focus is the removal of exterior lead and/or arsenic contaminated soils from two additional categories of priority properties: (1) residences where sensitive populations (i.e., pregnant women and/or children 6 years of age and under) live *and* the top six inches of soil associated with the residence has lead in excess of 400 mg/kg; (2) residences where a child has a blood lead level above 10 ug/dL and the top 24 inches of soil associated with the residence has lead in excess of 400 mg/kg. The second focus is the interior sampling and cleaning of residences in Zones 2 and 3 that have associated soils which require or required remediation. Approximately 81% of the properties in Zone 2 and 51% of the properties in Zone 3 require or required soil remediation. Based on data generated during work performed during the 2016 construction season, EPA anticipates that 50% of residences in both Zones 2 and 3 which require exterior soil remediation will also require interior cleaning.

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

The threat is presented by the presence of lead and arsenic-contaminated soil in residential yards and lead and arsenic contaminated dust within some of the residences in Zones 2 and 3. The presence of lead and arsenic in outdoor soils and in indoor dust at concentrations above health

screening values provides a constant source of exposure for individuals both outside and while in the home. Lead and arsenic are hazardous substances as defined by section 101(14) of CERCLA. *See* 40 C.F.R. § 302.4. Nearby lead processing operations caused extensive lead and arsenic contamination in soils throughout the Site. This removal is responding to actual and potential outdoor lead and arsenic contamination, as well as potential indoor contamination caused by the migration of lead and arsenic contaminated soil from outdoors to indoors (like the source of contamination found in Zone 1). The presence of elevated lead and arsenic levels in surface soils and potential presence of lead and arsenic in indoor dust in Zones 2 and 3 makes this a time-critical removal action.

Exposure may occur from direct ingestion of soil in yards, soil tracked indoors, or house dust; and inhalation of fugitive dust. Potential human receptors include residents, including children six years of age and under, and pregnant or nursing women.

Lead exposure via inhalation and/or ingestion can have detrimental effects on almost every organ and system in the human body. Exposure may occur from direct ingestion of soil in yards, soil tracked indoors (house dust), and inhalation of fugitive dust. Lead can cause a variety of health problems to people who are exposed to it. Potential human receptors include residents, with a particular concern for children six years of age and under and pregnant or nursing women. Children are at greatest risk from the toxic effects of lead. Initially, lead travels in the blood to the soft tissues (heart, liver, kidney, brain, etc.). Then, it gradually redistributes to the bones and teeth where it tends to remain. Children exposed to high levels of lead have exhibited nerve damage, liver damage, colic, anemia, brain damage, and death. The most serious effects associated with markedly elevated blood lead levels include neurotoxic effects such as irreversible brain damage.

Ingesting very high levels of arsenic can result in death. Exposure to lower levels can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, damage to blood vessels, and a sensation of "pins and needles" in hands and feet. Ingesting or breathing low levels of inorganic arsenic for a long time can cause a darkening of the skin and the appearance of small "corns" or "warts" on the palms, soles, and torso. Skin contact with inorganic arsenic may cause redness and swelling. Several studies have shown that ingestion of inorganic arsenic can increase the risk of skin cancer and cancer in the liver, bladder, and lungs. Inhalation of inorganic arsenic can cause increased risk of lung cancer. The Department of Health and Human Services (DHHS) and the EPA have determined that inorganic arsenic is a known human carcinogen (ATSDR, Chemical Abstract Services [CAS] # 7440-38-2], August 2007).

5. NPL status

The U.S.S. Lead Site consisting of both the former U.S.S. Lead facility (OU2) and the Calumet neighborhood to the north (OU1) was listed as a Superfund site on the National Priorities List (NPL) on April 8, 2009. EPA began the RI for OU1 on June 26, 2009. During December 2009 and August 2010, EPA contractors sampled yards in residential areas and background locations. In June 2012, EPA completed a preliminary remedial investigation and feasibility study to determine the level and extent of lead and arsenic contamination within OU1 and proposed a

remedy. In November 2012, after considering comments received from the City and IDEM, EPA outlined the long-term permanent cleanup plan in a Record of Decision for OU1. EPA has completed the remedial designs for work in Zone 1 and most of Zone 3. EPA is in the process of completing the remedial designs for Zone 2.

6. Maps, pictures and other graphic representations

Maps include:

Figure 1 – USS Lead and Lead Refinery, E. Chicago, IN. Location Map
Figure 2 – OU1 Zones 1, 2, and 3 – Location Map

B. Other Actions to Date

On January 22, 2008, EPA signed the original action memorandum to conduct a time-critical removal action in OU1 to address known parcels with lead levels that exceeded the removal action limit of 1,200 mg/kg. These parcels were identified based on sampling data collected during the RCRA Corrective Action investigation. That removal action began on June 9, 2008, and involved the excavation and off-site disposal of lead contaminated soil from 13 residential parcels. On August 13, 2008, EPA amended the original action memorandum to increase the project ceiling in order to complete the ongoing, time-critical removal action. In total, 1,838 tons of lead-contaminated soil were removed and disposed of at an approved landfill. Excavated areas were backfilled with clean fill and seeded. This removal action was completed on September 25, 2008, and the final Pollution Report was issued on November 18, 2008.

On September 12, 2011, EPA signed a second amendment to the action memorandum – which is an extension of the original memorandum - to conduct a time-critical removal action in Zones 1, 2, and 3 of OU1 to address 16 parcels (including the 2 that were missed in 2008) with lead levels exceeding the removal action limit of 1,200 mg/kg. These parcels were identified based on sampling data collected during the RI. This removal action began on October 24, 2011, and involved the excavation and off-site disposal of lead contaminated soil from 16 residential parcels. In total, 1,913 tons of lead-contaminated soil were removed and disposed of at an approved landfill. Excavated areas were backfilled with clean fill and seeded. This removal action was completed on December 9, 2011, and the final Pollution Report was issued on December 15, 2011.

On August 2, 2016, and continuing throughout the month of August, verbal authorizations were provided for emergency removal actions within the West Calumet Housing Complex for the purpose of conducting indoor home cleanings and the temporary relocation of residents during the cleanings. On September 20, 2016, EPA approved a third amendment to the action memorandum. The third amendment authorized the continuation of the activities within the WCHC.

On October 2, 2016, pursuant to the Consent Decree referenced above, EPA started excavation activities at 38 high priority properties in Zone 3 of OU1. As of December 14, 2016, 31 properties in Zone 3 have been excavated, backfilled and fully restored. An additional 7

properties in Zone 3 have been excavated and backfilled, but will require sod placement in the Spring of 2017.

On October 28, 2016, EPA signed a fourth amendment to the action memorandum to conduct a time-critical soil removal actions in Zone 2 for priority properties. On November 1, 2016, soil excavations commenced in Zone 2 on 17 properties. By December 14, 2016, all 17 properties in Zone 2 were excavated, backfilled and fully restored

As a part of the soil removal work in Zones 2 and 3, EPA conducted interior dust sampling to determine whether contaminated dust is present at concentrations that exceed screening levels established for arsenic and lead based on the August 10, 2016 (lead), and December 13, 2016 (arsenic) recommendations of EPA's toxicologist. In Zone 2, 15 of the 30 residences that were sampled had results that exceed the screening levels. Pursuant to the fourth amendment, EPA completed cleaning 14 of these 15 by the end of 2016 (one property owner deferred cleaning to Spring 2017). As of January 9, 2017, 17 of the 36 sampled residences in Zone 3 have results that exceed the screening levels (3 residences exceeded for arsenic only and 14 residences for lead or both lead and arsenic).

C. State and Local Authorities' Roles

1. State and Local Actions to Date

On August 24, 2016, Rex Osborn, Federal Programs Section Chief with IDEM, sent an email that indicated the State of Indiana does not have the financial resources to eliminate the threat posed by lead-contaminated soil in yards and lead-contaminated dust within the residences, or to fund temporary relocations. Neither the State of Indiana nor the City of East Chicago have taken or have the capacity to take action to abate the immediate threat.

2. Potential for Continued State/Local Response

The EPA is working with ATSDR, the East Chicago Health Department, the Indiana State Department of Health, and City of East Chicago elected officials to provide information to the public. EPA is coordinating discussions with stakeholders regarding the elevated levels of lead and arsenic in soil and dust, as well as EPA's plans to address these issues. Neither the state nor local officials have the resources to conduct the necessary cleanup of the indoor dust contamination or to provide for the temporary relocation of residents.

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

The conditions at Zones 2 and 3 of the U.S.S. Lead Site present a threat to the public health or welfare and the environment and meet the criteria for a time-critical removal action as provided for in the NCP, 40 C.F.R. § 300.415(b)(1), based on the factors in 40 C.F.R. § 300.415(b)(2). These factors include, but are not limited to, the following:

§ 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;

On October 2, 2016, EPA commenced excavation activities in Zone 3 to remove contaminated soil from high priority properties. To date, EPA has identified 250 properties above the remedial action level in Zone 3. In 2016, EPA remediated the soil in 38 high priority properties in Zone 3 (37 residential and 1 park). EPA conducted indoor dust sampling in conjunction with the yard excavations to fully evaluate the extent of contamination and to determine if exterior soils have migrated into homes. As of January 9, 2017, EPA has validated dust samples at 36 residential properties in Zone 3. Of the 36 residences, EPA has determined that 17 have levels above the established screening values (316 mg/kg for lead [fine fraction dust] and 26 mg/kg for arsenic [fine fraction]). Three residences had only arsenic values above the screening level with values ranging from 33 to 310 mg/kg. Fifteen residences exceeded the screening levels for lead or both lead and arsenic with lead values ranging from 330 to 1,200 mg/kg (attachment V).

Similarly, in 2016 EPA performed removal actions at 17 properties in Zone 2 and sampled 30 residences at those properties for lead and/or arsenic contaminated dust. EPA identified 15 residences with lead or arsenic levels above the site specific screening values. Interior cleanings were conducted at 14 of those residences (one property owner deferred cleaning to Spring 2017).

EPA expects to find similar exceedance rates in the interior of the remaining properties that still require outdoor soil remediation. High lead or arsenic concentrations in indoor dust are a risk to human health, particularly for children under the age of seven, because the contaminated dust may be ingested or an occupant or visitor may come into direct contact with the contaminated dust.

Pursuant to this fifth amendment, EPA is defining priority properties for the purposes of time-critical removal action as those with one or more of the following present: (1) surface soil (0-6 inches) with lead concentrations at or above 1,200 mg/kg and/or arsenic concentrations at or above 68 mg/kg, (2) residences with sensitive populations (children under 7 years of age and/or pregnant women) and surface soils (0-6 inches) with lead concentrations in excess of 400 mg/kg, and (3) children residing at a residence with blood lead levels at or above 10 µg/dL. Of the 404 Zone 2 properties with soil results that exceed the RALs, 72 have been identified as priority properties under this fifth amendment. 34 properties in Zone 2 have surface soils at 1,200 mg/kg or greater for lead and/or 68 mg/kg for arsenic, and 38 residential properties in Zone 2 have surface soils at 400 mg/kg or greater for lead and with sensitive populations present.

Lead is a hazardous substance, as defined by Section 101(14) of CERCLA. The effects of lead are the same whether it enters the body through breathing or swallowing. Lead can affect almost every organ and system in the body. The main target for lead toxicity is the nervous system, both in adults and children. Long-term exposure of adults can result in decreased performance in some tests that measure functions of the nervous system. It may also cause weakness in fingers, wrists, or ankles. Lead exposure also causes small increases in blood pressure, particularly in middle-aged and older people and can cause anemia. Exposure to high lead levels can severely damage the brain and kidneys in adults or children and ultimately cause death. In pregnant

women, high levels of exposure to lead may cause miscarriage. High-level exposure in men can damage the organs responsible for sperm production.

Arsenic is a hazardous substance under CERCLA and may be ingested or inhaled by residents living at the Site. Acute (short-term) high-level inhalation exposure to arsenic dust or fumes has resulted in gastrointestinal effects (nausea, diarrhea, abdominal pain); central and peripheral nervous system disorders have occurred in workers acutely exposed to inorganic arsenic. Chronic (long-term) inhalation exposure to inorganic arsenic in humans is associated with irritation of the skin and mucous membranes and effects in the brain and nervous system. Chronic oral exposure to elevated levels of inorganic arsenic has resulted in gastrointestinal effects, anemia, peripheral neuropathy, in humans. Chronic exposure by the inhalation route has been shown to cause a form of skin cancer and also to cause bladder, liver, and lung cancer. EPA has classified inorganic arsenic as a human carcinogen.

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

At this time, no local or state agency has the resources to respond to the immediate threat.

IV. EXEMPTION FROM STATUTORY LIMITS

Section 104(c) of CERCLA, as amended by the Superfund Amendments and Reauthorization Act (SARA), limits a removal action to 12 months and $2 million unless continued response actions are immediately required to prevent, limit or mitigate an emergency (i.e., the emergency exemption) or is appropriate and consistent with the remedial action to be taken (i.e., the consistency exemption). This removal action continues to meet the exemption criteria stated in the Fourth Action Memorandum Amendment transmitted from Region 5 to EPA Headquarters on October 24, 2016, and signed by the Assistant Administrator of the Office of Land and Emergency Management on October 28, 2016: there is an immediate risk to public health or welfare or the environment; continued response actions are immediately required to prevent, limit, or mitigate an emergency; and assistance will not otherwise be provided on a timely basis.

V. ENDANGERMENT DETERMINATION

Given the Site conditions, the nature of the known and suspected hazardous substances on-site, and the potential exposure pathways described in Sections II. and III. above, actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response actions selected in this Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment.

VI. PROPOSED ACTIONS

The response actions described in this memorandum directly address actual or potential releases of hazardous substances on Site that pose an imminent and substantial endangerment to public health, welfare, or the environment.

The actions proposed for authorization in this memo are twofold. The first is to authorize indoor actions including indoor sampling and indoor cleaning in Zones 2 and 3. These indoor actions are consistent with interior work currently approved in the Fourth Amendment except that: (1) the interior screening level for arsenic has been lowered from 100 mg/kg to 26 mg/kg; and (2) based on the knowledge that EPA gained in the fall 2016 cleaning, temporary relocation as an option during interior cleanings can be more carefully circumscribed. While the fourth amendment authorized EPA to temporarily relocate residents to undertake cleaning, EPA did not in fact have to do so. Thus, EPA has determined that temporary relocation of residents during cleanings in either Zone 2 or Zone 3 should be considered only on a case-by-case basis and only where compelling circumstances justify the need to relocate the resident(s) during the cleaning and the cleaning cannot be effectuated without the temporary relocation.

The second action proposed for authorization is soil removal actions at properties in Zone 2 beyond those authorized in the Fourth Amendment.

EPA may seek an additional ceiling request if the cost estimate provided in this action memorandum proves to be inaccurate.

Exterior Soil Removal Actions

The fourth amendment to the action memorandum authorized the excavation and removal of lead and arsenic-contaminated soils at residential parcels within Zone 2 with surficial soil concentrations at or above 1,200 mg/kg for lead and/or at or above 68 mg/kg for arsenic. This fifth amendment to the action memorandum expands the definition of priority property to include properties within Zone 2 with (1) surficial soil concentrations at or above 400 mg/kg for lead if a member of a sensitive population (e.g., pregnant women, children under the age of 7) resides at that property; and (2) lead soil concentrations in the first 24 inches bgs at or above 400 mg/kg if a child residing at the property has a blood lead level at or above 10 ug/dL. The response actions are consistent with the (OSWER) Publication 9285.7-50 *Superfund Lead-Contaminated Residential Sites Handbook* (Handbook) (2003), where the Superfund Program uses a tiered approach to prioritize which soils need to be cleaned up first. The two categories added by this Fifth Amendment are prioritized for immediate action under a time-critical removal action in the same manner as residential parcels with lead concentrations in surface soil at or greater than 1,200 mg/kg.

For cost accounting purposes, EPA has identified a total of 72 properties in Zone 2 which require time-critical removal action: 34 properties have surficial soils with lead concentrations at or greater than 1,200 mg/kg and/or arsenic concentrations at or greater than 68 mg/kg, and 38 residential properties have surficial soils with lead concentrations at or greater than 400 mg/kg where a sensitive population also resides. (EPA is not aware at this time of any properties where a child with blood lead levels at or above 10 µg/dL resides where lead soil concentrations exist in the top 24 inches bgs at or above 400 mg/kg.) These properties were identified based on the latest validated remedial design data for Zone 2 and information collected when securing access agreements. The actual number of properties subject to removal action may change due to additional properties being sampled, or more information being gathered about where sensitive

populations or children with elevated blood lead levels currently live, or additional sensitive populations/children with elevated blood lead levels moving into a Zone 2 residence.

Removal activities associated with the excavation of lead and/or arsenic contaminated soil from properties in Zone 2 will include:

1. Development of site plans, including a Work Plan, Sampling Plan/QAPP, site-specific HASP, and Emergency Contingency Plan;

2. Development of an air monitoring plan and conduct dust control measures to ensure worker and public health protection;

3. Provision for site security measures as necessary;

4. Excavation of soil at parcels where lead in the top six inches of soil is equal to or exceeds 1,200 mg/kg and/or arsenic is equal to or exceeds 68 mg/kg, as determined by EPA's RD sampling. Soil will be excavated to a depth of approximately two feet bgs, to eliminate any direct contact and inhalation threats. Excavated material that fails toxicity characteristic leaching procedure (TCLP) for lead may be treated with a fixation agent prior to disposal. Excavation will cease if lead and/or arsenic concentrations are less than 400 mg/kg for lead and 26 mg/kg for arsenic;

5. Excavation of soil at residential parcels where lead in the top six inches is equal to or exceeds 400 mg/kg, as determined by EPA's RD sampling, and where a member of a sensitive population resides (children 6 years old and under or a pregnant woman). Soil will be excavated to a depth of approximately two feet bgs, to eliminate any direct contact and inhalation threats. Excavated material that fails toxicity characteristic leaching procedure (TCLP) for lead may be treated with a fixation agent prior to disposal. Excavation will cease if lead and/or arsenic concentrations are less than 400 mg/kg for lead and 26 mg/kg for arsenic;

6. Excavation of soil at residential parcels where lead in the top twenty-four inches is equal to or exceeds 400 mg/kg, as determined by EPA's RD sampling, and where a child with a blood lead level of 10 ug/dL or greater resides. Soil will be excavated to a depth of approximately two feet bgs, to eliminate any direct contact and inhalation threats. Excavated material that fails toxicity characteristic leaching procedure (TCLP) for lead may be treated with a fixation agent prior to disposal. Excavation will cease if lead and/or arsenic concentrations are less than 400 mg/kg for lead and 26 mg/kg for arsenic;

7. Collection and analysis of confirmation samples from the bottom of each excavation. If lead levels below 400 mg/kg or arsenic levels below 26 mg/kg cannot be achieved at an excavation depth of approximately two feet bgs, excavation will cease and a visible barrier will be placed at the bottom of the excavation to alert the property owner of the existence of high levels of lead and/or arsenic. In such instances and consistent with the Record of Decision, institutional controls (ICs) will be implemented as part of the

remedial action to ensure the users of the property are not exposed to the contaminants of concern in soil;

8. Replacement of excavated soil with clean soil, including 6 inches of top soil to maintain the original grade. Each yard will be restored as close as practicable to its pre-removal condition. Once the parcels are sodded or seeded, removal site control of the sod or seed, including, watering, fertilizing, and cutting, will be conducted for 30 days. After the initial 30-day period, property owners will be responsible for the maintenance of their own yards. The aforementioned work shall be documented in a Work Plan;

9. Transportation and disposal off-site of any hazardous substances, pollutants and contaminants at a CERCLA-approved disposal facility in accordance with EPA's Off-Site Rule (40 CFR § 300.440); and

10. Performance of any other response actions to address any release or threatened release of a hazardous substance, pollutant or contaminant that the EPA On-Scene Coordinator (OSC) determines may pose an imminent and substantial endangerment to the public health or the environment.

These removal activities prioritize imminent risks associated with high levels of soil lead contamination and are consistent with the *Superfund Lead-Contaminated Residential Sites Handbook* (2003), with current Removal Management Levels, and with Office of Land and Emergency Management Directive 9200.2-167. EPA will continue to review the protectiveness of any actions performed consistent with the remedy selected in the Record of Decision, in a manner consistent with EPA policies and guidance and EPA's obligations under 42 U.S.C. § 9621(c).

Interior Dust Removal Actions

Data results from the first 30 residences in Zone 2 sampled for indoor dust indicate that 15 of those residences exceed the EPA screening level of 316 mg/kg for lead and/or 26 mg/kg for arsenic. Similarly, data results from the first 36 residences in Zone 3 sampled for indoor dust indicate that 17 residences of those residences exceed the EPA screening level of 316 mg/kg for lead and/or 26 mg/kg for arsenic. These exceedance rates are consistent with the exceedance rate for residences in Zone 1, where it was determined that lead-based paint was not a contributing source to indoor dust contamination. Given the significant number of indoor dust samples from Zones 2 and 3 that exceed the screening levels, given the threat posed by high concentrations of lead or arsenic in soil in adjacent outdoor areas, and given the consistent pattern of EBL levels in children less than 6 years of age living in WCHC and portions of Zone 2, action is needed.

At all residences where soil remediation is required, EPA will offer to test indoor dust for lead and arsenic. EPA will also screen the residence for lead-based paint using an XRF. Indoor sampling/screening (and any necessary follow-up cleaning, as described below) will be offered after soil excavations to prevent potential recontamination to the dwelling. For residences that qualify for indoor cleaning by EPA, EPA will also take post-cleaning samples and compare these to World Trade Center (WTC) dust loading values to determine the efficacy of the cleaning.

(World Trade Center Indoor Environment Assessment: Selecting Contaminants of Potential Concern and Setting Health-Based Benchmarks; May 2003.)

EPA will offer to clean the inside of residences where indoor sampling results exceed the risk-based screening criteria if soils associated with those residences exceeded the remedial actions levels and have been remediated. A combination of HEPA vacuums and/or wet cleaning will be used to remove contaminated dust from floors, carpeting, upholstery, surfaces, and readily accessible elements of HVAC systems. EPA may also clean and/or replace HVAC and AC unit filters. Replacement of carpets/mats may be considered on a case-by-case basis if cleaning mechanisms fail to result in or, based on experience, will likely fail to result in, lead and arsenic loading numbers that are below the WTC cleanup efficacy criteria. EPA may re-clean a residence if post-cleaning samples are above the WTC dust loading values. However, EPA will not re-clean any residence where indoor sampling/screening indicates the presence of lead-based paint.

EPA will not temporarily relocate any residents during interior cleanings in Zones 2 or 3 unless, on a case-by-case basis, compelling circumstances justify the need to relocate the resident during the cleaning and the cleaning cannot be effectuated without the temporary relocation.

Given the risk of tracking and cross contamination from lead or arsenic contaminated soils identified at private properties and commonly used public properties, including Riley Park and Kennedy Gardens Park, EPA will also perform indoor dust sampling/lead paint screening at other Zone 2 and Zone 3 residences when specifically requested by residents. If indoor sampling results exceed the risk-based screening criteria, EPA will offer the resident the use of a HEPA vacuum for cleaning.

For cost accounting purposes, EPA anticipates the scope of these indoor removal actions in Zones 2 and 3 to include (1) approximately 700 to 800 residences for indoor sampling; and (2) approximately 350 to 400 residences for indoor cleaning. The interior sampling figures are based on an approximation of the number of residences associated with approximately 600 properties in Zones 2 and 3 that have exterior soil contamination that exceeds the RALs. The interior cleaning figures are 50% of the interior sampling figures based on past history. The past history is a relatively small data set, and the actual number of residences that require indoor cleaning may increase as more data is collected. This may result in additional ceiling increase requests.

Removal activities associated with indoor sampling, evaluation, and removal of contaminated dust in Zone 2 and Zone 3 homes will include:

1. Development and implementation of an indoor sampling/screening plan;

2. Development of a Work Plan and Site Specific Health and Safety Plan, including plans for indoor cleaning;

3. Provision for Site security, as directed by the OSC or RPM;

4. Performance of indoor cleaning as specified in the Site Work Plan;

5. On a case-by-case basis and only upon a showing of a compelling circumstances where the cleaning cannot otherwise be effectuated, temporary relocation of a resident(s) during the indoor cleaning; and

6. Transportation and disposal off-site of any hazardous substances, pollutants and contaminants at a CERCLA-approved disposal facility in accordance with EPA's Off-Site Rule (40 CFR § 300.440).

The Action Memorandum and supporting documentation follow the April 2002 Superfund Response Actions: Temporary Relocations Implementation Guidance, particularly in considering residents' needs, property security, dealing with residents' stress and disruptions, and explaining benefits. Consistent with EPA's guidance on temporary relocations (2002), Sec. IV.A ("Making the Relocation Decision"), temporary relocation at the Site is justified during the cleaning process by the following factor:

- Efficiency of response action: temporary relocation minimizes concerns about noise, property access, and other restrictions on the hours or types of response activities that may be conducted at the Site.

Both the exterior and interior removal actions will be conducted in a manner not inconsistent with the NCP.

The threats posed by uncontrolled substances considered hazardous meet the NCP criteria listed at § 300.415(b), and the response actions proposed herein are consistent with the remedial action to be taken.

Off-Site Rule

All hazardous substances, pollutants, or contaminants removed off-site pursuant to this removal action for treatment, storage, and disposal shall be treated, stored, or disposed of at a facility in compliance, as determined by EPA, with the EPA Off-Site Rule, 40 C.F.R. § 300.440.

1. Contribution to remedial performance

The proposed action should not impede future remedial performance.

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

Not Applicable

3. Applicable or relevant and appropriate requirements (ARARs)

All applicable or relevant and appropriate requirements (ARARs) will be complied with to the extent practicable. On August 18, 2016, EPA sent an e-mail to Rex Osborn of IDEM asking for any State of Indiana ARARs that may apply. IDEM provided both Action and Chemical specific

state ARARs in a letter dated August 26, 2016. EPA will consider and implement the submitted ARARs as appropriate.

Project Schedule

The time-critical removal actions will require approximately 528 working days to complete.

B. Removal Project Ceiling Estimate – Extramural Costs:

The detailed cleanup contractor cost is presented in Attachment 1 and the Independent Government Cost Estimate is presented in Attachment IV. Estimated project costs are summarized below:

REMOVAL ACTION PROJECT CEILING ESTIMATE

Extramural Costs	**Current Ceiling**	**Proposed Increase**	**Proposed Ceiling**
Regional Removal Allowance Costs			
Total Cleanup Contractor Costs (This costs category includes estimates for ERRS, subcontractors, Notices to Proceed, and Interagency Agreements with Other Federal Agencies and 20% Contingency)	$29,009,457	$1,359,154	$30,368,611
Other Extramural Costs Not funded from the Regional Allowance			
Total START including multiplier costs	$4,547,250	$1,127,500	$5,674,750
Subtotal			
Subtotal Extramural Costs	$33,556,707	$2,486,654	$36,043,361
Extramural Costs Contingency (20% of Subtotal, Extramural Costs rounded to nearest thousand for Proposed Increase)	$6,711,341	$497,331	$7,208,672
TOTAL REMOVAL ACTION PROJECT CEILING	**$40,268,048**	**$2,983,985**	**$43,252,033**

The response actions described in this memorandum directly address the actual or threatened release of hazardous substances, pollutants, or contaminants at the Site, which may pose an imminent and substantial endangerment to public health or welfare or to the environment. These response actions do not impose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

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

Given the Site conditions, the nature of the hazardous substances and pollutants or contaminants documented in Zones 2 and 3 of OU1, and the potential exposure pathways to nearby populations described in Section II. and Section III., above, actual or threatened releases of hazardous substances and pollutants or 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, welfare, or the environment.

VIII. OUTSTANDING POLICY ISSUES

None.

IX. ENFORCEMENT

For administrative purposes, information concerning the enforcement strategy for this Site is contained in the Confidential Enforcement Addendum.

The total EPA costs of this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be $71,929,729[1].

($43,252,033+ $2,000,000) + (61.96% x $45,252,033) = $73,290,193

[1] 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 direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgement 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.

X. RECOMMENDATION

This decision document, along with the Action Memorandum signed on January 22, 2008, and the Action Memorandum Amendments signed on August 13, 2008, September 12, 2011, October 13, 2016, and October 28, 2016, represents the selected removal action for the U.S. Smelter and Lead Refinery Site, Zone 3, OU1, East Chicago, Lake County, Indiana. This removal action is developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for the Site (Attachment II). Conditions at OU1, Zones 2 and 3 meet the NCP Section 300.415(b) criteria for a removal action and the CERCLA Section 104(c) emergency exemption from the $2 million and 12-month statutory limitations. The total removal action project ceiling, if approved, will be $43,252,033 of which as much as $35,343,361 may be used from the removal allowance. I recommend your approval of the proposed removal action. You may indicate your decision by signing below.

APPROVE _____ DATE: 3/14/2017
Barry N. Breen, Acting Assistant Administrator
Office of Land and Emergency Management

DISAPPROVE _____ DATE: _____
Barry N. Breen, Acting Assistant Administrator
Office of Land and Emergency Management

Enforcement Addendum

Figures:

Figure 1 – USS Lead and Lead Refinery, E. Chicago, IN. Location Map
Figure 2 – OU1 Zones 1, 2, and 3– Location Map

Attachments:

I. Environmental Justice Analysis
II. Administrative Record Index
III. Detailed Cleanup Contractor Estimate
IV. Independent Government Cost Estimate
V. Summary of OU1 RD Soil Sampling Results
VI. Indoor Dust Screening Criteria for Lead
VII. Indoor Dust Screening Criteria for Arsenic
VIII. Fourth Amended Action Memorandum dated October 13, 2016

cc: Brian Schlieger, U.S. EPA, 5104A/B517F **(Schlieger.Brian@epa.gov)**
Lindy Nelson, U.S. DOI, **w/o Enf. Addendum (Lindy_Nelson@ios.doi.gov)**
Rex Osborn, IDEM **w/o Enf. Addendum (rosborn@idem.in.gov)**

BCC PAGE HAS BEEN REDACTED

NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

ENFORCEMENT ADDENDUM

HAS BEEN REDACTED – FOUR PAGES

ENFORCEMENT CONFIDENTIAL

NOT SUBJECT TO DISCOVERY

FOIA EXEMPT

NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

Figure 1
Site Location
USS Smelter and Lead Refinery, East Chicago, IN

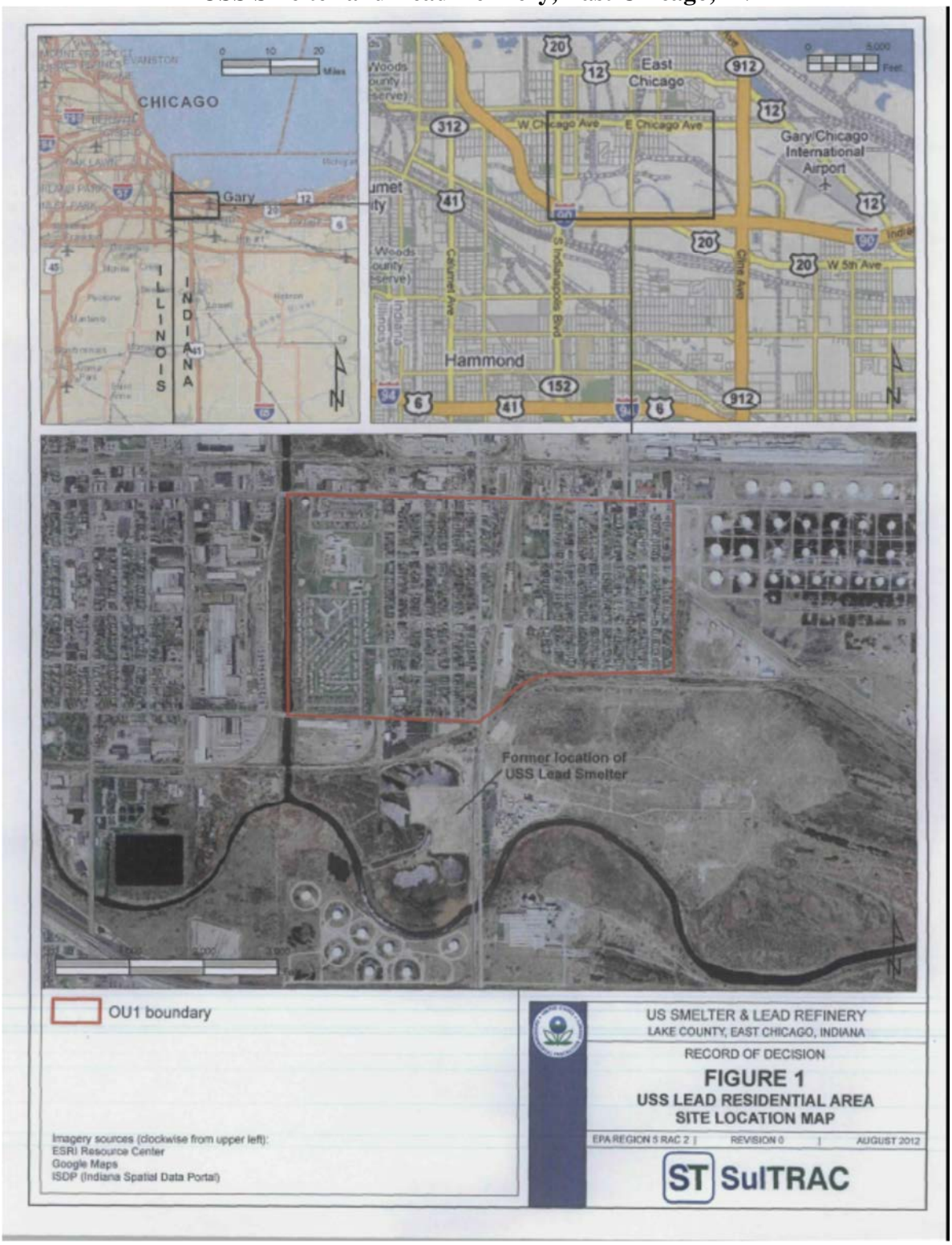
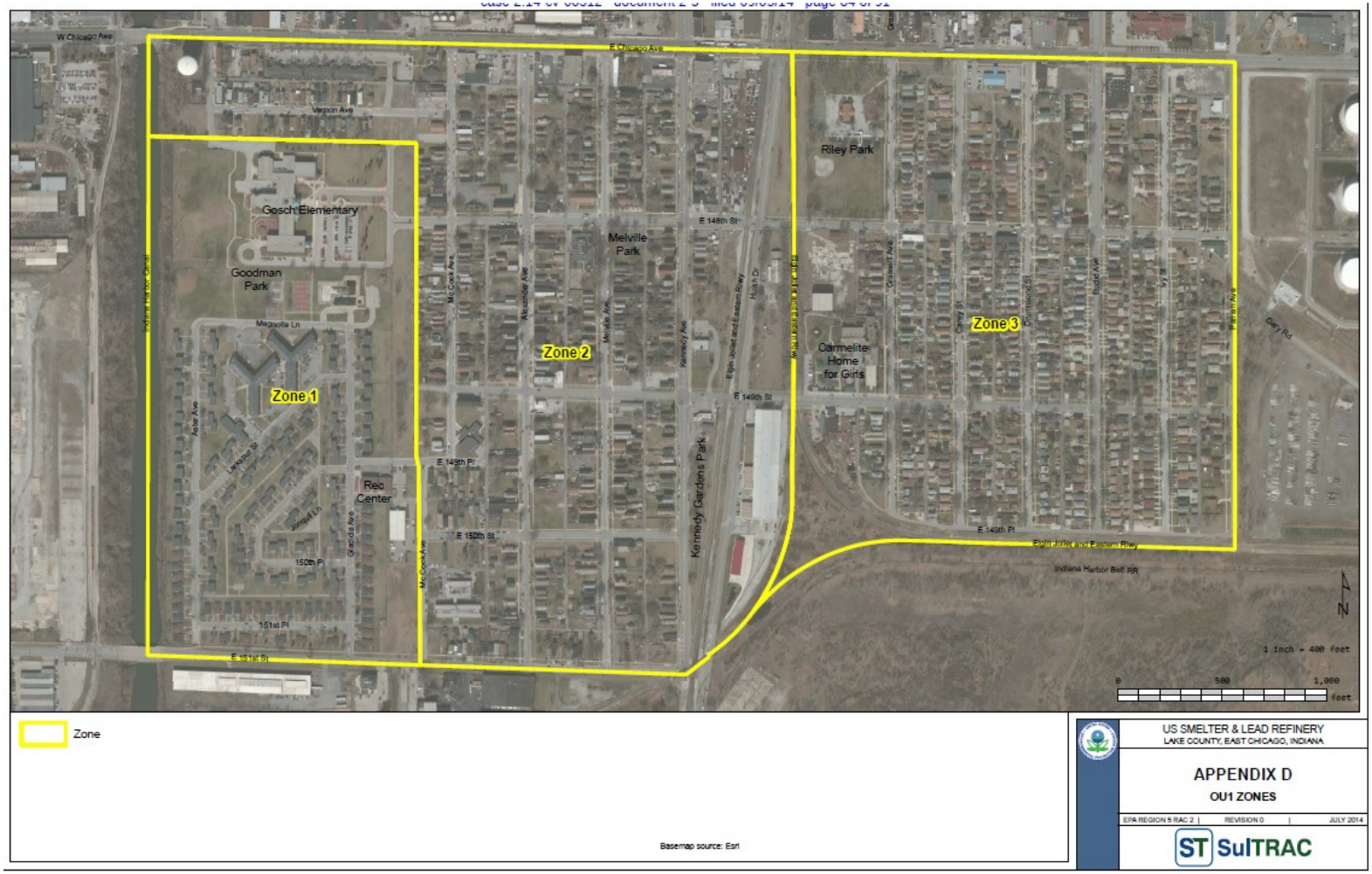


FIGURE 2
Zone 3/OU1 MAP
U.S. Smelter and Lead Refinery Site, East Chicago, Lake County, Indiana



ATTACHMENT I

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ENVIRONMENTAL JUSTICE ANALYSIS FOR U.S. SMELTER AND LEAD REFINERY SITE, EAST CHICAGO, LAKE COUNTY, INDIANA

EJSCREEN Report (Version 2016)

0.5 mile Ring Centered at 41.623974,-87.469228, INDIANA, EPA Region 5

Approximate Population: 2,455
Input Area (sq. miles): 0.79

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0
National Pollutant Discharge Elimination System (NPDES)	0

EJSCREEN Report (Version 2016)

0.5 mile Ring Centered at 41.623974,-87.469228, INDIANA, EPA Region 5

Approximate Population: 2,455

Input Area (sq. miles): 0.79

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	11.7	11	98	10.6	86	9.32	93
Ozone (ppb)	48.8	51.2	11	50.3	21	47.4	52
NATA* Diesel PM (µg/m³)	0.86	0.835	57	0.931	50-60th	0.937	50-60th
NATA* Cancer Risk (lifetime risk per million)	32	34	38	34	<50th	40	<50th
NATA* Respiratory Hazard Index	1.5	1.4	61	1.7	<50th	1.8	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	240	250	73	370	70	590	65
Lead Paint Indicator (% Pre-1960 Housing)	0.65	0.36	82	0.39	77	0.3	84
Superfund Proximity (site count/km distance)	1.5	0.16	99	0.12	99	0.13	99
RMP Proximity (facility count/km distance)	4.3	0.52	99	0.51	99	0.43	99
Hazardous Waste Proximity (facility count/km distance)	0.09	0.044	91	0.069	78	0.072	77
Water Discharger Proximity (facility count/km distance)	2.9	0.34	99	0.31	99	0.31	99
Demographic Indicators							
Demographic Index	84%	27%	99	29%	97	36%	96
Minority Population	92%	19%	98	24%	94	37%	91
Low Income Population	77%	35%	95	33%	95	35%	95
Linguistically Isolated Population	5%	2%	87	2%	83	5%	70
Population With Less Than High School Education	22%	12%	84	11%	87	14%	78
Population Under 5 years of age	10%	6%	81	6%	83	6%	81
Population over 64 years of age	8%	14%	23	14%	23	14%	27

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

ATTACHMENT II

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR THE
U.S. SMELTER AND LEAD SITE
EAST CHICAGO, LAKE COUNTY, INDIANA

UPDATE 5
FEBRUARY, 2017
SEMS ID:

NO.	SEMS ID	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	930087	5/1/03	World Trade Center Indoor Air Task Force Working Group	File	World Trade Center Indoor Environment Assessment: Selecting Contaminants of Potential Concern and Setting Health-Based Benchmarks	78
2	929996	8/10/16	Fusinski, K., U.S. EPA	Behnke, K., and Mitchell, J., U.S. EPA	Memorandum re: Development of an Indoor Dust Screening Criteria for the USS Lead Site	2
3	929997	9/20/16	Fusinski, K., U.S. EPA	Behnke, K., and Mitchell, J., U.S. EPA	Memorandum re: Development of an Indoor Dust Arsenic Screening Criteria for the USS Lead Site	1
4	931126	10/27/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report for USS Lead Indoor Dust	11
5	931127	11/4/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report for USS Lead Zone 3 Indoor Sampling	9
6	931128	11/9/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report for USS Lead Zone 3 Indoor Sampling	11
7	931129	11/10/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report for USS Lead Zone 3 Indoor Sampling	10

8	931130	11/18/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report for USS Lead Zone 3 Indoor Sampling	30
9	931131	11/22/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report for USS Lead Zone 3 Indoor Sampling	16
10	931245	11/30/16	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Report for USS Lead Zone 3 Indoor Sampling	44
11	931125	12/13/16	Fusinski, K., U.S. EPA	Behnke, K., and Mitchell, J., U.S. EPA	Memo re: Justification for Using Site-Specific Arsenic Background Concentration in Soil for Indoor Dust Screening Concentration for the USS Lead Site	2
12	932276	1/9/17	Vickers, J., Tetra Tech	Behnke, K., U.S. EPA	Data Validation Reports for Indoor Dust Sampling (Combined) - August 11, 2016 - January 9, 2017	838
13	932290	1/27/16	Snyder, R., U.S. EPA	File	Lab Data and Data Validation Reports for 18 Soil Samples - December 8-16, 2016 (**Redacted**)	29
14	932291	3/24/10	Griffin, S., U.S. EPA	File	Data Validation Report for 20 Soil Samples - December 7-10, 2009	55
15	932292	9/7/10	Griffin, S., U.S. EPA	File	Data Validation Report for 20 Soil Samples - August 12-13, 2010	68
16	-	-	Guerriero M., U.S. EPA	Breen, B., U.S. EPA	Action Memorandum re: Request for Approval and Funding for a Time-Critical Removal Action at the U.S. Smelter and Lead Refinery Site (***PENDING***)	-

ATTACHMENT III

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

DETAILED CLEANUP & OVERSIGHT CONTRACTOR COST ESTIMATE
U.S. Smelter and Lead Refinery Site (Zone 3)
East Chicago, Indiana
January 2017

Indoor Dust Mitigation		
ERRS Removal contractor		**Funding Allocation**
Personnel	**$895,256**	Removal
Equipment	**$100,322**	Removal
Miscellaneous	**$136,900**	Removal
T&D	**$150**	Removal
Total	**$1,132,628**	
Plus 20% Contingency	**$226,525.69**	
Total ERRS Contractor Costs	**$1,359,154**	

Indoor Dust Mitigation		
START contractor		**Funding Allocation**
Personnel	**$375,000**	Removal
Dust Sampling	**600,000**	Removal
Equipment/Vehicle	**$40,000**	Removal
Data Management	**$100,000**	Removal
Report Writing	**$12,500**	Removal
Total START Contractor Costs	**$1,127,500**	

ATTACHMENT IV

January 2016
INDEPENDENT GOVERNMENT COST ESTIMATE
Indoor Dust Mitigation Zone 3
U.S. Smelter and Lead Refinery Site
East Chicago, Indiana (based on latest information from January 9, 2017)

Note: As of January 2017, Zone 3 indoor dust sampling is summarized as follows:

- 468 parcels in Zone
- Validated dust sampling results available from 36 residential homes scheduled for a 2016 cleanup.
- 17 of the 36 sampled residences have levels above the lead and/or arsenic indoor screening value(s) (Validated Results)
- Currently, 247 properties in Zone 3 have been identified as needing soil remediation
- Approximately 50% of 247 identified properties = 124 (rounded up) properties may need indoor dust mitigating actions.
- Indoor sampling cost about $2,000 per event. A home would require at least 2 sampling events

Based on the aforementioned information the IGCE is estimated for approximately **124 homes** in Zone 3, 1.5 days per home. Estimated **188 working days (includes 2 days for mobilization and demobilization)** Working Days for total of **1880 hours** at 10 hours per day or 15 hours per home.
(see IGCE below)

ESTIMATED DAYS TO COMPLETE WORK

Activity	*Days*
Mob/Demob	2
Sampling	0
Removal Action	186
TOTAL	188

ERRS TRANSPORTATION AND DISPOSAL

Matrix	*Quantity*	*Unit*	*Unit Price*	*Subtotal*	*Trans*	*Samples*	*Total*
Non-Haz Waste	1	ton	50	50		$100	$150
					T&D TOTAL		**$150**

Personnel & Equipment

Personnel	*Units*	*Reg Rate*	*OT Rate*	*Reg Hours*	*OT Hours*	*Labor Cost*	*PerDiem*	*Lodging*	*PerDiem/ Lodging Cost*	*Total*
Response Manager	1	66	66	1504	376	$124,080	$59	$104	$30,644	$154,724
FCA	1	35	52	1504	376	$72,192	$59	$104	$30,644	$102,836
Foreman	1	55	77	1504	376	$111,672	$59	$104	$30,644	$142,316
Equipment Operator	0	56	73	1504	376	$0	$59	$104	$0	$0
Laborer	5	35	42	1504	376	$342,160	$59	$104	$153,220	$495,380
T&D Coordinator	0	65	65	1504	376	$0	$59	$104	$0	$0
Industrial Hygienist	0	65	65	1504	376	$0	$59	$104	$0	$0
Chemist	0	45	45	1504	376	$0	$59	$104	$0	$0
Truck Driver	0	50	63	1504	376	$0	$59	$104	$0	$0
							PERSONNEL SUB TOTAL			**$895,256**

Equipment	*Units*	*Daily Rate*	*Weekly Rate*	*Monthly Rate*	*Length*	*Lump Sum*	*Total*
1/2 ton pickup truck	3	$49			188		$27,771
1 ton stakebed truck	1	$74			188		$13,895
HEPA Vacuum	2	$18			188		$6,768
Negative air machine	2	$30			188		$11,280
PPE	6	$36			188		$40,608
				EQUIPMENT SUB TOTAL			**$100,322**

Materials & Miscellaneous	*Quantity*	*Costs*	*Daily Cost*	*Lump Sum*	*Length*	*Subtotal*	*Misc*	
Miscellaneous cleaning materials						$1,000		$1,000
Carpet Replacement	124	$1,000				$125,000		$125,000
Vehicle (fuel)		$25			188	$4,700		$4,700
Utility Usage	124	$50				$6,200		$6,200
							MISC. TOTAL	**$136,900**

ERRS 20% Contingency		$226,525.69
ERRS SUBTOTAL		**$1,359,154**

START

	Units	*Rate*	*Hours*	*Labor Cost/Unit Cost*	*PerDiem*	*Lodging*	*Cost*	*Total*
START-on site	2	$125	1,500					$375,000
Sampling	300			2,000				600,000
Equipment: vehicle, air monitoring, supplies	2	$125	200					$40,000
Data Management		100	1,000					100,000
Report Writing	1	$125	100					$12,500
							START TOTAL	**$1,127,500**

ATTACHMENT V

Summary of OU1 Interior Dust Sampling Results for Zone 3
U.S. Smelter and Lead Refinery Site East Chicago, Lake County, Indiana

Final validated data from USS Lead OU1 Zone 3 Indoor Dust Sampling) (as of 11/29/2016). Pb > 316 and As > 26

EDD Status	Location	Samp_No	Sub_Location	Analyte	Result	Result_ Qualifier	Lab_Result_ Qualifier	Result_Units
Level4	USSL-3023	USSL-3023-BR-101116	Bedroom	Arsenic (fine fraction)	1.1	J	J	mg/Kg-dry
Level4	USSL-3023	USSL-3023-BR-101116	Bedroom	Lead (fine fraction)	21	J		mg/Kg-dry
Level4	USSL-3023	USSL-3023-FE-101116	Front Entrance	Arsenic (fine fraction)	3.9	J	J	mg/Kg-dry
Level4	USSL-3023	USSL-3023-FE-101116	Front Entrance	Lead (fine fraction)	180			mg/Kg-dry
Level4	USSL-3037	USSL-3037-BM-112216	Basement	Arsenic (fine fraction)	11			mg/Kg-dry
Level4	USSL-3037	USSL-3037-BM-112216	Basement	Lead (fine fraction)	920			mg/Kg-dry
Level4	USSL-3037	USSL-3037-BR-110216	Bedroom	Arsenic (fine fraction)	2.6	J	J	mg/Kg-dry
Level4	USSL-3037	USSL-3037-BR-110216	Bedroom	Lead (fine fraction)	58			mg/Kg-dry
Level4	USSL-3037	USSL-3037-FE-110216	Front Entrance	Arsenic (fine fraction)	12			mg/Kg-dry
Level4	USSL-3037	USSL-3037-FE-110216	Front Entrance	Lead (fine fraction)	360			mg/Kg-dry
Level4	USSL-3039	USSL-3039-BR-110916	Bedroom	Arsenic (fine fraction)	3.3	J	J	mg/Kg-dry
Level4	USSL-3039	USSL-3039-BR-110916	Bedroom	Lead (fine fraction)	58			mg/Kg-dry
Level4	USSL-3039	USSL-3039-FE-110916	Front Entrance	Arsenic (fine fraction)	12	J	J	mg/Kg-dry
Level4	USSL-3039	USSL-3039-FE-110916	Front Entrance	Lead (fine fraction)	350			mg/Kg-dry

Level4	USSL-3043	USSL-3043-BM-101116	Basement	Arsenic (fine fraction)	310			mg/Kg-dry
Level4	USSL-3043	USSL-3043-BM-101116	Basement	Lead (fine fraction)	53			mg/Kg-dry
Level4	USSL-3043	USSL-3043-BR-101116	Bedroom	Arsenic (fine fraction)	37			mg/Kg-dry
Level4	USSL-3043	USSL-3043-BR-101116	Bedroom	Lead (fine fraction)	56			mg/Kg-dry
Level4	USSL-3043	USSL-3043-FE-101116	Front Entrance	Arsenic (fine fraction)	18			mg/Kg-dry
Level4	USSL-3043	USSL-3043-FE-101116	Front Entrance	Lead (fine fraction)	56			mg/Kg-dry
Level4	USSL-3046	USSL-3046-BR-101216	Bedroom	Arsenic (fine fraction)	3.8	J-		mg/Kg-dry
Level4	USSL-3046	USSL-3046-BR-101216	Bedroom	Lead (fine fraction)	350			mg/Kg-dry
Level4	USSL-3046	USSL-3046-FE-101216	Front Entrance	Arsenic (fine fraction)	26	J-		mg/Kg-dry
Level4	USSL-3046	USSL-3046-FE-101216	Front Entrance	Lead (fine fraction)	210			mg/Kg-dry
Level4	USSL-3047	USSL-3047-BM-101116	Basement	Arsenic (fine fraction)	38			mg/Kg-dry
Level4	USSL-3047	USSL-3047-BM-101116	Basement	Lead (fine fraction)	150			mg/Kg-dry
Level4	USSL-3047	USSL-3047-BR-101116	Bedroom	Arsenic (fine fraction)	17			mg/Kg-dry
Level4	USSL-3047	USSL-3047-BR-101116	Bedroom	Lead (fine fraction)	220			mg/Kg-dry
Level4	USSL-3047	USSL-3047-FE-101116	Front Entrance	Arsenic (fine fraction)	11			mg/Kg-dry
Level4	USSL-3047	USSL-3047-FE-101116	Front Entrance	Lead (fine fraction)	170			mg/Kg-dry

Level4	USSL-3055	USSL-3055-BM-101716	Basement	Arsenic (fine fraction)	3.6	J	J	mg/Kg-dry
Level4	USSL-3055	USSL-3055-BM-101716	Basement	Lead (fine fraction)	61			mg/Kg-dry
Level4	USSL-3055	USSL-3055-BR-092316	Bedroom	Arsenic (fine fraction)	3.5	J	J	mg/Kg-dry
Level4	USSL-3055	USSL-3055-BR-092316	Bedroom	Lead (fine fraction)	60			mg/Kg-dry
Level4	USSL-3055	USSL-3055-FE-092316	Front Entrance	Arsenic (fine fraction)	4.5			mg/Kg-dry
Level4	USSL-3055	USSL-3055-FE-092316	Front Entrance	Lead (fine fraction)	120			mg/Kg-dry
Level4	USSL-3070	USSL-3070-BR-102516	Bedroom	Arsenic (fine fraction)	1.8	J-	J	mg/Kg-dry
Level4	USSL-3070	USSL-3070-BR-102516	Bedroom	Lead (fine fraction)	80			mg/Kg-dry
Level4	USSL-3070	USSL-3070-RE-102516	Rear Entrance	Arsenic (fine fraction)	7.5	J-	J	mg/Kg-dry
Level4	USSL-3070	USSL-3070-RE-102516	Rear Entrance	Lead (fine fraction)	890			mg/Kg-dry
Level4	USSL-3071	USSL-3071-BM-111516	Basement	Arsenic (fine fraction)	13			mg/Kg-dry
Level4	USSL-3071	USSL-3071-BM-111516	Basement	Lead (fine fraction)	83	J-		mg/Kg-dry
Level4	USSL-3071	USSL-3071-FE-110416	Front Entrance	Arsenic (fine fraction)	9			mg/Kg-dry
Level4	USSL-3071	USSL-3071-FE-110416	Front Entrance	Lead (fine fraction)	87	J+		mg/Kg-dry
Level4	USSL-3071	USSL-3071-LR-110416	Living Room	Arsenic (fine fraction)	6.4			mg/Kg-dry
Level4	USSL-3071	USSL-3071-LR-110416	Living Room	Lead (fine fraction)	86			mg/Kg-dry

Level4	USSL-3072	USSL-3072-BR-101716	Bedroom	Arsenic (fine fraction)	2.4	J+	J	mg/Kg-dry
Level4	USSL-3072	USSL-3072-BR-101716	Bedroom	Lead (fine fraction)	120			mg/Kg-dry
Level4	USSL-3072	USSL-3072-FE-101716	Front Entrance	Arsenic (fine fraction)	2.7	J+	J	mg/Kg-dry
Level4	USSL-3072	USSL-3072-FE-101716	Front Entrance	Lead (fine fraction)	64			mg/Kg-dry
Level4	USSL-3075	USSL-3075-BR-102816	Bedroom	Arsenic (fine fraction)	8.1	J		mg/Kg-dry
Level4	USSL-3075	USSL-3075-BR-102816	Bedroom	Lead (fine fraction)	29	J		mg/Kg-dry
Level4	USSL-3075	USSL-3075-RE-102816	Rear Entrance	Arsenic (fine fraction)	33	J	J	mg/Kg-dry
Level4	USSL-3075	USSL-3075-RE-102816	Rear Entrance	Lead (fine fraction)	85	J	J	mg/Kg-dry
Level4	USSL-3087	USSL-3087-BM-101416	Basement	Arsenic (fine fraction)	48	J		mg/Kg-dry
Level4	USSL-3087	USSL-3087-BM-101416	Basement	Lead (fine fraction)	500			mg/Kg-dry
Level4	USSL-3087	USSL-3087-BR-101416	Bedroom	Arsenic (fine fraction)	14	J	J	mg/Kg-dry
Level4	USSL-3087	USSL-3087-BR-101416	Bedroom	Lead (fine fraction)	110			mg/Kg-dry
Level4	USSL-3087	USSL-3087-FE-101416	Front Entrance	Arsenic (fine fraction)	26			mg/Kg-dry
Level4	USSL-3087	USSL-3087-FE-101416	Front Entrance	Lead (fine fraction)	190			mg/Kg-dry
Level4	USSL-3088	USSL-3088-BM-101216	Basement	Arsenic (fine fraction)	1.6	J-	J	mg/Kg-dry
Level4	USSL-3088	USSL-3088-BM-101216	Basement	Lead (fine fraction)	110			mg/Kg-dry

Level4	USSL-3088	USSL-3088-BR-101216	Bedroom	Arsenic (fine fraction)	3	J-	J	mg/Kg-dry
Level4	USSL-3088	USSL-3088-BR-101216	Bedroom	Lead (fine fraction)	50			mg/Kg-dry
Level4	USSL-3088	USSL-3088-FE-101216	Front Entrance	Arsenic (fine fraction)	7.3	J-	J	mg/Kg-dry
Level4	USSL-3088	USSL-3088-FE-101216	Front Entrance	Lead (fine fraction)	330			mg/Kg-dry
Level4	USSL-3091	USSL-3091-BR/KI-111116	Bedroom, Kitchen	Arsenic (fine fraction)	20	J+	J	mg/Kg-dry
Level4	USSL-3091	USSL-3091-BR/KI-111116	Bedroom, Kitchen	Lead (fine fraction)	140	J	J	mg/Kg-dry
Level4	USSL-3091	USSL-3091-FE-111116	Front Entrance	Arsenic (fine fraction)	6.6	J	J	mg/Kg-dry
Level4	USSL-3091	USSL-3091-FE-111116	Front Entrance	Lead (fine fraction)	62			mg/Kg-dry
Level4	USSL-3092	USSL-3092-BR-101716	Bedroom	Arsenic (fine fraction)	4.5			mg/Kg-dry
Level4	USSL-3092	USSL-3092-BR-101716	Bedroom	Lead (fine fraction)	71			mg/Kg-dry
Level4	USSL-3092	USSL-3092-FE-101716	Front Entrance	Arsenic (fine fraction)	7.2	J	J	mg/Kg-dry
Level4	USSL-3092	USSL-3092-FE-101716	Front Entrance	Lead (fine fraction)	190			mg/Kg-dry
Level4	USSL-3097	USSL-3097-BR-102916	Bedroom	Arsenic (fine fraction)	5.2			mg/Kg-dry
Level4	USSL-3097	USSL-3097-BR-102916	Bedroom	Lead (fine fraction)	57			mg/Kg-dry
Level4	USSL-3097	USSL-3097-FE-102916	Front Entrance	Arsenic (fine fraction)	6.2			mg/Kg-dry
Level4	USSL-3097	USSL-3097-FE-102916	Front Entrance	Lead (fine fraction)	74			mg/Kg-dry

Level4	USSL-3106	USSL-3106-FE/RE-111016	Front Entrance, Rear Entrance	Arsenic (fine fraction)	3.3	J+	J	mg/Kg-dry
Level4	USSL-3106	USSL-3106-FE/RE-111016	Front Entrance, Rear Entrance	Lead (fine fraction)	18			mg/Kg-dry
Level4	USSL-3106	USSL-3106-LR-111016	Living Room	Arsenic (fine fraction)	22	J	J	mg/Kg-dry
Level4	USSL-3106	USSL-3106-LR-111016	Living Room	Lead (fine fraction)	81			mg/Kg-dry
Level4	USSL-3119	USSL-3119-BR-091516	Bedroom	Arsenic (fine fraction)	75	U	U	mg/Kg-dry
Level4	USSL-3119	USSL-3119-BR-091516	Bedroom	Lead (fine fraction)	160			mg/Kg-dry
Level4	USSL-3119	USSL-3119-LR-091516	Living Room	Arsenic (fine fraction)	75	U	U	mg/Kg-dry
Level4	USSL-3119	USSL-3119-LR-091516	Living Room	Lead (fine fraction)	73	J	J	mg/Kg-dry
Level4	USSL-3119	USSL-3119-RE-091516	Rear Entrance	Arsenic (fine fraction)	8	J	J	mg/Kg-dry
Level4	USSL-3119	USSL-3119-RE-091516	Rear Entrance	Lead (fine fraction)	110			mg/Kg-dry
Level4	USSL-3185	USSL-3185-FE-110216	Front Entrance	Arsenic (fine fraction)	4.9	J	J	mg/Kg-dry
Level4	USSL-3185	USSL-3185-FE-110216	Front Entrance	Lead (fine fraction)	210			mg/Kg-dry
Level4	USSL-3185	USSL-3185-LR-110216	Living Room	Arsenic (fine fraction)	12	J	J	mg/Kg-dry
Level4	USSL-3185	USSL-3185-LR-110216	Living Room	Lead (fine fraction)	140			mg/Kg-dry
Level4	USSL-3206	USSL-3206-BR-101416	Bedroom	Arsenic (fine fraction)	4.1	J	J	mg/Kg-dry
Level4	USSL-3206	USSL-3206-BR-101416	Bedroom	Lead (fine fraction)	410			mg/Kg-dry

Level4	USSL-3206	USSL-3206-FE-101416	Front Entrance	Arsenic (fine fraction)	12	J+	J	mg/Kg-dry
Level4	USSL-3206	USSL-3206-FE-101416	Front Entrance	Lead (fine fraction)	1200			mg/Kg-dry
Level4	USSL-3226	USSL-3226-BR-102616	Bedroom	Arsenic (fine fraction)	1.1	J	J	mg/Kg-dry
Level4	USSL-3226	USSL-3226-BR-102616	Bedroom	Lead (fine fraction)	44			mg/Kg-dry
Level4	USSL-3226	USSL-3226-FE-102616	Front Entrance	Arsenic (fine fraction)	8.9			mg/Kg-dry
Level4	USSL-3226	USSL-3226-FE-102616	Front Entrance	Lead (fine fraction)	190			mg/Kg-dry
Level4	USSL-3277	USSL-3277-BR-101116	Bedroom	Arsenic (fine fraction)	5.7			mg/Kg-dry
Level4	USSL-3277	USSL-3277-BR-101116	Bedroom	Lead (fine fraction)	84			mg/Kg-dry
Level4	USSL-3277	USSL-3277-FE-101116	Front Entrance	Arsenic (fine fraction)	7	J	J	mg/Kg-dry
Level4	USSL-3277	USSL-3277-FE-101116	Front Entrance	Lead (fine fraction)	520			mg/Kg-dry
Level4	USSL-3277	USSL-3277-RE-101116	Rear Entrance	Arsenic (fine fraction)	34			mg/Kg-dry
Level4	USSL-3277	USSL-3277-RE-101116	Rear Entrance	Lead (fine fraction)	740			mg/Kg-dry
Level4	USSL-3282	USSL-3282-BR-102616	Bedroom	Arsenic (fine fraction)	2.5	J	J	mg/Kg-dry
Level4	USSL-3282	USSL-3282-BR-102616	Bedroom	Lead (fine fraction)	75			mg/Kg-dry
Level4	USSL-3282	USSL-3282-SE-102616	Side Entrance	Arsenic (fine fraction)	4	J	J	mg/Kg-dry
Level4	USSL-3282	USSL-3282-SE-102616	Side Entrance	Lead (fine fraction)	100			mg/Kg-dry
Level4	USSL-3301	USSL-3301-BR-110116	Bedroom	Arsenic (fine fraction)	2.1	J	J	mg/Kg-dry

Level4	USSL-3301	USSL-3301-BR-110116	Bedroom	Lead (fine fraction)	120	J		mg/Kg-dry
Level4	USSL-3301	USSL-3301-FE/RE-110116	Front Entrance, Rear Entrance	Arsenic (fine fraction)	16			mg/Kg-dry
Level4	USSL-3301	USSL-3301-FE/RE-110116	Front Entrance, Rear Entrance	Lead (fine fraction)	280			mg/Kg-dry
Level4	USSL-3302	USSL-3302-BR-102716A	Bedroom	Arsenic (fine fraction)	2.8	J	J	mg/Kg-dry
Level4	USSL-3302	USSL-3302-BR-102716A	Bedroom	Lead (fine fraction)	160			mg/Kg-dry
Level4	USSL-3302	USSL-3302-BR-102716B	Bedroom	Arsenic (fine fraction)	4.4	J	J	mg/Kg-dry
Level4	USSL-3302	USSL-3302-BR-102716B	Bedroom	Lead (fine fraction)	220			mg/Kg-dry
Level4	USSL-3302	USSL-3302-BR-102716C	Bedroom	Arsenic (fine fraction)	3.4	J	J	mg/Kg-dry
Level4	USSL-3302	USSL-3302-BR-102716C	Bedroom	Lead (fine fraction)	150			mg/Kg-dry
Level4	USSL-3302	USSL-3302-FE-102716B	Front Entrance	Arsenic (fine fraction)	6.3	J	J	mg/Kg-dry
Level4	USSL-3302	USSL-3302-FE-102716B	Front Entrance	Lead (fine fraction)	430			mg/Kg-dry
Level4	USSL-3302	USSL-3302-FE-102716C	Front Entrance	Arsenic (fine fraction)	120	U	U	mg/Kg-dry
Level4	USSL-3302	USSL-3302-FE-102716C	Front Entrance	Lead (fine fraction)	110	J	J	mg/Kg-dry
Level4	USSL-3302	USSL-3302-RE-102716A	Rear Entrance	Arsenic (fine fraction)	5.6	J	J	mg/Kg-dry
Level4	USSL-3302	USSL-3302-RE-102716A	Rear Entrance	Lead (fine fraction)	400			mg/Kg-dry
Level4	USSL-3310	USSL-3310-BR-101116	Bedroom	Arsenic (fine fraction)	5.9	J	J	mg/Kg-dry

Level4	USSL-3310	USSL-3310-BR-101116	Bedroom	Lead (fine fraction)	110			mg/Kg-dry
Level4	USSL-3310	USSL-3310-FE-101116	Front Entrance	Arsenic (fine fraction)	16	J	J	mg/Kg-dry
Level4	USSL-3310	USSL-3310-FE-101116	Front Entrance	Lead (fine fraction)	170	J	J	mg/Kg-dry
Level4	USSL-3319	USSL-3319-BR-101816	Bedroom	Arsenic (fine fraction)	75	U	U	mg/Kg-dry
Level4	USSL-3319	USSL-3319-BR-101816	Bedroom	Lead (fine fraction)	69	J	J	mg/Kg-dry
Level4	USSL-3319	USSL-3319-FE-101816	Front Entrance	Arsenic (fine fraction)	4.8	J	J	mg/Kg-dry
Level4	USSL-3319	USSL-3319-FE-101816	Front Entrance	Lead (fine fraction)	460			mg/Kg-dry
Level4	USSL-3338	USSL-3338-BR-101116	Bedroom	Arsenic (fine fraction)	3.3	J	J	mg/Kg-dry
Level4	USSL-3338	USSL-3338-BR-101116	Bedroom	Lead (fine fraction)	91			mg/Kg-dry
Level4	USSL-3338	USSL-3338-FE-101116	Front Entrance	Arsenic (fine fraction)	8.5	J	J	mg/Kg-dry
Level4	USSL-3338	USSL-3338-FE-101116	Front Entrance	Lead (fine fraction)	170			mg/Kg-dry
Level4	USSL-3338	USSL-3338-RE-101116	Rear Entrance	Arsenic (fine fraction)	6.7	J	J	mg/Kg-dry
Level4	USSL-3338	USSL-3338-RE-101116	Rear Entrance	Lead (fine fraction)	210			mg/Kg-dry
Level4	USSL-3345	USSL-3345-BR-101116	Bedroom	Arsenic (fine fraction)	2.7	J	J	mg/Kg-dry
Level4	USSL-3345	USSL-3345-BR-101116	Bedroom	Lead (fine fraction)	130			mg/Kg-dry
Level4	USSL-3345	USSL-3345-FE-101116	Front Entrance	Arsenic (fine fraction)	7.1			mg/Kg-dry
Level4	USSL-3345	USSL-3345-FE-101116	Front Entrance	Lead (fine fraction)	190			mg/Kg-dry

Level4	USSL-3383	USSL-3383-BR-110316	Bedroom	Arsenic (fine fraction)	1.4	J	J	mg/Kg-dry
Level4	USSL-3383	USSL-3383-BR-110316	Bedroom	Lead (fine fraction)	76			mg/Kg-dry
Level4	USSL-3383	USSL-3383-FE/RE-110316	Front Entrance, Rear Entrance	Arsenic (fine fraction)	10			mg/Kg-dry
Level4	USSL-3383	USSL-3383-FE/RE-110316	Front Entrance, Rear Entrance	Lead (fine fraction)	560			mg/Kg-dry
Level4	USSL-3406	USSL-3406-BR-101716	Bedroom	Arsenic (fine fraction)	1.9	J	J	mg/Kg-dry
Level4	USSL-3406	USSL-3406-BR-101716	Bedroom	Lead (fine fraction)	110			mg/Kg-dry
Level4	USSL-3406	USSL-3406-RE-101716	Rear Entrance	Arsenic (fine fraction)	6.2			mg/Kg-dry
Level4	USSL-3406	USSL-3406-RE-101716	Rear Entrance	Lead (fine fraction)	920			mg/Kg-dry
Level4	USSL-3434	USSL-3434-BR-101416	Bedroom	Arsenic (fine fraction)	380	U	U	mg/Kg-dry
Level4	USSL-3434	USSL-3434-BR-101416	Bedroom	Lead (fine fraction)	110	J+	J	mg/Kg-dry
Level4	USSL-3434	USSL-3434-FE-101416	Front Entrance	Arsenic (fine fraction)	9			mg/Kg-dry
Level4	USSL-3434	USSL-3434-FE-101416	Front Entrance	Lead (fine fraction)	500			mg/Kg-dry
Level4	USSL-3437	USSL-3437-BR-110316	Bedroom	Arsenic (fine fraction)	1.8	J	J	mg/Kg-dry
Level4	USSL-3437	USSL-3437-BR-110316	Bedroom	Lead (fine fraction)	67			mg/Kg-dry
Level4	USSL-3437	USSL-3437-FE-110316	Front Entrance	Arsenic (fine fraction)	4.8	J	J	mg/Kg-dry
Level4	USSL-3437	USSL-3437-FE-110316	Front Entrance	Lead (fine fraction)	230			mg/Kg-dry

Level4	USSL-3443	USSL-3443-BR-110416	Bedroom	Arsenic (fine fraction)	4.7	J	J	mg/Kg-dry
Level4	USSL-3443	USSL-3443-BR-110416	Bedroom	Lead (fine fraction)	57	J+	J	mg/Kg-dry
Level4	USSL-3443	USSL-3443-FE-110416	Front Entrance	Arsenic (fine fraction)	7			mg/Kg-dry
Level4	USSL-3443	USSL-3443-FE-110416	Front Entrance	Lead (fine fraction)	220			mg/Kg-dry

Lead screening level exceedance (316 ppm)

Arsenic screening level exceedance (26 ppm) and not U qualified

Arsenic screening level exceedance (26 ppm) but U qualified= not detected above reporting limit

ATTACHMENT VI

US Smelter and Lead Refinery Site Dust Screening Level for Lead

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
9311 GROH ROAD
GROSSE ILE, MI 48138

MEMORANDUM

SUBJECT: Development of an Indoor Dust Screening Criteria for the USS Lead Site

FROM: Keith Fusinski, PhD Toxicologist US EPA
Superfund Division, Remedial Response Branch #1, Remedial Response Section #1

TO: Jim Mitchell, On-Scene Coordinator US EPA
Superfund Division, Emergency Response Branch #2, Emergency Response Section #4

AND

Kristina Behnke, On-Scene Coordinator US EPA
Superfund Division, Emergency Response Branch #2, Emergency Response Section #3

DATE: 8/10/2016

The Integrated Exposure Uptake Biokinetic (IEUBK) model used by the US Environmental Protection Agency (USEPA) uses the concentration of indoor dust as a key parameter to evaluate risks to children from lead in soil. EPA separates dust into fine (<150 µm) and coarse (>150 µm) fractions. It has been shown that the fine particle size is the fraction that is most likely to adhere to children's hands and be ingested. In addition, more recent information also indicates that there is a potential for enrichment of lead in smaller sized particles and increased bioavailability (USEPA 2016). Using only the fine particle size concentration for screening can improve the accuracy of exposure and risk calculations in lead risk assessments.

The IEUBK model (version 1.1 Build 11) was used to determine an indoor dust screening level for lead. The default assumption in the model is that the concentration of lead in indoor dust is 70% of the concentration of lead in outdoor soil (Brattin and Griffin - 2011). US EPA recommends that lead concentrations in residential soil do not exceed 400 parts per million (ppm) in soil.

The modeling was performed using default inputs from the IEUBK model for diet, drinking water, air concentration and bioavailability. The IEUBK model was run using 400 ppm for lead in soil and modeled children 0 to 84 months of age. The calculated screening level to protect this population from a current US EPA acceptable blood lead level of 10 µg/dL is **316 ppm** of lead in

dust. This concentration should be used when evaluating the fine particle size fraction of lead dust contamination.

REFERENCES

Brattin and Griffin - 2011 - William Brittin, Susan Griffin. Evaluation of the Contribution of Lead in Soil to Lead in Dust at Superfund Sites. Human and Ecological Risk Assessment: An International journal Vol. 17, Iss. 1, 2011.

USEPA 2016 - OLEM Directive 9200.1-128. Recommendations for Sieving Soil and Dust Samples at Lead Sites for Assessment of Incidental Ingestion.

Attachment VII

US Smelter and Lead Refinery Site Dust Screening Level for Arsenic

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
9311 GROH ROAD
GROSSE ILE, MI 48138

MEMORANDUM

SUBJECT: Justification for Using Site-Specific Arsenic Background Concentration in Soil for Indoor Dust Screening Concentration for the USS Lead Site.

FROM: Keith Fusinski, PhD Toxicologist US EPA
Superfund Division, Remedial Response Branch #1, Science and Quality Assurance Section

TO: Jim Mitchell, On-Scene Coordinator US EPA
Superfund Division, Emergency Response Branch #2, Emergency Response Section #4

AND

Kristina Behnke, On-Scene Coordinator US EPA
Superfund Division, Emergency Response Branch #2, Emergency Response Section #3

DATE: 12/13/2016

The US EPA looks at both cancer and non-cancer detrimental effects of exposure to contaminants. For non-cancer, EPA determines probability of a detrimental health effect to occur by calculating a hazard quotient (HQ). The HQ is a ratio of a single substance exposure level over a specified period of time to a reference dose of the same substance derived from a similar exposure period. It is recommended that the HQ of an exposure to a chemical of concern be below or equal to 1 which is the level at which no adverse human health effects are expected to occur. For cancer risk, the U.S. EPA recommends a screening level that would equate to a one in a million ($1x10^{-6}$) or greater lifetime risk of developing cancer from exposure to a contaminated site. However, rates up to 1 in 10,000 ($1x10^{-4}$) can be considered acceptable. Regional screening levels (RSLs) are based upon an excess lifetime cancer risk (ELCR) of $1x10^{-6}$ or an HQ of 1, whichever is most protective. The Office of Land and Emergency Management (OLEM) recommends removal management levels (RMLs) be set at an excess lifetime cancer risk of 1 in 10,000 or a non-cancer HQ of 3, whichever is most protective. Risks found between the RSLs and RMLs are remediated at the discretion of EPA risk managers. Risks greater than the RML, typically require remediation.

The residential RSL for arsenic in soil is 0.68 mg/kg. The residential RML for soil is 68 mg/kg. These values are highly protective and are based upon an individual working or playing in the soil for 24 hours a day, for 350 days per year for 26 years. This includes the first 6 years of life, where children are most susceptible to developmental effects of contaminant exposure. Routes of exposure in these calculations include ingestion, inhalation, and dermal contact. Any concentration

of arsenic in soil less than 68 mg/kg is considered within EPA's acceptable risk range and protective of human health.

House dust is composed of small amounts of plant pollen, human and animal hairs and skin cells, textile fibers, paper fibers, outdoor soil, and many other materials which may be found in the local environment. It is important to note that only a fraction of house dust actually comes from exterior soils. However, in order to be protective of human health, US EPA will assume that 100 percent of house dust at the USS Lead Site comes directly from exterior soil degradation.

Arsenic is a naturally occurring substance and can be found in soils all across the US at some concentration. This is considered naturally occurring background. The site specific background concentration for arsenic in soils at the USS Lead site has been determined to be 26 milligrams of arsenic per kilogram of soil (mg/kg). This value is well below the residential soil RML of 68 mg/kg. As US EPA is assuming that 100 percent of house dust comes from exterior soils, then it can be considered that 26 mg/kg is not only the background in exterior soils, but also residential house dust.

When evaluating homes for remediation, or to review the effects of remediation, any home with concentrations of arsenic below 26 mg/kg should be considered below background concentrations and safe for unrestricted residential use.

ATTACHMENT VIII
FOURTH AMENDED ACTION MEMORANDUM
DATED OCTOBER 13, 2016

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

OCT 24 2016

REPLY TO THE ATTENTION OF:

MEMORANDUM

SUBJECT: **ACTION MEMORANDUM – 4th AMENDMENT:** Request for a Change in Scope and Ceiling Increase for the Time-Critical Removal Action at the U.S. Smelter and Lead Refinery Site, East Chicago, Lake County, Indiana (Site ID # 053J)

FROM: Douglas Ballotti, Acting Director
Superfund Division

THRU: Reggie Cheatham, Office Director
Office of Emergency Management (OEM)

TO: Mathy Stanislaus, Assistant Administrator
Office of Land and Emergency Management

I. PURPOSE

The purpose of this Action Memorandum Amendment is to request and document your approval, consistent with Section 104(c)(1)(A) of CERCLA, 42 U.S.C. Section 9604 (c)(1)(A), to Change the Scope of the Response and for a Ceiling Increase for the time-critical removal action at portions of the U.S. Smelter and Lead Refinery Site (the Site) residential area defined as Zone 2 of Operable Unit 1 (OU1), in East Chicago, Lake County, Indiana (see Figure 2). The sought increase of $13,870,506 would raise the project ceiling for the time-critical removal action from $26,397,542 to $40,268,048

The Change of Scope of the Response and Ceiling Increase is necessary as the previous Action Memoranda approved on January 22, 2008, August 13, 2008, September 12, 2011, and October 13, 2016 (Attachments IX, X, XI, XII), were for the excavation and proper disposal of lead-contaminated soils from residential parcels in OU1, Zones 1, 2 and 3, indoor cleanup of lead contaminated dust inside of residences in Zone 1, and temporary relocation of residents in the West Calumet Housing Complex (WCHC) in Zone 1. Subsequent soil data collected in Zone 2 during the remedial design (RD) phase in order to implement EPA's Remedial Action as set forth in the Record of Decision (November 2012), found lead and arsenic concentrations in surface soils (0-6") in a number of residential yards above EPA screening criteria.

Response actions are necessary in Zone 2 of OU1 to mitigate threats to public health, welfare, and the environment posed by the release and/or threatened release of uncontrolled hazardous substances at the Site. This removal involves (1) the excavation and proper disposal of lead

and/or arsenic contaminated soils from residential parcels in Zone 2, and (2) testing for lead and/or arsenic contaminated dust in residential homes if requested by the home owner and, if necessary, removal of the contaminated dust.

Conditions existing at the Site present a threat to public health and the environment and meet the criteria for initiating a removal action under 40 CFR § 300.415(b) of the National Contingency Plan (NCP). The U.S. Environmental Protection Agency (EPA or the Agency) documented elevated levels of lead and arsenic in surface soil in residential parcels at the Site. Lead and arsenic are hazardous substances as defined by Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

There are no nationally significant or precedent setting issues associated with the Change of Scope sought in this Action Memorandum to the extent it seeks approval for the excavation of soils. Testing at the owner's request and the removal of lead and/or arsenic contaminated dust in residential homes may set a precedent. The Site is on the National Priorities List (NPL).

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID:	IND047030226
RCRA ID:	IND047030226
STATE ID:	None
Category:	Time-Critical Removal

A. Site Description

1. Removal Site Evaluation

The Indiana Department of Environmental Management (IDEM) sampled some of the residential parcels to the north of the U.S. Smelter and Lead Refinery, Inc. (U.S.S. Lead) facility in 1985. This area is now known as Operable Unit 1 of the Site. IDEM found elevated lead levels in these residential yards. In September of 1985, the Indiana State Board of Health found the U.S.S. Lead facility in violation of state law and stated that the lead-contaminated soils within the facility boundaries may pose a risk to human health and the environment. IDEM referred the U.S.S. Lead facility, but not the area now known as Operable Unit 1, to EPA for cleanup.

From 1993 through 2006, EPA's Resource Conservation and Recovery Act (RCRA) Corrective Action program oversaw the remediation and management of lead-contaminated soils within the boundaries of the U.S.S. Lead facility, currently referred to as Operable Unit 2 (OU2). On November 18, 1993, EPA and U.S.S. Lead entered into an Administrative Order on Consent (AOC) pursuant to Section 3008(h) of RCRA. The AOC required U.S.S. Lead to implement interim measures, including site stabilization and construction of a corrective action management unit (CAMU) to contain contaminated soils and slag and to conduct a Modified RCRA Facility Investigation at the U.S.S. Lead facility, OU2. The CAMU covers approximately 10 acres and is surrounded by a subsurface slurry wall. Excavation and construction of the CAMU was conducted in two phases and completed between August and September 2002. Slag generated from the blast-furnace operations was routinely placed by U.S.S. Lead in piles on the southern

portion of the property near the banks of the Grand Calumet River. The cleanup of slag was described in the Interim Stabilization Measures Work Plan prepared by ENTACT, LLC and was completed during the third quarter of 2002.

As part of a RCRA Corrective Action in 2003 and 2006, EPA conducted soil sampling in the residential neighborhood to the north located in OU1 of the U.S.S. Lead Site. In the investigation of late July and early August 2003, 83 residential parcels within OU1 were sampled and analyzed for lead using a Niton X-ray fluorescence (XRF) instrument. Soils from 43 locations (52 percent) exceeded the 400 milligrams per kilogram (mg/kg) residential soil screening criterion for lead. In 2006, EPA's Field Environmental Decision Support (FIELDS) team supplemented the work performed in 2003 by collecting additional data from 14 parcels sampled in 2003 to (1) assess whether the top-most soils (zero to one inch below ground surface (bgs)) had elevated lead concentrations relative to deeper soils (one to six inches bgs), (2) collect and compare composite samples to individual samples to assess whether composite samples accurately represented the concentrations in residential yards and parks, and (3) compare lead concentrations in the fine and coarse fractions of sieved samples to evaluate whether lead was preferentially distributed in the fine-grain sizes. These sampling results showed some yards in OU1 to have high levels of lead contamination with the highest sample containing lead at 3,000 mg/kg. The RCRA Corrective Action program looked at the possible source of the lead contamination and determined it was from various industrial sources. The RCRA Corrective Action program referred OU1—the off-site contamination from the U.S.S. Lead facility—and other industrial sources to the Superfund Program in 2004; the remainder of OU2—the on-site contamination—was referred in 2006.

Consistent with the OSWER Publication 9285.7-50 *Superfund Lead-Contaminated Residential Sites Handbook* (Handbook) (2003), the Superfund Program used a tiered approach to prioritize which homes needed to be cleaned up first. Residential parcels with lead concentrations in surface soil at or greater than 1,200 mg/kg were the highest priority for immediate action under a time-critical removal action. Residential parcels with lead concentrations in surface soil below 1,200 mg/kg, but above 400 mg/kg would be addressed through remedial actions. EPA does not consider the 1,200 mg/kg concentration as an action level for removal actions, but this level does provide an alternative to running the Integrated Exposure Uptake Biokinetic (IEUBK) model with limited data to determine if the site poses an urgent threat. On January 22, 2008, EPA signed the original action memorandum to conduct a time-critical removal action in OU1 to address known parcels with lead levels in surface soil exceeding 1,200 mg/kg. These parcels had been identified as part of the RCRA Corrective Action residential investigation. The EPA identified 15 private parcels that contained soil with lead concentrations exceeding 1,200 mg/kg in the top six inches of soil. On June 9, 2008, the EPA initiated the time-critical removal action to address the 15 residential parcels with lead levels exceeding 1,200 mg/kg. On August 13, 2008, the EPA amended the original action memorandum to increase the project ceiling by $511,950 for a total of $984,060. The EPA was able to obtain access agreements and remediate only 13 of the 15 parcels. The removal action was completed on November 18, 2008. In total, 1,838 tons of lead-contaminated soil were removed and disposed of at an approved landfill.

A Remedial Investigation (RI) was conducted from 2009 through 2010 to collect additional soil data in OU 1 which consists of Zone 1, Zone 2, and Zone 3. As a result of the sampling, EPA

discovered an additional 14 areas within OU1 with lead levels exceeding the removal action level of 1,200 mg/kg. On September 11, 2011, EPA signed the second amendment to the original action memorandum which increased the total project ceiling to $1,928,460. On October 11, 2011, EPA started the time-critical removal action involving lead-contaminated soil removals at five West Calumet Housing Complex (WCHC) addresses (located in Zone 1) and nine other residential parcels outside the WCHC. In addition, two parcels that were not remediated during the previous removal action in 2008 because of access issues were remediated during this removal action. The removal action was completed on December 9, 2011. In total, 1,913 additional tons of lead-contaminated soil were removed and disposed of at an approved landfill as a result of the 2011 removal activities.

In November 2012, EPA issued a Record of Decision (ROD) for Operable Unit 1 (OU1) of the Site. OU1 has been divided into 3 separate zones for implementation of the remedy (Zones 1, 2, and 3). OU1 contains residential yards contaminated with lead and arsenic at levels that pose a threat to human health through ingestion, inhalation and direct contact. EPA's selected remedy for OU1 addresses these risks from exposure to contaminated soils through the excavation and off-site disposal of lead or arsenic contaminated soils. The remedial action levels (RALs) for OU1 are 400 mg/kg for lead at residential parcels, 800 mg/kg for lead at industrial/commercial parcels, and 26 mg/kg for arsenic at both residential and industrial/commercial parcels.

From November 2014 through April 2015, EPA conducted more extensive soil sampling within Zone 1 as part of the remedial design process for OU1 and completed remedial designs for Zone 1 in October 2015. Zone 1 includes approximately 118 separate "parcels," including 111 parcels in the WCHC, three right-of-way parcels, and a school, park, recreation center, and maintenance facilities. EPA sampled all parcels in Zone 1 except a narrow strip of land on the east bank of the Indiana Harbor Canal. In May 2016, EPA received validated sampling results which revealed lead concentrations in soil up to 24 inches in depth ranged from non-detect (ND) to 91,100 mg/kg for lead. Arsenic concentrations ranged from ND to 3,530 mg/kg (See Attachment V – Summary of OU1 RD Soil Sampling Results). Within Zone 1, a total of 117 parcels exceeded the removal management level (RML) for lead of 400 mg/kg for residential soil and 61 parcels exceeded the RML for arsenic of 68 mg/kg. Each of the parcels that exceeded the RML for arsenic also exceeded the RML for lead. Sample results from surface soils (0-6") indicated that lead concentrations at 13 parcels in the WCHC exceed 5,000 mg/kg with concentrations up to 45,000 mg/kg.

Beginning in July 2016, EPA began conducting more extensive soil sampling within Zone 2 as part of the RD process for OU1. Zone 2 includes approximately 590 separate "parcels." Most of these parcels are residential parcels, though there are some commercial/industrial parcels. In September 2016, EPA received validated sampling results from 48 parcels which revealed lead concentrations in surface soil (0-6 inches below ground surface) at values ranging from 38.3 to 2,120 mg/kg. Arsenic concentrations ranged from 4.3 to 111 mg/kg (See Attachment V – Summary of OU1 RD Soil Sampling Results). Ten sampled parcels had surface soil lead concentrations above 1,200 mg/kg and 40 of 48 parcels exceed the RML for lead of 400 mg/kg for residential surface soil. Two parcels exceeded the 68 mg/kg RML for arsenic (111 and 78.1 mg/kg in surface soil). One parcel that exceeded the RML for arsenic also exceeded the RML for lead in soil.

On July 29, 2016, EPA initiated in-house sampling for dust collection in Zone 1 to determine lead concentrations in homes given the elevated levels of lead in surface soils within the WCHC and the likelihood that lead contaminated soil/dust was being tracked or blown into the housing units. EPA prioritized homes for sampling based on the likelihood that they would have elevated lead levels in indoor dust, based on elevated lead concentrations in yards and elevated blood lead level (BLL) records associated with those residences. As of September 28, 2016, EPA has received validated results from 154 residences. Concentrations ranged from 3.9 to 32,000 mg/kg for lead fines and 0.12J (J means the associated value is the approximate concentration) to 880 mg/kg for arsenic fines. Results from indoor dust from the first 154 homes indicate 69 parcels exceed the EPA screening level of 316 mg/kg for lead for indoor living spaces (See Attachment VII – Indoor Dust Screening Criteria for Lead).

On August 12, 2016, EPA began cleaning the inside of residences in the WCHC to remove lead contaminated dust. A combination of HEPA vacuums and wet cleaning are used to remove lead dust from ceilings, floors, carpets, walls, drapes, accessible ductwork, furnace, and furniture. As of October 3, 2016, EPA has cleaned approximately 113 out of 334 occupied units. Residents were temporarily relocated during the cleaning process and clearance sampling conducted as necessary to document efficacy of cleaning.

The Indiana State Department of Health (ISDH) accompanied EPA into 14 of the initial 42 residences in Zone 1 and conducted a separate inspection for compliance with lead paint abatement policies. Wipe samples were collected from floors, interior window sills, and window troughs and compared to HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (2012 Edition)(40 $\mu g/ft^2$-floors, 250 $\mu g/ft^2$- window sills, and 400 $\mu g/ft^2$– window trough). Wipe samples from six of the 14 units sampled were above the respective lead dust clearance standards (see Attachment VIII - Indiana State Department of Health Wipe Sample Results). Lead based paint was not found by ISDH in any of the inspected units.

The Agency for Toxic Substances and Disease Registry (ATSDR) is working with the East Chicago Health Department (ECHD), which is conducting an ongoing exposure investigation of blood lead in the WCHC. The following is a summary of the findings from screenings of children living in the WCHC, which is derived both from historical data and from the on-going blood lead testing campaign being conducted by ECHD:

- From the most recent ECHD testing in summer 2016, 18 out of 94 (19%) tested children from the WCHC under age six were identified with elevated blood lead (EBL) levels (> 5 µg/dL) based on capillary (finger stick) measurements.

- From 2014 through 2015, 26% of children under age seven tested at the WCHC were identified with EBL levels, with the highest measurement at 33 µg/dL in a one-year-old child. Within the same period, the census tract that includes all of the children from the WCHC (Zone 1) and part of Zone 2 had an EBL incidence rate of 22%. By comparison, the EBL rates for the two adjacent census tracts were 9% and 11%.

- The ATSDR Exposure Investigation conducted in the West Calumet neighborhood in 1997 showed a 35% EBL incidence rate, which was defined at that time as greater than 10 µg/dL.

These observations by ATSDR across almost 20 years demonstrate a consistent pattern of elevated blood lead levels in young children living in OU1. Given that the ISDH Lead Inspectors found no lead-based paint in recently sampled units within the WCHC, it is likely that exposure to soil-based lead contamination in the WCHC and portions of Zone 2 is a primary cause of elevated blood lead levels in children there.

2. Physical Location

The U.S.S. Lead Site lies approximately 18 miles southeast of Chicago, Illinois, in East Chicago, Indiana (Figure 1). The Site consists of the former U.S.S. Lead facility located at 5300 Kennedy Avenue, East Chicago, Indiana (designated as Operable Unit 2 (OU2)) and the residential area to the north and northeast (defined as OU1). OU1 is bound by East Chicago Avenue on the north, East 151st Street/149th Place on the south, the Indiana Harbor Canal on the west, and Parrish Avenue on the east. OU1 includes about 1200 homes, a small number of parks, open space as a part of the railroad right-of-way, schools, and public buildings. For the purpose of implementing the remedial action (RA) in OU1, EPA has divided OU1 into three distinct geographic areas (Zones 1, 2, and 3). This removal action is taking place in OU1 Zone 2. Zone 2 is adjacent to and directly east of Zone 1 and is generally bordered: (1) on the north by East Chicago Avenue; (2) on the east by Joliet, Elgin Railroad; (3) on the south by East 151st Street; and (4) on the west by the East Chicago Public Housing Complex, the Carrie Gosch Elementary School, and the Harbor Canal.

The EPA conducted an EJ analysis for the Site (see Attachment I). Screening of the surrounding area was conducted using Region 5's EJ Screen Tool. Region 5 has reviewed environmental and demographic data for the area surrounding the U.S.S. Lead Site and has determined there is high potential for EJ concerns at this location.

3. Site Characteristics

OU1 includes about 1,200 homes, a small number of parks, open space as a part of the railroad right-of-way, schools, and public buildings. OU1 is primarily a residential area, which includes commercial and light industrial areas. Some parcels in the residential area in Zones 1, 2 and 3 have levels of lead above EPA's RML of 400 mg/kg and arsenic above the RML of 68 mg/kg.

United States Geological Survey (USGS) historical aerial photographs from 1939, 1951, 1959, and 2005 show OU1 over time. Review of these aerial photographs indicates that most of the residential neighborhoods within the Site west of the railroad tracks were built before 1939. By 1951, approximately 75 to 80 percent of the homes were built; by 1959, most of the homes east of the railroad tracks had also been built. These photographs also show that the International Smelting and Refining Company, a subsidiary of the Anaconda Copper Company (whose successor in interest is now the Atlantic Richfield Company [ARC]) occupied the area where the WCHC is currently located (Zone 1 in the southwest portion of OU1) prior to 1946. Title records indicate that the East Chicago Housing Authority constructed the WCHC on the former Anaconda Copper Mining Company/International Smelting and Refining Company site between 1970 and 1973.

The U.S.S. Lead facility was a primary and secondary smelter of lead in the East Chicago, Indiana area. It began operations around 1906 and ended operations in 1985. From about 1920 until 1973, the facility was a primary smelter of lead. This included a refining process to create high quality lead free of bismuth. From 1973 until its closure in 1985, the facility was a secondary smelter and a reprocessor of car batteries. The secondary refinery operations included: battery breaking with tank treatment of spent battery acid at a rate of 16,000 gallons per day; baghouse dust collection with storage in on-site waste piles of up to 8,000 tons of flue dust; and blast furnace slag disposal, which was deposited in the wetland adjacent to and along the southern boundary of the facility. The blast-furnace baghouse collected approximately 300 tons of baghouse flue dust per month during maximum operating conditions. Some of the flue dust escaped the baghouse capture system and was deposited by the wind within the boundaries of OU1. Secondary lead recovery operations ceased in 1985.

In addition to the U.S.S. Lead facility operation, other industrial operations have managed or processed lead and other metals and are sources of contamination in OU1. Immediately east of the U.S.S. Lead facility and south of Zone 3 is the former DuPont site (currently leased and operated by W.R. Grace & Co., Grace Davison). One of the processes that historically took place at the DuPont site was the manufacturing of a lead arsenate pesticide. In 2015, DuPont spun off certain assets and liabilities to a newly created company, The Chemours Company FC, LLC (Chemours). Chemours is now the owner of the former DuPont facility.

North of the former U.S.S. Lead facility stood two smelter operations, which processed lead and other metals. A 1930 Sanborn map identifies the operations as Anaconda Lead Products and International Lead Refining Company (referred to as the former Anaconda facility). Anaconda Lead Products was a manufacturer of white lead and zinc oxide and the International Lead Refining Company was a metal refining facility. These facilities consisted of a pulverizing mill, white lead storage areas, a chemical laboratory, a machine shop, a zinc oxide experimental unit building and plant, a silver refinery, a lead refinery, a baghouse, and other miscellaneous buildings and processing areas. The International Lead Refining Company was a subsidiary of the Anaconda Copper Mining Company. Title to the property in Zone 1 was held between 1934 and 1946 by International Lead Smelting and Refinery Company. International Lead Smelting and Refinery Company acquired titled to the property in Zone 1 in 1934 from International Lead Refining Company, which had acquired title in 1912.

The residential area that comprises Zone 2 has been contaminated by aerial deposition of windblown contaminants from the U.S.S. Lead facility, the Anaconda Copper Mining Company/International Lead Smelting and Refinery Company facility, and the DuPont/Chemours facility. The focus of this time-critical removal action is Zone 2, which has approximately 590 residential parcels.

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

The threat is presented by the presence of lead and arsenic-contaminated soil in residential yards and potential lead and arsenic contaminated dust within the residences in Zone 2. The presence of lead and arsenic in outdoor soils and potentially in indoor dust at concentrations above health

screening values provides a constant source of exposure for individuals both outside and while in the home. Lead and arsenic are hazardous substances as defined by section 101(14) of CERCLA. *See* 40 C.F.R. § 302.4. Nearby lead processing operations caused extensive lead and arsenic contamination in soils throughout the Site. The removal is responding to actual and potential outdoor lead and arsenic contamination, as well as potential indoor contamination caused by the migration of lead and arsenic contaminated soil from outdoors to indoors (like the source of contamination found in Zone 1). The presence of elevated lead and arsenic levels in surface soils and potential presence of lead and arsenic in indoor dust in Zone 2 makes this a time-critical removal action.

Exposure may occur from direct ingestion of soil in yards, soil tracked indoors, or house dust; and inhalation of fugitive dust. Potential human receptors include residents, including children six years of age and under, and pregnant or nursing women.

Lead exposure via inhalation and/or ingestion can have detrimental effects on almost every organ and system in the human body. Exposure may occur from direct ingestion of soil in yards, soil tracked indoors, or house dust; and inhalation of fugitive dust. Lead can cause a variety of health problems to people who are exposed to it. Potential human receptors include residents, including children six years of age and under, and pregnant or nursing women. Children are at greatest risk from the toxic effects of lead. Initially, lead travels in the blood to the soft tissues (heart, liver, kidney, brain, etc.). Then, it gradually redistributes to the bones and teeth where it tends to remain. Children exposed to high levels of lead have exhibited nerve damage, liver damage, colic, anemia, brain damage, and death. The most serious effects associated with markedly elevated blood lead levels include neurotoxic effects such as irreversible brain damage.

Ingesting very high levels of arsenic can result in death. Exposure to lower levels can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, damage to blood vessels, and a sensation of "pins and needles" in hands and feet. Ingesting or breathing low levels of inorganic arsenic for a long time can cause a darkening of the skin and the appearance of small "corns" or "warts" on the palms, soles, and torso. Skin contact with inorganic arsenic may cause redness and swelling. Several studies have shown that ingestion of inorganic arsenic can increase the risk of skin cancer and cancer in the liver, bladder, and lungs. Inhalation of inorganic arsenic can cause increased risk of lung cancer. The Department of Health and Human Services (DHHS) and the EPA have determined that inorganic arsenic is a known human carcinogen (ATSDR, Chemical Abstract Services [CAS] # 7440-38-2], August 2007).

5. NPL status

The U.S.S. Lead Site consisting of both the former U.S.S. Lead facility (OU2) and the West Calumet neighborhood to the north (OU1) was listed as a Superfund site on the national priorities list (NPL) on April 8, 2009. EPA began the RI for OU1 on June 26, 2009. During December 2009 and August 2010, EPA contractors sampled yards in residential areas and background locations. In June 2012, EPA completed a preliminary investigation and study to determine the level and extent of lead and arsenic contamination within OU1 and proposed a remedy. In November 2012, after considering comments received from the City and IDEM,

EPA outlined the long-term permanent cleanup plan in a Record of Decision for OU1. The EPA has completed the remedial designs for work in Zone 1 and Zone 3 and is in the process of completing the remedial design for Zone 2.

6. Maps, pictures and other graphic representations

Maps include:

Figure 1 – USS Lead and Lead Refinery, E. Chicago, IN. Location Map
Figure 2 – OU1 Zones 1, 2, and 3– Location Map

B. Other Actions to Date

1. Previous actions

On January 22, 2008, EPA signed the original action memorandum to conduct a time-critical removal action in OU1 to address known parcels with lead levels exceeding the removal action limit of 1,200 mg/kg. These parcels were identified based on sampling data collected during the RCRA Corrective Action investigation. That removal action began on June 9, 2008, and involved the excavation and off-site disposal of lead contaminated soil from 13 residential parcels. On August 13, 2008, EPA amended the original action memorandum to increase the project ceiling in order to complete the ongoing, time-critical removal action. In total, 1,838 tons of lead-contaminated soil were removed and disposed of at an approved landfill. Excavated areas were backfilled with clean fill and seeded. This removal action was completed on September 25, 2008, and the final Pollution Report was issued on November 18, 2008.

On September 12, 2011, EPA signed an action memorandum to conduct a time-critical removal action in Zones 1, 2, and 3 of OU1 to address 16 parcels (including the 2 that were missed in 2008) with lead levels exceeding the removal action limit of 1,200 mg/kg. These parcels were identified based on sampling data collected during the RI. This removal action began on October 24, 2011, and involved the excavation and off-site disposal of lead contaminated soil from 16 residential parcels. In total, 1,913 tons of lead-contaminated soil were removed and disposed of at an approved landfill. Excavated areas were backfilled with clean fill and seeded. This removal action was completed on December 9, 2011, and the final Pollution Report was issued on December 15, 2011.

2. Current actions

On July 11, 2016, EPA started remedial action activities to cover bare soils with wood mulch within the WCHC to minimize fugitive dust, direct contact and potential migration of soil with elevated lead levels. The mulching work was completed on July 22, 2016, although maintenance of the mulch cover is ongoing as part of the remedial work associated with the implementation of the ROD for OU1.

On July 29, 2016, EPA initiated in-house sampling for dust collection in Zone 1 to determine lead concentrations in homes. As of September 28, 2016, EPA has received validated results

from 154 residences. Concentrations ranged from 3.9 to 32,000 mg/kg for lead fines and 0.12J (J means value is estimate) to 880 mg/kg for arsenic fines (See Attachment VI – Summary of Indoor Dust Sampling Results). Data results from indoor dust from the first 154 homes indicate 69 parcels exceed the EPA screening level of 316 mg/kg for lead for indoor living spaces (See Attachment VII – Indoor Dust Screening Criteria).

ISDH conducted a separate inspection of fourteen of the identified residential units for compliance with lead paint abatement policies. Lead-based paint was not found in any of the inspected units. On August 12, 2016, EPA began cleaning (under October 13, 2016 USS Lead action memo for Zone 1) the inside of all occupied (approximately 334) units within the WCHC, all of which are or have the potential to be contaminated with lead contaminated dust above the risk-based screening criteria for indoor dust from industrial activities. A combination of HEPA vacuums and wet cleaning are used to remove lead dust from ceilings, floors, carpets, walls, drapes, accessible ductwork, furnace, and furniture. As of October 3, 2016, approximately 113 out of 334 occupied units have been cleaned. Residents were temporarily relocated during the indoor cleaning period.

C. State and Local Authorities' Roles

1. State and Local Actions to Date

On August 24, 2016, Rex Osborn, Federal Programs Section Chief with IDEM, sent an email indicating the State of Indiana does not have the financial resources to eliminate the threat posed by lead-contaminated soil in yards and dust within the residences or to fund temporary relocations. Neither the State of Indiana nor the City of East Chicago have taken or have the capacity to take action to abate the immediate threat.

2. Potential for Continued State/Local Response

The EPA is working with ATSDR, the East Chicago Health Department, the Indiana State Department of Health, and City of East Chicago elected officials to provide information to the public. EPA is coordinating discussions with stakeholders regarding the elevated levels of lead and arsenic in soil and EPA's plans to address this issue. Neither the state nor local officials have the resources to conduct the necessary cleanup of the indoor dust contamination or to provide for the temporary relocation of residents.

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

The conditions at Zone 2 of the U.S.S. Lead Site present a threat to the public health or welfare and the environment and meet the criteria for a time-critical removal action as provided for in the NCP, 40 C.F.R. § 300.415(b)(1), based on the factors in 40 C.F.R. § 300.415(b)(2). These factors include, but are not limited to, the following:

§ 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;

Beginning in July 2016, EPA began conducting more extensive soil sampling within Zone 2 as part of the RD process for OU1. Zone 2 includes approximately 590 separate parcels. Most of these parcels are residential parcels, though there are some commercial/industrial parcels. In September 2016, EPA received validated sampling results from 48 parcels in Zone 2 which revealed lead concentrations in surface soil (0-6 inches below ground surface) at values ranging from 38.3 to 2,120 mg/kg. Arsenic concentrations ranged from 4.3 to 111 mg/kg (See Attachment V – Summary of OU1 RD Soil Sampling Results). Ten sampled parcels had surface soil lead concentrations above 1,200 mg/kg and 40 of 48 parcels exceed the RML for lead of 400 mg/kg for residential surface soil. Two parcels exceeded the 68 mg/kg RML for arsenic (111 and 78.1 mg/kg in surface soil). One parcel that exceeded the RML for arsenic also exceeded the RML for lead in soil.

Data results from indoor dust from the first 154 homes sampled in Zone 1 indicate 69 properties exceed the EPA screening level of 316 mg/kg for lead for indoor living spaces. EPA is currently addressing exposure to lead contaminated soil in yards and indoor dust in Zone 1. High lead concentrations in indoor dust are a risk to human health, particularly for children under the age of six (i.e., inhalation, ingestion). A recent blood lead study conducted by ECHD found that children in the WCHC and part of Zone 2 are at an increased risk for lead exposure (22% at or above 5 µg/dL compared to the national average of 2.5%).

Lead is a hazardous substance, as defined by Section 101(14) of CERCLA. The effects of lead are the same whether it enters the body through breathing or swallowing. Lead can affect almost every organ and system in the body. The main target for lead toxicity is the nervous system, both in adults and children. Long-term exposure of adults can result in decreased performance in some tests that measure functions of the nervous system. It may also cause weakness in fingers, wrists, or ankles. Lead exposure also causes small increases in blood pressure, particularly in middle-aged and older people and can cause anemia. Exposure to high lead levels can severely damage the brain and kidneys in adults or children and ultimately cause death. In pregnant women, high levels of exposure to lead may cause miscarriage. High-level exposure in men can damage the organs responsible for sperm production.

Arsenic is a hazardous substance under CERCLA and may be ingested or inhaled by residents living at the Site. Acute (short-term) high-level inhalation exposure to arsenic dust or fumes has resulted in gastrointestinal effects (nausea, diarrhea, abdominal pain); central and peripheral nervous system disorders have occurred in workers acutely exposed to inorganic arsenic. Chronic (long-term) inhalation exposure to inorganic arsenic in humans is associated with irritation of the skin and mucous membranes and effects in the brain and nervous system. Chronic oral exposure to elevated levels of inorganic arsenic has resulted in gastrointestinal effects, anemia, peripheral neuropathy, in humans. Chronic exposure by the inhalation route, has been shown to cause a form of skin cancer and also to cause bladder, liver, and lung cancer. EPA has classified inorganic arsenic as a human carcinogen.

§ 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;

As stated in the previous paragraphs, surface soils in Zone 2 where found to be contaminated with lead and arsenic above the EPA screening levels.

Residents living in Zone 2 may cause the high levels of lead and arsenic to migrate into other areas including inside the home by walking through and tracking in, gardening, play, and other residential activities, especially in areas where the soil does not have any cover. Other means of migration may include routine construction activities.

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

There is a threat of release from high winds dispersing surface particulate matter containing lead, resulting in exposure to children and adults who reside within the Site. Grass cover is generally lighter in the early spring and fall, allowing more potential of tracking contaminated soil into the home. Rain or thundershowers may cause the outdoor lead to migrate via surface runoff. The use of an air conditioner during the hot summer months or the running of a furnace during the winter would also result in the migration of indoor dust.

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

At this time, no local or state agency has the resources to respond to the immediate threat.

IV. EXEMPTION FROM STATUTORY LIMITS

Section 104(c) of CERCLA, as amended by the Superfund Amendments and Reauthorization Act (SARA), limits a Federal response action to 12 months and $2 million unless response actions meet emergency and/or consistency exemptions. Documentation for the aforementioned exemptions are provided in the U.S.S. Lead Action Memorandum-Third Amendment approved on October 13, 2016.

V. ENDANGERMENT DETERMINATION

Given the Site conditions, the nature of the known and suspected hazardous substances on-site, and the potential exposure pathways described in Sections II and III above, actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response actions selected in this Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment.

VI. PROPOSED ACTIONS

The response actions described in this memorandum directly address actual or potential releases of hazardous substances on Site, which may pose an imminent and substantial endangerment to public health, or welfare, or the environment.

The proposed action involves excavation and removal of lead and arsenic-contaminated soil at residential parcels within Zone 2 with surficial soil concentrations at or above 1,200 mg/kg for lead and/or the removal management level (RML) of 68 mg/kg for arsenic, and indoor dust sampling and cleaning upon the request of residents and owners. The response actions are consistent with the (OSWER) Publication 9285.7-50 *Superfund Lead-Contaminated Residential Sites Handbook* (Handbook) (2003), where the Superfund Program uses a tiered approach to prioritize which homes needed to be cleaned up first. Residential parcels with lead concentrations in surface soil at or greater than 1,200 mg/kg would be the highest priority for immediate action under a time-critical removal action. Excavated areas will be backfilled to original grade with clean soil and the yards restored as closely as practicable to its pre-removal condition.

Approximately 590 Zone 2 parcels will be sampled during the remedial design process. For cost accounting purposes, EPA anticipates the scope of this removal action in Zone 2 to include approximately 132 residential parcels that are at or greater than 1,200 mg/kg for lead and/or 68 mg/kg for arsenic based on historical and the latest remedial design validated data from Zone 2.

Removal activities associated with the excavation of lead and arsenic contaminated soil from residential yards in Zone 2 will include:

1. Development of site plans, including a Work Plan, Sampling Plan/QAPP, site-specific HASP, and Emergency Contingency Plan;

2. Development of an air monitoring plan and conduct dust control measures to ensure worker and public health protection;

3. Provision for site security measures as necessary;

4. Excavation of soil at residential parcels where lead is equal to or exceeds 1,200 mg/kg and/or arsenic exceeds 68 mg/kg as determined by EPA's RD sampling. Soil will be excavated to a depth of approximately two feet bgs, to eliminate any direct contact and inhalation threats. Excavated material that fails toxicity characteristic leaching procedure (TCLP) for lead may be treated with a fixation agent prior to disposal. Excavation will cease if lead and/or average arsenic concentrations are less than 400 mg/kg for lead and 26 mg/kg for arsenic.

5. Collection and analysis of confirmation samples from the bottom of each excavation. If lead levels below 400 mg/kg or arsenic levels below 26 mg/kg cannot be achieved at an excavation depth of approximately two feet bgs, excavation will cease and a visible barrier will be placed at the bottom of the excavation to alert the property owner of the existence of high levels of lead and/or arsenic. In such instances and consistent with the record of

decision, institutional controls (ICs) will be implemented as part of the remedial action to ensure the users of the property are not exposed to the contaminants of concern in soil;

6. Replacement of excavated soil with clean soil, including 6 inches of top soil to maintain the original grade. Each yard will be restored as close as practicable to its pre-removal condition. Once the parcels are sodded or seeded, removal site control of the sod or seed, including, watering, fertilizing, and cutting, will be conducted for 30 days. After the initial 30 day period, property owners will be responsible for the maintenance of their own yards. The aforementioned work shall be documented in a Work Plan;

7. Transportation and disposal off-site of any hazardous substances, pollutants and contaminants at a CERCLA-approved disposal facility in accordance with EPA's Off-Site Rule (40 CFR § 300.440);

8. Performance of any other response actions to address any release or threatened release of a hazardous substance, pollutant or contaminant that the EPA On-Scene Coordinator (OSC) determines may pose an imminent and substantial endangerment to the public health or the environment; and

9. Conduct an evaluation to determine if soil excavation activities result in a release of lead scale particles from lead service lines into the drinking water supply. This sampling will be conducted from parcels being excavated in the fall of 2016. Data will be evaluated prior to the 2017 construction season to determine if construction activities impact drinking water quality. Bottled water and water filters will be provided during and after the soil excavation activities as necessary during the evaluation period. Based on findings from the 2016 evaluation, a determination will be made on whether the provision of bottled water and water filters should continue beyond the evaluation period. (Note: This evaluation is being conducted at the request of the Agency for Toxic Substances and Disease Registry, see memo from Mark Johnson to Doug Ballotti dated October 24, 2016.)

Data results in Zone 1 from indoor dust from the first 154 homes sampled indicate 69 parcels exceed the EPA screening level of 316 mg/kg for lead for indoor living spaces. Given the significant number of indoor samples that indicated action is needed and the threat posed by high concentrations of lead in soil in adjacent outdoor areas, and the consistent pattern of EBL levels in children less than 6 years of age living in WCHC and portions of Zone 2, EPA, at the request of the residents and homeowners, will vacuum sample indoor dust for lead and arsenic. EPA will clean the inside of residences that are above the risk-based screening criteria of 316 mg/kg for lead and 100 mg/kg arsenic for indoor dust from industrial-related activities. In general, the indoor cleanup process will involve four basic steps: (1) collection of indoor dust vacuum samples (in homes previously not sampled), (2) possible temporary relocation of residents, (3) removal of contaminated indoor dust from floors and carpeting, and cleaning of accessible HVAC systems and filter replacement (4) Post cleaning clearance sampling; and (5) the return of occupants to their residence if temporarily relocated. A combination of HEPA vacuums and/or wet cleaning will be used to remove contaminated dust from floors, carpeting and HVAC systems. Replacement of carpets/mats may be considered on a case by case basis if cleaning mechanisms fail to remove lead and arsenic dust below cleanup criteria.

Removal activities associated with indoor sampling, evaluation, and removal of contaminated dust in homes in Zone 2 will include:

1. Development of a Work Plan and Site Specific Health and Safety Plan;
2. Development and implementation of an air monitoring/sampling plan for the work zone and Site;
3. Continuation of indoor dust and other sampling as determined necessary;
4. Provision for Site security, as directed by the OSC;
5. Development of a relocation plan to address, if necessary, the temporary relocation of residents during the cleaning process;
6. Performance of interior dust cleanup activities as specified in the Site Work Plan;
7. Transportation and disposal off-site of any hazardous substances, pollutants and contaminants at a CERCLA-approved disposal facility in accordance with EPA's Off-Site Rule (40 CFR § 300.440); and
8. Performance of any other response actions to address any release or threatened release of a hazardous substance, pollutant or contaminant that the EPA On-Scene Coordinator (OSC) determines may pose an imminent and substantial endangerment to the public health or the environment.

The Action Memorandum and supporting documentation follow the April 2002 Superfund Response Actions: Temporary Relocations Implementation Guidance, particularly in considering residents' needs, property security, dealing with resident's stress and disruptions, and explaining benefits. Consistent with EPA's guidance on temporary relocations (2002), Sec. IV.A ("Making the Relocation Decision"), temporary relocation at the Site is justified during the cleaning process by the following factor:

- Efficiency of response action: temporary relocation minimizes concerns about noise, property access, and other restrictions on the hours or types of response activities that may be conducted at the Site.

The removal actions will be conducted in a manner not inconsistent with the NCP.

The threats posed by uncontrolled substances considered hazardous meet the NCP criteria listed at § 300.415(b), and the response actions proposed herein are consistent with any long-term remedial actions which may be required.

Off-Site Rule

All hazardous substances, pollutants, or contaminants removed off-site pursuant to this removal action for treatment, storage, and disposal shall be treated, stored, or disposed of at a facility in compliance, as determined by EPA, with the EPA Off-Site Rule, 40 C.F.R. § 300.440.

1. Contribution to remedial performance

The proposed action should not impede future remedial performance.

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

Not Applicable

3. Applicable or relevant and appropriate requirements (ARARs)

All applicable or relevant and appropriate requirements (ARARs) will be complied with to the extent practicable. On August 18, 2016, EPA sent an e-mail to Rex Osborn of IDEM asking for any State of Indiana ARARs that may apply. IDEM provided both Action and Chemical specific state ARARs in a letter dated August 26, 2016. EPA will consider and implement the submitted ARARs as appropriate.

Project Schedule

The time-critical removal actions will require approximately 528 working days to complete.

B. Removal Project Ceiling Estimate – Extramural Costs:

The detailed cleanup contractor cost is presented in Attachment 1 and the Independent Government Cost Estimate is presented in Attachment IV. Estimated project costs are summarized below:

REMOVAL ACTION PROJECT CEILING ESTIMATE

Extramural Costs	**Current Ceiling**	**Proposed Increase**	**Proposed Ceiling**
Regional Removal Allowance Costs:			
Total Cleanup Contractor Costs (This cost category includes estimates for ERRS, subcontractors, Notices to Proceed, and Interagency Agreements with Other Federal Agencies and 20% Contingency)	$18,875,702	$10,133,755	$29,009,457
Other Extramural Costs Not Funded from the Regional Allowance:			
Total START, including multiplier costs	$3,122,250	$1,425,000	$4,547,250
Subtotal			
Subtotal Extramural Costs	$21,997,952	$11,558,755	$33,556,707
Extramural Costs Contingency (20% of Subtotal, Extramural Costs rounded to nearest thousand for Proposed Increase)	$4,399,590	$2,311,751	
TOTAL REMOVAL ACTION PROJECT CEILING	**$26,397,542**	**$13,870,506**	**$40,268,048**

The response actions described in this memorandum directly address the actual or threatened release of hazardous substances, pollutants, or contaminants at the Site which may pose an imminent and substantial endangerment to public health or welfare or to the environment. These response actions do not impose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

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

Given the Site conditions, the nature of the hazardous substances and pollutants or contaminants documented in Zone 2 of OU1, and the potential exposure pathways to nearby populations described in Section II and Section III, above, actual or threatened releases of hazardous substances and pollutants or 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, welfare, or the environment.

VIII. OUTSTANDING POLICY ISSUES

None

IX. ENFORCEMENT

For administrative purposes, information concerning the enforcement strategy for this Site is contained in the Confidential Enforcement Addendum.

The total EPA costs of this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be $68,457,330[1].

($40,268,048+ $2,000,000) + (61.96% x $42,268,048) = $68,457,330

[1] 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 direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgement 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.

X. RECOMMENDATION

This decision document, along with the Action Memorandum signed on January 22, 2008, and the Action Memorandum Amendments signed on August 13, 2008, September 12, 2011, and October 13, 2016 represents the selected removal action for the U.S. Smelter and Lead Refinery Site, Zone 2, OU1, East Chicago, Lake County, Indiana. It was developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for the Site (Attachment II). Conditions at OU1, Zone 2 meet the NCP Section 300.415(b) criteria for a removal action and the CERCLA Section 104(c) emergency exemption from the $2 million and 12-month limitation. The total removal action project ceiling, if approved, will be $40,268,048 of which as much as $33,770,398 may be used from the removal allowance. I recommend your approval of the proposed removal action. You may indicate your decision by signing below.

APPROVE _____ DATE: 10/28/16
Assistant Administrator Office of Land and Emergency Management

DISAPPROVE _____ DATE: _____
Assistant Administrator Office of Office of Land and Emergency Management

Enforcement Addendum

Figures:

Figure 1 – USS Lead and Lead Refinery, E. Chicago, IN. Location Map
Figure 2 – OU1 Zones 1, 2, and 3– Location Map

Attachments:

I. Environmental Justice Analysis
II. Administrative Record Index
III. Detailed Cleanup Contractor Estimate
IV. Independent Government Cost Estimate
V. Summary of OU1 RD Soil Sampling Results
VI. Indoor Dust Screening Criteria for Lead
VII. Indoor Dust Screening Criteria for Arsenic
VIII. Third Amended Action Memorandum dated October 13, 2016

cc: Brian Schlieger, U.S. EPA, 5104A/B517F **(Schlieger.Brian@epa.gov)**
Lindy Nelson, U.S. DOI, **w/o Enf. Addendum (Lindy_Nelson@ios.doi.gov)**
Rex Osborn, IDEM **w/o Enf. Addendum (rosborn@idem.in.gov)**

APPENDIX F

TO
Z2&3 INTERIOR UAO

FORM OF INTERIOR ACCESS AGREEMENT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

CONSENT FOR ACCESS TO PROPERTY FOR SAMPLING AND TO TAKE RESPONSE ACTION

Name: _____ Daytime Phone Number: _____
(Print)

Evening Phone Number: _____

Title (e.g., tenant, owner): _____

Address of Property: _____

I consent to officers, employees, contractors and authorized representatives of the U.S. Environmental Protection Agency entering and having continued access to the property described above (the Property), including the interior of residences located within the Property, to perform the following actions: (1) to conduct sampling and lead-based paint screenings as deemed necessary by EPA; and (2) to perform response actions within the residences to address risks to human health and the environment as deemed necessary by EPA.

I understand that these actions taken by EPA are undertaken pursuant to its response and enforcement responsibilities under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, 42 U.S.C. Section 9601 et seq., and that these activities are necessary to protect human health and the environment. I also understand that I may be required to share the results of the lead-based paint screenings with current and potential future residents of the property, and that I must comply with all relevant and applicable laws and regulations regarding lead-based paint.

I give this written permission voluntarily on behalf of myself and all other residents of the Property, with knowledge of my right to refuse and without threats or promises of any kind. I understand that EPA or authorized representatives of EPA will use best efforts to contact me before the sampling begins.

This document can only be signed by a resident of the property who is over 18 years of age.

PLEASE CHECK ONLY ONE BOX AND SIGN BELOW

_____
Date

☐ I grant access to the Property for the purposes stated above.

☐ I do not grant access to the Property.

_____
Signature

_____
Signature

Please provide the month and year in which you moved to this residence: _____

Please provide the age of each child under the age of 18 living at this residence:

_____

Are there any pregnant women living at this residence? _____

APPENDIX Q

TO
Z2&3 INTERIOR UAO

Comments on Original Z2 Soil UAO and Z2&3 Interior UAO from ARC, Chemours, DuPont, and USMR to EPA (Jan. 10, 2018)

K&L GATES

January 10, 2018

David L. Rieser
david.rieser@klgates.com

T +1 312 807 4359

VIA EMAIL AND REGULAR MAIL

Mr. Steven Kaiser
Mr. Leo Chingcuanco
Office of Regional Counsel
Region 5
U.S. Environmental Protection Agency
77 W. Jackson Blvd. (C-14J)
Chicago, IL 60604-3590

Re: USS Lead Superfund Site - Opportunity to Confer Comments
UAO for Zone 2 Remedial Action, CERCLA Docket No. V-W-18-C-001
UAO for Zones 2 and 3 Interior Removal Action, CERCLA Docket No. V-W-18-C-002

Dear Steve and Leo:

Having had an opportunity to confer, I am writing on behalf of the following respondents to the above Unilateral Administrative Orders ("UAOs"): the Atlantic Richfield Company, the Chemours Company, FC, LLC, E.I. Du Pont de Nemours and Company and United States Metals Refining Company (collectively the "ASAOC Respondents") to submit comments in response to our conference held on January 5, 2018. In general, these comments memorialize the discussion we had at that conference and address the same topics.

I. Arranger PRPs

We discussed again the importance of issuing the UAO so as to include the arranger PRPs, at least those which received notification of potential liability from EPA. We have stressed the importance of requiring these PRPs to participate in remedial activities for several years, including providing a legal basis to support issuing notice letters to the arranger PRPs. We worked with EPA on these UAOs because we believed their issuance would encourage other PRPs to participate. It was not until our meeting on November 12, 2017 that we were advised that the arranger PRPs would not be included due to concerns regarding the relative size of the contribution from the arranger PRPs and SREA issues. In a subsequent letter we addressed those concerns, pointing out that parties could not be identified as de minimis outside the

settlement context and that SREA placed the burden of proof on the PRPs to document that the exemption applied.

At the January 5 meeting, we referenced these prior discussions and focused on several additional issues. We addressed DOJ's comment that liability for entities which arranged for treatment as opposed to disposal was an untested theory that would not support liability for these arrangers. We pointed out that CERCLA assessed liability for people who arranged for "disposal or treatment," stating clear Congressional intent that arranging for treatment was a basis for liability, separate and apart from arranging for disposal. We analogized to *Cooper Industries Inc. v. Aviall Services, Inc.*, 543 U.S. 157 (2004) in which the Supreme Court overturned years of circuit court decisions to find that the plain language of CERCLA prohibited PRPs from bringing contribution actions if they have not been previously sued based on the plain language of CERCLA. We also note that there are a number of cases which have based liability on arranging for treatment as discussed in the attached article (*CERCLA Enforcement: Terminology and Meaning of "Treatment" Arranger Liability*, 38 W. New Eng. L. Rev. 425 (2016)).

We also discussed EPA's other stated bases not to include arrangers but that discussion mainly recapitulated our letter after the November meeting. EPA's position on these matters has also been left uncertain by Annette Lang's email of December 13, which appeared to reject some of the rationales provided for not including the arranger PRPs. As a result, we request that EPA reconsider its decision not to name the arranger PRPs in this UAO.

II. EPA Cost Payment

We herein renew our requests, based upon the equitable and legal reasons discussed with you, that EPA reconsider and remove from the UAOs the provisions relating to payment of EPA's response costs. We recognize that EPA has and will otherwise retain its legal authority to seek recovery of its response costs outside of the context of the UAOs.

As referenced above, the UAOs seek to require a subset of the USS Lead site PRPs to undertake significant remedial activities and incur significant cost. Therefore equity and fairness requires removing the provisions seeking to require the PRPs named in the UAOs to reimburse response costs pursuant to the UAOs.

Additionally, the UAOs do not provide any opportunity for the respondents to review, question, or object to the payment of any such bill, or item in any such bill, for response costs received pursuant to the UAOs. We respectfully suggest that the potential to receive a bill from EPA which contains errors or questionable response costs exists. We are all aware that this is a complex site and significant unanticipated costs have been incurred to date. Again, equity and fairness dictate providing an opportunity to review and question response costs included in a bill received for response costs.

Furthermore, we respectfully request that EPA provide us with the statutory and regulatory authority for seeking to require payment of response costs in the UAOs. More specifically the

UAOs are issued under the authority of Section 106(a) of CERCLA. EPA's authority under Section 106(a) of CERCLA is limited to the issuance of orders for "abatement actions as may be necessary to protect public health welfare and the environment." Section 106(a), among other limitations, does not authorize EPA to order a PRP to reimburse EPA for response costs. EPA has reserved its right to pursue a separate civil action to recover response costs in the UAO's Reservation of Rights provisions.

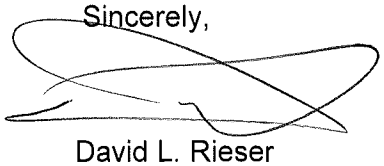
III. Orphan Share Consideration

Numerous PRPs for the work required under the UAOs are "orphan" parties because they are insolvent or defunct. For example, U.S.S. Lead Refinery, Inc. is an insolvent party who owned and operated the USS Lead facility from 1919 until it was closed in 1985, and several parties who arranged for disposal or treatment of hazardous substances at the USS Lead facility are insolvent or defunct. Further, EPA has recognized that slag is present in the soil that has been or needs to be removed in OU1. This slag appears to be from local steel mills, the owners and operators of which are insolvent or defunct.

We request that EPA provide orphan share funding to address the unfairness of the UAO Respondents being required to pay for all of the orphan parties' liability at this site. While the share of the orphan parties' liability has not been fully determined by EPA, we believe it exceeds the 25% that EPA is readily allowed to fund as an orphan share. Accordingly, we request that EPA provide 25% of the funding required to perform the work under the UAOs.

As always, we appreciate your consideration of these matters. If you have any questions, please contact me.

Sincerely,



David L. Rieser

cc: Annette Lang
Sparsh Khandeshi
Bernard Reilly
Michael Elam
Doug Reinhart
Patricia McGee
Jason Hughes
David Wallis
Ben Lippard

APPENDIX R

TO
Z2&3 INTERIOR UAO

Comments on Original Z2 Soil UAO and Z2&3 Interior UAO from USS Lead to EPA (Dec. 26, 2017)

BakerHostetler

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Robert N. Steinwurtzel
Direct dial: 202.861.1708
rsteinwurtzel@bakerlaw.com

December 26, 2017

VIA E-MAIL

Leonardo Chingcuanco
Office of Regional Counsel
U.S. EPA – Region 5 (C-14J)
77 West Jackson Blvd.
Chicago, IL 60604

Steven P. Kaiser
Office of Regional Counsel
U.S. EPA Region 5 (C-14J)
77 West Jackson Blvd.
Chicago, IL 60604

Re: U.S. Smelter and Lead Refinery, Inc.

Dear Leo and Steve:

On behalf of our client U.S. Smelter and Lead Refinery, Inc. ("USS Lead") we hereby provide USS Lead's written comments, pursuant to paragraphs 11-12 of the Unilateral Administrative Orders relating to the East Chicago Site that were signed on December 14, 2017 (the "UAOs"). We provided notice of USS Lead's intent to make this submission by letter dated December 19, 2017. These comments respond to the language that provides USS Lead with the opportunity to comment on the "applicability" of the orders to the company.

USS Lead requests that EPA remove it as a respondent to the UAOs prior to their effective date on the grounds that USS Lead does not have the financial ability to comply and based upon EPA's policy against issuing UAOs to entities that are not financially viable.

BACKGROUND

USS Lead commenced operations approximately one hundred years ago as a refinery of lead bullion. In the early 1970's, USS Lead converted its full operation to a lead recycling facility. Smelting operations ceased in 1983 and the facility permanently closed in 1985. USS

Lead has no ongoing operations, revenue streams or assets. It is in debt to multiple creditors and is currently delinquent in payment of its property taxes in the approximate amount of $2.8 mm. *See, Exhibit 1.*

REMOVAL OF USS LEAD

EPA's policy against issuing UAOs to entities that are not financially viable is set forth in its "Guidance on CERCLA Section 106(a) Unilateral Administrative Orders for Remedial Designs and Remedial Actions," dated March 7, 1990 (the "1990 Guidance"). The guidance lists case-specific considerations to determine whether a party should be named as a respondent in a UAO. One of the criteria is that the "PRPs are Financially Viable." Guidance at 14. The Guidance states: "The financial viability of PRPs should be considered before an order is issued" and "the order should not include PRPs that lack any substantial resources, unless the activities required of those persons do not involve expenditures of money (*e.g.*, providing access)." *Id.*; *see also id.* at 15 (stating that "financial viability should be considered" when evaluating whether to name an individual PRR in an order). EPA reiterated this policy in "Evaluation of, and Additional Guidance on, Issuance of Unilateral Administrative Orders (UAOs) for RD/RA," dated June 20, 1991 (the "1991 Guidance"), stating that "order involving expenditures of money should generally not be issued to PRPs that lack any substantial resources." 1991 Guidance at 4. EPA's policy is consistent with CERCLA's legislative history, which states that PRPs who did not at the time have the financial resources to comply with a UAO would have a sufficient cause not to do so. 126 Cong. Rec. 30873, 30986 (Nov. 24, 1980) ("There could also be 'sufficient cause' for not complying with an order if the party subject to the order did not at the time have the financial or technical resources to comply ....").

EPA is required to comply with its policy in this case. It has already determined that USS Lead lacks any substantial resources. EPA confirmed this by letter dated July 28, 2006, stating that EPA "has examined the financial documentation submitted by USS Lead, and determined that USS Lead itself appears to have limited financial ability to complete all of the RCRA and other remediation-related activities currently required or expected to be required for the facility," including "remediation activities in the East Chicago area currently required or expected to be required by the Superfund Program under CERCLA." (July 28, 2006 Letter from Mr. McClary, EPA Associate Regional Counsel, re USS Lead Refinery, Inc. at 1.) A copy of this letter is included as Exhibit 2.

The exception noted in the guidance does not apply for situations where EPA has cause to name respondents who are not financially viable because there are "activities required of those persons [that] do not involve expenditures of money (*e.g.*, providing access)." 1990 Guidance at 14. There are no "activities" required of USS Lead for the work under the UAOs to be accomplished. USS Lead offered to make its facility available as a staging or disposal location in connection with any remediation relating to the USS Lead site, including the residential areas (given that USS Lead does not have resources to contribute financially to the cleanup). EPA declined this offer. Of course, USS Lead does not own the residential areas that are the subject of the UAOs, but even if access to USS Lead's property were necessary, the company has and would continue to provide access voluntarily, without the need for EPA to resort to a UAO.

Indeed, in May 2015, USS Lead entered into an access agreement with EPA, East Chicago Waterway Management District, and EPA's Great Lakes National Program Office to collect on-site samples in connection with the restoration of the Grand Calumet River. This access was granted without the need to resort to an enforcement order. USS Lead has a long history of cooperating with EPA regarding its Site, including repeatedly accommodating EPA's request to review documents and providing substantial logistical assistance to EPA in those efforts.

* * *

For these reasons, we respectfully request that EPA remove USS Lead as a respondent, based on its longstanding policy against issuing UAOs to entities that are not financially viable. Please contact the undersigned if you have any questions regarding this submission or need additional information. Thank you.

Sincerely yours,

Robert N. Steinwurtzel

Attachments: Exhibits 1 and 2

EXHIBIT 1

SRI, INCORPORATED
LAKE COUNTY AUDITOR'S OFFICE
P.O. BOX 501610
INDIANAPOLIS IN 46250-1610

9214 8901 0661 5400 0108 9622 13

DO NOT SEND PAYMENTS TO THIS ADDRESS; SEND PAYMENTS TO THE ADDRESS AT THE BOTTOM OF THE LETTER

OWNER OF RECORD: U S S Lead Refining Inc
4780 CATERPILLAR RD
Redding CA 96003

PRESCRIBED BY STATE BOARD OF ACCOUNTS

NOTICE OF TAX SALE

COUNTY FORM NO. 137A (2001)

Township or Corporation: East Chicago

Pursuant to the laws of the Indiana General Assembly, notice is hereby given that the following described property is listed for sale for delinquent taxes and/or special assessments. The county auditor and county treasurer will apply on or after 8/23/2017 for a court judgment against the tracts or real property for an amount that is not less than the amount set out below and for an order to sell the tracts or real property at public auction to the highest bidder, subject to the right of redemption.

The period of redemption will expire on Wednesday, September 19, 2018 for property sold on this sale. The period of redemption for a property not sold on this sale will expire on: Wednesday, January 17, 2018 if the county intends to pursue title to the parcel. The terms of the redemption are specified at IC 6-1.1-25-2 and IC 6-1.1-25-4.

Any defense to the application for judgment must be filed with the Lake County Circuit Court before 8/23/2017. The auditor and treasurer must receive all pleadings. The court will set a date for a hearing at least seven (7) days before the advertised date of sale and the court will determine any defenses to the application for judgment at the hearing. The public auction will be conducted as an electronic sale under IC 6-1.1-24-2(b), at the following website: www.zeusauction.com. The public auction will begin on September 11, 2017 at 8:00 am local time. The properties in the online auction will commence closing in batches beginning at 12:00 pm local time on September 18, 2017 at www.zeusauction.com. Each property will have its specific closing time posted on the auction website.

DESCRIPTION OF TRACT OR ITEM OF REAL PROPERTY

Property ID # / Key Number	Location and Street Address or Common Description of Real Property	Brief Legal Description
45-03-33-300-002.000-024	5300 KENNEDY AVE EAST CHICAGO 46312	PT. N. RIV. W2. S.33 T.37 R.9 SUBJ. TO EASMT. 79.003 A.

** THE COUNTY DOES NOT WARRANT THE ACCURACY OF THE STREET ADDRESS OR COMMON DESCRIPTION OF REAL PROPERTY **

DELINQUENT TAX	AMOUNTS DUE
Prior Year's Spring Installment or Before Delinquent	$735,306.69
Prior Year's Second Installment	$0.00
Current Year's First Installment	$5.00
PENALTIES	
Penalties	$2,055,984.05
SPECIAL ASSESSMENTS	
Delinquent (Prior Year's Spring Installment or Before) Current Year	$0.00
Postage and Publication Costs and Any Other Actual Costs Incurred by the County	$150.00
Actual Costs Incurred by the County From a Previous Tax Sale and Not Yet Recovered by the County	$955.00
Partial Payments	$0.00
Amount To Remove From Sale (Amount For Judgment)	$2,792,400.74
Current Year's Second Installment 2016 Payable 2017 Taxes	$0.00
Current Year's Second Installment 2016 Payable 2017 Special Assessments	$0.00
Amount Subject To Sale	$2,792,400.74

No property described above shall be sold if, at any time before the sale, the Total Amount for Judgment as noted above, is paid in full. If the real property is sold in the tax sale, the amount required to redeem such property will be 110% of the minimum bid for which the tract or real property was offered at the time of sale, if redeemed not more than six (6) months after the date of sale, or 115% of the minimum bid for which the tract or real property was offered at the time of sale, if redeemed more than six (6) months after the date of sale, plus the amount by which the purchase price exceeds the minimum bid on the real property plus five percent (5%) per annum interest on the amount by which the purchase price exceeds the minimum bid on the property.

All taxes and special assessments upon the property paid by the purchaser subsequent to the sale, plus five percent (5%) per annum interest on those taxes and special assessments, will also be required to be paid to redeem such property. In addition, IC 6-1.1-25-2(e) states that the total amount required for redemption may include the following costs incurred and paid by the purchaser or the purchaser's assignee or the county before redemption: (1) The attorney's fees and costs of giving notice under IC 6-1.1-25-4.5; (2) The costs of a title search or examining and updating the abstract of title for the tract or item of real property. If the tract or item of real property is sold for an amount more than the minimum bid and the property is not redeemed, the owner of record of the real property who is divested of ownership at the time the tax deed is issued may have a right to the tax sale surplus.

All payments must be made in cash or certified funds made payable to the Lake County Treasurer and mailed to 2293 North Main Street, Crown Point, IN 46307. Payments may also be made in person at the same address.

The above property will be advertised in the local newspaper as having delinquent taxes and it will be offered on the tax sale scheduled to commence on 9/11/2017 at 8:00 am local time. To remove this property from the publication the Amount To Remove From Sale (Amount For Judgment) must be paid by 4:30 pm on July 14, 2017. In order to remove the property from the tax sale the Amount To Remove From Sale (Amount For Judgment) must be paid by 4:30 pm on September 8, 2017.

Dated: 6/30/2017

John Petalas
Auditor, Lake County, Indiana

EXHIBIT 2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUL 28 2006

REPLY TO THE ATTENTION OF
(C14J)

Robert N. Steinwurtzel, Esq.
Swidler Berlin LLP
The Washington Harbour
3000 K Street, NW, Suite 300
Washington, DC 20007-5116

Re: USS Lead Refinery, Inc.

Dear Mr. Steinwurtzel:

This is to respond to your email inquiries regarding various aspects of USS Lead Refinery's (USS Lead) facility located at 5300 Kennedy Avenue, East Chicago, Indiana, and regarding the environmental remediation activities taking place or planned at the facility and the surrounding area. More specifically, this is to address your inquiries regarding termination of the current Administrative Order on Consent (AOC) issued to USS Lead under the Resource Conservation and Recovery Act (RCRA); furthering (or, in your words, "authorizing the funding of") USS Lead's post-closure permit process with the State of Indiana; "allowing" USS Lead to enter into the Natural Resource Damages (NRD) settlement, and "resolving" issues related to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

First, U.S. EPA has examined the financial documentation submitted by USS Lead, and determined that USS Lead itself appears to have limited financial ability to complete all of the RCRA and other remediation-related activities currently required or expected to be required for the facility: i.e., RCRA corrective action under the AOC between U.S. EPA and USS Lead, post-closure activities for a Corrective Action Management Unit that may be required by the Indiana Department of Environmental Management (IDEM), and remediation activities in the East Chicago area currently required or expected to be required by the Superfund Program under CERCLA.

Questions remain, however, regarding the financial ability of USS Lead's corporate parent(s) to fund such activities, which questions U.S. EPA Region 5's RCRA Corrective Action Program ("RCRA Program") does not find it necessary to resolve at this time. Rather, the RCRA Program believes that because any remaining corrective action and other RCRA requirements can and will be imposed on USS Lead by IDEM through its post-closure permit process, no further RCRA corrective action activities will be required by U.S. EPA at this time for the USS Lead facility under the AOC, pending the completion of IDEM's permit process. The RCRA Program is thus deferring to the Region's Superfund Program to address the remediation requirements for the facility and its neighboring affected properties, and deferring to IDEM to

address RCRA requirements under a post-closure permit. U.S. EPA acknowledges the desirability of terminating the current RCRA AOC governing the facility once the IDEM permit has become effective, but it is unable, pursuant to longstanding policy, to terminate the AOC until after the effective date of a permit issued by IDEM (i.e., after public comment and any revisions based thereon have been finalized). Accordingly, U.S. EPA is also unwilling to issue any covenant not to sue.

U.S. EPA plans to terminate the AOC once the post-closure permit is effective. However, as USS Lead's funding and IDEM's post-closure permitting are independent of the AOC, U.S. EPA has no role in "authorizing the funding of" USS Lead's post-closure responsibilities. U.S. EPA does not believe there is or has been any reason for USS Lead to delay its completion of the IDEM permit process.

Second, U.S. EPA Region 5 is not in a position to "allow" or "disallow" USS Lead's entry into the NRD settlement being negotiated for the Grand Calumet River. The authority for that role belongs to the Natural Resource Damages Trustee, with whom you have indicated you have been in contact. You are free to contact Region 5's attorney with lead authority for U.S. EPA's involvement with that effort, Mr. Richard Nagle, to discuss the NRD settlement. His number is 312-353-8222.

Third, with regard to "resolving" CERCLA issues, as I have indicated above U.S. EPA Region 5 is proceeding with its efforts to have USS Lead and other Potentially Responsible Parties conduct remediation activities under Superfund. The Region 5's attorney handling that effort is Mr. Steven Kaiser, and you may contact him at 312-353-3804.

Once an IDEM post-closure permit to USS Lead is effective, U.S. EPA expects to initiate the AOC termination process. In the meantime, if you have further questions or concerns, don't hesitate to raise them.

Very truly yours,

Michael J. McClary
Associate Regional Counsel

APPENDIX S

TO
Z2&3 INTERIOR UAO

Comments on Original Z2 Soil UAO and Z2&3 Interior UAO from Mueller to EPA (Dec. 29, 2017)

COVINGTON

BEIJING BRUSSELS DUBAI JOHANNESBURG LONDON
LOS ANGELES NEW YORK SAN FRANCISCO SEOUL
SHANGHAI SILICON VALLEY WASHINGTON

E. Donald Elliott

Covington & Burling LLP
One CityCenter
850 Tenth Street, NW
Washington, DC 20001-4956
T +1 202 662 5631
delliott@cov.com

BY EMAIL AND U.S. MAIL

December 29, 2017

Steven Kaiser
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Chicago, IL 60604-3590
kaiser.steven@epa.gov

Leonardo Chingcuanco
Office of Regional Counsel
Region 5, US EPA
77 West Jackson Blvd. (C-14J)
Chicago, IL 60604-3590
chingcuanco.leonardo@epa.gov

Re: Mueller Industries, Inc. Written Comments
Soil and Interior UAOs - OU1 Zones 2 and 3
U.S. Smelter and Lead Refinery, Inc. Site
East Chicago, Lake County, Indiana
CERCLA Docket Nos. V-W-18-C-001 and V-W-18-C-002

Dear Mr. Kaiser and Mr. Chingcuanco:

On behalf of our client Mueller Industries, Inc. ("Mueller") we hereby provide these written comments regarding the two Unilateral Administrative Orders (UAOs) dated December 14, 2017 cited above.

Mueller respectfully submits that it is not a proper party to be named as a respondent on the UAOs at the East Chicago site because there are no factual findings in the UAOs that Mueller is a potentially responsible party (PRP) for the portions of the site addressed by the UAOs. The UAOs allege only two liability theories against Mueller:

(1) That Mueller is somehow liable as a "successor" based on unspecified events that occurred from 1919 to 1979, BEFORE Mueller purchased the stock of USS Lead; and

(2) that Mueller somehow became an "operator" of the USS Lead site by virtue of

unspecified actions between November 1979 and 1985.[1]

Both legal theories are invalid as a matter of law and therefore the final UAOs should drop Mueller as a respondent. The unanimous case law reviewed in section 1 below is clear that events that occurred BEFORE a company purchases the stock of a subsidiary cannot form the basis for piercing the corporate veil against the new owner that was not involved in those events. As there is no legal support whatsoever for the successor liability theories in section V.9.f(2)(i), which are based solely on events that occurred entirely BEFORE Mueller acquired the stock of

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[1] Section V.9.f(2) of the UAOs, on pages 10-11 claims:

Respondent Mueller Industries, Inc. ("Mueller") is liable as a successor to two companies: (i) United States Smelting Refining and Mining Company, which later changed its name to UV Industries, Inc. ("UV/USSRAM"); and (ii) Sharon Steel Corporation ("Sharon Steel").

i. UV/USSRAM was one or more of the following:

> a. *From 1919 to 1920*, a person who, at the time of disposal of hazardous substances, "owned" and/or "operated"—within the meaning of Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2)—the Former USS Lead Facility at which hazardous substances were disposed of and from which there were releases of hazardous substances.
>
> b. For some or all of the time *between 1920 and 1979*, a person who "operated"—within the meaning of Section 101(20) of CERCLA, 42 U.S.C. §§ 9601(20), and Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2)—the Former USS Lead Facility at which hazardous substances were disposed of and from which there were releases of hazardous substances.
>
> c. A parent company who, *for some or all of the time between 1920 and 1979*, is indirectly liable, under a corporate veil piercing theory, for the acts of its subsidiary, USS Lead (which is liable as described in Paragraph 9.f(1) above).
>
> d. For some or all of the time *between 1920 and 1979*, a person who arranged with USS Lead for the disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances at the Former USS Lead Facility, within the meaning of Section 107(a)(3) of CERCLA, 42 U.S.C. § 9607(a)(3).

ii. Sharon Steel, for some or all of the time between 1979 and 1985, was a person who "operated"—within the meaning of Section 101(20) of CERCLA, 42 U.S.C. §§ 9601(20), and Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2)—the Former USS Lead Facility at which hazardous substances were disposed of and from which there were releases of hazardous substances."

(emphasis supplied).

USS Lead on November 26, 1979, EPA should drop these paragraphs entirely from the UAOs.

With regard to the second liability theory against Mueller, that it became an "operator" of the site by virtue of unspecified actions between 1979 and 1985, the failure to identify any such acts or make factual findings that they actually occurred is fatal to this theory as well, and section V.9.f(2)(ii) also should be dropped from the final version of the UAOs.

Mueller is entitled to notice and an opportunity to rebut the facts that purport to require it to spend millions of dollars under a unilateral administrative order not only by EPA guidance and practice, but also by basic principles of administrative law, fairness, and constitutional due process.[2] *Tennessee Valley Authority v. Whitman*, 336 F.3d 1236, 1258-59 (11th Cir. 2003) (imposition of monetary penalties for failure to abide by an administrative order issued without a record and an opportunity to respond to factual allegations would be unconstitutional), *cert. denied*, 541 U.S. 1030 (2004). *See also Sackett v. EPA*, 566 U.S. 120 (2012).

Moreover, EPA cannot constitutionally issue UAOs for which pre-enforcement review is unavailable, particularly when EPA has failed to provide a meaningful opportunity to be heard regarding EPA's liability theories administratively. *Certiorari* on this due process issue was granted in *Sackett*, where the Supreme Court agreed to review whether the "inability to seek pre-enforcement judicial review of the administrative compliance order violate[s] [petitioners'] rights under the Due Process Clause," 564 U.S. 1052, and the issue was briefed by petitioners, *Petitioners' Brief on the Merits*, *Sackett v. EPA*, 2011 WL 4500687 (U.S. 2011). The Court ultimately did not need to reach the question because it found the Clean Water Act orders at issue there subject to pre-enforcement review. Here, however, CERCLA prohibits "review [of] any order issued under section 9606(a)" until all of the work required by the UAO has been completed or until EPA brings an enforcement action. 42 U.S.C. § 9613(h). This bar on pre-enforcement judicial review violates Mueller's constitutional right to due process. The lack of any meaningful notice and opportunity to be heard is further heightened here because the UAOs are devoid of any factual findings for Mueller to respond to, and because EPA considers conferences or comments submitted on the UAOs to not be "an evidentiary hearing," a "proceeding to challenge" the UAOs, or as providing "a right to seek review" of the UAO. UAOs ¶ 12.

In addition to these fatal flaws with the UAOs, Mueller makes the following points as to why there is no basis to name Mueller as a respondent.[3]

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[2] That Mueller may have the opportunity, years from now, to seek reimbursement does not remedy the due process concerns presented by the UAOs. *See, e.g.*, *Fuentes v. Shevin*, 407 U.S. 67, 81-82 (1972) ("[N]o later hearing and no damage award can undo the fact that the arbitrary taking that was subject to the right of procedural due process has already occurred. This Court has not . . . embraced the general proposition that a wrong may be done if it can be undone.") (quotation omitted).

[3] Moreover, Mueller reserves all defenses and rights in this matter.

1. Pre-November 1979 Actions Are Irrelevant to Mueller's Liability. The UAOs assert Mueller is liable based on events that occurred from 1919 to 1979, including events supposedly justifying piercing the corporate veil against a prior owner, UV Industries, Inc., which is not named as a respondent. What may or may not have occurred between USS Lead and its prior stockholder UV Industries before Mueller came on the scene November 26, 1979 is entirely irrelevant to any claim that Mueller is a proper PRP to be named on the UAOs. This is because Mueller did not merge with UV Industries in 1979, nor did Mueller assume UV Industries' "unascertained liabilities," but merely bought certain assets and assumed existing liabilities by contract. That contractual assumption of liability did not include any CERCLA liabilities for which UV Industries may have become liable due to piercing the corporate veil between UV Industries and USS Lead, as CERCLA had not even been enacted at the time of the transaction.

The courts have squarely and repeatedly held that veil piercing is personal to the entities involved and does not follow assets that are later purchased by a third party. *New York State Elec. & Gas Corp. v. FirstEnergy Corp.*, 766 F.3d 212, 229-30 (2d Cir. 2014) (rejecting theory in CERCLA case that veil piercing follows assets purchased later by a third party).[4] We are aware of no authority, and the Government has cited none, indicating that piercing of the corporate veil against a prior parent makes a subsequent purchaser of the subsidiary's stock liable for pre-purchase disposal by the subsidiary.

Whether the government would have had a basis to pierce the corporate veil or for operator liability against the prior owner of USS Lead's stock, UV Industries, based on its actions prior to 1979, is totally irrelevant to whether Mueller is a proper party to the current UAOs, which could

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[4] The *First Energy* case *supra* is directly on point. The Second Circuit specifically rejected the argument that a later owner could be held liable to clean-up property contaminated during a prior owner's period of ownership merely because the corporate veil could be pierced against the prior owner. The court reasoned that a mere showing of domination by the prior parent is not enough; a plaintiff must also show that "such domination was used to commit a fraud or wrong against the plaintiff which resulted in a plaintiff's injury." 766 F.3d at 229 (citation omitted). The actions of a *new* corporate parent could in no way have resulted in a wrong *prior* to the parent acquiring ownership of the subsidiary. As the Second Circuit explained, there is no basis to think that a new parent "was directing the creation of [pollution] at the subsidiaries *prior* to purchasing them." *Id.* Accordingly, the Second Circuit specifically declined "to pierce the corporate veil to hold" the current parent company "responsible for contamination on sites that occurred prior to when" the current parent acquired the subsidiary. *Id.* at 229-30. *Accord Next Millennium Realty, LLC v. Adchem Corp.*, 690 F. App'x 710, 715 (2d Cir. 2017) (noting that piercing the corporate veil in the CERCLA context requires, among other requirements "show[ing] that the domination caused the contamination at the site," and rejecting attempt to pierce the corporate veil); *Bedford Affiliates v. Sills*, 156 F.3d 416, 431 (2d Cir. 1998) (to pierce the corporate veil, a plaintiff must show that the parent's "control was used to commit a wrong that resulted in contamination at the Site").

as a matter of established law only be based on what occurred during Mueller's period of stock ownership, November 26, 1979 to the present.

2. The Absence of Factual Findings Against Mueller in the UAOs Renders Them Invalid. The UAOs do not contain sufficient factual findings that Mueller is liable at the site. The UAOs merely assert in conclusory terms utterly devoid of any facts that Mueller "is liable as a successor" because a PRIOR owner, UV Industries, was supposedly "indirectly liable, under a corporate veil piercing theory, for the acts of its subsidiary," based on unspecified actions by UV Industries that occurred during the period of 1919-1979, before Mueller purchased the stock of USS Lead. UAOs, at 10-11. No supporting legal authority is provided for this unprecedented theory of vicarious liability for the alleged acts of a prior owner, and we have been unable to find any.

EPA also asserts without identifying any evidence or providing an opportunity to respond that Sharon Steel is liable as an "operator" of the Former USS Lead Facility "for some or all of the time between 1979 and 1985." *Id.* However, these assertions are wholly conclusory in nature; they merely state legal conclusions that Mueller is liable rather than providing any meaningful factual findings that support EPA's claim that Mueller is liable at the site. The lack of any factual findings to support its legal conclusions means that the UAOs are invalid as to Mueller on their face. *See, e.g., W.R. Grace & Co. v. EPA*, 261 F.3d 330, 340-42 (3d Cir. 2001) (vacating emergency EPA order because agency failed to provide factual basis in support of conclusion that action was necessary to protect public health); *United States v. Tarkowski*, 248 F.3d 596, 598-99 (7th Cir. 2001) (affirming denial of EPA's requested access order under CERCLA because EPA failed to provide "any factual basis" for its conclusion that contamination at the site presented an imminent and substantial endangerment); *see also Hannah v. Larche*, 363 U.S. 420, 442 (1960) (noting that when agencies adjudicate, "it is imperative that those agencies use the procedures which have traditionally been associated with the judicial process").[5]

The lack of factual findings also violates EPA's own guidance on UAOs, which provides that UAOs "should also state factual information to support the elements of liability alleged. If a PRP is to be included in the order under a 'successor,'[6] 'alter ego,' or other complex liability theory, the *finding of fact section should explain the factual basis to support those theories*." EPA, *Guidance on CERCLA Section 106(a) Unilateral Administrative Orders for Remedial Designs and Remedial Actions* (Mar. 1990), at 17 (emphasis added). Note that the Guidance requires

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[5] The UAOs, which carry the threat of severe monetary damages, do not resemble informal agency adjudication. *Cf. Pension Ben. Guar. Corp. v. LTV Corp.*, 496 U.S. 633, 655 (1990).

[6] While the 1990 Guidance mentions a "successor" theory of liability, EPA's theory at the time that purchasers of assets automatically succeeded to CERCLA liabilities related to the assets they purchase was specifically rejected by the Supreme Court in *United States v. Bestfoods*, 524 U.S. 51 (1998). *See* discussion *infra*.

"findings of fact," not mere assertions of legal conclusions or notice pleading.[7] This EPA Guidance is binding on the agency, unless and until it is changed, and cannot be ignored on an *ad hoc* basis without explanation.[8]

The lack of such factual findings deprives Mueller of any meaningful right to comment on these UAOs, as the Government has failed to provide any factual basis for its conclusory assertions of liability. *See United States v. Nova Scotia Food Prod. Corp.*, 568 F.2d 240, 252 (2d Cir. 1977) ("To suppress meaningful comment by failure to disclose the basic data relied upon is akin to rejecting comment altogether."); *Whitman*, 336 F.3d at 1258-59 (stating that EPA administrative order imposing severe civil penalties would be unconstitutional if regulated party did not have opportunity to present evidence rebutting agency's theory of liability).[9] For these reasons as well as the others indicated in this letter, it is improper to name Mueller as a respondent to the UAOs.

3. No Assumption by Contract of UV Industries' After-Arising CERCLA Liability. As to the claimed status of Mueller as a "successor" to UV Industries, we have previously explained why the Government's successorship by contract theory is wrong as a matter of clear New York law, and we now attach and incorporate that previous correspondence (including the exhibits) by reference. *See* E. Donald Elliott December 29, 2016 and November 6, 2017 Letters. To summarize briefly, Sharon Steel purchased certain assets, including the stock of USS Lead, from UV Industries on November 26, 1979. However, it did not assume by contract or otherwise any liabilities of UV Industries other than debts existing as of the purchase date, which under governing New York law do not include CERCLA response costs, as the statute had not even been enacted yet. *See Grant-Howard Assocs. v. General Housewares Corp.*, 472 N.E.2d 1, 3-4 (N.Y. 1984); *Georgia-Pacific Consumer Prods., LP v. Int'l Paper Co.*, 566 F. Supp. 2d 246, 251 (S.D.N.Y. 2008) ("Courts . . . have regularly held that where a pre-CERCLA contract for sale of assets required a buyer to assume only those liabilities in existence on the date of the sale, the

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[7] Moreover, the bare legal conclusions contained in the UAOs would not even satisfy the pleading requirements set forth by *Ashcroft v. Iqbal*, 556 U.S. 662 (2009), which are far less stringent than the factual findings that need to be made to justify agency action here.

[8] *Allentown Mack Sales & Service, Inc. v. NLRB*, 522 U.S. 359 (1998) ("It is hard to imagine a more violent breach of [the requirement of reasoned decision-making] than applying a rule of primary conduct . . .which is in fact different than the rule or standard formally announced."); *see also* Peter Strauss, *The Rulemaking Continuum*, 41 DUKE L.J. 1463 (1992).

[9] While the Government did provide prior drafts of the UAOs for comment, they did not name Mueller as a respondent and so lacked even the conclusory factual assertions contained in the final UAOs; Mueller therefore has had no meaningful opportunity to comment on the expansive and unsupported theories of liability ascribed to Mueller in the UAOs.

buyer did not assume later-arising CERCLA liabilities.") (collecting cases).[10] The Government has provided no response to our November 6, 2017 letter which describes the binding New York case law that compels this conclusion. As a result, the first basis for Mueller's purported liability recited in the UAOs is incorrect as a matter of law.

4. No Standalone Theory of Successor Liability for Parent Corporations. The UAOs' bald assertion that Mueller is liable as a successor to UV Industries and Sharon Steel, without more, does not establish liability under CERCLA. The Supreme Court specifically rejected a standalone theory of successor liability for parent corporations in *United States v. Bestfoods*, holding that a parent will be derivatively liable under CERCLA "when (but only when) the corporate veil may be pierced." 524 U.S. 51, 63 (1998). *Bestfoods* greatly limited the viability of expansive theories of successor liability, and the Government cannot establish Mueller's liability simply by vaguely referring to Mueller as a successor. *See New York v. Nat'l Serv. Indus., Inc.*, 460 F.3d 201, 207 (2d Cir. 2006) (noting that substantial continuity theory of successor liability "could not stand after *Bestfoods*"); *United States v. General Battery Corp., Inc.*, 423 F.3d 294, 309 (3d Cir. 2005) (noting that courts have rejected more expansive theories of successor liability after *Bestfoods*). Nor do the UAOs even make any attempt to make factual findings that the corporate veil between Mueller and USS Lead can be pierced, which is what would be required for "successor liability" under *Bestfoods*.

5. No Basis for Operator Liability Post-November 1979. The second basis for Mueller's claimed liability asserted in the UAOs is that Sharon Steel operated the site between 1979 and 1985. To begin with, we note that despite repeated requests, the Government has failed to provide any factual basis for this assertion, and the UAOs likewise fail to find any facts that would support this legal conclusion. As noted above, the Government's failure to provide this factual basis has deprived Mueller of any meaningful opportunity to comment on or contest the Government's assertions.

Importantly, the question of whether operator liability may exist is based on "norms of corporate behavior (undisturbed by any CERCLA provision)." *Bestfoods*, 524 U.S. at 71-72. Thus, actions "that involve the facility but are consistent with the parent's investor status, such as monitoring of the subsidiary's performance, supervision of the subsidiary's finance and capital budget decisions, and articulation of general policies and procedures" do not give rise to operator liability. *Id.* Instead, the question is whether the parent had, "in degree and detail," engaged in actions directing the facility that "are eccentric under accepted norms of parental oversight of a subsidiary's facility." *Id.*; *see also Yankee Gas Servs. Co. v. UGI Utilities, Inc.*, 616 F. Supp. 2d 228, 233, 246-47, 256 (D. Conn. 2009) (parent not liable as an operator because record did not reveal anything "eccentric or beyond the norms of corporate behavior" in parent's level of oversight over subsidiary, despite that parent "carefully oversaw" operations of subsidiary, was in "constant and close touch" with subsidiary's management, provided advice

[10] Courts regularly reach this result outside of New York as well. *See, e.g., John S. Boyd Co., Inc. v. Boston Gas Co.*, 992 F.2d 401, 406-07 (1st Cir. 1993); *United States v. Vermont Am. Corp.*, 871 F. Supp. 318 (W.D. Mich. 1994).

and recommendations to subsidiary, set policies and approved subsidiary's budgets, and had overlapping board members and officers), *aff'd*, 428 F. App'x 18 (2d Cir. 2011).

We have found no grounds whatsoever for operator liability during the period of November 26, 1979 to 1985, nor has the Government brought to our attention any such grounds despite our repeated requests that it provide any such information that it may possess. The UAOs are likewise silent in this regard. Hence, Mueller is not a proper PRP to be named on the UAOs.

6. No Disposal by Mueller Itself in Relevant Areas. Additionally, Mueller is not a proper party to be named on the UAOs because it is not a responsible party for the geographic locations covered by the UAOs. *See* 42 U.S.C. § 9607(a). The alleged releases of hazardous substances that are the subject of the UAOs were caused by an act or omission of third parties other than employees or agents of Mueller and with whom Mueller did not have a contractual relationship. *See* 42 U.S.C. § 9607(b).

Very truly yours,

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