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RD/RA WORK PLAN

OU1, Modified Zone 1, USS Lead Superfund Site | East Chicago, Indiana

December 2022

Prepared for:
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List of Acronyms

AMP	Air Monitoring Plan
ARARs	Applicable or Relevant and Appropriate Requirements
Bgs	below ground surface
BMP	Best Management Practices
CD	Consent Decree
CQAP	Construction Quality Assurance Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	Contaminants of Concern
CY	Cubic Yard
DOT	Department of Transportation
ECHA	East Chicago Housing Authority
EPA	U.S. Environmental Protection Agency
ERP	Emergency Response Plan
ESD	Explanation of Significant Differences
FS	Feasibility Study
FSAP	Field Sampling and Analysis Plan
GPS	Global Positioning System
HASP	Health and Safety Plan
HUD	Housing and Urban Development
ICS	Incremental Composite Sampling
IC	Institutional Controls
ICIAP	Institutional Controls Implementation and Assurance Plan
IDA	Industrial Development Advantage of East Chicago, LLC
IDEM	Indiana Department of Environmental Management
mg/kg	micro grams per kilograms
NPDES	National Pollutant Discharge Elimination System
OU	Operable Unit
O&M	Operations & Maintenance
O&M Plan	Operations 7 Maintenance Plan
ppm	parts per million
PC	Project Coordinator
PS	Performance Standards
PRSP	Periodic Review Support Plan
QAPP	Quality Assurance Project Plan
RA	Remedial Action
RAO	Remedial Action Objectives
RAL	Remedial Action Level
RD	Remedial Design
ROD	Record of Decision
RODA	Record of Decision Amendment
RI	Remedial Investigation
RPM	EPA Remedial Project Manager
Site	USS Lead OU1 Modified Zone 1
SMP	Soil Management Plan
SOW	Statement of Work
SPC	State Project Coordinator
T&D	Transportation and Disposal
TODP	Transportation and Off-site Disposal Plan
TCLP	Toxicity Characteristic Leaching Procedure
USS Lead	U.S. Smelter and Lead Refinery, Inc.
WCHC	West Calumet Housing Complex

1.0 Introduction

Verdantas LLC (Verdantas) has prepared this Remedial Design/Remedial Action (RD/RA) Work Plan as the Supervising Contractor on behalf of Industrial Development Advantage of East Chicago, LLC (IDA) "Purchaser" to describe the overall technical approach of the RD/RA for Operable Unit 1 (OU1), Modified Zone 1 of the U.S. Smelter and Lead Refinery, Inc. (USS Lead) Superfund Site located in East Chicago, Indiana. OU1 Modified Zone 1 is defined in Section III of the Administrative Settlement Agreement for Remedial Action by Prospective Purchaser ("Settlement"). For definition purposes throughout this document and the companion OU1 planning documents, the term "Site" is used consistent with the definition in the Settlement to solely refer to "Modified Zone 1" in OU1, as shown on Figure 1. IDA is a real estate developer and the Purchaser as defined in the Settlement Agreement and is responsible for the remedial action at the Site.

This RD/RA Work Plan was prepared to address lead and arsenic contaminated soil exceeding commercial/industrial Remedial Action Levels (RALs) within the upper 12 inches across the Site in accordance with the March 2020 Record of Decision Amendment (RODA). The U.S. Environmental Protection Agency (EPA) Region 5 is the lead agency that will be overseeing the implementation of this RD/RA and the supporting agency is the Indiana Department of Environmental Management (IDEM).

The remedy being implemented includes the actions described in Section VI of the RODA for the Site (Alternate 4A). The remedy generally includes excavation and off-site disposal of contaminated soils that exceed the industrial/commercial performance standards of 800 ppm for lead and 26 ppm for arsenic, down to a maximum depth of 12" below ground surface (bgs). Specific excavation limits and requirements are described in greater detail in Section 2.3.2. The remedy also includes implementation of excavation and backfilling, compliance monitoring and reporting, and implementation and monitoring of Institutional Controls (ICs).

The RD/RA will be performed in accordance with the Settlement requirements, which incorporates the RODA and the Statement of Work (SOW) signed by U.S. Department of Justice on April 7, 2022 as Appendix A. The SOW defines specific response activities and obligations that will guide the preparation of this Work Plan and the execution of the work as described herein.

1.1 Site Location and Description

The Site encompasses the former West Calumet Housing Complex (WCHC), Goodman Park and adjacent utility corridor, generally bound by the former Carrie Gosch School to the north, East 151st Street to the south, McCook Avenue to the east and the Indiana Harbor Canal to the west (referred to as OU1 modified Zone 1). The Site Location is shown on Figure 1 and the Site Map is shown on Figure 2.

1.2 Background

The USS Lead Superfund Site is located in the City of East Chicago, Indiana and was placed on the National Priorities List (NPL) in April 2009. EPA divided the Superfund Site into two Operable Units (OUs). OU1 is a predominantly residential neighborhood, which 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. OU1 has been further subdivided into Zones 1, 2, and 3. OU2 includes the surface and subsurface of the 79-acre former USS Lead facility as well as groundwater beneath OU1 and OU2.

The former Anaconda Lead Products and International Lead Refining Company is included as part of the USS Lead Superfund Site. The former Anaconda Lead Products and International Lead Refining Company occupied the OU1 modified Zone 1 site from at least the early 20th century until the early 1970's. The Anaconda facility operated three inter-related processes. In 1912, a lead refinery was built on the Anaconda facility, which used a pyrometallurgical process to refine lead bullion. In 1919, a white lead plant was constructed at the Anaconda facility to produce white lead for use as an ingredient in lead paint. Finally, in 1922, a zinc oxide plant was added to the Anaconda 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. Byproducts of these operations included slag, lead waste, and arsenic. Significant quantities of lead were refined at the Anaconda facility from 1912 until 1946, when Anaconda Copper Mining Company sold the Anaconda facility to Eagle-Picher Company. Eagle-Picher Company appears to have continued operations at the Anaconda facility until at least 1952, though the extent of its operations is largely unknown. Sometime between 1952 and 1970, the Anaconda facility was demolished.

In the early 1970s, the West Calumet Housing Complex (WCHC) was constructed within the footprint of the former Anaconda facility and was used for multi-family, low-income housing, and recreation until 2018. In 2018, utilities were disconnected and capped, and the WCHC was demolished due to elevated arsenic and lead in soils. Following demolition of the WCHC and surface infrastructure during the summer of 2018, the site no longer contains structures or drives with the exception of a maintenance building and associated parking lot owned by the East Chicago Housing Authority (ECHA) in the east-central portion of the site as well as a tennis/basketball court and asphalt parking lot in Goodman Park. On May 26, 2020, the East Chicago City Council approved rezoning the site to an industrial land use.

1.2.1 Remedial Investigations and Studies

Extensive sampling and limited removal of shallow soils within a limited portion of Modified Zone 1 and within Zones 2 and 3 has been on-going since 2003. Previous investigations are summarized in detail in the June 2012 Remedial Investigation (RI) Report and Feasibility Study (FS) for the USS Lead Superfund Site and the August 2018 FS for the USS Lead Superfund Site OU1 Zone 1 each report prepared by SulTRACT.

Based on investigations between June 2009 and June 2012 and on the corresponding FS, EPA issued its ROD for OU1 on November 30, 2012. The major components of the original remedy chosen in November 2012 called for the excavation of contaminated soils down to two feet, the off-site disposal of the soils in an appropriate landfill, placement of a demarcation barrier, the restoration of the excavated properties, and the imposition of ICs. The 2012 ROD anticipated that hardscapes would remain in-place and soils beneath hardscapes would not be remediated. The RALs established for residential land use are 400 ppm lead and 26 ppm arsenic.

Remedy design work was performed by EPA between November 2014 and April 2016 to determine the extent of contamination in the yards of the individual properties. EPA collected approximately 1,000 soil samples from various depths within Zone 1 and determined that the majority of all WCHC yards required remediation. The findings were provided to ECHA and to the City of East Chicago and the City made a decision recommending relocating the residents from the WCHC. ECHA subsequently applied to HUD for approval and funding to demolish the WCHC in 2016 which was later granted in 2017 by HUD. Based on these developments, EPA implemented interim risk mitigation measures to protect residents. In 2018 the WCHC was demolished. These changes within modified Zone 1 resulted in EPA preparing an addendum to the 2012 FS in 2018 and issue the March 2020 RODA. The RODA only applies to modified Zone 1 of the USS Lead Superfund Site and

only address soil and not groundwater, other than identifying the need for groundwater use restrictions if soil above action levels is left in place at depth at the facility. Based on communications with the City, EPA has concluded it is likely that the end use of modified Zone 1will change from residential to commercial/industrial and the RODA should reflect the possibility of a change in land use. On May 26, 2020, the East Chicago City Council approved rezoning the Site to an industrial land use. To be protective for commercial/industrial usage, all soils within modified Zone 1 above the RALs for lead (800 ppm) and arsenic (26 ppm) will be excavated down to 12 inches bgs and disposed at an appropriate landfill and the areas restored with clean backfill.

In November 2020, Verdantas implemented the Decision Unit Sampling Work Plan for OU1 modified Zone 1. Sampling was based on a Geospatial Sample/Incremental Composite Sampling (ICS) Design with the Site divided into 55 Decision Units as shown on the attached Figure 3. Within each decision unit, sub-sample locations were arrayed in a "five on a die" pattern for compositing five (5) 0.0 to 1.0-foot depth interval sub-samples into a single sample within each decision unit for laboratory analysis of total arsenic and total lead. As the maintenance building and parking lot in the east-central portion of the Site will remain post-development and soil beneath the hardscape materials will not be excavated, the sampling pattern was modified such that sub-samples were collected from existing green space areas in affected decision units per the approved work plan. Triplicate sub-samples were collected within nine (9) of the decision units for statistical evaluation for determining a confidence level. Each composited decision unit sample was also analyzed for TCLP extraction for arsenic and lead to assist with determining the need for on-Site treatment (e.g., stabilization) prior to off-Site disposal, as applicable.

Using the data from the Decision Unit sampling in November 2020, a statistical evaluation of the data was performed by EPA (February 2021) in which a 95% Confidence Interval was calculated using the global variance of the triplicate results. This provides a threshold value where there is 95% confidence that Decision Unit results less than 19 mg/kg for arsenic and 787 mg/kg for lead can be considered less than the RAL of 26 mg/kg for arsenic and 800 mg/kg for lead established in the RODA (EPA, 2020) for commercial/industrial land use (Alternate 4A).

Using the established statistically criteria, 13 Decision Units required no action, 10 Decision Units exceeded for lead only, five Decision Units exceeded for Arsenic only, and 27 Decision Units exceeded for both arsenic and lead. Based on this sampling, a total of 64,570 cubic yards of material to a depth of one foot will be excavated and properly disposed and that 36,228 cubic yards of this amount exceeds the lead threshold of 5 mg/L for characteristically hazardous and will require stabilization prior to excavation and disposal to render the material non-hazardous. An additional, 3,450 cubic yards will be stabilized in two of the decision units that met the statistical criteria for arsenic and lead but exceeded the TCLP threshold for lead.

A complete list of all documents completed for the USS Lead Superfund Site can be found online in the Administrative Records Collection at https://semspub.epa.gov/src/collections/05/AR62604.

1.3 RD/RA Work Plan Purpose and Scope

The purpose of the RD/RA Work Plan is to enable IDA to implement the remedy for soils (Alternative 4A) set forth in the March 2020 RODA and the Explanation of Significant Differences (ESD). This RD/RA Work Plan follows the requirements of the SOW to describe the execution of the OU1, modified Zone 1 RD/RA work, including project planning, selection, site preparation, excavation, disposal, backfilling, revegetation, Institutional Controls and O&M activities. The RD/RA Work Plan also presents information on project organization, contractor selection and schedule.

1.4 RD/RA Objective

The objective of the RD/RA is to reduce lead and arsenic levels in impacted to a maximum depth of one-foot below ground surface (bgs) to acceptable levels for human health risk from exposure to arsenic and lead through ingestion, direct contact, or inhalation exposure pathways; assuming commercial/industrial uses and prevention of the release of contaminants to off-site media.

This RD/RA Work Plan includes the following information pursuant to the SOW:

- Identification and description of all plans necessary for implementing all RD activities identified in the SOW or otherwise required to develop the RD;
- A description of the overall management strategy for performing the RD;
- A description of the potential considerations for guiding the general approach(es) to contracting, construction, operation, maintenance, and monitoring of the RA as necessary to implement the Work;
- A description of responsibility and authority of all organizations and key personnel involved with the development of the RD;
- Descriptions of any areas of the remedy requiring clarification and/or anticipated problems (e.g., areas where additional information is necessary);
- A description of proposed treatability study for treatment of soils to be disposed of off-site that exceed the TCLP test for lead;
- Descriptions of any applicable permitting requirements and other regulatory requirements;
- Description of plans for obtaining access in connection with the RA, such as property acquisition, property leases, and/or easements;
- Description of any pre-construction activities including project staging and associated activities;
- Quality control and testing requirements; and
- List of all supporting deliverables, and a schedule for submittal of each draft deliverable.

2.0 RD/RA Elements, Rationale and Pre-Design Activities

2.1 Project Planning and Pre-Design

Project planning and remedial design tasks include preparation of this RD/RA Work Plan and the associated documents listed in Section 3.3. The planning and design task includes preparation of design documents, along with substantive adherence to environmental and construction permits that would be required if this were not a CERCLA action.

This Work Plan addresses both Remedial Design and Remedial Action. The information herein will serve as the basis of design, supplemented with construction drawings to include the boundary survey, primary features, utility locations, features that will require protection during excavation, excavation limits, haul routes, site controls, erosion and sediment controls, and a proposed grading plan.

2.2 Selected Remedial Action and Performance Standards

The selected remedy specified in the March 2020 RODA for commercial/Industrial land use (Alternate 4A) will serve as the RA for the Site. As detailed in the RODA, the major components of the selected remedy are listed below and described in more detail in Section 2.3.

1. Site Preparation-This component describes the methods to prepare the site for the remedial action.
2. Excavation- This component describes the methods to excavate contaminated soils that exceed the industrial/commercial RALs (787 mg/kg for lead and 19 mg/kg for arsenic) down to a maximum depth of one-foot bgs, surveying limits of excavation, and installation of a demarcation barrier. Note the RALs for arsenic and lead were re-evaluated as part of decision unit sampling described in Section 1.2.1 and were reduced from the RALs presented in the March 2020 RODA, 26 mg/kg (arsenic) and 800 mg/kg (lead).
3. Stabilization of Lead-Impacted Soil- This component describes the selected reagent and concentrations for the treatment of soils that exceed the toxicity characteristic leaching procedure (TCLP) threshold of 5 mg/L for lead and are characteristically hazardous will be handled in accordance with the Treatability Study.
4. Backfilling Excavations- This component describes backfill and restoration procedures and components within excavated areas.
5. Material Handling, Transport and Disposal- This component describes the process for loading and material handling and segregation, re-use of material (e.g., gravel), truck washing, transportation routes, and disposal facility approval and coordination.
6. Institutional Controls- This component describes the institutional controls that will apply to the property, land use restrictions, groundwater use restrictions, etc., notices that contaminants exist on the property.
7. Operations & Maintenance- The component describes the performance monitoring of institutional controls.

Additional remedy elements are spelled out in the RODA and are discussed further in later sections of this report. The implementation of the above noted RA components will conform to the design specifications presented in the Final RD Report.

2.3 Remedial Design/Remedial Action Elements

The following section provides the rationale behind remedial design elements, including site preparation, the extent of excavation and how excavation will be planned to maximize efficiency of production, procedures for identifying and verifying clean fill, waste characterization and disposal strategies, and revegetation procedures.

2.3.1 Site Preparation

Site preparation activities will include:

- Identification of current Site conditions and features that may influence the final location of design components;
- Contractor mobilization including establishment of equipment, import soil stockpile, and material staging areas located proximate to, but outside of, the active work area;
- Installation of Best Management Practices (BMPs) and Storm Water Pollution Prevention Plan (SWP3) controls;
- Set up monitoring system and conduct background air monitoring data during site preparation;
- Clearing and grubbing of vegetation within work areas;
- Construction of access roads and cap deployment stations; and
- Installation of fencing and other site control measures.

2.3.2 Excavation

Excavation is required to remove contaminated soils that exceed the industrial/commercial RALs (800 ppm for lead and 26 ppm for arsenic) down to a maximum depth of one-foot bgs. Based on the results of the previous investigations and Decision Unit sampling, the limits of arsenic and lead impacted soils that will be excavated and disposed off-Site have been defined and clarified during the RD. The design for excavation is anticipated to include the following:

- Defining areas of existing aggregate to be re-used on-Site;
- Defining areas for placement of excavated aggregate for re-use on-Site;
- Defining areas requiring no action;
- Defining areas requiring excavation with no stabilization;
- Defining areas requiring stabilization prior to excavation;
- Determining temporary stormwater management measures to manage storm run-on and run-off and erosion;
- Describing dust and air quality monitoring and dust control measures that will be implemented during the excavation activities including thresholds and mitigation measures;
- Identifying requirements for placement of demarcation barrier prior to backfilling; and
- Pre- and post-excavation surveying requirements.

2.3.3 Stabilization of Lead-Impacted Material

In-situ treatment to chemically stabilize soils that exceed the toxicity characteristic (TC) threshold of 5 mg/L for lead will be necessary to meet off-Site disposal requirements. The design for stabilization is anticipated to include:

- Completing lead treatability study to determine property mixture and stabilization reagent;
- Identifying *in-situ* techniques to stabilize soil;

- Identifying requirements for confirmation sampling following stabilization;
- Defining requirements to verify that the stabilized soils are no longer characteristically hazardous; and
- Implementing dust and air quality monitoring and dust control measures that will be implemented during the stabilization activities.

2.3.4 Backfilling of Excavations

After arsenic and/or lead is excavated from the defined areas, the excavations will be backfilled and graded in accordance with the design. The design for backfilling the excavations is anticipated to include the following:

- Conceptual plan for backfilling operations including timing and sequencing of backfill; materials to be placed during backfilling, laydown area(s) for stockpiling backfill materials, etc.;
- Requirements for demarcation barrier;
- Placement and compaction requirements for backfill materials including maximum lift thicknesses and minimum compaction requirements;
- Requirements for imported backfill materials and potential borrow sources(s) and testing; and
- Requirements for topsoil cover where required and seeding.

2.3.5 Material Handling, Transport and Disposal

Excavated material will be processed for transportation to off-Site location(s) for disposal. Existing Aggregate base from former roadways or structures will be removed and stockpiled on site for re-use during future development below hardscape surfaces. The RD for material handling, segregation, transportation, and disposal is anticipated to include the following:

- Describing mechanism for loading soils for transportation to off-Site location(s) for disposal;
- Describe mechanisms for removal of aggregate base and stockpiling for reuse onsite;
- Evaluating the rate at which excavated materials can be managed that will be used in developing the operations and sequencing of excavation and backfilling activities;
- Describing requirements for containment of excavated materials, loading/unloading of trucks and loading and unloading areas;
- Describing requirements for truck washing prior to departing Site;
- Identifying applicable DOT transportation requirements for transporting soils to off-Site disposal facilities. This include evaluating available options for transportation, alternate roads, entrance, and exit to access Site); and shipping routes; and
- Identifying off-Site disposal facilities criteria and requirements. This will include evaluating material testing requirements prior to shipment of waste to the disposal facilities.

2.3.6 Institutional Controls

An Institutional Control Implementation and Assurance Plan (ICIAP) will be developed as part of RD efforts, as discussed in Section 3.3.11. ICs in the form of a restricted covenant to restrict land use to commercial/industrial purposes, restrict groundwater use, and language to notified future prospective owners that contaminated soil exists below one foot. Data gaps associated with implementation of ICs include:

- Boundary surveys of land subject to institutional controls; and
- Surveys of any engineering controls (i.e., hardscape surfaces).

2.3.7 Operation and Maintenance

An Operation and Maintenance (O&M) Plan will be developed as part of RA efforts as discussed in Section 3.3.9. O&M Tasks may include periodic inspections of vegetation until vegetation is full established and monitoring of grass cover and potential erosion areas.

2.4 Pre-Design Investigations

Additional investigations will be performed to collect necessary information to design the RA selected in the RODA. The following investigations will be performed as part of the RD process.

2.4.1 Lead Stabilization Treatability Study

A Lead Treatability Study Work Plan was submitted concurrently with the RD/RA Work Plan under separate cover. The Lead Treatability Work Plan details the study approach, sample collection, sample homogenization, formulation development, analytical testing, and result reporting activities to be conducted as plan of the treatability study.

Composite soil samples were collected in 5-gallon buckets from the top 0 to one foot depth from within Decision Units (DUs) B6, B9, and E9. These samples were shipped to Forgen in Sevierville, TN. The sample material was composited and thoroughly homogenized. The homogenized composite sample was analyzed for total solids, pH, bulk density, total lead, and TCLP lead.

Portions (~300g) of the homogenized sample were mixed with a variety of reagents known to be effective for the chemical fixation of lead. These reagents will include Portland cement, cement kiln dust, TerraBond TS, magnesium oxide, calcium polysulfide, phosphoric acid, EnviroBlend 20/80, Enviroblend 80/20, and triple superphosphate. Three different reagent/waste addition levels were made for each reagent system. The addition levels were based on the specific chemical and physical properties of the sample material. All formulations were mixed using a planetary mixer operating at 30-40 rpm for 45 to 60 seconds. The treated material from all formulations were allowed to cure overnight. Portions of the treated material from all formulations were subjected to a modified TCLP. The modified TCLP involves extracting 10 g of material in 200 mL of the appropriate TCLP extraction fluid overnight. After extraction, the equilibrium pH of the TCLP extract is determined.

Based on the results from the formulation development testing, formulations were selected for leach testing. The treated material for selected formulations was submitted for full TCLP testing for confirmation. The TCLP extracts were analyzed for arsenic and lead. The performance goal will be TCLP leachable arsenic and lead levels below 4.9 mg/L.

A bench-scale treatability study report was developed identifying results and recommendations. The report will include:

- Study approach,
- Composite characterization data,
- Formulation development information,
- Leach testing results,
- Recommendations for full-scale remediation.

The treatability study evaluated the following reagents:

- Portland Type I/II Cement (Heidelburg)
- Terrabond TS
- Triple Superphosphate

- Enviroblend
- Hydrated Lime (Lhoist)
- Blastex 215

The Treatability Study concluded that Triple Superphosphate was the most effective reagent to meet the performance criteria of TCLP-leachable Pb concentrations < 5.0 mg/L. None of the alkaline-based reagents were able to reduce the TCLP-leachable Pb concentrations below 5.0 mg/L. Based on these results, a mix design of 2% triple superphosphate by dry weight would be recommended for the full-scale treatment. Successful full-scale treatment will require thorough mixing of the TSP and the impacted soil. There are several mixing options available for full-scale treatment including, but not limited to, dozers, excavators, pugmills, scrapers, and tillers. The selected contractor for full-scale treatment will be required to treat at least 100 cubic yards of impacted soil in Decision Units B6, B9, and E9 and demonstrate successful treatment before proceeding with the full-scale treatment.

2.4.2 Baseline Topographic, Decision Unit and Utility Survey

Land surveying will be performed by a Professional Land Surveyor licensed in the State of Indiana to establish survey controls and conduct a topographic survey, including current surface elevations, aggregate roadway and former building pads, Decision Unit and Site boundaries. Utility locations will be identified in order to help develop the excavation plan/sequence, as well as to determine how best to protect the utilities and other features to remain during the excavation and restoration activities. Utility information will be obtained from publicly available existing drawings. In addition, the Indiana 811 service will be contacted to mark the location of all recorded public utilities servicing the property.

2.5 Attainment of ARARs and Substantive Permit Requirements

CERCLA provides that no Federal, State, or local permit is required for the portion of any response action conducted on-site but requires that the substantive requirements that would be contained in a permit must be satisfied. This section outlines the specific statutes or regulations for which a permit would be required but for the CERCLA permit exemption and describes how the substantive requirements that would otherwise be established in such permits will be satisfied as the remedy is designed and implemented.

Without the CERCLA permit exemption, a project involving the activities required to implement the OU1 Modified Zone 1 RA would typically be required to obtain permits for erosion and sediment control, and stormwater discharge/management and any required local or state construction permitting. Substantive requirements that would be contained in a permit will be addressed and adhered to during RA activities as detailed in the Preliminary Design.

3.0 RD and Supporting RD/RA Project Plans

3.1 Introduction

This section outlines the RD and also summarizes the RD/RA project plans that are required pursuant to the SOW that supplement and support this RD/RA Work Plan, provides the framework of each plan.,.

3.2 Remedial Design Submittals

The design deliverables that will be submitted to EPA are listed below. These design submittals and their scope will be consistent with the SOW. These deliverables will be submitted to the EPA in accordance with the RD schedule included in Table 1.

3.2.1 Preliminary (30%) RD

Preliminary excavation drawings and specifications will be based on the November 2020 Decision Unit sampling results as well as information obtained from the pre-design topographic survey and treatability study. Based on the RALs established following the Decision Unit sampling and a review of TCLP data, no action is required for 11 Decision Units while the remaining 44 Decision Units require soil excavation and off-Site disposal. Stabilization of soils due to TCLP lead exceedances is required in 24 Decision Units of the 44

When the Preliminary Design is at 30 percent of the overall design effort, the existing conditions of the Site will be field verified, as necessary, and the technical requirements of the RA will be outlined so that they may be reviewed to determine if the final design will provide an effective remedy.

The Preliminary RD will include:

- A design criteria report in accordance with USEPAs *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995);
- Preliminary drawings and specifications.
- An outline of the required drawings, including but not limited to preliminary sketches and layouts of the area in which the remedial activity will be completed, descriptions of conceptual aspects of the design, and unit processes. In addition, an outline of the required specifications, including Performance Standards, and ARARs.
- Descriptions of permit requirements.
- A plan for ensuring that all remedial activities 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 Work meet the substantive requirements of all applicable federal and state laws and regulations described in Section 2.5 of this RD Work Plan will be submitted.
- A preliminary O&M Plan;
- Lead treatability work plan; and
- A description of monitoring and control measures to be implemented during the RA, including air monitoring and dust suppression, to protect human health and the environment.
- A description of procedures for assessing and approving backfill sources for imported soils.

3.2.2 Pre-Final (95%) RD

The Pre-Final (95%) RD will be a continuation and expansion of the Preliminary (30%) RD and will address EPA's comments regarding the Preliminary (30%) RD. The Pre-Final (95%) RD will include:

- A complete set of construction drawings and specifications that are: (i) certified by a registered professional engineer licensed in the State of Indiana; and (ii) suitable for construction;
- A survey and engineering drawings showing existing Property features, such as elements, property borders, easements, and Property conditions;
- Pre-Final versions of the same elements and deliverables as are required for the Preliminary RD;
- A specification for photographic documentation of the RA; and
- Updates of all supporting deliverables.

3.2.3 Final (100%) RD.

A draft Final (100%) RD will be submitted to EPA for final review and approval. It will address EPA's comments on the Pre-final (95%) RD and will include draft final versions of all RD deliverables. Following EPA's final review, the Final (100%) RD will be submitted. The Final (100%) RD will include certification of the design, including all drawings and specifications, by an Indiana registered professional engineer for formal acceptance by EPA.

3.2.4 Soil Management Plan (SMP)

A Soil Management Plan (SMP) will be prepared that describes the measures to be used to control dust emissions during the construction of the proposed warehouse that will be conducted separate from the remedy as part of another scope. In addition, former utilities may be encountered from the demolished WCHC and demolition debris from the former smelter. The SMP shall also describe how these materials will be handled during the building construction.

3.3 Supporting Documentation

The SOW requires the following plans be developed in conjunction with this RD/RA Work Plan to guide the execution of the OU1 modified Zone 1 RD/RA work. A brief description of each plan element and how it relates to this RD/RA Work Plan is provided below. Work Plans will be submitted in accordance with the schedule outline in Table 1.

3.3.1 Health and Safety Plan (HASP)

The Health and Safety Plan (HASP) will be developed in accordance with Occupational Safety and Health Administration (OSHA) requirements under (OSHA) 29 CFR 1910.120 that provides a general description of the levels of personal protection and safe operating guidelines expected of each employee associated with the RD/RA. The HASP also identifies chemical and physical hazards known to be associated with the Site. All work will be performed in accordance with the HASP, all personnel working on the Site will have read and will be familiar with the HASP, and a Site Safety Officer (SSO) will be on-site full-time during execution of the work. We note that HASPs are intended to be dynamic documents addressing worker health and safety, revised as necessary as specific activities are added or modified. Subsequent revisions will not be submitted to EPA for review but will be available on-site during field activities for consultation. The remediation contractor shall be responsible for developing their own HASP which will be consistent with the Verdantas HASP.

3.3.2 Field Sampling and Analysis Plan (FSAP)

The Field Sampling and Analysis Plan (FSAP) will address all sample collection and analysis during the RD investigations and subsequent RA. The anticipated field sampling to be performed under the RD and RA consists of the following activities:

- Sampling and analysis of soils following stabilization for the purposes of demonstrating soils are no longer characteristically hazardous for lead;
- Sampling and analysis of imported fill to assure that all imported materials meet the clean fill standards as required by the Settlement, to include both clean fill and topsoil.
- Air sampling as defined in the Air Monitoring Plan.

3.3.3 Quality Assurance Project Plan (QAPP)

The existing Quality Assurance Project Plan (QAPP) developed and approved by EPA for the Decision Unit Sampling in 2020 will be used as a template to address confirmation sampling of soils following stabilization, air monitoring sample collection and analysis and data handling, and sampling of backfill sources for import related to the RA Work.

3.3.4 Air Monitoring Plan

Air monitoring will be discussed in the HASP, AMP, QAPP and FSAP. In general, the AMP will outline the air monitoring program to protect the public and workers on the Site from dust and airborne particulate containing arsenic and lead.

3.3.5 Construction Quality Assurance Plan (CQAP)

A Construction Quality Assurance Plan (CQAP) will be developed, in accordance with EPA guidelines, to describe the approach to quality assurance and the measures to be taken to determine compliance with plans and specifications through tests and systems of inspection during construction activities. Construction Quality Assurance (CQA) is defined as a planned system of activities that ensures that the remedy is constructed as specified in the design. The system includes inspections, verifications, audits, and evaluations of materials and workmanship necessary to determine and document the quality of the construction elements.

The CQA process will assure that qualified people are monitoring the progress and quality of construction. The process provides an objective overview of project progress and can help identify potential deficiencies or future problem areas during and after construction. The CQAP identifies the personnel involved in construction quality controls, their relationships, and their responsibilities; establishes QC reporting requirements; and requires that any test results, field observations, and as- built plans be compiled into a Final Report to document that construction was completed as designed and the RAOs were met.

The primary quality-controlled aspects of this project include excavation to the required depths and boundaries, transportation and disposal of excavated soils, meeting clean fill specifications, backfilling, appropriate compaction of placed soils, proper grading and revegetation, and documenting excavation limits and any remaining contaminated areas. The CQAP describes each of these elements, with sampling and inspection procedures to ensure that each element is executed as intended, with corrective actions when necessary.

3.3.6 Emergency Response Plan (ERP)

The Emergency Response Plan (ERP) will be prepared to outline the procedures to be used in the event of an accident or emergency at the Site. The ERP shall include:

- Name of the person or entity responsible for responding in the event of an emergency

incident;
- If applicable, 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;
- 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;
- Notification activities in accordance with Paragraph 3.9(b) of the SOW Release Reporting) in the event of a release of hazardous substances requiring reporting under CERCLA § 103 and/or EPCRA § 304; and
- A description of all necessary actions to ensure compliance with Paragraph 3.9 (Emergency Response and Reporting) of the SOW in the event of an occurrence during the performance of the activities required by this SOW that causes or threatens a release of Waste Material from the Property that constitutes an emergency or may present an immediate threat to public health or welfare or the environment.

3.3.7 Transportation and Off-Site Disposal Plan (TODP)

The Transportation and Off-Site Disposal Plan (TODP) describes plans to ensure compliance with Paragraph 3.10 in the SOW (Off-Site Shipments). The TODP shall include:

- Proposed routes for off-site shipment of Waste Material;
- Identification of communities potentially affected by shipment of Waste Material; and
- Description of plans to minimize potential impacts on affected communities.

3.3.8 Operations &Maintenance Plan (O&M Plan)

The Operations & Maintenance Plan (O&M Plan) describes the requirements for inspecting, operating, and maintaining the RA. The O&M plan shall be developed in accordance with Guidance for Management of Superfund Remedies in Post Construction, OLEM 9200.3-105 (Feb. 2017) and include the following additional requirements:

- A description of Performance Standards (PS) required to be met to implement the remedy selected in the Amended ROD and Explanation of Significant Differences;
- A description of activities to be performed: (a) to provide confidence that the PS will be met; and (b) to determine whether PS have been met;
- A description of records and reports that will be generated during O&M, such as daily operating logs, laboratory records, records of operating costs, reports regarding emergencies, personnel and maintenance records, monitoring reports, and monthly and annual reports to EPA and the State;
- Description of corrective action in case of systems failure, including: (a) alternative procedures to prevent the release or threatened release of Waste Material which may endanger public health and the environment or may cause a failure to achieve PS; (b) analysis of vulnerability and additional resource requirements should a failure occur; (c) notification and reporting requirements should O&M systems fail or be in danger of imminent failure; and (d) community notification requirements; and
- Description of corrective action to be implemented in the event that PS are not achieved; and a schedule for implementing these corrective actions.

3.3.9 Groundwater Monitoring Well Abandonment and Installation Plan

The Groundwater Monitoring Well Abandonment and Installation Plan describes the steps to be taken to abandon existing groundwater monitoring wells impacted by the RA and to reinstall groundwater monitoring wells at the conclusion of the O&M.

3.3.10 Institutional Controls Implementation and Assurance Plan (ICIAP)

This Institutional Controls Implementation and Assurance Plan (ICIAP) will document the institutional control (IC) activities that will be implemented, maintained, and enforced at OU1, Modified Zone 1, and the parties that will conduct these activities. Institutional controls will include restricting land use to commercial/industrial, prohibiting the potable use of groundwater or otherwise, and language to notify future prospective owners that contaminated soil exists below one foot. This ICIAP addresses the ICs to help ensure that the OU1 Modified Zone 1 remedy, selected by EPA in accordance with the Record of Decision Amendment (RODA) for the site [EPA, 2020] continues to function as intended. The ICIAP must include the following additional requirements:

- Locations of recorded real property interests (e.g., easements, liens) and resource interests in the property that may affect ICs (e.g., surface, mineral, and water rights) including accurate mapping and geographic information system (GIS) coordinates of such interests; and
- Legal descriptions and survey maps that are prepared according to current American Land Title Association (ALTA) Survey guidelines and certified by a licensed surveyor.).
- The ICIAP should set forth a list of land, water, or other resource use restrictions
- Prohibiting certain activities which could interfere with any remedial action.
- Prohibiting use of groundwater, potable or otherwise
- Prohibiting activities which could result in exposure to contaminants in subsurface soils and groundwater;
- Ensuring that any new structures on the Property will not be constructed in a manner which could interfere with the Remedial Action or any other response action; and
- Ensuring that any new structures on the Property will be constructed in a manner, which will minimize potential risk of inhalation of contaminants including lead and arsenic.

3.3.11 Remedial Action (RA) Completion Report

The RA Completion report will be prepared within 14 days following RA Completion Inspection in accordance with 3.11 (b) of the SOW requesting EPA's Certification of RA Completion. The RA Completion Report will: (1) include certifications by a registered professional engineer licensed in the State of Indiana and by Client's Project Coordinator that the RA is complete; (2) include as-built drawings for the remedy signed and stamped by a registered professional engineer; (3) be prepared in accordance with Chapter 2 (Remedial Action Completion) of EPA's *Close Out Procedures for NPL Sites* guidance (May 2011), as supplemented by *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017); and (4) be certified in accordance with Paragraph 5.5 (Certification) of the SOW.

4.0 Project Organization

4.1 Project Team Members

The RD/RA activities will be performed and managed by Verdantas on behalf of IDA. A preliminary project organization showing major project team members for the RD and RA is presented on Figure 4. Project team members are defined below. Names of personnel and companies will be placed on the organization chart after all project team members are selected.

4.1.1 Regulatory Agencies

The regulatory agencies for the RD/RA are EPA and Indiana Department of Environmental Management (IDEM).

4.1.2 Local Authorities

Local authorities include the police, fire, and emergency response personnel and public officials for City of East Chicago.

4.1.3 Property Owners

The owners of the property where the RA work will be performed include the following:

- IDA
- East Chicago Housing Authority

4.1.4 Community Relations

IDA has retained Global Consulting Solutions to conduct community relations.

4.1.5 Supervising Contractor

The Supervising Contractor is Verdantas and will be responsible for preparing project deliverables. The Supervising Contractor is responsible for quality assurance oversight, engineering design, technical evaluations, and records management and will assist Global Consulting Solutions in public meetings. IDA will review project deliverables prior to submittal to EPA. EPA will review the RD deliverables and provide additional oversight as necessary.

All lines of communication between the project team members will follow the organizational structure on Figure 4. The EPA Project Coordinator will communicate any comments and instructions directly to IDA's Project Coordinator. In turn, the IDA Project Coordinator will convey these comments and instructions to the Supervising Contractor.

Responsibilities of key project personnel are outlined below.

4.2 Project Management Responsibilities

4.2.1 EPA Remedial Project Manager (RPM)

Mr. Tom Alcamo is the EPA RPM for the RD/RA. Mr. Alcamo is overseeing the implementation of the Settlement and is the primary communication link between EPA and IDA. Mr. Alcamo is responsible for the review and approval of all documents submitted under the Settlement. As the RPM and/or an on-scene coordinator, Mr. Alcamo has the authority to halt, conduct, or direct any work required by this Settlement, or to direct any other response action undertaken at the Site. EPA has designated Karen Kirchner as the alternate RPM for the Site.

4.2.2 State Project Coordinator (SPC)

Mr. Doug Petroff is the IDEM SPC and will be responsible for the review and approval of all documents under the Settlement on behalf of the State of Indiana. The alternate IDEM SPC is Jessica Fliss.

4.2.3 Project Coordinator/Project Manager

IDA, as the Purchaser has designated Dave Mustafaga from Verdantas as the Project Coordinator (PC) who will be responsible for planning, coordinating, monitoring and evaluating project activities and ensuring that each phase of the RD/RA meets the appropriate objectives and quality standards. Dave Mustafaga is also the Project Manager (PM) and perform the functions of both the Project Manager and Project Coordinator and is referred to as the PC throughout this document and the supporting documents. The PC will provide project oversight and will guide project personnel throughout the project. The PC is responsible for disseminating project communications to the IDA and EPA Project Coordinators. The PC will also work with project personnel to resolve technical problems during the course of the project and review technical evaluations, reports, and other work products prior to their issuance.

4.2.4 Alternate Project Coordinator (APC)

Mr. Steve Radel is representing IDA as the Alternate Project Coordinator (APC)and will serve as the primary communication link with EPA and between EPA and the Verdantas Project Team. Mr. Radel's responsibilities include planning and/or approving project strategies, oversight all project activities, reviewing and approving all project deliverables prior to their submittal to EPA, and communicating with stakeholders.

4.2.5 Remedial Design/Remedial Action (RD/RA) Manager

The RD Manager and RA Manager will report to the PC. Laura Page of Verdantas will serve as the RD Manager and will guide project team personnel in completing project tasks assigned to meet the overall project tasks identified in the *RD/RA Work Plan* and supporting documents and preparing the RD. Hien Pham will serve as the RA Manager will be responsible for the supervising and providing support to project engineers and scientists, and/or technicians. The RA Manager will also be responsible for preparing the bid documents, managing the bid process and subcontractor selection process, and managing subcontractors executing RD tasks. The RA Manager will assist the RD Manager with preparation and review of technical reports and project deliverables. Design work will be reviewed and stamped by a professional engineer licensed in the State of Indiana.

4.2.6 Quality Assurance Officer (QAO)

The Project Manager is responsible for assisting the QAO with day-to-day administration of the quality assurance requirements of the project, including the periodic review of documented quality assurance and control procedures associated with long-term monitoring and making revisions to the plans, if needed, to maintain proper QA throughout the investigation. The QAO is Luke Slezak with Verdantas. Specific functions and duties of the QAO are to:

- assist in establishing QA/QC procedures for the project;
- evaluate data quality and maintain QC records;
- provide a communication link between project personnel and the Laboratory ;
- provide periodic QA reports;
- assure corrective actions are taken for deficiencies noted during project activities; and
- conduct periodic review of the documented QA/QC procedures for the long-term monitoring and prepare revisions as necessary.

4.2.7 Community Relations Coordinator

The Community Relations Coordinator will be responsible for performing public relation activities, as needed, during the RD/RA phases of work. IDA has retained Milton Reed with Global Consulting Solutions to conduct community relations.

4.2.8 Health and Safety Officer (HSO)

The HSO will work closely with the PC and RA Manager to ensure that all work is carried out in the safest manner possible. He is responsible for assuring the overall implementation and enforcement of the HASP, accident or incident investigation/reporting, contractor/employee compliance, and similar activities. The HSO will have the authority to stop any phase of the project deemed dangerous to human health and the environment and/or not in substantial compliance with the Verdantas HASP. The currently identified HSO is Mark Zakrzewski with Verdantas.

4.2.9 Laboratory Project Manager

The Laboratory Project Manager will be the primary communications link between the laboratory, including the Laboratory Director and the Laboratory QAO and project data team including the QAO and the PC. The Laboratory PM will be responsible for relating any special needs of the field operations personnel to the laboratory. The Laboratory PM will also provide the final review of all data packages before reporting results. The ALS laboratory contacts are Julienn Williams (Holland, MI) and Bob Nieman (Cincinnati, OH)

4.2.10 Field Operations Coordinator (FOC)

The Field Operations Coordinator (FOC) will be responsible for overseeing the day-to-day conduct of project activities during the RA. Duties and responsibilities of the FOC are to:

- ensure the sampling activities are conducted in a manner that follows the procedures outlined in this RD/RA Work Plan and supporting documents;
- coordinate sampling activities with the technical leads, QAO, and field personnel;
- oversee the use, maintenance, and operation of sampling equipment; and
- report daily activities to the PC and RA Manager.

The FOC will be identified prior to commencement of the RA. Additional project staff, including subcontractors will be identified once selected and added to the organization chart.

5.0 Remedial Action Construction Contractor Selection and Contracting

IDA will select the RA Construction Contractor through a competitive bidding process. Bid documents will be assembled by the Supervising Contractor on behalf of IDA and issued to a minimum of three pre-qualified bidders. Bid proposals from responding bidders will be evaluated and a construction contractor will be selected.

Potential construction contractors will be required to provide information regarding their qualifications with their description on how they would perform the work.

The main criteria for contractor selection are listed below, with no implied order of preference:

- Availability to meet schedule
- Contract terms
- Contractor equipment, construction methods and QC procedures
- Contractor overall qualifications
- Health and safety culture and record
- Insurance and bonding
- Price
- Understanding of the work

5.1 Developing a Contracting Strategy

IDA and Verdantas will work cooperatively with EPA to efficiently complete the RD/RA and identify opportunities to accelerate completion of the project. Potential areas for acceleration may include:

- submitting supporting plans for EPA review prior to EPA's final approval of the RD/RA work plan;
- pre-qualifying subcontractors, preparing bid documents, and conducting bidding prior to EPA's final approval of the RD, subject to updates based on the final RD; and
- initiating Site Preparation activities (as described in the RD/RA Work Plan) while the rest of the design activities are ongoing including construction of temporary access roads and staging areas, importing and staging of approved backfill material, and conducting soil stabilization on a test plot as recommended in the treatability study.

Changes to the schedule to accommodate these types of schedule acceleration activities will be coordinated with EPA.

6.0 Construction Summary and Schedule

6.1 Preliminary RA Schedule

Table 1 is a tentative project schedule has been prepared showing the duration of various tasks that will be triggered by the approval of this RD/RA Work Plan. The task durations correspond to the deadlines specified in the Settlement. It will be replaced by a revised, final RA construction schedule that will be developed by the Construction Contractor and provided at the pre-construction meeting before start of construction.

6.2 Construction Summary and Sequencing

The following sections detail the activities associated with implementing the RA components. The sequencing of construction work is listed here in the general order that the work will be accomplished, but the actual sequence of work activities will be determined by the Contractor once the contract is signed and the Contractor's schedule is received.

6.2.1 Pre-Construction Activities

Prior to or upon finalization of the design documents, including the design drawings and construction specifications, IDA will issue bid packages to prospective bidders for the RA. At the end of the bidding process, IDA will review the bids, interview potential contractors, obtain clarification of issues with the bid, and then select a contractor to receive the RA construction award.

The contractors will be required to provide the following submittals with the bid:

- List all proposed suppliers and subcontractors used in the preparation of the bid.
- Identify the Contractor's key personnel proposed to perform the work on the Site and provide their resumes and work experience. The list shall contain at a minimum the Contractor's project manager, site superintendent, site foreman, and site health and safety officer.
- Include a preliminary Contractor's progress schedule for performance of the work
- Submit a preliminary material handling plan.
- Provide a preliminary amendment to the HASP.

Upon contract award, the Contractor will prepare and submit the following documents:

- Project schedule.
- The material handling plan, which also includes the method statements as presented in Section 01510 - Progress Schedules. It shall include a surface water diversion plan as presented in Section 01080 - Environmental Controls.
- In accordance with Section 01080 - Environmental Controls, the Contractor shall submit prior to the start of work a surface water diversion plan and an air emissions control plan as part of the spill and emission control plan.

In accordance with Section 01070 - Health and Safety Requirements, the Contractor shall submit a HASP amendment. This document shall be complete with Contractor-specific requirements and activity hazard analyses (AHAs) for all tasks to be performed as part of the RA.

The Contractor shall secure all road use permits prior to mobilization.

IDA will hold a pre-project safety analysis (pre-PSA) call as well as a PSA call / meeting prior to the start of field activities for each major work element. The purpose and attendees of this meeting are described in the HASP.

A pre-construction conference will be held after contract award and prior to mobilization.

To save time and accelerate the start of RA work, IDA may use a separate contract to perform most of the tree clearing and grubbing activities. The tree clearing will start about a month before the mobilization of the RA Contractor. The balance of the clearing will be performed by the RA Contractor.

Details such as the proposed staging areas, procedures, methods, equipment, sequence, and schedule to be used for the clearing work are to be included in the material handling plan.

The clearing of trees shall be coordinated with the installation of the sediment and erosion control measures.

Prior to mobilization, the RA contractor is to take pre-construction photographs and video to document the condition of the work areas, ECHA maintenance building and parking lot, and adjacent roadways. These will include but not be limited to East 151st Street and McCook Street sections used to haul materials from the Site to the off-Site disposal facility.

6.2.1.1 Health and Safety

In accordance with the SOW for the project, a site-specific HASP has been prepared based on the best available information regarding the physical and chemical hazards known or suspected to be present at OU1Modified Zone 1. While it is not possible to discover, evaluate, and protect in advance against all possible hazards which may be encountered during the completion of this project, most of the likely hazards can be anticipated and adherence to the requirements of the HASP will significantly reduce the potential for occupational injury.

The HASP provides a general description of the levels of personal protection and safe operating guidelines expected of each employee or subcontractor associated with the environmental services being conducted. HASP supplements will be generated as necessary to address any additional activities or changes in site conditions which may occur during field operations. Once generated, each supplement will be inserted in the master HASP and reviewed/acknowledged by field personnel prior to the start of applicable work activities.

A copy of the site-specific HASP will be maintained on-site and available for review at all times. Field staff will perform all operations in accordance with the applicable HASP unless alternate procedures are presented in the POP.

Through Verdantas' understanding of the SOW and the work practices that will be involved to achieve the safe execution and successful completion of this project, there are four key aspects that must be considered for the safe execution of this project, as detailed in the following subsections.

6.2.1.2 Utility Clearances

Prior to any ground disturbing activities, proper utility clearances must be obtained, verified, and understood by all individuals involved with field activities. The Subcontractor will coordinate utility clearance through the local one-call system (Indiana 811) and a 3rd party utility verification company to ensure that all utilities are identified and properly marked/located in the proposed areas of work prior to initiating any ground-disturbing activities. Verdantas project staff will be

present at all times during utility clearance surveys and will maintain complete oversight and control of all work being performed in OU1 Modified Zone 1.
It is not anticipated that abandoned utility lines will be encountered while performing the excavation activities. In the event that abandoned utility lines are encountered, the contingency plan section of the HASP (Section 9.0) describes how unknown buried lines will be observed and addressed to ensure worker safety and prevent any spills or releases from unknown pipes.

6.2.1.3 Heavy Equipment Operations

Field operations that involve heavy equipment represent a significant risk to ground workers as well as the equipment operators. Heavy equipment may cause serious injury or death during operations as a result of roll-over, contact with ground personnel (crushed-by or struck-by injuries), and contact with overhead or underground utilities. As such, Verdantas has developed a specific SOP outlining the specific concerns associated with heavy equipment operations, including communications, personnel clearances, PPE, utility clearances, operator training, inspection/maintenance of the equipment, and general safe operating procedures.

All aspects of this SOP will be strictly adhered to and an appropriately trained individual designated by Verdantas as a Competent Person for heavy equipment operations and excavation will be on-site at all times during these operations. This Competent Person will have the necessary training and experience to identify existing and predictable hazards and will be authorized to take prompt corrective measures to eliminate them.

6.2.1.4 Excavation Safety

Following the proper precautions associated with safe excavation practices will be essential for the successful completion of this project. Whenever possible, Verdantas will minimize the necessity of employees entering the excavation (e.g., to take measurements, guide equipment, or collect GPS data); however, all excavations will be less than one foot deep in competent soil or sloped adequately enough to protect the well-being and safety of adjacent people, equipment, and/or property. Verdantas has developed an SOP outlining the specific concerns associated with safe excavation and trenching procedures, including utility clearances, protective systems, superimposed loads, weather conditions, and hazardous atmospheres. Copies of relevant Verdantas' SOPs will be maintained on-site with the HASP, and all employees will be familiar with their requirements. In addition, all excavation and associated activities will be performed in accordance with 29 CFR 1926, Subpart P.

6.2.1.5 Dust and Noise Control

An additional concern during the execution of this project is the protection of the public and site workers from the potential negative impacts of dust and noise during excavation, loading, and heavy equipment operations.

The site-specific HASP describes in detail the measures that will be taken to ensure the safety of staff, subcontractors, and the nearby community. The Air Monitoring program described in Section 3.3.5 and in the AMP is designed to provide protection from and control of dust/particulate emissions. Excavation work will be performed in accordance with 29 CFR 1926.62 and performed by 40-hour trained personnel in accordance with HAZWOPER requirements (29 CFR 1910.120) and the site- specific HASP. The March 17, 2021 USEPA Memo identified potential hazards to heavy equipment operators due to inhalation of arsenic and lead-laden particulates; these will also be measured and mitigated in accordance with the AMP.

Ambient construction noise and potential impacts on neighbors also remain a concern during construction activities. Verdantas will perform periodic perimeter noise monitoring as necessary

during construction operations and will implement mitigating engineering controls as required. If necessary, Verdantas will consider coordinating noise-intensive work activities with community driven schedules.

6.3 Excavation of Soil

The independent surveyor shall perform pre-construction surveys to record existing topography and establish survey controls. The surveyor will stake out the excavation areas delineating both the non-hazardous and the high lead areas as shown on Figure 3.

The Contractor must decontaminate all equipment and trucks prior to leaving work areas and or prior to leaving the Site to prevent tracking of contaminated materials between the work areas of the site or offsite. As an alternate approach, the Contractor can prevent contamination of equipment such as trucks.

The soil stabilization treatment areas will require special handling, including preparing the treatment area; treating; sampling; and testing for TCLP lead. Sampling and analytical testing shall be conducted in accordance with the FSAP and QAPP.

The Contractor will excavate the non-hazardous soils requiring off-site disposal and stabilized soils. This activity will include handling, loading, hauling, staging if necessary. The Contractor's material handling plan will define the sequencing of the various areas will be excavated in consideration of prevailing winds (excavating from west to east), north to south, etc. in consideration of ingress egress from the Site. The Contractor is responsible for coordinating the trucks, loading the trucks, and decontaminating the trucks before they leave the site.

Verification that the RD objectives are achieved will be accomplished by performing surveys of the excavation areas at least three times, including:

1. Before the excavation,
2. After the material has been excavated to confirm the required depth of material has been removed to the required limits, and
3. After backfill to confirm the required cover soil has been installed.

These surveys will be performed by an independent surveyor registered in Indiana.

6.4 Excavation Area Restoration

In parallel with the excavation of soils, the contractor will backfill the excavation areas with clean soils from offsite borrow sources.

Excavated areas will be backfilled with approved clean imported material. Imported backfill must be sampled and analyzed in accordance with the FSAP and QAPP, respectively, and meet IDEM residential standards prior to being transported on-site. Approved imported material may be stockpiled in decision units that do not require stabilization or excavation prior to implementation of the remedy. Backfilled areas will be restored with sod, topsoil or seed unless an impermeable surface will be placed over the area within 60 days. Up to six inches of topsoil may be added in areas that will remain as greenspace and require seeding.

6.5 Erosion Control Methods

Temporary Erosion Control: The Contractor shall install, maintain, and if needed, relocate and or repair all soil erosion and sediment control equipment and features detailed in the specifications and on the drawings. These features include silt fence below the excavation. The contractor shall maintain these control measures throughout the site restoration to prevent soil erosion; prevent damage to ground cover and prevent release of contaminants or wastes. Control measures shall be maintained until the vegetation is established as at least a 70% cover.

6.6 Dust Control

The Contractor shall prepare an air emissions control plan as part of a spill and emission control plan. The air emissions control plan will target dust control and control of emission of dust with lead levels that may exceed action levels.

Dust control may include water sprinkling, certain chemical treatments (calcium chloride), or similar methods. Dust control shall be repeated at intervals that will ensure that ground conditions in work areas, areas under active grading, and haul roads do not result in the release of visible dust clouds from the site. The Contractor cannot allow dust or soil emissions to occur from trucks used to transport contaminated materials or soils. The Contractor shall cover the soil in the truck beds to prevent any emissions.

6.7 Air Monitoring

The Supervising Contractor will perform air monitoring in accordance with the AMP at the Site perimeter and real-time air monitoring for dust upgradient and downgradient of the work areas. The purposes of the Supervising Contractor's real-time monitoring will be to:

- Detect risks to offsite personnel and receptors
- Determine if an upgrade (or downgrade) of personnel protective equipment is required while performing onsite work
- Implement engineering controls, protocols, or emergency procedures if the Contractor-established action levels are encountered.

The Supervising Contractor's AMP shall include, at a minimum, any additional air monitoring for dust to be performed by the Supervising Contractor and procedures for the collection of samples from workers within the work area for lead analysis.

All supervisory and safety personnel employed on the site must participate in a health and safety training program that complies with criteria set forth by the Occupational Safety and Health Administration in accordance with 29 *Code of Federal Regulations* (CFR) 1910.120(e). Contractors who are not performing intrusive activities are not required to have 29 CFR 1910.120(e) training but must be working under the oversight of someone who does. All personnel involved in field activities must participate in a medical monitoring program as required by 29 CFR 1910.120(f). Substance abuse testing and background checks is required for all employees working on the Site.

The Supervising Contractor shall designate an individual to be the Site Safety and Health Officer (SSHO). Where appropriate for each work crew, the Supervising Contractor shall designate one person as a health and safety support person. These individuals shall perform activities at their location consistent with the HASP such as air monitoring, decontamination, and safety oversight

on behalf of the SSHO. They shall have appropriate training equivalent to the SSHO in the specific areas for which they have responsibility. They shall report to and be under the supervision of the SSHO.

A pre-PSA hazard identification call will be held, a Project Safety Analysis (PSA) will be prepared, and a PSA call/meeting held for each major work element. These calls/meetings will include the representatives from the Supervising Contractor, and any subcontractors involved in the work element.

6.8 Construction Quality Program

The CQAP describes QC and QA procedures for the RA construction activities for the Site. This plan summarizes the CQ requirements detailed in the specifications and includes the CQA program to ensure the work is performed in accordance with the approved design documents.
Post Construction Submittals

Upon completion of construction, the Contractor is required to submit final record topographical drawings documenting final topography of the backfilled excavation areas. The drawings should include all new drainage structures and all existing structures visible on the surface of the ground or noted on the contract drawings. The Contractor shall submit the results of all testing performed as part of the work and shall provide material certifications and warranties if not already submitted.

6.9 Project Close-Out

The Contractor shall comply with the general conditions of the contract and provide all required submittals before requesting the Supervising Contractor's inspection of the work, or a designated portion of the work, for certification of substantial completion. The Contractor shall perform final cleaning and remove temporary facilities and tools before final closeout.

Once the Supervising Contractor and IDA agree that the construction is complete, IDA will notify the EPA to arrange for a prefinal Inspection. The EPA will perform a walk-through inspection and will advise IDA, who will then advise the Contractor of any outstanding construction items discovered during the walkthrough. Once the Contractor has completed the outstanding work, a final inspection walk-through will be performed.

6.10 Post Construction Monitoring / Operation and Maintenance

Once vegetation is established, the Contractor shall remove temporary erosion controls. The Contractor will be required to periodically inspect vegetation until vegetation is fully established. This condition is defined as at least 70% grass cover. The monitoring of grass cover and potential erosion areas will be addressed in the O&M Plan.

6.11 Schedule for Other Plan Submittals

Table 1 provides a preliminary schedule for submittal of other significant deliverables or completion of other activities associated with RA construction.

7.0 Certification by Project Coordinator

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.

David B. Mustafaga, PG, CPG
Project Coordinator

Table

Estimated Work Plan/Remedial Design Schedule (Accelerated)

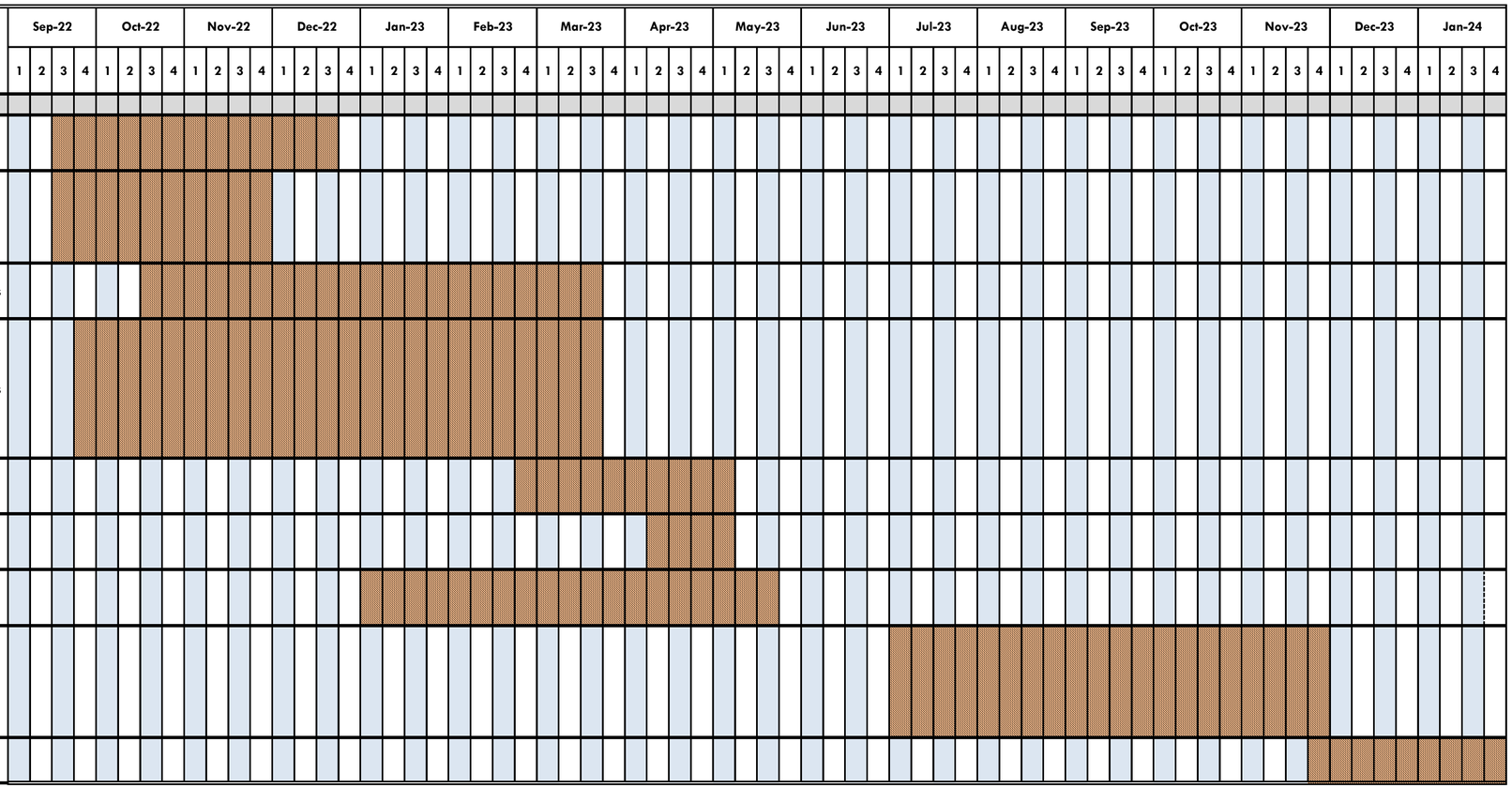
Table 1

USS Lead Superfund Site, Operable Unit 1, Modified Zone 1, East Chicago, Lake County, Indiana

December 2022

EFFECTIVE DATE 9/19/2022

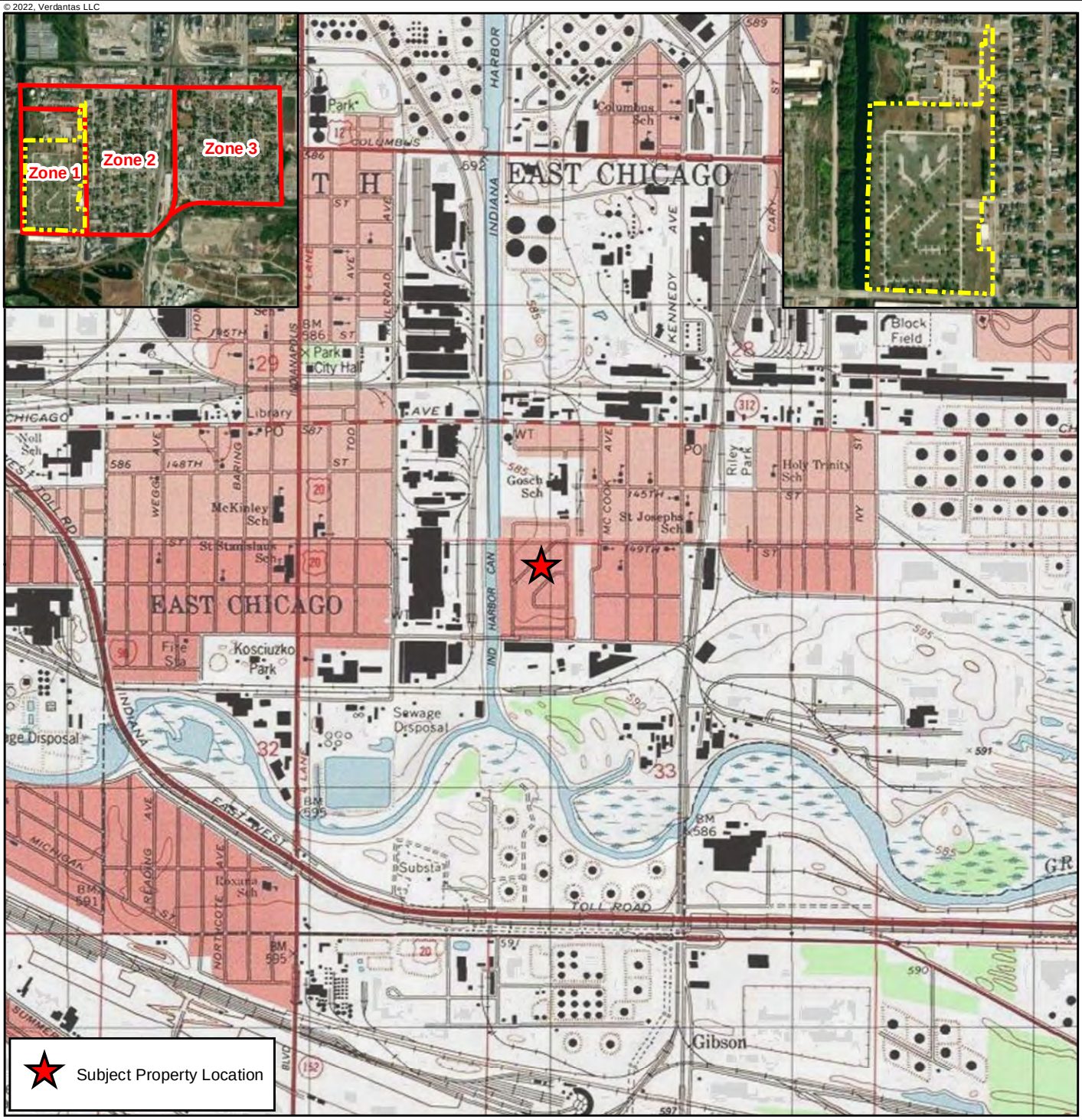
ACTIVITY	Deadline	START	Due Date Initial Draft to Agency[1]	Estimated Max Duration (Days)	Estimated Agency Approval Date	Status
RD/RA Work Plan	60 days after effective date	9/19/2022	11/10/2022	95	1/15/2023	in agency review
Treatability Study Work Plan[2]	30 days after effective date	9/19/2022	10/10/2022	64	11/22/2022	in agency review
Preliminary 30% Design	30 days after approval of RD/RA Work Plan	10/19/2022	1/30/2023	47	3/18/2023	in progress
Supporting Deliverables (Health and Safety Plan, Emergency Response Plan, Field Sampling Plan, QAPP, CQA/QCP, AMP, O&M Plan, TODP, Groundwater Monitoring Well Abandonment and Installation Plan and ICIAP)	30 days after approval of RD/RA Work Plan	9/26/2022	1/30/2023	47	3/18/2023	in progress
Pre-Final (90-95%) RD	30 days after EPA submits comments on 30%	3/18/2023	4/2/2023	30	4/17/2023	
Final (100%) RD	30 days after EPA submits comments on pre-final	4/17/2023	5/1/2023	21	5/8/2023	
Remedial Bid Process[3]	start at 30% design submittal	2/20/2023	NA	90	5/21/2023	
Remedy Implementation	Start in Summer 2023	7/2/2023	NA	150	11/29/2023	
Project Closeout	14 days after RA Completion Inspection	11/29/2023	12/23/2023	60	1/28/2024	

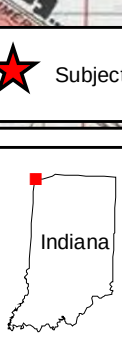


1. Due Date per SOW or for the accelerated schedule this is the estimated date of submission to agency
2. Treatability Work Plan is complete, Treatability Study is complete, not yet approved by agency
3. Includes Bid Notice, Bid Doc Prep, Bid, Award,start of this task may be conducted earlier to obtain updated pricing
4. Remedy implementation would likely shift to Spring 2024 with project closeout in Fall 2024

Modified Schedule showing accelerated completion of Work Plans and bid document prep/bidding process

Figures





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0 1,000 2,000 4,000 Feet

1:24,000

Quadrangles: Whiting and Highland, IN

Source: The topographic map was acquired through the USGS Topographic Map web service.

The aerial photo was acquired through the Esri Imagery Web Service. Aerial photography dated 2020.

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PEOPLE FOCUSED FUTURE

Remedial Design/Remedial Action Work Plan
OU1, Modified Zone 1, USS Lead Superfund Site

Subject Property Location

East Chicago, Lake County, Indiana

Date:
December 2022

File Name:
15773_01_Fig01_SLM.mxd

Edited: 12/7/2022 By: rkaip

Figure
1

Produced Using Esri's ArcGIS Software

0 100 200 400 Feet

1:2,400

PRIVATE ST
VERNON AV
MUNICIPAL DR
148TH ST
MCCOOK AV
149TH ST
149TH PL
150TH ST
151ST PL
151ST ST
MAGNOLIA ST
LARKSPUR ST
JONQUIL LN
ASTER ST
GLADIOLA ST

Former Goodman Park
Former WCHC Area
Indiana Harbor Canal

OU1MW6
OU1MW13
OU1MW14
OU1MW15
ECHA-MW-35
ECHA-MW-09
ECHA-MW-01

Notes:
1) The aerial photo was acquired through the Esri Imagery Web Service. Aerial photography dated 2020.
2) Road names in gray have been vacated and removed.

Property Boundary
Parcel
2019 Remediated Soil Area
Existing Monitoring Wells

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December 2022

Remedial Design/Remedial Action Work Plan
OU1, Modified Zone 1, USS Lead Superfund Site

Subject Property Layout

East Chicago, Lake County, Indiana

Figure 2

Produced Using Esri's ArcGIS Software

File Name: 15773_01_Fig02_SitePlan.mxd

Edited: 12/19/2022 By: rkaip

- Property Boundary
- Decision Unit Grid
- Composite Sampling Location (0.0' - 1.0')
- Waste Disposal Profiling Sample Location
- Triplicate Sampling Locations
- Decision Unit not requiring Excavation
- Decision Unit requiring Excavation and No Stabilization
- Decision Unit requiring Excavation and Stabilization
- Decision Unit not requiring Excavation but Requires Stabilization (exceeds TCLP Lead)

0 100 200 400 Feet

1:2,400

Note:
The aerial photo was acquired through the Esri Imagery Web Service. Aerial photography dated 2020.

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December 2022

Remedial Design/Remedial Action Work Plan
OU1, Modified Zone 1, USS Lead Superfund Site

Remedial Areas Map

East Chicago, Lake County, Indiana

Figure 3

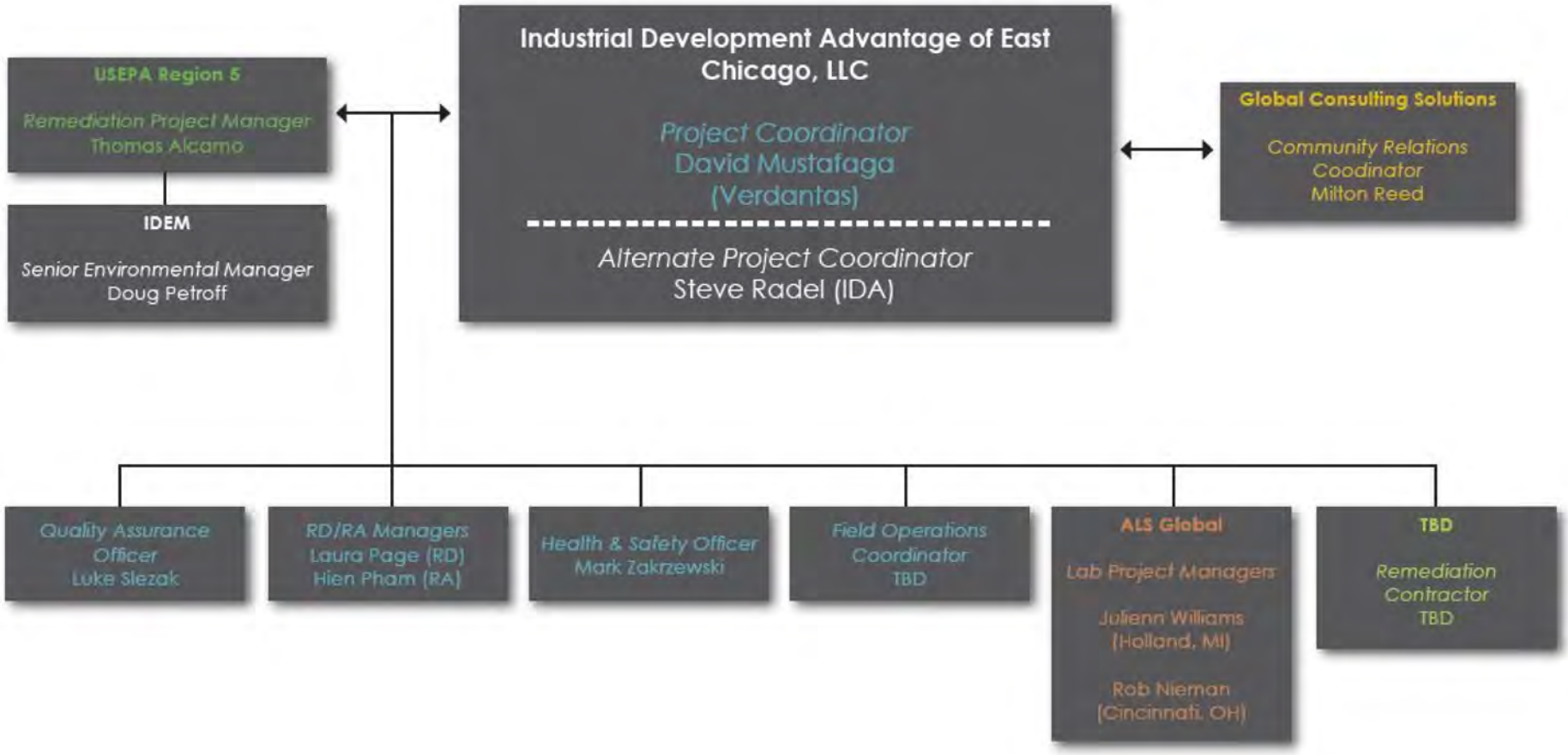
Produced Using Esri's ArcGIS Software

File Name: 15773_01_Fig03_PropSamps.mxd

Edited: 12/6/2022 By: rkaip

Figure 4

Project Organization



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December 2022

Remedial Design/Remedial Action Work Plan
OU1, Modified Zone 1, USS Lead Superfund Site

Project Organization

East Chicago, Lake County, Indiana

Figure 4

Produced Using Esri's ArcGIS Software

File Location: Z:\GIS\Projects\015\0000015773_EastChicago\15773_01_Fig04_OrgChart.mxd Edited: 12/7/2022 User: rkaip

Appendix A

Statement of Work

REMEDIAL DESIGN/REMEDIAL ACTION

STATEMENT OF WORK

USS LEAD SUPERFUND SITE

MODIFIED ZONE 1

EAST CHICAGO, LAKE COUNTY, STATE OF INDIANA

TABLE OF CONTENTS

1. INTRODUCTION

1.1 Purpose of the SOW. This Remedial Design/Remedial Action Statement of Work (SOW) sets forth the procedures and requirements for implementing and ensuring the integrity of the remedy for soils (Alternative 4A) selected by EPA and set forth in the ROD Amendment and an Explanation of Significant Differences.

1.2 Structure of the SOW

- Section 2 (Community Involvement) sets forth EPA's and Purchaser's responsibilities for community involvement.
- Section 3 (Remedial Design/Remedial Action) sets forth the process for developing the RD, which includes the submission of specified primary deliverables, and the requirements regarding the completion of the RA, including primary deliverables related to completion of the RA .
- Section 4 (Reporting) sets forth Purchaser's reporting obligations.
- Section 5 (Deliverables) describes the content of the supporting deliverables and the general requirements regarding Purchaser's submission of, and EPA's review of, approval of, comment on, and/or modification of, the deliverables.
- Section 6 (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 RA.
- Section 7 (State Participation) addresses State participation.
- Section 8 (References) provides a list of references, including URLs.

1.3 The scope of the remedy being implemented by this SOW includes the actions described in Section VI of the ROD Amendment and in an ESD for the area described as Modified Zone 1, which will be conducted on the real property acquired by Purchaser as depicted in Appendix E and described in Appendix D ("Property"). The remedy includes excavation of contaminated soils that exceed the industrial/commercial performance standards of 800 ppm for lead and 26 ppm for arsenic, down to a maximum depth of 12" below ground surface (bgs). Excavated areas will be backfilled with clean material to grade and the backfilled areas will be restored with sod or topsoil and seed unless an impermeable surface will be placed over the excavated area within 60 days. Contaminated soils will be disposed of at a licensed, off-site Subtitle C or Subtitle D landfill, as appropriate. Ex-situ treatment may be required for some soils before disposal. Institutional Controls will also be implemented as set forth in the ROD Amendment and in this SOW.

1.4 The terms used in this SOW that are defined in CERCLA, in regulations promulgated under CERCLA, or in the Administrative Settlement Agreement for Remedial Action and Payment of Response Costs by Prospective Purchaser ("Settlement"), have the meanings

assigned to them in CERCLA, in such regulations, or in the Settlement, except that the term "Paragraph" or "¶" means a paragraph of the SOW, and the term "Section" means a section of the SOW, unless otherwise stated. In the event of conflict between the Settlement and any appendix, including this SOW, the Settlement controls. To the extent any provisions of this SOW are found to conflict or not be consistent with the Settlement, the Settlement shall control.

2. COMMUNITY INVOLVEMENT

2.1 Community Involvement Responsibilities

(a) EPA has the lead responsibility for developing and implementing community involvement activities at the Site. In connection with other work at the Site, EPA developed previously a Community Involvement Plan (CIP). Pursuant to 40 C.F.R. § 300.435(c), EPA will review the existing CIP and determine whether to revise the CIP to describe additional public involvement activities to be undertaken before, during and after the completion of the Work.

(b) If required by the CIP, Purchaser shall participate in community involvement activities, including participation in (1) the preparation of information regarding the Work for dissemination to the public, with consideration given to including mass media and/or Internet notification, and (2) public meetings that may be held or sponsored by EPA to explain activities at or relating to the Property. Purchaser's support of EPA's community involvement activities may include providing online access to initial submissions and updates of deliverables to any Community Advisory Groups or other entities to provide them with a reasonable opportunity for review and comment. EPA may describe Purchaser's responsibilities for community involvement activities in a revised CIP. All community involvement activities conducted by Purchaser at EPA's request are subject to EPA's oversight. Upon EPA's request, Purchaser shall establish a community information repository at or near the Site to house a copy of the administrative record.

(c) Purchaser's CI Coordinator. If requested by EPA, Purchaser shall within 15 days designate and notify EPA of Purchaser's Community Involvement Coordinator ("Purchaser's CI Coordinator"). Purchaser may hire a contractor for this purpose. Purchaser's notice must include the name, title, and qualifications of Purchaser's CI Coordinator. Purchaser's CI Coordinator is responsible for providing support in connection with EPA's community involvement activities. This support includes coordinating with EPA's CI Coordinator to prepare responses to the public's inquiries about the Property.

3. REMEDIAL DESIGN/REMEDIAL ACTION

3.1 RD/RA Work Plan. Purchaser shall submit a Remedial Design (RD)/Remedial Action (RA) Work Plan (RDRAWP) for EPA approval within 60 days of the Effective Date of the Settlement. The goal of the RDRAWP is to enable Purchaser to implement the

remedy for soils (Alternative 4A) set forth in the ROD Amendment and the Explanation of Significant Differences and to manage contaminated soils during the construction of the commercial warehousing facility. The RDRAWP must include:

(a) Plans for implementing all RD activities identified in this SOW, or required by EPA to be conducted to develop the RD;

(b) A description of the overall management strategy for performing the RD, including a proposal for phasing of design and construction;

(c) A description of the proposed general approach to contracting, construction, operation, maintenance, and monitoring of the Remedial Action (RA) as necessary to implement the Work;

(d) A description of the responsibility and authority of all organizations and key personnel involved with the development of the RD;

(e) Descriptions of any areas requiring clarification and/or anticipated problems (e.g., data gaps);

(f) If necessary, a description of any proposed treatability study for treatment of soils to be disposed of off-site that exceed the toxicity characteristic leaching potential (TCLP) test;

(g) Descriptions of any applicable permitting requirements and other regulatory requirements;

(h) Description of plans for obtaining access to perform the RA, such as property acquisition, property leases, and/or easements; and a description of any pre-construction activities including project staging and associated activities;

(i) A description of construction activities including, but not limited to soil excavation and import, transportation, backfilling, grading, and site restoration;

(j) Quality control and testing requirements; and

(k) Reporting and schedules.

3.2 Purchaser shall meet regularly with EPA to discuss design issues as necessary, as directed or determined by EPA.

3.3 Treatability Study (if necessary)

(a) Purchaser shall perform a Treatability Study (TS), if necessary, to determine whether treatment of soils is required prior to off-site disposal.

(b) If it so chooses, Purchaser shall submit a TS Work Plan (TSWP) for EPA approval. Purchaser shall prepare the TSWP in accordance with EPA's *Guide for*

Conducting Treatability Studies under CERCLA, Final (Oct. 1992), as supplemented for RD by the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995).

(c) Following completion of the TS, Purchaser shall submit a TS Evaluation Report for EPA review and approval. The TS Evaluation Report shall set forth the results of and conclusions drawn from the TS.

(d) EPA may require Purchaser to supplement the TS Evaluation Report and/or to perform additional treatability studies.

3.4 Preliminary (30%) RD for the Excavation and Off-site Disposal of Soils. Purchaser shall submit a Preliminary (30%) RD for EPA's comment within 30 days of the Effective Date. The Preliminary RD must include:

(a) A design criteria report, as described in the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995);

(b) Preliminary drawings and specifications;

(c) Descriptions of permit requirements, if applicable;

(d) A preliminary Operation and Maintenance (O&M) Plan

(e) A description of monitoring and control measures to be implemented during the RA, including stormwater, air monitoring and dust suppression, to protect human health and the environment;

(f) Any proposed revisions to the RA Schedule that is set forth in ¶6.3 (RA Schedule); and

(g) Drafts of supporting deliverables required to implement the site remedy as described in ¶ 5.7 (Supporting Deliverables).

3.5 Pre-Final (95%) RD for the Excavation and Off-site Disposal of Soil. Purchaser shall submit the Pre-final (95%) RD for EPA's comment within 30 days of receiving comments from EPA on the Preliminary (30%) RD. The Pre-final RD must be a continuation and expansion of the previous design submittal and must address EPA's comments on the Preliminary RD. The Pre-final RD will serve as the approved Final (100%) RD if EPA approves the Pre-final RD without comments. The Pre-final RD must include:

(a) A complete set of construction drawings and specifications that are: (i) certified by a registered professional engineer licensed in the State of Indiana; and (ii) suitable for procurement;

(b) A survey and engineering drawings showing existing Property features, such as elements, property borders, easements, and Property conditions;

(c) Pre-Final versions of the same elements and deliverables as are required for the Preliminary RD;

(d) A specification for photographic documentation of the RA; and

(e) Updates of all supporting deliverables required along with the Preliminary RD.

3.6 Final (100%) RD. Purchaser shall submit the Final (100%) RD for EPA approval within 30 days of receiving comments from EPA on the Pre-Final (95%) RD. The Final RD must address EPA's comments on the Pre-final RD and must include final versions of all Pre-final RD deliverables.

3.7 Soil Management Plan (SMP). The Purchaser shall develop a Soil Management Plan that describes the measures to be used to control dust emissions during the construction of the warehouse. In addition, the Purchaser may encounter former utilities from the demolished public housing complex and demolition debris from the former smelter. The SMP shall also describe how these materials will be handled during the building construction.

3.8 Meetings and Inspections

(a) **Preconstruction Conference**. Purchaser shall hold a preconstruction conference with EPA and others as directed or approved by EPA and as described in the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995). Purchaser shall prepare minutes of the conference and shall distribute the minutes to all Parties.

(b) **Periodic Meetings**. During the construction portion of the RA, Purchaser shall meet every week with EPA, and others as directed or determined by EPA, to discuss construction issues. Purchaser shall distribute an agenda and list of attendees to all Parties prior to each meeting. Purchaser shall prepare minutes of the meetings and shall distribute the minutes to all Parties.

(c) **Inspections**

(1) EPA, or its representative, and the State may have an on-site presence during the Work. At EPA's or the State's request, the Project Coordinator or other designee shall accompany EPA, or its representative, or the State during inspections.

(2) Purchaser shall provide office space near the Property for EPA personnel, or their representatives, and the State's personnel to perform their oversight duties.

(3) Subject to Section XIII (Dispute Resolution) of the Settlement, upon notification by EPA of any deficiencies during the RA construction, Purchaser shall take all necessary steps to correct the deficiencies and bring the RA construction into compliance with the approved Final RD,

any approved design changes, and/or the approved RDRAWP. Purchaser shall comply with any schedule provided by EPA in its notice of deficiency.

3.9 Emergency Response and Reporting

(a) **Emergency Action**. If any event occurs during performance of the activities required by this SOW that causes or threatens to cause a release of Waste Material on, at, or from the Property and that either constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Purchaser 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 Paragraph 3.9(c)) orally; and (3) take such actions in consultation with the authorized EPA officer 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 SOW.

(b) **Release Reporting**. Upon the occurrence of any event during performance of the activities required by this SOW that requires Purchaser 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, Purchaser shall immediately notify the authorized EPA officer orally.

(c) The "authorized EPA officer" for purposes of immediate oral notifications and consultations under Paragraph 3.9(a) and Paragraph 3.9(b) is the EPA Remedial Project Manager (RPM), the EPA Alternate RPM (if the RPM is unavailable), or the EPA Emergency Response Unit, Region 5 (if neither the RPM nor Alternate RPM is available).

(d) For any event covered by Paragraph 3.9(a) and Paragraph 3.9(b), Purchaser shall: (1) submit within 7 days after the onset of such event 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 Paragraph 3.9 are in addition to the reporting required by CERCLA § 103 and/or EPCRA § 304.

3.10 Off-Site Shipments

(a) Purchaser may ship hazardous substances, pollutants, and contaminants from the Property 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. Purchaser will be deemed to be in compliance with CERCLA § 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if Purchaser obtains 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) Purchaser may ship Waste Material from the Property to an out-of-state waste management facility only if, prior to any out-of-state shipment, Purchaser provides notice to the appropriate state environmental official in the receiving facility's state and to the RPM. 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. Purchaser also shall notify the state environmental official referenced above and the RPM of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-state facility. Purchaser shall provide the notice of an out-of-state shipment after the award of the contract for RA construction and before Purchaser ships the Waste Material.

(c) Purchaser may ship Investigation Derived Waste (IDW) from the Property to an off-Site facility only if Purchaser complies 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 Amended ROD. Wastes shipped off-site to a laboratory for characterization, and RCRA hazardous wastes shipped off-site for treatability studies that meet the requirements for an exemption from RCRA under 40 C.F.R. § 261.4(e) are not subject to 40 C.F.R. § 300.440.

3.11 Certification of RA Completion

(a) **RA Completion Inspection**. The RA is complete for purposes of this Paragraph when it has been fully performed and the Performance Standards have been achieved. Purchaser shall schedule an inspection for the purpose of obtaining from EPA a Certification of RA Completion. The inspection must be attended by Purchaser and EPA and/or their representatives. The State's representatives may also attend any such inspections.

(b) **RA Report**. Within 14 days following the RA Completion Inspection, Purchaser shall submit a RA Report to EPA requesting EPA's Certification of RA Completion. The RA Report must: (1) include certifications by a registered professional engineer licensed in the State of Indiana and by Purchaser's Project Coordinator that the RA is complete; (2) include as-built drawings for the remedy signed and stamped by a registered professional engineer; (3) be prepared in accordance with Chapter 2 (Remedial Action Completion) of EPA's *Close Out Procedures for NPL Sites* guidance (May 2011), as supplemented by *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017); and (4) be certified in accordance with Paragraph 5.5 (Certification).

(c) If EPA concludes that the RA is not complete, EPA shall so notify Purchaser. EPA's notice must include a description of the deficiencies. EPA's notice may include a schedule for addressing such deficiencies or may require Purchaser to

submit a schedule for EPA approval. Subject to Section XIII (Dispute Resolution) of the Settlement, Purchaser shall perform all activities described in the notice of deficiency in accordance with the schedule.

(d) If EPA concludes, based on the initial or any subsequent RA Report requesting Certification of RA Completion, that the RA is complete, EPA shall issue a Certification of RA Completion. This certification will constitute the Certification of RA Completion for purposes of the Settlement.

4. REPORTING

4.1 Progress Reports. Commencing on the 15th day of the month following the Effective Date of the Settlement and until EPA issues the Certification of RA Completion, Purchaser shall submit progress reports to EPA on a monthly basis, or as otherwise requested by EPA. The progress 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 Settlement;

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

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

(d) A description of all activities relating to RA construction that are scheduled for the next six weeks;

(e) An updated RA Schedule, together with information regarding percentage of completion, delays encountered or anticipated that may affect the future schedule for implementation of the RA, 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 Purchaser has proposed or that have been approved by EPA; and

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

4.2 Notice of Progress Report Schedule Changes. If the schedule changes for any activity described in the progress reports, including activities required to be described under Paragraph 4.1(d), Purchaser shall notify EPA of such change at least seven (7) days before performance of the activity.

5. DELIVERABLES

5.1 **Applicability**. Purchaser shall submit deliverables for EPA approval or for EPA comment as specified in the SOW. If neither approval nor comment is specified, the deliverable does not require EPA's approval or comment. Paragraphs 5.2 (In Writing) through 5.4 (Technical Specifications) apply to all deliverables. Paragraph 5.5 (Certification) applies to any deliverable that is required to be certified. Paragraph 5.6 (Approval of Deliverables) applies to any deliverable that is required to be submitted for EPA approval.

5.2 **In Writing**. All deliverables under this SOW must be in writing unless otherwise specified.

5.3 **General Requirements for Deliverables.** All deliverables must be submitted by the deadlines in the RD Schedule or RA Schedule, as applicable. Purchaser shall submit all deliverables to EPA in electronic form specified by the RPM. Technical specifications for sampling and monitoring data and spatial data are addressed in Paragraph 5.4. If requested by EPA, Purchaser shall also provide EPA with paper copies of any deliverable including maps, drawings, or other exhibits that are larger than 8.5" by 11".

5.4 **Technical Specifications.**

(a) Sampling and monitoring data should be submitted in the Region 5 Electronic Data Deliverable (EDD) format and successfully uploaded to the Region 5 EQuIS database. Please use the following resources:

https://www.epa.gov/superfund/region-5-superfund-electronic-data-submission

https://www.epa.gov/superfund/region-5-superfund-electronic-data-submission-documents

(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://www.epa.gov/geospatial/epa-metadata-editor.

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

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

5.5 Certification. All deliverables that require compliance with this Paragraph 5.5 must be signed by Purchaser's Project Coordinator, or other responsible official of Purchaser, 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.

5.6 Approval of Deliverables.

(a) **Initial Submissions**

(1) After review of any deliverable that is required to be submitted for EPA approval under the Settlement or the SOW, EPA shall: (i) approve, in whole or in part, the submission; (ii) approve the submission upon specified conditions; (iii) disapprove the submission, in whole or in part; 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 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 Paragraph 5.6(a) (Initial Submissions), or if required by a notice of approval upon specified conditions under Paragraph 5.6(a), Purchaser shall, within 21 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 Purchaser to correct the deficiencies; or (5) any combination of the foregoing.

(c) **Implementation**. Upon approval, approval upon conditions, or modification by EPA under Paragraph 5.6(a) (Initial Submissions) or Paragraph 5.6(b)

(Resubmissions), of any deliverable, or any portion thereof: (1) such deliverable, or portion thereof, will be incorporated into and enforceable under the Settlement; and (2) Purchaser shall take any action required by such deliverable, or portion thereof. The implementation of any non-deficient portion of a deliverable submitted or resubmitted under Paragraph 6.6(a) or Paragraph 6.6(b) does not relieve Purchaser of any liability for stipulated penalties under Section XV (Stipulated Penalties) of the Settlement.

5.7 **Supporting Deliverables**. Purchaser shall submit at the time it submits the Preliminary Design each of the following supporting deliverables for EPA approval, except as specifically provided. Purchaser shall develop the deliverables in accordance with all applicable regulations, guidance documents, and policies (see Section 8 (References)). Purchaser shall update each of these supporting deliverables as necessary or appropriate during the course of the RA, and/or as requested by EPA.

(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 SOW activities. Purchaser 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 RD activities and should be, as appropriate, updated to cover activities during the RA, and updated to cover activities after RA completion. 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.

(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, etc.). 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 Paragraph 3.9(b) (Release Reporting) in the event of a release of hazardous substances requiring reporting under CERCLA § 103 and/or EPCRA § 304; and

(5) A description of all necessary actions to ensure compliance with Paragraph 3.9 (Emergency Response and Reporting) of the SOW in the event of an occurrence during the performance of the activities required by this SOW that causes or threatens a release of Waste Material from the Property that constitutes an emergency or may present an immediate threat to public health or welfare or the environment.

(c) **Field Sampling Plan**. The Field Sampling Plan (FSP) addresses all sample collection activities. The FSP must be written so that a field sampling team unfamiliar with the project would be able to gather the samples and field information required. Purchaser shall develop the FSP in accordance with previous discussions with EPA's Fields Group.

(d) **Quality Assurance Project Plan**. The Quality Assurance Project Plan (QAPP) augments the FSP and addresses sample analysis and data handling regarding the Work. The QAPP must include a detailed explanation of Purchaser' quality assurance, quality control, and chain of custody procedures for all treatability, design, compliance, and monitoring samples. Purchaser 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 the State and their authorized representative have reasonable access to laboratories used by Purchaser in implementing the Settlement (Purchaser's Labs);

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

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

(5) For Purchaser to provide EPA and the State with notice at least 14 days prior to any sample collection activity;

(6) For Purchaser to provide split samples and/or duplicate samples to EPA and the State upon request;

(7) For EPA and the State to take any additional samples that they deem necessary;

(8) For EPA and the State to provide to Purchaser, upon request, split samples and/or duplicate samples in connection with EPA's and the State's oversight sampling; and

(9) For Purchaser to submit to EPA and the State all sampling and tests results and other data in connection with the implementation of the Settlement.

(e) **Construction Quality Assurance/Quality Control Plan (CQA/QCP)**. The purpose of the Construction Quality Assurance Plan (CQAP) is to describe planned and systemic activities that provide confidence that the RA construction will satisfy all plans, specifications, and related requirements, including quality objectives. The purpose of the Construction Quality Control Plan (CQCP) is to describe the activities to verify that RA construction has satisfied all plans, specifications, and related requirements, including quality objectives. The CQA/QCP must:

(1) Identify, and describe the responsibilities of, the organizations and personnel implementing the CQA/QCP;

(2) Describe the PS required to be met to achieve completion of the RA;

(3) Describe the activities to be performed: (i) to provide confidence that PS will be met; and (ii) to determine whether PS have been met;

(4) Describe verification activities, such as inspections, sampling, testing, monitoring, and production controls, under the CQA/QCP;

(5) Describe industry standards and technical specifications used in implementing the CQA/QCP;

(6) Describe procedures for tracking construction deficiencies from identification through corrective action;

(7) Describe procedures for documenting all CQA/QCP activities; and

(8) Describe procedures for retention of documents and for final storage of documents.

(f) **Air Monitoring Plan (AMP)**. The AMP describes plans to ensure the RA minimizes emissions of fugitive dust and ensures that emissions of fugitive dust do not exceed the airborne screening levels for lead and arsenic established by EPA. EPA has calculated airborne screening levels for lead and arsenic that will

be referenced as the action levels and will be provided to the Purchaser. The Purchaser will upload air monitoring results for lead and arsenic to EPA's webviewer. EPA will provide to Purchaser the format for submittal of the laboratory data. The AMP shall include but not be limited to the following:

(1) A description of the air monitoring methodology including monitoring locations, monitoring equipment, and the location of a relevant metrological station;

(2) An air monitoring schedule;

(3) A description of action levels and response actions to be used to address any exceedances of the action levels;

(4) A description of Quality Control for laboratory and field samples including sample handling;

(5) Forms to be used to implement the Air Monitoring Plan such as Activity Dust Field Log and Weather Observation Field Log;

(g) **Transportation and Off-Site Disposal Plan**. The Transportation and Off-Site Disposal Plan (TODP) describes plans to ensure compliance with Paragraph 3.10 (Off-Site Shipments). The TODP may be a part of the RD/RA Work Plan and must include:

(1) Proposed routes for off-site shipment of Waste Material;

(2) Identification of communities affected by shipment of Waste Material; and

(3) Description of plans to minimize impacts on affected communities.

(h) **O&M Plan**. The O&M Plan describes the requirements for inspecting, operating, and maintaining the RA. Purchaser shall develop the O&M Plan in accordance with *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017). The O&M Plan must include the following additional requirements:

(1) A description of Performance Standards (PS) required to be met to implement the remedy selected in the ROD Amendment and Explanation of Significant Differences;

(2) A description of activities to be performed: (a) to provide confidence that the PS will be met; and (b) to determine whether PS have been met;

(3) A description of records and reports that will be generated during O&M, such as daily operating logs, laboratory records, records of operating costs, reports regarding emergencies, personnel and maintenance records, monitoring reports, and monthly and annual reports to EPA and the State;

(4) Description of corrective action in case of systems failure, including: (a) alternative procedures to prevent the release or threatened release of Waste Material which may endanger public health and the environment or may cause a failure to achieve PS; (b) analysis of vulnerability and additional resource requirements should a failure occur; (c) notification and reporting requirements should O&M systems fail or be in danger of imminent failure; and (d) community notification requirements; and

(5) Description of corrective action to be implemented in the event that PS are not achieved; and a schedule for implementing these corrective actions.

(i) **Groundwater Monitoring Well Abandonment and Installation Plan.** The Groundwater Monitoring Well Abandonment and Installation Plan describes the steps to be taken to abandon existing groundwater monitoring wells and to reinstall groundwater monitoring wells at completion of the RA.

(j) **Institutional Controls Implementation and Assurance Plan**. The Institutional Controls Implementation and Assurance Plan (ICIAP) describes plans to implement, maintain, and enforce the Institutional Controls (ICs) at the Property. Purchaser shall develop the ICIAP in accordance with *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), and *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). The ICIAP must include the following additional requirements:

(1) Locations of recorded real property interests (e.g., easements, liens) and resource interests in the property that may affect ICs (e.g., surface, mineral, and water rights) including accurate mapping and geographic information system (GIS) coordinates of such interests; and

(2) Legal descriptions and survey maps that are prepared according to current American Land Title Association (ALTA) Survey guidelines and certified by a licensed surveyor.).

(3) A list of land, water, or other resource use restrictions applicable to the Property:

(4) Prohibiting certain activities which could interfere with any remedial action;

(5) Prohibiting use of groundwater, potable or otherwise;

(6) Prohibiting activities which could result in exposure to contaminants in subsurface soils and groundwater;

(7) Ensuring that any new structures on the Property will not be constructed in a manner which could interfere with the Remedial Action or any other response action; and

(8) Ensuring that any new structures on the Property will be constructed in a manner which will minimize potential risk of inhalation of contaminants including lead and arsenic.

(k) **Periodic Review Support Plan.** The Periodic Review Support Plan (PRSP) describes plans to support EPA's reviews under Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), and applicable regulations, of whether the RA is protective of human health and the environment.

6. SCHEDULES

6.1 Applicability and Revisions. All deliverables and tasks required under this SOW must be submitted or completed by the deadlines or within the time durations listed in the RD and RA Schedules set forth below. Purchaser may submit proposed revised RD Schedules or RA Schedules for EPA approval. Upon EPA's approval, the revised RD and/or RA Schedules supersede the RD and RA Schedules set forth below, and any previously-approved RD and/or RA Schedules.

6.2 RD Schedule

	Description of Deliverable, Task	**¶ Ref.**	**Deadline**
1	RDRAWP	3.1	60 days after the Effective Date
2	Treatability Study Work Plan (if necessary)	3.3	30 days after Effective Date
3	Preliminary (30%) RD	3.4	30 days after EPA approval of Final RDRAWP
4	Pre-final (95%) RD	3.5	30 days after EPA comments on Preliminary RD
5	Final (100%) RD	3.6	30 days after EPA comments on Pre-final RD
6	Soil Management Plan	3.7	30 days after EPA approval of Final RD/RA Work Plan

6.3 RA Schedule

	Description of Deliverable / Task	¶ Ref.	Deadline
1	Award RA contract		30 days after EPA Notice of Authorization to Proceed with RA
2	Pre-Construction Conference	3.8(a)	15 days after Approval of RAWP
3	Start of Construction		Pursuant to Schedule in RAWP
4	RA Completion Inspection	3.11(a)	10 days after Completion of Work
5	RA Report	3.11(b)	14 days after RA Completion Inspection
6	Periodic Review Support Plan	5.7	4 years after start of RA construction
7	Supporting Deliverables (Health and Safety Plan, Emergency Response Plan, Field Sampling Plan, QAPP, CQA/QCP, AMP, O&M Plan, TODP, Groundwater Monitoring Well Abandonment and Installation Plan and ICIAP)	5.7	Submitted at the time of the Preliminary (30%) RD

7. STATE PARTICIPATION

7.1 **Copies**. Purchaser shall, at any time they send a deliverable to EPA, send a copy of such deliverable to the State. EPA shall, at any time it sends a notice, authorization, approval, disapproval, or certification to Purchaser, send a copy of such document to the State.

7.2 **Review and Comment**. The State will have a reasonable opportunity for review and comment prior to:

(a) Any EPA approval or disapproval under Paragraph 5.6 (Approval of Deliverables) of any deliverables that are required to be submitted for EPA approval; and

(b) EPA's issuance of the Certification of RA Completion under Paragraph 3.11 (Certification of RA Completion).

8. REFERENCES

8.1 The following regulations and guidance documents, among others, apply to the activities required by this SOW. Any item for which a specific URL is not provided below is available on one of the two EPA Web pages listed in Paragraph 8.2:

(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) Guidance for Conducting Remedial Investigations and Feasibility Studies, OSWER 9355.3-01, EPA/540/G-89/004 (Oct. 1988).

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

(e) 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).

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

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

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

(i) Guidance for Conducting Treatability Studies under CERCLA, OSWER 9380.3-10, EPA/540/R-92/071A (Nov. 1992).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(z) Summary of Key Existing EPA CERCLA Policies for Groundwater Restoration, OSWER 9283.1-33 (June 2009).

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

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

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

(dd) Groundwater Road Map: Recommended Process for Restoring Contaminated Groundwater at Superfund Sites, OSWER 9283.1-34 (July 2011).

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

(ff) Construction Specifications Institute's MasterFormat, available from https://www.csiresources.org/home.

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

(hh) 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).

(ii) 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).

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

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

(ll) Guidance for Evaluating Completion of Groundwater Restoration Remedial Actions, OSWER 9355.0-129 (Nov. 2013).

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

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

8.2 A more complete list of regulations and guidance applicable to the Work may be found on the following EPA Web pages:

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

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

For any regulation or guidance referenced in the Settlement or 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 Work only after Purchaser receive notification from EPA of the modification, amendment, or replacement.