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Ms. Jill Groboski, Project Manager
Corrective Action Section, DE-9J
Enforcement and Compliance Assurance Branch
United States Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

April 27, 2007

Re: Revised Interim Measures Workplan for the Lake Shore Foundry Facility
U.S. EPA ID #ILR 000 111 591

Dear Ms. Groboski:

On behalf of Lake Shore Foundry, Deigan and Associates, LLC is submitting a revised Interim Measures Work Plan (IMWP) for the Lake Shore Foundry facility in Waukegan, Lake County, Illinois. This revised IMWP includes responses and revisions resulting from comments noted in U.S. EPA's letter dated 22 February 2007. It also includes a Quality Assurance Project Plan (QAPP) with associated Field Sampling Plan (FSP) and a site-specific Health and Safety Plan (HASP), as requested by USEPA.

Our responses to your comments are provided below:

USEPA General Comment:

In addition, it is important to note that for any corrective measure to be considered as a final remedy, it must meet a set threshold criteria as outline in May 1, 1996 Advance Notice of Proposed Rulemaking (ANPR) (61 FR 19449). They are the following: 1) protect human health and the environment, 2)attain media cleanup standards, 3) control the source of releases so as to reduce or eliminate, to the extent practicable, further releases of hazardous wastes that might pose a threat to human health and the environment, and 4) comply with any applicable standards for management of wastes. This is important to keep in mind as LSF implements the proposed interim measure.

LSF Response: We propose to conduct the interim remedy following the EPA's metals-in-soil presumptive remedy (EPA 540-F-98-054, September 1999). The presumptive remedy for principal threat metals-in-soil waste that is targeted for treatment is Reclamation/Recovery (when feasible) or Immobilization and the presumptive remedy for low-level threat metals-in-soil waste that is not targeted for treatment is containment. By implementing the presumptive remedy, we will ensure that the interim measures will meet the threshold criteria for a final remedy.

U. S. EPA Comments on the Interim Measures Workplan dated January 16, 2007
Lake Shore Foundry

USEPA Comment:

1. There was no Quality Assurance Project Plan (QAPP), Field Sampling Plan, or Site Health and Safety Plan included in the Workplan. These are integral attachments to any workplan. Please refer to the U. S. EPA Region 5 Policy, found at the following website http://www.epa.gov/reg5rcra/ca/quapp.htm for guidance on writing a QAPP.

LSF Response: A QAPP, which includes a Field Sampling Plan, and a HASP has been prepared and is being submitted with the revised Interim Measures Work Plan.

USEPA Comment:

2. EPA approves the subsurface soil clean up goal using Toxicity Characteristic Leaching Procedure (TCLP) value of 5 mg/L as a cleanup goal for the subsurface in this Interim Measure as long as LSF also analyzes for total lead. This will be useful information later on in the investigation since we will need to identify risks to construction/utility workers who may need to access subsurface soils. TCLP analysis will not provide this information.

LSF Response: Subsurface samples will also be analyzed for total lead. This protocol is included in the revised IMWP.

USEPA Comment:

3. In general, there was a limited amount of background information given as to why this Interim Measure focuses only on lead and whether they may be other contaminants of concern at the property and when those will be addressed. Include this information in the Revised Workplan.

LSF Response: The foundry was established in 1900 and produces prototype, short run and high production non-ferrous alloys. Products presently produced by Lake Shore Foundry include brass, bronze & aluminum sand & permanent mold castings. The facility previously manufactured red brass and tin bronze, products which contained lead. Previous investigations by EPA in September 2004 also tested for TCLP arsenic, barium, cadmium, chromium, selenium, and silver. TCLP lead exceeded regulatory limits while the other metals were either not detected or did not exceed regulatory limits. In addition, Interim Measures addressing the lead contamination will result in the removal of other residual contaminants that may be present. Thus, the list of target parameters for this project is limited to analysis of total lead and TCLP lead. This protocol is included in the revised IMWP.

USEPA Comment:

4. It is unclear from the text regarding the use of the sampling grid how the spacing of the grid was chosen. Please provide this information.

LSF Response: The grid shown on Figure 2, Sample Location Map, is a 100 foot by 100 foot sampling grid. The figure has been revised to present a 50 ft by 50 ft grid. The grid is simply used for the purpose of field locating the 20 new sample locations to known reference points. The grid was not relied upon to select sample locations.

USEPA Comment:

5. In the Interim Measures Report of Findings, please include data on the figures and a contour line bounding the extent of contamination with the cleanup levels (ie. the lead PRG for industrial soil of 800 mg/kg for surface soil and the TCLP value of 5 mg/L for subsurface soil). It would also be helpful to include data next to each sample location on a figure.

LSF Response: The requested information will be included in figures presented in the Interim Measures Report of Findings. Data will also be presented on a figure showing sample locations and cleanup levels.

If you need any additional information, please feel free to contact me at 847-623-9356 or via email at gdeigan@deiganassociates.com.

Sincerely,
Deigan & Associates, LLC

Gary J. Deigan
Principal

Enclosure
IMWP w/QAPP/HASP

cc: Lake Shore Foundry

Interim Measures Work Plan

Lake Shore Foundry
653 Market Street
Waukegan, Illinois 60085
Revision: 1

27 April 2007

Prepared by:

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847.623.9356

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1.0 Background and Objective

The objective of this document is to provide an Interim Measure work plan (IMWP) for characterization, delineation, and proper removal of sources of contamination including but not limited to areas where sampling has already shown that the concentration of lead are in excess of regulatory limits at the Lake Shore Foundry (LSF) facility. This IMWP is submitted to USEPA in accordance with the Agreed Consent Order, effective November 17, 2006. The purposes of the Order are to ensure that the risks from the previous releases of hazardous wastes at or near the Facility are known and understood, and to mitigate any potential threats to human health or the environment.

1.2 Previous Investigations

Previous sampling was conducted by the United States Environmental Protection Agency (USEPA) in February 2003 and in September 2004 [Booz Allen Hamilton (BAH), *Trip Report for Soil Sampling Activities, Lake Shore Foundry*, 24 November 2004]. In February 2003, the USEPA and the Illinois Environmental Protection Agency (IEPA) conducted a Compliance Sampling Inspection to determine if any site contamination had occurred which would indicate the release of lead that would render soils or other residues and characteristic hazardous waste under 40CFR 261.24. During the CSI, six samples were collected from areas outside the facility building/structure from the ground surface. Samples were analyzed for Toxicity Characteristic leaching Procedure (TCLP) metals. TCLP Lead concentrations up to 440 mg/L were detected, exceeding the regulatory limit set forth in 40 CFR 261.24 of 5 mg/L.

On September 21, 2004, USEPA, IEPA, and USEPA's contractors performed sampling on LSF property to determine whether the soil was a characteristic hazardous waste based on TCLP metals. The results from ten of the twelve soil samples collected from depths of 3 inches to 2 feet below ground surface (bgs) were above the regulatory limit for lead (5 mg/L), ranging from 1.23 mg/L to 43.2

mg/L (BAH, 2004). The samples were also tested for TCLP arsenic, barium, cadmium, chromium, selenium, and silver, which were either not detected or did not exceed regulatory limits. This sampling and analysis, however, was not sufficient to design a removal plan or adequately quantify the vertical or horizontal extent of soils having elevated TCLP and total lead levels.

1.3 Site Use and Potential Sources of Contamination

The IMWP focuses on determining and defining total and TLCP-lead contamination in soils on the property. The foundry was established in 1900 and produces prototype, short run and high production non-ferrous alloys. Products presently produced by Lake Shore Foundry include brass, bronze & aluminum sand and permanent mold castings. The facility previously manufactured red brass and tin bronze, products which contained lead. Historical land uses surrounding the property have also been heavy industrial.

1.4 Current Site Setting & Conditions

The Site is at 653 Market Street in Waukegan, Lake County, Illinois. The dimensions of the property are approximately 270 feet north-south and 135 feet east-west. The 0.77 acre LSF property contains a single corrugated metal building. The Facility is located on the western shoreline of Lake Michigan. The Elgin, Joliet, and Eastern railroad borders the facility on the west and north sides. Lake Michigan borders the facility on the east side. A City ROW is south of the facility. The ground surface is relatively flat with fill soil covering much of the ground throughout the facility property. The LSF property and adjoining properties have a 100+ year history of heavy industrial uses, including Moen, US Steel, Fansteel/VR Wesson, Waukegan Paint & Lacquer, Diamond Scrap Yard and numerous other factories and warehouses.

Figure 1 shows the location of this property imposed on a 2002 aerial photo.

1.5 Objectives of Environmental Investigation

The objective of this environmental investigation is to obtain the environmental data needed to determine the nature and extent of hazardous levels of lead contamination at the Facility. This information will be used to perform interim measures on the facility.

This IMWP is proposed to:

- Test soil on the facility to determine the extent lead-contaminated soil above the TCLP regulatory limit of 5 mg/L set forth in 40 CFR 261.24;
- Evaluate the levels of total lead measured in soil by comparing the average surface (0 – 6 inch) soil lead concentration to the USEPA Region 9 preliminary remediation goal of 800 mg/kg for a commercial/industrial exposure scenario; and
- Develop an appropriate interim measures removal or treatment plan for the facility to address characteristically hazardous sources of lead contamination.

Previous investigations by EPA in September 2004 tested for TCLP arsenic, barium, cadmium, chromium, lead, selenium, and silver. TCLP lead exceeded regulatory limits while the other metals were either not detected or did not exceed regulatory limits. Interim measures addressing the lead contamination will result in the removal of other residual contaminants that may be present. Thus, the target parameters for this project are limited to total lead and TCLP lead.

2.0 Scope of Investigation

In determining environmental conditions on the project site, a sampling and analysis program (SAP) will be conducted on the property as outlined herein. All field investigative activities will conducted by Deigan and Associates, LLC. Severn Trent Laboratories, Inc. (STL) of University Park, Illinois will be used for laboratory analysis. STL is an IEPA-accredited laboratory. All environmental investigations and laboratory analyses will follow the requirements of the IEPA SRP as described in 35 IAC Part 740 and the IEPA Tiered Approach to Corrective Action Objectives (TACO) as described in 35 IAC Part 742. The accompanying QAPP is also consistent with these IEPA regulations.

2.1 Basis of Investigation

The environmental investigations will include advancing direct-push Geoprobe soil borings and collecting samples of surface and subsurface soil for laboratory analysis and interpretation to determine the extent of TCLP and total lead levels on the facility.

2.2 Sampling & Analysis Plan

Figure 2 presents an overview of the proposed sampling and analysis schematic for the study area. Sample locations (x,y,z coordinates) will be documented using GPS and/or field survey techniques.

A site-wide grid pattern of surface and subsurface borings for soil (see **Figure 2**) will be established using a base grid and a supplemental grid. The base grid will utilize a north-south grid interval of 50 feet and east-west grid interval of 50 feet. The grid is simply utilized as a field reference to locate the 20 new sample locations shown on Figure 2. The grid will also be utilized to return to various field locations and perform off-set sampling for further delineation and as a point of reference for removal work, if necessary. Some sample locations will be inside the grid interval when necessary to delineate potential source areas near the baghouse/cyclone unit. Discrete soil samples will be collected in the 0- to 6-inch

interval and at every two feet in depth, beginning at 6 inches below ground surface (bgs) and continuing to the above the interface of the groundwater/vadose zone. Groundwater on lakefront parcels near the facility has been encountered as shallow as 4 feet below ground surface (bgs), with most encountered at approximately 11 to 14 ft bgs. No soil samples will be obtained at or below the water table. Geoprobe direct push sampling techniques will be utilized using a Bob-cat or truck mounted rig.

Surface (0-6" bgs) samples will be analyzed for total lead. TCLP lead analysis will be performed on surface soil samples if total lead concentrations exceed 100 mg/kg. All subsurface samples (> 6" bgs) will be analyzed for total lead and TCLP lead. Total lead will be analyzed using SW846-Method 6010; TCLP lead will be analyzed using SW-846 Methods 1310/6010.

During the soil delineation, a composite sample of the material that may be subject to excavation and disposal will be collected for analysis of parameters required for waste profiling at the disposal facility(ies). The analytical parameters will be determined by the disposal facilities waste analysis plan and permits. We anticipate working with Veolia in Menominee, Wisconsin and Peoria Disposal Company in Peoria, Illinois to obtain disposal approvals.

2.3 Data Quality Objectives

Sampling protocols and laboratory methods will follow IEPA and USEPA guidelines. Illinois EPA practical quantitation limits (PQLs) established under the Illinois SRP and TACO regulations will be used by the laboratory. PQLs will be based on residential land use. STL will provide all sample containers for this project. All sample containers supplied by STL will have been cleaned according to USEPA standards. A Quality Assurance Project Plan (QAPP), which includes a Field Sampling Plan (FSP) has been prepared for this project and is included in Appendix A. A site-specific Health and Safety Plan (HASP) is provided in Appendix B.

Field precision will be assessed through the collection and analysis of duplicate samples. One duplicate sample will be collected for every 10 analytical samples for soil. At least one duplicate soil sample will be collected for each round of sampling performed. The precision of laboratory analyses will be based upon laboratory matrix spike/matrix spike duplicate (MS/MSD) analyses. Precision is reported as RPD or RSD. MS/MSD analyses will be either at a rate of 1 per 10 samples received by the laboratory or in accordance with laboratory's Standard Operating Procedures (SOPs).

Detailed records of the field activities will be maintained in field books dedicated to the LSF site. Entries will be dated and signed by personnel recording the data and the entries will be made in ink. At a minimum, information recorded in the field books will include documentation of sample locations, sampling times, types of samples collected, weather conditions, and any other information pertinent to the assessment. Each sample will be given a unique sample identified. For example *LSF-SB-02 (6 – 24 in)* illustrates a subsurface soil sample collected from the Lake Shore Foundry site at location 02 at a depth of 6 to 24 inches bgs.

3.0 Interim Measures

Soil with lead contamination in excess of TCLP regulatory thresholds will be excavated and disposed of properly at an off-site disposal facility. The horizontal and vertical excavation limits will be determined from the IM investigation results. If further excavation would undermine the stability of any structure on the property or such removal was demonstrated to be impractical remediation as defined in 35 IAC Part 742.920, other steps will be taken to mitigate potential harm, which could include engineered barriers and institutional control(s) to prevent human exposures to the contaminated soil. The arithmetic average concentration of lead in surface soil (0-6" bgs) will be compared to the USEPA Region 9 industrial PRG of 800 mg/kg. Discrete TCLP lead concentrations will be compared to the TCLP regulatory limit of 5 mg/L set forth in 40 CFR 261.24.

Within the excavation area, an appropriate number of confirmation samples will be collected in accordance with IEPA's guidelines set forth in 35 IAC Title 35 Part 742. One composite sample consisting of four subsamples from each of four quadrants will be collected from the floor of the excavation. If the excavation is greater than 3 feet deep, four discrete sidewall samples will be collected from the center of each wall. The sample collection and analysis will follow procedures detailed in Section 2 of this IMWP. Confirmation samples will be analyzed for TCLP lead. The excavation will be backfilled with clean fill.

4.0 Report of Findings

An IM Investigation Report (IMIR) will be prepared that documents the nature and extent of contamination on the facility. The IMIR will be submitted for USEPA review and comment. At a minimum, the IMIR will include the following:

- Text describing site conditions and potential sources of contamination;
- Text describing field sampling methodologies, analytical results, DQOs, data usability, conclusions and recommendations;
- Figures showing property location, property boundaries, and sampling locations;
- Tables comparing all laboratory data to the TCLP regulatory threshold and Region 9 PRG for lead;
- Figures showing summaries of impacted areas, including data next to each sample location and a contour line bounding the extent of contamination with the cleanup levels (i.e., the lead PRG for industrial soil of 800 mg/kg for surface soil and the TCLP value of 5 mg/L for subsurface soil);
- Tables summarizing QA/QC analytical results;
- Complete laboratory data reports, including copies of all COC records; and
- Copies of soil boring sampling logs.

Upon completion of the IM, an IM completion report will be prepared that documents the removal and associated analysis. At a minimum, the IM completion report document will include the following:

- Text describing site conditions and potential sources of contamination;
- Text describing excavation activities and confirmation sampling methodologies, analytical results;
- Figures showing property location, property boundaries, excavation areas, and confirmation sampling locations and associated data;
- Tables comparing all laboratory data to the TCLP regulatory threshold and Region 9 PRG for lead;
- Tables summarizing QA/QC analytical results;
- Complete laboratory data reports, including copies of all COC records;
- Copies of disposal manifests.

Figures

Figure 1
Site Location Map
Lake Shore Foundry, Inc.
653 Market St., Waukegan, Lake County, IL. 60085

Deigan & Associates, LLC
Environmental Consultants

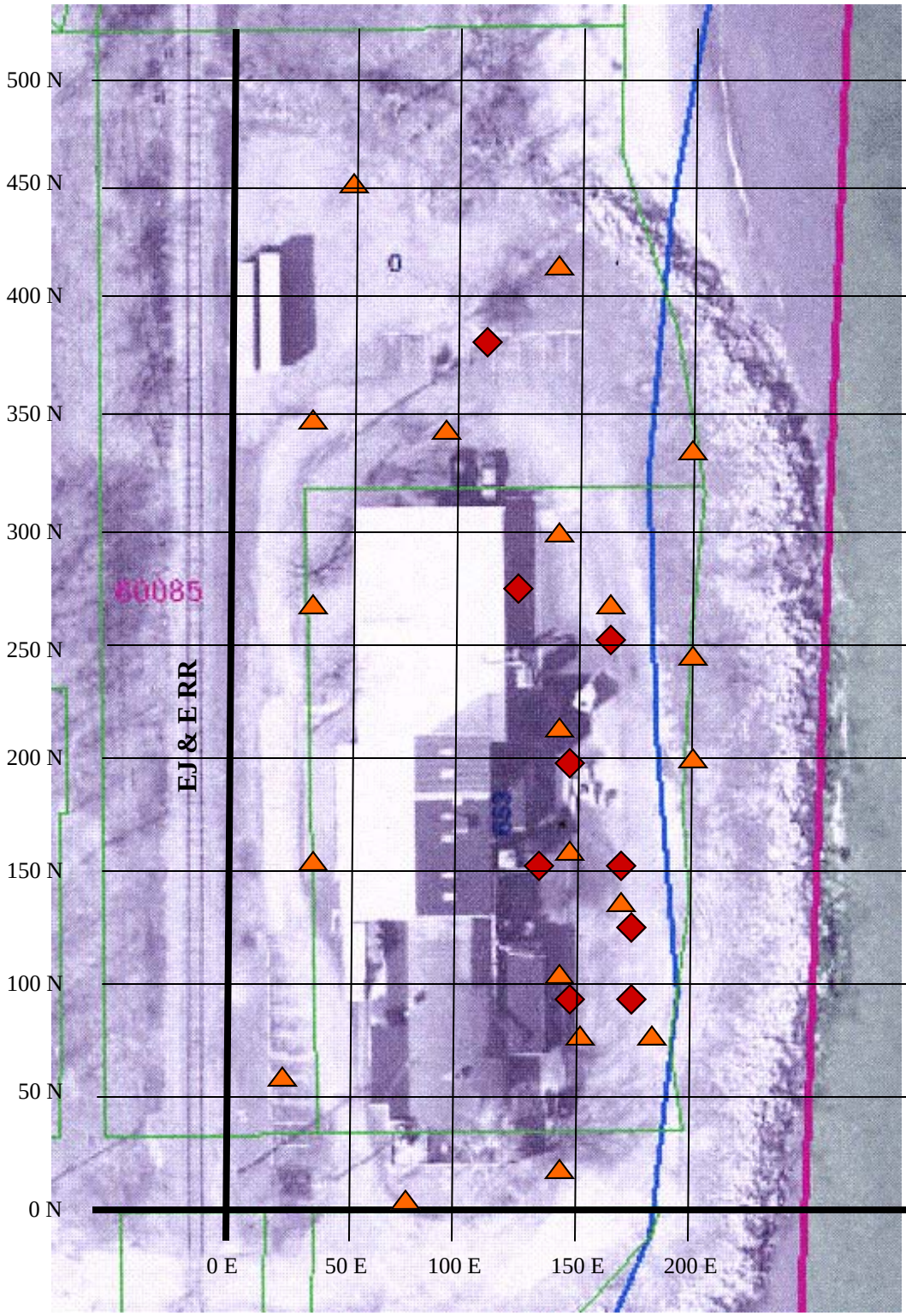

FIGURE 2 SAMPLE LOCATION MAP
Lake Shore Foundry
Waukegan, IL

Sustainable Environmental Solutions
www.deiganassociates.com

Appendix A
Quality Assurance Project Plan