

Health Consultation

RUSTON FOUNDRY

ALEXANDRIA, RAPIDES PARISH, LOUISIANA

EPA FACILITY ID: LAD985185107

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

HEALTH CONSULTATION

RUSTON FOUNDRY

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Prepared by:

Louisiana Department of Health and Hospitals
Office of Public Health/ Section of Environmental Epidemiology and Toxicology
Under a Cooperative Agreement with the
Agency for Toxic Substances and Disease Registry

I. INTRODUCTION

At the request of concerned residents, the Louisiana Department of Health and Hospitals (LDHH), Office of Public Health (OPH)/Section of Environmental Epidemiology and Toxicology (SEET), reviewed the United States Environmental Protection Agency's (EPA's) Record of Decision (ROD) for the Ruston Foundry site located in Alexandria, Rapides Parish, Louisiana. Having reviewed these data, SEET will address residential concerns regarding the proposed remedial actions, along with the chosen remedial alternative and its level of protectiveness to public health. This health consultation will also address community concerns of cleanup levels and the overall protective quality of remedial alternative #4 with regard to human health.

II. Background and Statement of Issues

1. Site History

From 1908 to 1985, the now-inactive and abandoned Ruston Foundry engaged in foundry and machine shop activities and in the manufacturing, prefabrication, and repair of articles of steel, iron and other metals [1]. The Ruston site includes the 4.98-acre Ruston Foundry property and the 1.62-acre Louisiana Pine Products (LPP) property for a total of 6.6 acres.

Located at 1010 Bogan Street, Alexandria, Rapides Parish, Louisiana, the Ruston Foundry site has been classified as a public health hazard. A Ruston Foundry public health assessment includes comprehensive information regarding the public health hazard status [1]. Generally, a site is classified as a public health hazard when (1) evidence exists that exposures have occurred, are occurring, or are likely to occur in the future and (2) exposures to contaminants occur at concentrations which, if continued long-term, can cause adverse health effects [2]. The Ruston Foundry site is classified as a public health hazard because of the likelihood of current and future exposures from lead and antimony-contaminated soils. The ROD summarizes the contaminant concentrations and distributions, and estimates the total volume of waste to be removed from the site [3]. The Baseline Risk Assessment which was completed in March of 2002, estimates the probability and magnitude of potential adverse human health effects from exposure to contaminants associated with the site- assuming no remedial action was taken [4]. It also provides the basis for taking action and identifies the contaminants and exposure pathways that need to be addressed by the remedial action.

2. Statement of Issues

In EPA's ROD for the Ruston Foundry site, remedial alternative #4 has been selected as the preferred remediation method. Alternative # 4, "Stabilization and Off-site Disposal", involves the excavation and segregation of lead and antimony contaminated soils from the hazardous waste foundry material and the building debris. After required confirmation sampling validates that the waste has been adequately segregated, the hazardous waste will be stabilized. Stabilization involves mixing the material with a reagent to physically or chemically bind the metals in the waste material to prevent leaching. During the design, a treatability study will

determine the proper reagent and mixing ratio. After stabilized, materials undergo confirmation sampling for verification purposes. They will be disposed of off site at a Resource Conservation and Recovery Act (RCRA)-regulated Subtitle D facility- together with building debris and the lead and antimony contaminated soil. Excavated areas will be backfilled with clean fill and compacted. Topsoil will be placed over the disturbed area, followed by a layer of natural vegetative cover.

Remedial alternative #5, "Excavation and Off-site Disposal", is similar to alternative #4 with the exception that the hazardous waste foundry material will not be stabilized prior to disposal. Also, the waste will be disposed of at a RCRA-regulated Subtitle C facility, rather than a RCRA-regulated Subtitle D facility as in alternative #4. Subtitle C facilities accept and store hazardous waste materials, while subtitle D facilities are strictly non-hazardous material containing facilities.

Neighboring residents have expressed concerns regarding the level of protection and cleanup provided by remedial alternative #4. According to EPA, this remedial action will serve its intended purpose of reducing the excess non-cancer risk associated with exposure to contaminated soil, as well as the excess risk of exceeding a 10 micrograms per deciliter (ug/dL) blood lead level. It will accomplish this by reducing the concentrations of soil contaminants, specifically lead and antimony, to appropriate target levels based on the Baseline Risk Assessment.

EPA created remedial action objectives (RAOs) for future site reuse for recreational or commercial purposes. Because there are no federal or state cleanup standards for soil contamination, the EPA used the Baseline Risk Assessment to establish the RAO cleanup levels. These objectives, which will be met under remedial alternative # 4, provide long-term protection to human health by reducing the concentrations of the soil contaminated with antimony to 150 mg/kg, or to less than the Louisiana Synthetic Precipitation Leachate Procedure (LA SPLP) of 12 mg/kg, or both. Similarly, the objectives will reduce the concentrations of lead-contaminated soil to 500 mg/kg, or to less than the LA SPLP of 100 mg/kg, or both. The LA SPLP is a procedure which determines whether soil concentrations of contaminants are protective of groundwater. In addition, all asbestos-containing material, the underground storage tank and its contents, and building debris and surrounding contaminated soils will be disposed of off site. The on-site well will be plugged and abandoned, and hazardous waste will be stabilized and disposed of off site in a RCRA facility.

Residents living near the foundry support alternative #5, i.e., complete excavation and off-site disposal of hazardous waste without stabilization- as they believe it is more protective of the public health than alternative #4. Community concerns regarding the protectiveness of the two remedial alternatives will be discussed in the following section.

III. DISCUSSION

To narrow the selection of cleanup alternatives for certain categories of sites in the Superfund program, the EPA has developed presumptive remedies. Based on the soil and contaminant characteristics found at the Ruston Foundry site, EPA has determined that it is appropriate to apply its presumptive remedy for metals in soils [5]. Overall, five remedial alternatives were examined, each being evaluated individually and against each other based upon nine criteria. A brief overview of the remedial alternatives and evaluation criteria will be presented in this health consultation. But a comprehensive discussion is contained in the EPA ROD for the Ruston Foundry site [3]. Categories of remedial alternatives in ascending order- include no action, containment, stabilization and capping, stabilization and off-site disposal, and excavation and off-site disposal. The evaluation criteria for selection of remedial alternatives can be referenced in Appendix A [3].

A. Pathways Analysis

To determine whether nearby residents, trespassers, and/or workers would be exposed to site contaminants during remedial activities, ATSDR and OPH evaluate the environmental and human components that lead to human exposure. The pathway analysis consists of five elements: (1) a source of contamination, (2) transport through an environmental medium, (3) a point of exposure, (4) a route of exposure, and (5) a receptor population.

ATSDR categorizes an exposure pathway as a completed or potential exposure pathway if the exposure pathway cannot be eliminated. Completed pathways require that the five elements exist and indicate that exposure to a contaminant has occurred in the past, is currently occurring, or will occur in the future. Potential pathways, however, require that at least one of the five elements is missing but could exist. Potential pathways indicate that exposure to a contaminant could have occurred in the past, could be occurring now, or could occur in the future. An exposure pathway can be eliminated if at least one of the five elements is missing and will never be present.

B. Evaluation of Possible Exposure Pathways

As previously mentioned, under alternative #4, remediation of on-site soils will be carried out by excavating, stabilizing, and disposing of lead and antimony contaminated soils in a RCRA regulated subtitle D facility. Potential exposure pathways of concern during remediation include inhalation of dust and/or particulate matter, ingestion of contaminated soil and soil dusts, and skin contact with soil contaminants by on-site workers, on-site trespassers, and/or nearby residents. The Ruston Foundry public health assessment can be referenced for comprehensive information regarding the evaluation of all exposure pathways, not just those involving remediation activities [1].

Per the EPA remedial program manager, several protective measures will be in place to prevent the aforementioned potential exposure pathways. Dust and surface water control measures and

air monitoring will be conducted during remedial activities to ensure that off-site migration of site-related contaminants does not occur. A complete health and safety plan will be implemented along with the Occupational Safety and Health Association (OSHA) safety regulations, in order to reduce the risk of worker exposures to site related hazards and contaminants. Short-term monitoring of the surface water and groundwater during remedial activities may also be carried out to ensure that runoff control measures are working. Safety measures carried out during remedial activities will be in place in order to protect on-site workers, nearby residents, and trespassers from remediation related exposures.

Residents living near the foundry support alternative #5, complete excavation and off-site disposal of hazardous waste without stabilization- as they believe it is more protective of the public health than alternative #4. Both alternatives could be considered protective of public health, however, alternative #5 introduces an additional potential pathway of exposure. Since the contaminated soils would not be stabilized prior to transport and disposal at the off-site facility, nearby residents, businesses, and roads along the transport route would be at added risk of a potential exposure to contaminated wastes. Consequently, there could be correspondingly less exposure risk presented to the community by the waste being stabilized and treated before transport and subsequent disposal, as outlined in remedial alternative #4.

IV. CONCLUSION

SEET concurs with EPA that the selected alternative #4 of stabilization and off-site disposal is the most protective of public health, because it meets the intended purpose of reducing the health hazards posed by the contaminants at the site.

V. RECOMMENDATIONS

1. OPH recommends that EPA continue to keep residents informed of any developments during remediation of the Ruston Foundry site.

VI. PUBLIC HEALTH ACTION PLAN

1. Per the EPA remedial project manager, EPA is currently performing enforcement activities at the site. Remediation will begin after negotiation proceedings with potentially responsible parties are completed. Remediation has an estimated construction time frame of 9 to 12 months.
2. This Health Consultation will be individually mailed to attendees who signed in at the March 28, 2002, EPA meeting held at the Peabody High School in Alexandria, LA. It will also be placed in the public repository at the Rapides Parish public library, 411 Washington Street, Alexandria, LA 71301.

LIST OF ACRONYMS

ATSDR	Agency for Toxic Substances and Disease Registry
EPA	Environmental Protection Agency
LA SPLP	Louisiana Synthetic Precipitation Leachate Procedure
LDHH	Louisiana Department of Health and Hospitals
LPP	Louisiana Pine Products
OPH	Office of Public Health
OSHA	Occupational Safety and Health Association
RAOs	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
SEET	Section of Environmental Epidemiology and Toxicology
mg/kg	Milligram per kilogram
µg/dL	Microgram per deciliter

VII. REFERENCES

1. Louisiana Department of Health and Hospitals, Office of Public Health, Section of Environmental Epidemiology and Toxicology. Public Health Assessment for the Ruston Foundry site, Alexandria, Rapides Parish, Louisiana. August 2002.
2. Agency for Toxic Substances and Disease Registry. Public Health Assessment Guidance Manual. Atlanta: US Department of Health and Human Services; 1992.
3. United States Environmental Protection Agency. Record of Decision Summary for the Ruston Foundry Superfund site, Rapides Parish, Alexandria, Louisiana, Cerclis No. LAD985185107. June 2002.
4. CH2M Hill. Final Human Health Risk Assessment for the Ruston Foundry site, Alexandria, Rapides Parish, Louisiana. Remedial Action Contract Work Assignment 930-RICO-061-F. March 2002.
5. United States Environmental Protection Agency. Metals-In-Soils, Presumptive Remedy. EPA/540/F-98/054. OSWER Directive 9355.0-72FS. May 1999.

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CERTIFICATION

The Ruston Foundry Health Consultation was prepared by the Louisiana Department of Health and Hospitals under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the health consultation was prepared.



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The Division of Health Assessment and Consultation, ATSDR, has reviewed this public health consultation and concurs with the findings.



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APPENDIX A

Appendix A: Evaluation criteria for the selection of EPA remedial alternatives:

- 1) Overall protectiveness of human health and the environment determines whether an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment.
- 2) Compliance with applicable or relevant and appropriate requirements evaluates whether the alternative meets Federal and State environmental statutes, regulations, and other requirements that pertain to the site, or whether a waiver is justified.
- 3) Long-term effectiveness and permanence considers the ability of an alternative to maintain protection of human health and the environment over time.
- 4) Reduction of toxicity, mobility, or volume of contaminants through treatment evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.
- 5) Short-term effectiveness considers the length of time needed to implement an alternative and the risks the alternative poses to workers, residents, and the environment during implementation.
- 6) Implementability considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services.
- 7) Cost includes estimated capital and annual operations and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent.
- 8) State/support agency acceptance considers whether the State agrees with the EPA's analyses and recommendations, as described in the Remedial Investigation/Feasibility Study and Proposed Plan.
- 9) Community acceptance considers whether the local community agrees with EPA's analyses and preferred alternative. Comments received on the Proposed Plan are an important indicator of community acceptance.