UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TEXAS 75202-2733

TO ADMINISTRATIVE RECORD

REMOVAL ACTION
INDEX

SITE NAME: DELATTE METALS, INC.

PONCHATOULA, TANGIPAHOA PARISH, LOUISIANA

SITE NUMBER: LAD052510344

VOLUME 1 OF 1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TEXAS 75202-2733

004498

INTRODUCTION

The "administrative record" is the collection of documents which form the basis for the U.S. Environmental Protection Agency's (EPA) selection of a response action at a Superfund site. Superfund is the name given to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) which can be found in Title 42 of the U.S. Code (U.S.C.) at Sections 9601 through 9675. As EPA decides what to do at the site of a release of hazardous substances, EPA compiles documents concerning the site and EPA's decision into an "administrative record file." Documents may be added to the administrative record file from time to time. Once the EPA Regional Administrator or the Regional Administrator's delegate signs the Action Memorandum memorializing the selection of the removal action, the documents which form the basis for the selection of the removal action are known as the "administrative record."

The administrative record will be available for public review during normal business hours at EPA Region 6 offices which are located at the address given below, and it will also be available at a repository located near the Site. The administrative record is treated as a non-circulating reference document. Individuals may photocopy any documents contained in the administrative record file, according to the photocopying procedures at the EPA Region 6 offices and at the repository located near the Site. The administrative record will be maintained at the local repository until further notice. EPA may send additional documents to the repository as work progresses at the Site.

EPA may hold formal public comment periods at certain stages of the response process. The public is urged to use the formal public comment periods to submit written comments to EPA regarding the removal at the Site. However, EPA welcomes written comments at any time. Please send all comments to:

Removal Administrative Record Coordinator (6SF-R)
U.S. Environmental Protection Agency Region 6
1445 Ross Avenue
Dallas, TX 75202-2733

Except as explained below, this index and the record was compiled in accordance with EPA's Final Guidance on Administrative Records for Selecting CERCLA Response Actions, Office of Solid Waste and Emergency Response (OSWER) Directive Number 9833.3A-1 (December 3, 1990), and in accordance with Superfund Removal Procedures Public participation Guidance for On-scene Coordinators: Community Relations and the Administrative Record, OSWER 9360.3-05

(July 1992).

According to OSWER Directive No. 9833.3A-1, Page 37, each Region should maintain a compendium of guidance documents which are frequently used in selecting response actions, and the record located at or near the site of the response action should contain an index to the compendium of response selection guidance documents. However, the EPA-headquarters generated compendium of guidance documents has not been updated since March 22, 1991 [see CERCLA Administrative Records: First Update of the Compendium of Documents Used for Selecting CERCLA Response Actions (March 1991)]. Moreover, the Region 6 Superfund Division Director has decided that developing and maintaining a compendium index in Region 6 would require extensive resources which are better utilized elsewhere in the Division. Accordingly, the Division Director has decided not to maintain an indexed compendium of response-selection guidance documents. Instead, consistent with 40 CFR Sections 300.805(a)(2), 300.810(a)(2), and OSWER Directive No. 9833.3A-1, Page 37, the Region has listed, in the Administrative Record Index (or in bibliographies of documents listed in the index), all guidance documents which may form a basis for the selection of this response action. Unless the guidance documents indexed were generated specifically for the Site, the guidance documents may not be physically present in the administrative record.

Documents listed as bibliographic sources for other documents in the record might not be listed separately in the Site index. Where a document is listed in the Site index but not located among the documents which EPA has made available in the repository, EPA will, upon request, include the document in the repository. This applies to verified sampling data, chain of custody forms, and guidance and policy documents. It does not apply to documents in EPA's confidential file. Requests for such documents should be addressed to the Removal Administrative Record Coordinator at the address listed above. Copies of guidance documents can also be obtained by calling the RCRA/Superfund/Title 3 Hotline at (800) 424-9346.

Environmental Protection Agency | and Remedial Response Washington DC 20460 | WH/FS-87-003R

EPA

The Superfund Removal Program

Incidents involving hazardous substances that present an imminent threat to human health or the environment may occur or be discovered in any community at any time. These kinds of incidents may include, but are not limited to:

- Illegal disposal of toxic materials or hazardous waste,
- Improper handling or disposal of hazardous substances at landfills, industrial areas, etc.
- Spills of hazardous substances when a truck or train overturns,
- Discharges of hazardous substances into the air or water during a fire.

The U.S. Environmental Protection Agency (EPA) Superfund Emergency Response Program was created to respond to situations such as these.

How Can EPA Respond to Releases or Threatened Releases of Hazardous Substances?

Under Superfund, EPA may respond to releases or threats of releases of hazardous substances by starting a removal action. A removal action is a short-term action intended

Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, in 1980. This law created a tax on the chemical and petroleum industries and provided a broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or welfare or the environment. Over 5 years, $1.6 billion were collected and the tax went to a Trust Fund for cleaning up abandoned or uncontrolled hazardous waste sites. The U.S. Environmental Protection Agency (EPA) is responsible for running the Superfund program. On October 17, 1986, the Superfund Amendments and Reauthorization Act (SARA) was signed into law. SARA increases the Trust Fund to $8.5 billion over 5 years and strengthens EPA's authority to conduct cleanup and enforcement activities.

Under the Superfund program, EPA can:

- Pay for the cleanup of hazardous waste sites when those responsible for such sites cannot be found or are unwilling or unable to clean up a site.
- Take legal action to force those responsible for hazardous waste sites that threaten public health or the environment to clean up those sites or pay back the Federal government for the costs of cleanup.

The law authorizes two kinds of response actions:

- Short-term *removals* where actions may be taken to address releases or threats of releases requiring prompt response.
- Longer-term *remedial responses* that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious but not immediately life threatening. They can be conducted only at sites on EPA's National Priorities List (NPL).

Remedial and removal responses include, but are not limited to

- Destroying, detoxifying or immobilizing the hazardous substances on the site through incineration or other treatment technologies.
- Containing the substances on-site so that they can safely remain there and present no further threat.
- Removing the materials from the site to an EPA-approved, licensed hazardous waste facility for treatment, containment, or destruction.
- Identifying and restoring contaminated ground water, halting further spread of the contaminants, or in some circumstances providing an alternate source of drinking water.

to stabilize or clean up an incident or site that poses a threat to human health or the environment. These actions may include:

- Removing and disposing of hazardous substances,
- Constructing a fence, posting warning signs, or taking other security measures to control access of humans or animals to a site,
- Providing alternate water supplies to local residents where drinking water has become contaminated,
- Temporarily relocating area residents.

Under Superfund, removal actions can last no longer than 12 months in duration or cost more than $2 million, although exemptions may be granted in certain circumstances.

Because the purpose of removal actions is to respond to more immediate threats and because they are short-term actions, they generally cannot deal with long-term environmental problems like area-wide contamination of ground water. In that event, the On-Scene Coordinator refers the site to EPA's Remedial Response Program for further investigation and assessment.

Remedial actions are longer-term actions that stop or substantially reduce releases or threatened releases of hazardous substances that are serious but not immediately life-threatening. Remedial actions can be undertaken only at sites on EPA's National Priorities List (NPL), which identifies the most serious uncontrolled or abandoned hazardous waste sites. EPA often conducts both removal and remedial actions at NPL sites. Removal actions may be required if an immediate threat is discovered during remedial work. Removals also must contribute to the efficient performance of any long-term remedial action.

How Does the Removal Program Work?

The National Contingency Plan (NCP), the Federal regulation that guides the Superfund program, outlines the roles and responsibilities of each agency involved in responding to releases or threatened releases of hazardous substances. The U.S. Coast Guard has primary responsibility for response to releases in or upon the coastal and other navigable waters of the United States, and EPA has primary responsibility for inland response.

The first step in EPA's removal program is the discovery of a release or threatened release of hazardous substances that presents a threat to public health or the environment. EPA may be notified through the National Response Center (NRC) at the 24-hour telephone number 1-800-424-8802, which is operated by the U.S. Coast Guard, or be contacted directly by States, communities, industries or individuals.

The NRC notifies the appropriate government agencies and officials when a release is reported. EPA's On-Scene Coordinator evaluates the situation, and based upon this evaluation, may use Superfund money to clean up the incident if those responsible for the incident cannot or will not conduct the cleanup, or if State or local officials are unable to respond. Other government agencies may be called upon for assistance when necessary, depending upon the nature and extent of the release.

Who Pays For Removal Actions?

Some removals are paid for or conducted by those responsible for creating the emergency. In addition to past and present owners or operators, those responsible may include generators, transporters, storers, or disposers of hazardous substances. The rest may be paid for and conducted by State or county response teams with their own funds, or by EPA, using Superfund money. When Superfund money is used, EPA may take action to force those responsible to reimburse the Federal government for the costs of the cleanup.

COMMONLY USED ACRONYMS

004503

ADPC&E	Arkansas Department of Pollution Control & Ecology
ATSDR	Agency for Toxic Substances and Disease Registry
CDC	Centers for Disease Control and Prevention
CERCLA	Comprehensive Environmental Response Compensation & Liability Act of 1980
EPA	United States Environmental Protection Agency
RPB	Response and Prevention Branch (formerly ERB)
ERRS	Emergency and Rapid Response Services [EPA Contractor] (Formerly ERCS)
FOIA	Freedom of Information Act
LDEQ	Louisiana Department of Environmental Quality
NFRAP	No Further Remedial Action Planned Summary
NMED	New Mexico Environment Department (formerly NMEID)
NPL	National Priorities List
OPA	Oil Pollution Act
OSC	On-Scene Coordinator
ODEQ	Oklahoma Department of Environmental Quality (formerly OSDH)
OSHA	Occupational Safety and Health Administration
POLREP	Pollution Report
PRP	Potentially Responsible Party
RCRA	Resource Conservation and Recovery Act of 1976
SARA	Superfund Amendment and Reauthorization Act of 1986
START	Superfund Technical Assessment and Response Team [EPA contractor] (formerly TAT)
TNRCC	Texas Natural Resources Conservation Commission (formerly TWC)

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CHRONOLOGICAL INDEX OF DOCUMENTS

EPA GUIDANCE REFERENCE

ADMINISTRATIVE RECORDS
REMOVALS

004504

RECORD NUMBER: 1
DOCUMENT DATE: 02/01/88
DOCUMENT TYPE: EPA Guidance Document
DOCUMENT TITLE: Superfund Removal Procedures, Revision Number Three, OSWER Directive No. 9360.0-3B
AUTHOR: Unspecified
COMPANY/AGENCY: EPA
RECIPIENT: Unspecified
COMPANY/AGENCY: Unspecified
DESCRIPTION: Superfund removal procdures (superceded in part by later guidance). Write to the address in the Introduction to have document sent to the repository.

RECORD NUMBER: 2
DOCUMENT DATE: 04/01/90
DOCUMENT TYPE: EPA Guidance Document
DOCUMENT TITLE: Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan and Data Validation Procedures, OSWER Directive No. 9360.4-01
AUTHOR: Unspecified
COMPANY/AGENCY: EPA
RECIPIENT: Unspecified
COMPANY/AGENCY: Unspecified
DESCRIPTION: Procedures for QA/QC for data collection activities and review of laboratory data packages. Write to the address in the Introduction to have document sent to the repository.

RECORD NUMBER: 3
DOCUMENT DATE: 12/01/90
DOCUMENT TYPE: EPA Guidance Document
DOCUMENT TITLE: Superfund Removal Procedures, Action Memorandum Guidance, OSWER Directive No. 9360.3-01
AUTHOR: Unspecified
COMPANY/AGENCY: EPA
RECIPIENT: Unspecified
COMPANY/AGENCY: Unspecified
DESCRIPTION: Outlines the minimum requirements for an action memorandum. Write to address in the Introduction to have document sent to the repository.

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CHRONOLOGICAL INDEX OF DOCUMENTS

EPA GUIDANCE REFERENCE

ADMINISTRATIVE RECORDS
REMOVALS

004505

RECORD NUMBER: 4
DOCUMENT DATE: 12/03/90
DOCUMENT TYPE: EPA Guidance Document
DOCUMENT TITLE: Final Guidance on Administrative Records for Selecting CERCLA Response Actions, OSWER Directive No. 9833-3A-1
AUTHOR: Unspecified
COMPANY/AGENCY: EPA
RECIPIENT: Unspecified
COMPANY/AGENCY: Unspecified
DESCRIPTION: How to compile and establish administrative records under CERCLA. Write to the address in the Introduction to have document sent to the repository.

RECORD NUMBER: 5
DOCUMENT DATE: 09/01/91
DOCUMENT TYPE: EPA Guidance Document
DOCUMENT TITLE: Superfund Removal Procedures, Guidance on the Consideration of ARARs during Removal Actions, OSWER Directive No. 9360.3-02
AUTHOR: Unspecified
COMPANY/AGENCY: EPA
RECIPIENT: Unspecified
COMPANY/AGENCY: Unspecified
DESCRIPTION: Potential Applicable or Relevant and Appropriate Requirements (ARARs) for removals. Write to the address in the Introduction to have document sent to the repository.

RECORD NUMBER: 6
DOCUMENT DATE: 04/01/92
DOCUMENT TYPE: EPA Guidance Document
DOCUMENT TITLE: Superfund Removal Procedures, Removal Enforcement Guidance for OSCs, OSWER Directive No. 9360.3-06
AUTHOR: Unspecified
COMPANY/AGENCY: EPA
RECIPIENT: Unspecified
COMPANY/AGENCY: Unspecified
DESCRIPTION: Summary of authorities for conducting enforcement activities during removal actions. Write to the address in the Introduction to have document sent to the repository.

CHRONOLOGICAL INDEX OF DOCUMENTS

EPA GUIDANCE REFERENCE

ADMINISTRATIVE RECORDS
REMOVALS

004506

RECORD NUMBER: 7
DOCUMENT DATE: 07/01/92
DOCUMENT TYPE: EPA Guidance Document
DOCUMENT TITLE: Superfund Removal Procedures, Public Participation Guidance for OSCs: Community Relations and the Administrative Record, OSWER Directive No. 9360.3-05
AUTHOR: Unspecified
COMPANY/AGENCY: EPA
RECIPIENT: Unspecified
COMPANY/AGENCY: Unspecified
DESCRIPTION: Removal action public participation and administrative record activities. Write to the address in the Introduction to have document sent to the repository.

RECORD NUMBER: 8
DOCUMENT DATE: 08/01/93
DOCUMENT TYPE: EPA Guidance Document
DOCUMENT TITLE: Guidance on Conducting Non-Time-Critical Removal Actions under CERCLA, OSWER Directive No.9360.0-32
AUTHOR: Unspecified
COMPANY/AGENCY: EPA
RECIPIENT: Unspecified
COMPANY/AGENCY: Unspecified
DESCRIPTION: Non-time-critical removal actions under CERCLA and the National Contingency Plan. Write to the address in the Introduction to have document sent to the repository.

RECORD NUMBER: 9
DOCUMENT DATE: 06/01/94
DOCUMENT TYPE: EPA Guidance Document
DOCUMENT TITLE: Superfund Removal Procedures, Removal Response Reporting: POLREPs and OSC Reports, OSWER Directive No. 9360.3-03
AUTHOR: Unspecified
COMPANY/AGENCY: EPA
RECIPIENT: Unspecified
COMPANY/AGENCY: Unspecified
DESCRIPTION: Clarifies removal action reporting criteria. Write to the address in the Introduction to have document sent to the repository.

CHRONOLOGICAL INDEX OF DOCUMENTS

EPA GUIDANCE REFERENCE

ADMINISTRATIVE RECORDS
REMOVALS

004507

RECORD NUMBER:	10
DOCUMENT DATE:	09/01/96
DOCUMENT TYPE:	EPA Guidance Document
DOCUMENT TITLE:	Superfund Removal Procedures, Response Management: Removal Action Start-Up to Close-Out, OSWER Directive No. 9360.3-04
AUTHOR:	Unspecified
COMPANY/AGENCY:	EPA
RECIPIENT:	Unspecified
COMPANY/AGENCY:	Unspecified
DESCRIPTION:	Summarizes the relevant guidance and statutory authorities for providing response management during removal actions. Write to the address in the Introduction to have document sent to the repository.

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ADMINISTRATIVE RECORD INDEX

REMOVAL ACTION

SITE NAME: DELATTE METALS, INC.

SITE NUMBER: LAD052510344

INDEX DATE: MAY 20, 1999

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ADMINISTRATIVE RECORD INDEX

REMOVAL ACTION

SITE NAME: DELATTE METALS, INC.
SITE NUMBER: LAD052510344

004509

RECORD NUMBER: 1
DOCUMENT DATE: Undated FIRST PAGE: 0001 LAST PAGE: 0001
DOCUMENT TYPE: Map
DOCUMENT TITLE: Site Location (Attachment No. 2 of Action Memorandum).
AUTHOR: Unspecified
COMPANY/AGENCY: Ecology and Environment, Inc. START, Region 6
RECIPIENT: Unspecified
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Drawing/Diagram of site location.

RECORD NUMBER: 2
DOCUMENT DATE: Undated FIRST PAGE: 0002 LAST PAGE: 0002
DOCUMENT TYPE: Map
DOCUMENT TITLE: Site Sketch Delatte Metals (Attachment No. 3 of Action Memorandum).
AUTHOR: Unspecified
COMPANY/AGENCY: Ecology and Environment, Inc. START, Region 6
RECIPIENT: Unspecified
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Drawing/Diagram of site.

RECORD NUMBER: 3
DOCUMENT DATE: Undated FIRST PAGE: 0003 LAST PAGE: 0004
DOCUMENT TYPE: Material Safety Data Sheets for Lead
DOCUMENT TITLE: File 1; Entry 31; Accession No. 7216776 (LEAD). (Attachment No. 4 of Action Memorandum).
AUTHOR: Unspecified
COMPANY/AGENCY: EPA, Region 6; OHM/TADS
RECIPIENT: Unspecified
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Oil and Hazardous Materials/Technical Assistance Database (OHM/TADS) printout for Lead (PB).

ADMINISTRATIVE RECORD INDEX

REMOVAL ACTION

004510

SITE NAME: DELATTE METALS, INC.
SITE NUMBER: - LAD052510344

RECORD NUMBER: 4
DOCUMENT DATE: Undated FIRST PAGE: 0005 LAST PAGE: 0006
DOCUMENT TYPE: Material Safety Data Sheets for Cadmium
DOCUMENT TITLE: File 2; Entry 2; Accession No. 7216622 (CADMIUM) (Attachment No. 5 of Action Memorandum).
AUTHOR: Unspecified
COMPANY/AGENCY: EPA, Region 6; OHM/TADS
RECIPIENT: Unspecified
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Oil and Hazardous Materials/Technical Assistance Database (OHM/TADS) printout for Cadmium (CD).

RECORD NUMBER: 5
DOCUMENT DATE: Undated FIRST PAGE: 0007 LAST PAGE: 0014
DOCUMENT TYPE: Material Safety Data Sheets for Arsenic
DOCUMENT TITLE: File 3; Entry 1; Accession No. 7216596 (ARSENIC) (Attachment No. 6 of Action Memorandum).
AUTHOR: Unspecified
COMPANY/AGENCY: EPA, Region 6; OHM/TADS
RECIPIENT: Unspecified
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Oil and Hazardous Materials/Technical Assistance Database (OHM/TADS) printout for Arsenic (AS4).

RECORD NUMBER: 6
DOCUMENT DATE: Undated FIRST PAGE: 0015 LAST PAGE: 0015
DOCUMENT TYPE: Reference Index to National Contingency Plan (NCP)
DOCUMENT TITLE: Part 300-National Oil and Hazardous Susbstances Pollution Contingency Plan.
AUTHOR: Unspecified
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: Unspecified
COMPANY/AGENCY: Unspecified
DESCRIPTION: Index sheet only.

ADMINISTRATIVE RECORD INDEX

REMOVAL ACTION

004511

SITE NAME: DELATTE METALS, INC.
SITE NUMBER: LAD052510344

RECORD NUMBER: 7
DOCUMENT DATE: Undated FIRST PAGE: 0016 LAST PAGE: 0016
DOCUMENT TYPE: Memorandum - Cover Sheet only
DOCUMENT TITLE: Selection of Control Technologies for Remediation of Lead Battery Recycling Sites.
AUTHOR: Tapan K. Basu, Ari Selvakumar and Roger Gaire
COMPANY/AGENCY: Foster Wheeler Enviresponse, Inc.
RECIPIENT: Unspecified
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Cover sheet only for selection of control technologies for remediation of lead battery recycling sites; rest of information can be located/requested from EPA Region 6.

RECORD NUMBER: 8
DOCUMENT DATE: Undated FIRST PAGE: 0017 LAST PAGE: 0019
DOCUMENT TYPE: Guidance Document
DOCUMENT TITLE: Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites. OSWER Directive #9355.4-02.
AUTHOR: Henry L. Longest II, Director
COMPANY/AGENCY: U.S. EPA, Headquarters
RECIPIENT: Unspecified
COMPANY/AGENCY: EPA, Regions 1,2,3,4,5,6,7,8,9 and 10
DESCRIPTION: Directive to set forth an interim soil cleanup level totals lead at 500 to 1000 ppm for protective consideration for residential settings to be used by both Fund-lead and Enforcement-lead CERCLA sites

RECORD NUMBER: 9
DOCUMENT DATE: 08/29/91 FIRST PAGE: 0020 LAST PAGE: 0023
DOCUMENT TYPE: Guidance Document
DOCUMENT TITLE: Update on OSWER Soil Lead Cleanup Guidance. OWSER #9355.4-02 directive.
AUTHOR: Don R. Clay, Assistant Administrator
COMPANY/AGENCY: U.S. EPA, Headquarters
RECIPIENT: Unspecified
COMPANY/AGENCY: EPA, Regions 1,2,3,4,5,6,7,8,,9 and 10
DESCRIPTION: Progress report from; Office of Solid Waste and Emergency Response (OSWER) in updating the directive #9355.4-02 entitled Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites.

ADMINISTRATIVE RECORD INDEX

REMOVAL ACTION

004512

SITE NAME: DELATTE METALS, INC.
SITE NUMBER: LAD052510344

RECORD NUMBER: 10
DOCUMENT DATE: 11/01/91 FIRST PAGE: 0024 LAST PAGE: 0024
DOCUMENT TYPE: Guidance Document - Cover Sheet only
DOCUMENT TITLE: Removal Program Representative Sampling Guidance, Volume 1: Soil, Interim Final. OSWER Directive 9360.4-10
AUTHOR: Unspecified
COMPANY/AGENCY: U.S. EPA, Headquarters
RECIPIENT: Unspecified
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Cover sheet only; rest of this Superfund Representative Sampling Guidance may be located/requested from EPA, Region 6. (OSWER Directive 9360.4-10)

RECORD NUMBER: 11
DOCUMENT DATE: 01/21/92 FIRST PAGE: 0025 LAST PAGE: 0073
DOCUMENT TYPE: RCRA Facility Assessment Report (DRAFT)
DOCUMENT TITLE: RCRA Facility Assessment Delatte Metals, Inc. (DRAFT)
AUTHOR: Unspecified
COMPANY/AGENCY: LDEQ
RECIPIENT: Unspecified
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Summary, recommendations, facility description, visual site inspection, environmental setting, areas of concern, references, maps, and solid waste management units.

RECORD NUMBER: 12
DOCUMENT DATE: 06/01/92 FIRST PAGE: 0074 LAST PAGE: 0074
DOCUMENT TYPE: Guidance Document - Cover Sheet only
DOCUMENT TITLE: EPA Superfund Standard Operating Safety Guides. Publication 9285.1-03, PB92-963414.
AUTHOR: Unspecified
COMPANY/AGENCY: U.S. EPA, Headquarters
RECIPIENT: Unspecified
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Cover sheet only; rest of this standard operating safety guide documentation may be located/requested from EPA, Region 6.

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REMOVAL ACTION

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SITE NAME: DELATTE METALS, INC.
SITE NUMBER: LAD052510344

RECORD NUMBER: 13
DOCUMENT DATE: 02/25/94 FIRST PAGE: 0075 LAST PAGE: 0134
DOCUMENT TYPE: Expanded Site Inspection Report
DOCUMENT TITLE: Expanded Site Inspection Ponchatoula Battery CERCLIS ID # LAD062644232.
AUTHOR: Unspecified
COMPANY/AGENCY: Morrison Knudsen Corporation, ICF Technology, Inc.
RECIPIENT: Unspecified
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Expanded site inspection objectives, operational history, analytical results, pathway assessment, site photographs, chemical data summaries, chronology of LDEQ files for Ponchatoula Battery.

RECORD NUMBER: 14
DOCUMENT DATE: 03/08/95 FIRST PAGE: 0135 LAST PAGE: 0136
DOCUMENT TYPE: LDEQ letter
DOCUMENT TITLE: Final Denial of the Hazardous Waste Operating Permit Application regarding Delatte Metals, Inc. (Attachment 1 to state referral letter of 6/14/96.)
AUTHOR: Glenn A. Miller, Assistant Miller
COMPANY/AGENCY: LDEQ
RECIPIENT: Larry Delatte, President
COMPANY/AGENCY: Delatte Metals, Inc.
DESCRIPTION: Administrative final denial of the hazardous waste operating permit application, becoming effective 30 (thirty) days after service of this notice unless review is requested.

RECORD NUMBER: 15
DOCUMENT DATE: 05/02/95 FIRST PAGE: 0137 LAST PAGE: 0138
DOCUMENT TYPE: Environmental Justice Report
DOCUMENT TITLE: Potential Environmental Justice Index (DVMAV*DVECO*PF) (Attachment No. 7 of Action Memorandum).
AUTHOR: Unspecified
COMPANY/AGENCY: Ecology and Environment, Inc.
RECIPIENT: Unspecified
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Methodology criteria, economic and minority status for LA.

ADMINISTRATIVE RECORD INDEX

REMOVAL ACTION

004514

SITE NAME: DELATTE METALS, INC.
SITE NUMBER: LAD052510344

RECORD NUMBER: 16
DOCUMENT DATE: 07/01/95 FIRST PAGE: 0139 LAST PAGE: 0139
DOCUMENT TYPE: Guidance Document - Cover Sheet only
DOCUMENT TITLE: Contaminants and Remedial Options at Selected Metal-Contaminated Sites. EPA/540/R-95/512.
AUTHOR: Unspecified
COMPANY/AGENCY: U.S. EPA, Headquarters
RECIPIENT: Unspecified
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Cover sheet only; rest of this report on contaminants and remedial options at selected metal-contaminated sites may be located/requested from EPA, Region 6.

RECORD NUMBER: 17
DOCUMENT DATE: 12/01/95 FIRST PAGE: 0140 LAST PAGE: 0140
DOCUMENT TYPE: Guidance Document - Cover Sheet only
DOCUMENT TITLE: Superfund Program Representative Sampling Guidance, Volume 2: Air (Short-Term Monitoring) Interim Final. OSWER Directive 9360.4-09.
AUTHOR: Unspecified
COMPANY/AGENCY: U.S. EPA, Headquarters
RECIPIENT: Unspecified
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Cover sheet only; remaining superfund program representative sampling guidance from Volume 2 on air, may be located/requested at EPA, Region 6.

RECORD NUMBER: 18
DOCUMENT DATE: 12/01/95 FIRST PAGE: 0141 LAST PAGE: 0141
DOCUMENT TYPE: Guidance Document - Cover Sheet only
DOCUMENT TITLE: Superfund Program Representative Sampling Guidance, Volume 4: Waste, Interim Final. OSWER Directive 9360.4-14.
AUTHOR: Unspecified
COMPANY/AGENCY: U.S. EPA, Headquarters
RECIPIENT: Unspecified
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Cover sheet only; remaining superfund program representative sampling guidance from Volume 4 on waste, may be located/requested at EPA, Region 6.

ADMINISTRATIVE RECORD INDEX

REMOVAL ACTION

004515

SITE NAME: DELATTE METALS, INC.
SITE NUMBER: LAD052510344

RECORD NUMBER: 19
DOCUMENT DATE: 03/11/96 FIRST PAGE: 0142 LAST PAGE: 0142
DOCUMENT TYPE: Interoffice Memorandum
DOCUMENT TITLE: Delatte Industries Site (formerly Delatte Metals), Ponchatoula Louisiana. (Attachment 2 to state referral letter of 06/14/96).
AUTHOR: Steve Aguillard, Program Manager
COMPANY/AGENCY: LDEQ
RECIPIENT: Glenn Miller, Administrator
COMPANY/AGENCY: LDEQ
DESCRIPTION: Site being referred to the inactive and abandoned sites division after series of actions.

RECORD NUMBER: 20
DOCUMENT DATE: 06/14/96 FIRST PAGE: 0143 LAST PAGE: 0143
DOCUMENT TYPE: State Referral Letter
DOCUMENT TITLE: Transfer to EPA Site Assessment Section, Site Name: Delatte Metals Inc., Ponchatoula, Tangipahoa, LA. Inactive and Abandoned Sites Division #00276.
AUTHOR: Glenn A. Miller, Administrator
COMPANY/AGENCY: LDEQ
RECIPIENT: Stacey Bennett, Team Leader
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: State of Louisiana's request for assistance from CERCLA in cleanup actions after receiving information that Delatte Site is no longer an active facility.

RECORD NUMBER: 21
DOCUMENT DATE: 08/01/97 FIRST PAGE: 0144 LAST PAGE: 0144
DOCUMENT TYPE: Engineering Bulletin
DOCUMENT TITLE: Technology Alternatives for the Remediation of Soils Contaminated with As, Cd, CR, HG and PB. EPA/540/S-97/500.
AUTHOR: Unspecified
COMPANY/AGENCY: U.S. EPA Headquarters
RECIPIENT: Unspecified
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Bulletin providing information to facilite the selection of appropriate remedial alternatives for soil contaminated with arsenic, cadmium, chromium, mercury and lead.

ADMINISTRATIVE RECORD INDEX

REMOVAL ACTION

004516

SITE NAME: DELATTE METALS, INC.
SITE NUMBER: LAD052510344

RECORD NUMBER: 22
DOCUMENT DATE: 05/26/98 FIRST PAGE: 0145 LAST PAGE: 0145
DOCUMENT TYPE: Federal Register Notice - Cover Sheet only (CFR)
DOCUMENT TITLE: Land Disposal Restrictions Phase IV: Final Rule. 40 CFR Parts 148, 261, 266, 268 and 271 (Part II)
AUTHOR: Unspecified
COMPANY/AGENCY: U.S. Government Printing Office Washington: 1998
RECIPIENT: Unspecified
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Final rule promulgating treatment standards for metal wastes and mineral processing wastes, issues and standards for hazardous soils, etc.

RECORD NUMBER: 23
DOCUMENT DATE: 07/24/98 FIRST PAGE: 0146 LAST PAGE: 0157
DOCUMENT TYPE: Action Memorandum
DOCUMENT TITLE: Request for a Removal Action and Exemption from the $2 Million Statutory Limitation at the Delatte Metals-North Ponchatoula Battery Site.
AUTHOR: Althea C. Foster, OSC
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: Myron O. Knudson, P.E. Director
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Request for time-critical removal and disposal of crushed battery casings. The $2 million exemption is necessitated by large volume of waste material.

RECORD NUMBER: 24
DOCUMENT DATE: 07/29/98 FIRST PAGE: 0158 LAST PAGE: 0176
DOCUMENT TYPE: Memorandum with Attachments
DOCUMENT TITLE: Wetland Determination - Delatte Metals (Attachments, sketch/drawings of wetlands, data forms)
AUTHOR: William Kirchner (6SF-RA)
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: Stephen Tzhone, Remedial Project Manager
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Onsite inspection of (5) significant areas meeting criterion (i.e.,predominance of hydrophytic vegetation, and wetland hydrology saturated soil conditions.

ADMINISTRATIVE RECORD INDEX

REMOVAL ACTION

004517

SITE NAME: DELATTE METALS, INC.
SITE NUMBER: LAD052510344

RECORD NUMBER: 25
DOCUMENT DATE: 09/16/98 FIRST PAGE: 0177 LAST PAGE: 0179
DOCUMENT TYPE: Pollution Report No. 1
DOCUMENT TITLE: Delatte Metals-North Ponchatoula Battery Site, Ponchatoula, Tangipahoa Parish, LA. Time Critical Removal Action
AUTHOR: Althea C. Foster, OSC
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: Charles A. Gazda, RPB
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Describes status of work done at site, future plans, key issues and attached digital photographs.

RECORD NUMBER: 26
DOCUMENT DATE: 09/25/98 FIRST PAGE: 0180 LAST PAGE: 0183
DOCUMENT TYPE: Ceiling Increase Action Memorandum
DOCUMENT TITLE: Request for Approval of a Project Ceiling Increase for the Removal Action at the Delatte Metals-North Ponchatoula Battery Site.
AUTHOR: Althea C. Foster, OSC
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: Myron O. Knudson, P.E. Director
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Request approval for an increase in project ceiling from $6,000.00 to $13,302,885.00 to complete actions, based on revised volume and cost estimates for the disposal of the high concentration wastes.

RECORD NUMBER: 27
DOCUMENT DATE: 10/15/98 FIRST PAGE: 0184 LAST PAGE: 0184
DOCUMENT TYPE: Pollution Report No. 2
DOCUMENT TITLE: Delatte Metals-North Ponchatoula Battery Site, Ponchatoula, Tangipahoa Parish, LA. Time Critical Removal Action.
AUTHOR: Althea C. Foster, OSC
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: Charles A. Gazda, RPB
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Describes further continuation of work done, situation, future plans and key issues.

ADMINISTRATIVE RECORD INDEX

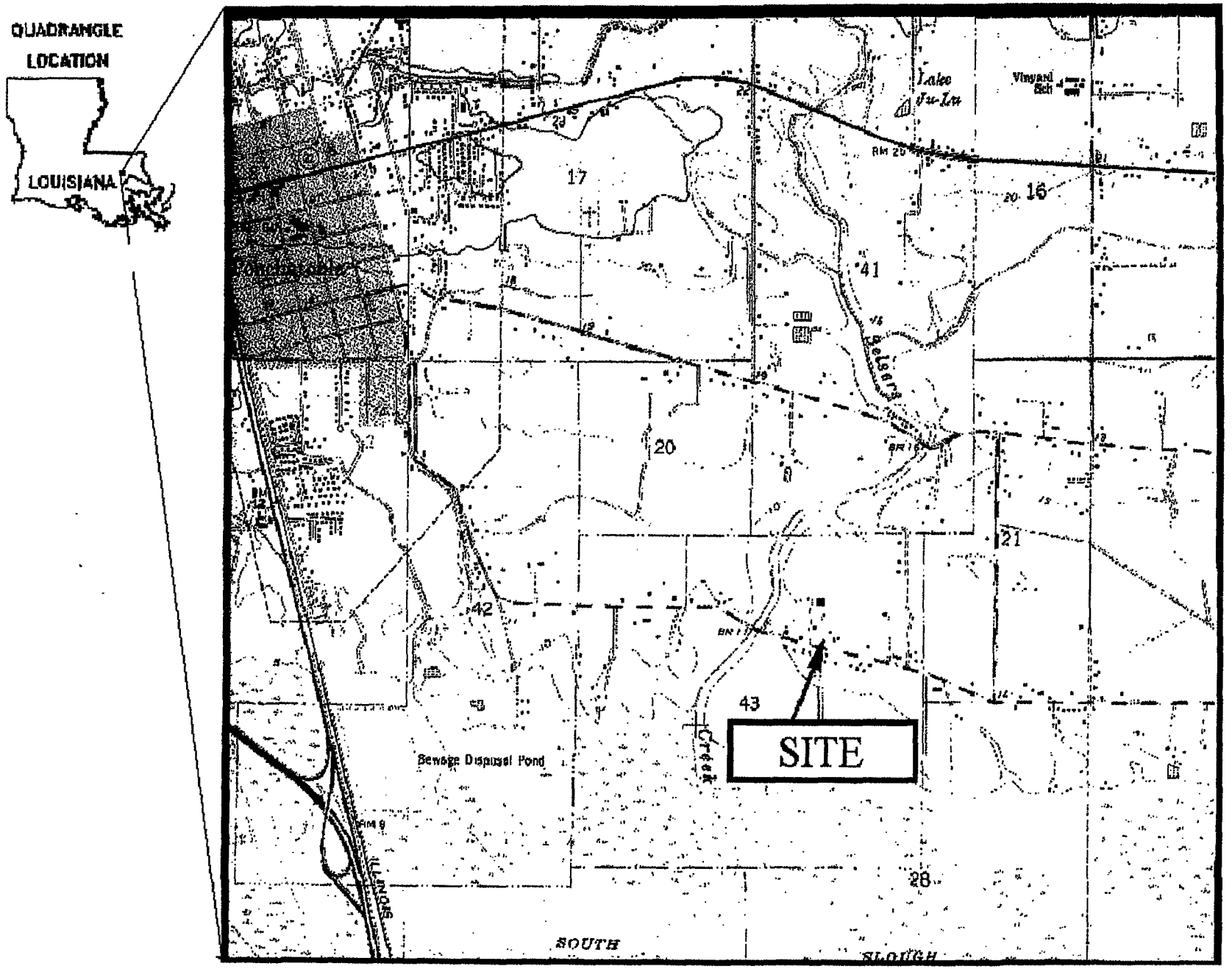
REMOVAL ACTION

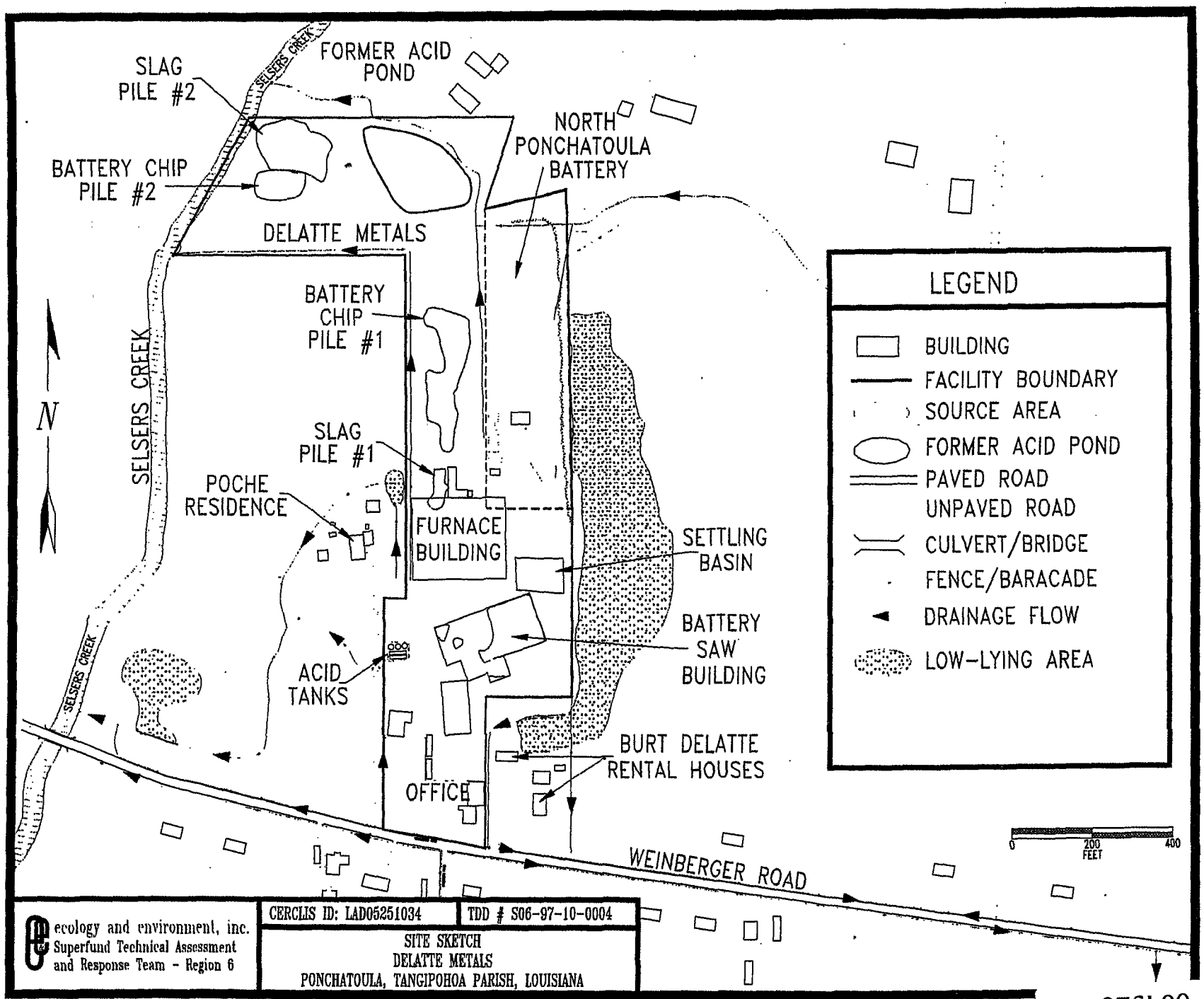
004518

SITE NAME: DELATTE METALS, INC.
SITE NUMBER: LAD052510344

RECORD NUMBER: 28
DOCUMENT DATE: 10/16/98 FIRST PAGE: 0185 LAST PAGE: 0186
DOCUMENT TYPE: Fact Sheet
DOCUMENT TITLE: Superfund Site Update Delatte Metals, Ponchatoula, Louisiana. EPA Proposes Site To National Priorities List.
AUTHOR: Unspecified
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: Unspecified
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Update and information on Delatte Metals, background and recent activities, what is to happen next, how to get more information on site and information on the technical assistance and grant.

RECORD NUMBER: 29
DOCUMENT DATE: 10/01/98 FIRST PAGE: 0187 LAST PAGE: 0190
DOCUMENT TYPE: Fact Sheet
DOCUMENT TITLE: Delatte Metals Site Transportation Route
AUTHOR: Unspecified
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: Unspecified
COMPANY/AGENCY: EPA, Region 6
DESCRIPTION: Diagram/drawing of site transportation route.





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004520

File 1; Entry 31; Accession No. 7216776

(CAS) CAS Registry Number: 7439-92-1
(SIC) SIC Code: 3693; 3562; 2816; 3323; 3691
(MAT) Material Name: ⊙L⊙E⊙A⊙D
(FML) Chemical Formula: PB
(USS) Common Uses: X-RAY PROTECTION; PAINT PIGMENT; BEARING METAL AND ALLOY STEEL BATTERIES
(BIN) Binary Reactants: HYDROGEN PEROXIDE, ZIRCONIUM,.
(SGM) Synergistic Materials: AS DISSOLVED OXYGEN LEVELS DECREASE ⊙L⊙E⊙A⊙D BECOMES MORE TOXIC TO FISH. SOFT WATER ALSO INCREASES TOXICITY.
(ANT) Antagonistic Materials: THE CHARACTERISTICS OF WATER SOFT OR HARD THAT APPEAR TO BE CONDUCTIVE TO PLUMBO-SOLVENCY INCLUDE COMPARATIVE ABSENCE OF CA AND MG BICARBONATES, LOW PH, HIGH DISSOLVED OXYGEN AND HIGH NITRATE CONTENT. INSOLUBLE ⊙L⊙E⊙A⊙D IS NOT HIGHLY TOXIC TO FISH. ⊙L⊙E⊙A⊙D IS MORE IN SOFT WATER. 50 PPM CA HAS DESTROYED THE TOXIC EFFECT OF 1 PPM ⊙L⊙E⊙A⊙D⊙
(FDL) Detection Limit (Field; Techniques, Ref) (ppm): .05, LEAD, (BNW10* 0006)
(LDL) Detection Limit (Lab.; Techniques, Ref) (ppm): .05, LEAD, (BNW10* 0006)
(STD) Standard Codes: NFPA - 3,2,-; ICC, USCG - NO.
(FLM) Flammability: MODERATE IN FORM OF DUST EXPOSED TO HEAT OR FLAME.
(TCP) Toxic Combustion Products: WHEN HEATED EMITS HIGHLY TOXIC FUMES. ENTER WITH GREAT CARE.
(EXP) Explosiveness: MODERATE IN FORM OF DUST EXPOSED TO HEAT OR FLAME. REACTIVE AT HIGH TEMPERATURE AND PRESSURE; CAN REACT VIGOROUSLY WITH OXIDIZING MATERIALS.
(MLT) Melting Point (C.): 327.4
(BLP) Boiling Point (C.): 1740
(SPG) Specific Gravity: 11.34
(VPN) Vapor Pressure (mm Hg): 1; 1; 5; 10; 100
(PER) Persistency: WILL SLOWLY BE PRECIPITATED BY NATURAL CARBONATES.
(PFA) Potential for Accumulation: ACCUMULATES IN BONES. POSITIVE. CONCENTRATION FACTORS FOR LEAD - MARINE AND FRESHWATER PLANTS AND INVERTEBRATES 200 AND FISH - 60 (-170). HALF-LIFE IN TOTAL HUMAN BODY - 1460 DAYS (R172** 0001).
(CAG) Carcinogenicity: NEGATIVE. NO TUMORIGENIC EFFECTS NOTED IN RODENTS ADMINISTERED 25 MG/L PB IN DRINKING WATER (R120** 0001).
(MUT) Mutagenicity: POTENTIAL. CHROMOSOME DAMAGE HAS BEEN NOTED FOR LEAD IN OCCUPATIONALLY EXPOSED PERSONS (R120** 0001).
(TER) Teratogneicity: 1 PPB TOXIC TO 24-32% OF CHICK EMBRYOS (XNRNBT 0002). POTENTIAL.
(TRT) Major Species Threatened: ALL LIFE
(INH) Inhalation limit (value): .15
(INT) Inhalation Limit (Text): REGULATIONS-- OSHA PEL (TWA) .05 MG/M3 (29CFR* 1910). RECOMMENDATIONS-- NIOSH TWA <.100 MG/M3 (CRSOE* 78-158,78/NIOSH) ACGIH TLV (TWA) .15 MG/M3 (TLVADM 83/ACGIH) ACGIH STEL .45 MG/M3/15 MIN (TLVADM 83/ACGIH)
(GNS) General Sensation: COMPOUNDS CAN BE ABSORBED THROUGH SKIN AT TOXIC CHRONIC LEVELS. SYMPTOMS INCLUDE PICA, ANOREXIA, VOMITING, MALAISE AND CONVULSIONS. MAY LEAVE PERMANENT BRAIN DAMAGE.
(DHI) Direct Human Ingestion (mg/kg): 15
(SAF) Personal Safety Precautions: WEAR FILTER MASK.
(AHL) Acute Hazard Level: THRESHOLD CONCENTRATION FOR FRESH AND SALT WATER FISH, .1 PPM (E188** 0001). .2 GM LEAD/KG BODY WEIGHT CAUSED DEATH WITHIN A FEW DAYS IN CALVES. BACTERIAL DECOMPOSITION OF ORGANIC MATTER IS INHIBITED BY .1 PPM LEAD. LOBSTERS DIED IN 20 DAYS WHEN KEPT IN LEAD LINED TANKS. REPORT OF CHRONIC LEAD POISONING AMONG ANIMALS BY 1.8 PPM OF LEAD IN SOFT WATER. LEAD COMPOUNDS ARE HIGHLY TOXIC IF INGESTED OR INHALED. LEAD METAL IS AN INHALATIVE HAZARD.

000003

109726

CHL) Chronic Hazard Level: MORE OF A CHRONIC PROBLEM THAN ACUTE. APPLICATION FACTOR TO CONVERT 96 HOUR LC50 TO CHRONIC SAFE LIMIT - .013 BROOK; LEAD METAL IS A CHRONIC HAZARD VIA INGESTION OR INHALATION. TROUT, .043 FOR RAINBOW TROUT. (R131** 0001) DEFORMITY AND SUB-ADULT MORTALITY HAS BEEN NOTED IN TROUT EXPOSED TO .012-.14 PPM PB FOR 19 MONTHS AND 18 DAYS; CHRONIC POISONING SYMPTOMS INCLUDE, WEIGHT LOSS, WEAKNESS, AND ANEMIA. RESPECTIVELY. (R182** 0001) FRESHWATER SHOULD NOT EXCEED .03 PPM PB AND MARINE WATERS 1/50 OF 96 HOUR LC50. (R184** 0001) DAPHNID REPRODUCTION REDUCED 16% FROM 3 WEEKS EXPOSURE TO .030 PPM PB. (JFRBAK 0010); ADMINISTRATION OF 25 MG/L PB IN DRINKING WATER LED TO RAPID DIE-OFF OF BREEDING COLONIES OF MICE AND RATS(R120** 0001).

(HEL) Degree of Hazard to Public Health: LEAD IS AN ACUTE INHALATIVE TOXIN AND A CHRONIC INGESTIVE AND INHALATIVE TOXIN. COMPOUNDS ARE GENERALLY MORE TOXIC DUE TO SOLUBILITY. LEAD COMPOUNDS CAN ALSO BE ABSORBED THROUGH SKIN AT HIGHLY TOXIC LEVELS.

(AIR) Air Pollution: HIGH

ACT) Action Levels: ATTEMPT TO SUPPRESS SUSPENSION OF DUSTS.

AML) In Situ Amelioration: ADD LIME TO PRECIPITATE BASIC LEAD CARBONATE. POSSIBLE TO ADD COMPLEXING AGENT (EDTA) AND ADSORB ON CARBON SEEK PROFESSIONAL ENVIRONMENTAL ENGINEERING ASSISTANCE THROUGH EPA'S ENVIRONMENTAL RESPONSE TEAM (ERT), EDISON, NJ, 24-HOUR NO. 201-321-6660.

(AVL) Availability of Countermeasure Materials: LIME - CEMENT PLANTS COMPLEXANTS - DETERGENT MANUFACTURERS, ANALYTICAL LABS; CARBON - WATER TREATMENT PLANTS, SUGAR REFINERIES.

DIS) Disposal Methods: ROUTE TO METAL SALVAGE FACILITY.

(IFP) Industrial Fouling Potential: TRACES OF LEAD IN METAL-PLATING BATHS WILL AFFECT THE SMOOTHNESS AND BRIGHTNESS OF DEPOSITS.

WAT) Major Water Use Threatened: POTABLE SUPPLY. FISHERIES.

(LOC) Probable Location and State of Material: METAL WILL SINK. MANY SALTS INSOLUBLE. MAY GET DISPERSIONS.

DRT) Soil Chemistry: SOIL ORGANIC MATTER, PH, AND PHOSPHATE CONTENT CONTROL THE MOBILITY OF ⊙L⊙E⊙A⊙D; EFFLUENT HOLDING 173 MG/L PB HAS BEEN NOTED TO UNDERGO A 98% REDUCTION IN 3 INCHES OF SOIL (R174** 0001); ⊙L⊙E⊙A⊙D CONCENTRATIONS SHOULD NOT EXCEED 2 PPM AS THE SOLUBLE FORM IN THE SOIL SOLUTION FOR PHYTO TOXIC CONSIDERATIONS; CALCIUM MAY COUNTERACT SOME ⊙L⊙E⊙ TOXICITY (R175** 0001); ⊙L⊙E⊙A⊙D CONCENTRATIONS OF UP TO 1632 PPM IN THE T 12 INCHES OF SOIL CAN BE TOLERATED FROM THE STANDPOINT OF ACCUMULATION AND BIOMAGNIFICATION (WWAEA2 0001).

HOH) Water Chemistry: ⊙L⊙E⊙A⊙D IS STABLE IN OXYGENATED WATER AS THE CARBONAT HYDROXIDE, OR; CARBONATE-HYDROXIDE SALTS. UNDER REDUCING CONDITIONS AND IN THE PRESENCE OF SULFUR, ⊙L⊙E⊙A⊙D SULFIDE WILL PREDOMINATE. ⊙L⊙E⊙A⊙D IS SOLUBLE AT PH 9-10 WITH CARBON DIOXIDE LEVELS AT 10-3 M. AT CARBON DIOXIDE LEVELS OF 10-2 M SOLUBILITY IS LOWEST AT PH 8-10. AT PH 7-8, SOLUBILITY OF TOTAL ⊙L⊙E⊙A⊙D IS .001-.01 MG/L (JAWWA5 0013).

)AT) Adequacy of Data: GOOD

File 2; Entry 2; Accession No. 7216622

(CAS) CAS Registry Number: 7440-43-9
(SIC) SIC Code: 2899; 3471; 3691
(MAT) Material Name: ⊛C⊛A⊛D⊛M⊛I⊛U⊛M
(FML) Chemical Formula: CD
(USS) Common Uses: SOLDERING ALUMINUM; ELECTROPLATING BATTERIES.
(BIN) Binary Reactants: TELLURIUM, ZINC.
(SGM) Synergistic Materials: ⊛C⊛A⊛D⊛M⊛I⊛U⊛M ACTS WITH OTHER SUBSTANCES TO INC THE TOXICITY ZN AND CU, CD AND CN IONS ACT SYNERGISTICALLY 5 MG/L CD INCREASED MORTALITY OF RATS ON A DIET CONTAINING 11 MG/L SE. SOIL DECREASES TOXICITY OF ⊛C⊛A⊛D⊛M⊛I⊛U⊛M TO EURASIAN WATER MILFOIL.(AECTCV 000
(ANT) Antagonistic Materials: DEFINITE ANTAGONISTIC ACTION OF CA, MG, AND PERHAPS OTHER SALTS TOWARD CD TOXICITY. CANA2 EDTA IS EFFECTIVE ANTIDOTE FOR CD.
(FDL) Detection Limit (Field; Techniques, Ref) (ppm): 10005, CADMIUM (BNW10* 0010)
(LDL) Detection Limit (Lab.; Techniques, Ref) (ppm): .0005 MG, CADMIUM (BNW10* 0010)
(STD) Standard Codes: NFPA - 3,2,-; ICC, USCG - NO.
(FLM) Flammability: MODERATE - DUST WHEN EXPOSED TO HEAT A FLAME OR BY CHEMICAL REACTION WITH OXIDIZING AGENTS.
(TCP) Toxic Combustion Products: HIGHLY TOXIC, ENTER WITH GREAT CAUTION.
(EXP) Explosiveness: SLIGHT - DUST WITH FLAME. REACTIVE ONLY UNDER EXTREME CONDITIONS.
(MLT) Melting Point (C.): 321
(BLP) Boiling Point (C.): 765
(SPG) Specific Gravity: 8.642
(VPN) Vapor Pressure (mm Hg): 1
(PER) Persistency: NATURAL CARBONATE MAY SLOWLY PRECIPITATE CADMIUM, BUT LEVELS WILL REMAIN ABOVE ACCEPTABLE LIMITS.
(PFA) Potential for Accumulation: CONCENTRATES IN LIVER, KIDNEY, PANCREAS, AND THYROID. POSITIVE. CONCENTRATION FACTORS FOR CD - MARINE AND FRESHWATER PLANTS 1000; SHELLFISH CONCENTRATE CADMIUM 900-1600 TIMES. FISH 3000, MARINE INVERTEBRATES 250,000 AND FRESHWATER INVERTEBRATES 4000; HALF-LIFE IN TOTAL HUMAN BODY 200 DAYS (R172** 0001).
(EDF) Etiological Potential: APPEARS TO CAUSE "ITAI-ITAI" DISEASE BY FORCING BODY TO EXCRETE CALCIUM AND THUS WEAKENING BONES. ALSO CAN CAUSE BRONCHOPNEUMONIA IF DUST IS INHALED.
(TER) Teratogneicity: POSITIVE. STUDIES SHOW EMBRYOTOXICITY AT LEVELS (10 PPB OR LESS) BELOW THOSE TOXIC TO ADULTS (R181** 0001) 1 PPB TOXIC TO 24-32% OF CHICK EMBRYOS (XNRNBT 0002).
(TRT) Major Species Threatened: ALL FORMS OF LIFE. ESPECIALLY CROPS.
(INH) Inhalation limit (value): 40 (MG/M3; IDLH)
(INT) Inhalation Limit (Text): REGULATIONS-- OSHA PEL (TWA) .2 MG/M3 (DUST); 0.1 MG/M3 (FUME) (29CFR* 1910) OSHA CEILING .6 MG/M3 (DUST); 0.3 MG/M3 (FUME) (29CFR* 1910). RECOMMENDATIONS-- NIOSH TWA 0.04 MG/M3 FOR 10 HOURS (CRSOE* 76-192,77/NIOSH) NIOSH CEILING .2 MG/M3/15 MIN (CRSOE* 76-192,77/NIOSH) NIOSH IDLH 40 MG/M3 (PKTGD* 80/MAC) ACGIH TLV (TWA).05 MG CD/M3 (TLVADM 83/ACGIH) ACGIH STEL .2 MG CD/M3/15 MIN (TLVADM 83/ACGIH) UPDATED 3/84
(JNS) General Sensation: IRRITANT. HEADACHE, NAUSEA, VOMITING, DIARRHEA, AND ABDOMINAL PAIN FOLLOW INGESTION. INHALATION CAUSES DRY THROAT, COUGHING, CONSTRICTION OF THROAT AND CHEST PAINS.
(DHI) Direct Human Ingestion (mg/kg): 300
(SAF) Personal Safety Precautions: WEAR EYE PROTECTION AND SELF-CONTAINED BREATHING APPARATUS, WEAR FULL PROTECTIVE CLOTHING.
(AHL) Acute Hazard Level: RESPONSE IN FISH IS SLOW AT EVEN HIGH EXPOSURE EVEN THOUGH 7 DAY TLM APPEARS QUITE LOW. HIGHLY TOXIC TO ALL FORMS OF

LIFE. ESPECIALLY TOXIC OVER LONGER EXPOSURES. .01 PPM RECOMMENDED FOR FISHERIES USE (E188** 0001).

(CHL) Chronic Hazard Level: EXTREMELY DANGEROUS. CHRONIC STUDIES WITH FISH SHOW FRY AND EGG SURVIVAL OVER 30 DAYS AFFECTED BY LOW LEVELS OVER EXTENDED PERIODS OF TIME CAN BE HAZARDOUS TO ALL LIFE FORMS. .0006-.111 PPM CD (R182** 0001) DAPHNID REPRODUCTION IS REDUCED 16% AT .17 PPB (JFRBAK 0010); FRESHWATER SHOULD NOT EXCEED .03 PPM CD IN HARD WATER, .004 IN SOFT; MARINE WATERS SHOULD NOT EXCEED 1/100 OF 96 HOUR LC50 (R184** 0001); APPLICATION FACTOR TO CONVERT 96 HOUR LC50 TO SAFE CHRONIC LEVEL FOR CD - .001; FOR FATHEAD MINNOW, .0015 FOR BLUEGILL, AND .0025 FOR GREEN SUNFISH (R131** 0001); RETARDATION, SOMNOLESCENCE, DECREASE IN APPETITE, MUSCLE RIGIDITY AND; PARTIAL TETANUS IN RATS GIVEN 3 MG/KG CDCL2 IP 3 X WEEK FOR 3 WEEKS (R120** 0001); MAXIMUM ALLOWABLE CONCENTRATION (MATC) FOR FATHEAD MINNOWS .037-.057 PPM; APPLICATION FACTOR FOR EXTRAPOLATION OF 96 HOUR IL50 - .005-.008 (JWPFA5 0019).

(HEL) Degree of Hazard to Public Health: CADMIUM POISONING OF HUMANS HAS RESULTED FROM THE CONSUMPTION OF FOODS OR LIQUIDS PREPARED AND LEFT IN CADMIUM-PLATED CONTAINERS. THE DAILY INTAKE IN MAN CAN VARY FROM 4-60 MICROGRAMS, DEPENDING ON THE FOOD CHOSEN. HIGHLY TOXIC.

(AIR) Air Pollution: HIGH

(ACT) Action Levels: NOTIFY LOCAL AIR AUTHORITY. SUPPRESS SUSPENSION OF DUSTS IN AIR. IF FIRE IS EVIDENT, EVACUATE IMMEDIATE AREA.

(AML) In Situ Amelioration: CARBONATE IS INSOLUBLE. ADD CO2. CATION EXCHANGES WILL RETAIN CADMIUM. SEEK PROFESSIONAL ENVIRONMENTAL ENGINEERING ASSISTANCE THROUGH EPA'S ENVIRONMENTAL RESPONSE TEAM (ERT), EDISON, NJ, 24-HOUR NO. 201-321-6660.

(AVL) Availability of Countermeasure Materials: CO2 - SOFT DRINK DISTRIBUTORS; CATION EXCHANGE RESINS - WATER SOFTENER SUPPLIERS.

(DIS) Disposal Methods: ROUTE TO METAL SALVAGE FACILITY

(IFP) Industrial Fouling Potential: MAY CAUSE SCALING PROBLEMS

(MAT) Major Water Use Threatened: ALL USES

(PLOC) Probable Location and State of Material: SILVER-WHITE METAL WILL SINK. MOST SALTS HAVE LIMITED SOLUBILITY. NATURAL CARBONATE MAY CAUSE WHITE PRECIPITATE TO FORM.

(SORT) Soil Chemistry: PRESENCE OF LIME DECREASES ☺C☺A☺D☺M☺I☺U☺M AVAILABILITY SOIL (STEVA8 0003); ☺C☺A☺D☺M☺I☺U☺M IS EFFICIENTLY REMOVED FROM WATERS BY S (R174** 0001); TO MINIMIZE PHYTO TOXICITY TO CROPS, SOIL WATER SHOULD NOT EXCEED .1 PPM CD AND SOIL 2.5 PPM (R175** 0001); MAXIMUM CONCENTRATIONS ABOVE 8 PPM IN THE TOP 12 INCHES OF SOIL MAY LEAD TO TOXIC LEVELS IN PRODUCT CROPS (WWAEA2 0001).

(WOH) Water Chemistry: ☺C☺A☺D☺M☺I☺U☺M EXHIBITS ONLY THE +2 VALENCE STATE IN A SOLUTION. THE CD+2 ION FORMS IMPORTANT SOLUBLE AQUEOUS COMPLEXES WITH AMMONIA AND WITH CYANIDE, HALIDE, AND HYDROXIDE IONS. LIKE HG, IT IS VERY TOXIC, PRESUMABLY BECAUSE IT FORMS A STRONG BOND WITH SULFUR AND HENCE CAN DISPLACE ESSENTIAL METALS (SUCH AS ZN+2) FROM THE BINDING SITES OF CERTAIN ENZYMES. THE CD+2 ION HAS SLIGHTLY LESS TENDENCY TO HYDROLYZE THAN DOES ZN+2 ION. HYDROLYSIS BECOMES SIGNIFICANT ABOVE PH 7 IN CONCENTRATED SOLUTION (> .1 M), WHERE THE POLYNUCLEAR SPECIES CD2OH+3 AND PROBABLY CD4(OH)4+4 ARE FORMED IN SMALL AMOUNTS BEFORE PRECIPITATION OF A ☺C☺A☺D☺M☺I☺U☺M HYDROXIDE OCCURS. MONONUCLEAR HYDROLYSIS PRODUCTS APPE ABOVE PH 8, BUT THE LOW SOLUBILITY OF THE HYDROXIDE LIMITS THE CONCENTRATION OF ☺C☺A☺D☺M☺I☺U☺M, PRESENT AS CDOH+ AND CD(OH)2, TO LESS THA M UNTIL PH 13 IS REACHED. IN MORE BASIC SOLUTIONS, THE HYDROXIDE SHOWS AN INCREASING SOLUBILITY WITH PH RESULTING FROM THE FORMATION OF CD(OH)4-2.

(WOL) Color in Water: GENERALLY COLORLESS

(WQAT) Adequacy of Data: GOOD

File 3; Entry 1; Accession No. 7216596

(AS) CAS Registry Number: 7440-38-2
(MAT) Material Name: -E-A[redacted]-R[redacted]-S[redacted]-E[redacted]-N[redacted]-I[redacted]-C[redacted]
(FML) Chemical Formula: AS4
(SS) Common Uses: METALLURGY FOR HARDENING COPPER, LEAD ALLOYS. (MEIEDD 0001) HIGH-PURITY (SEMICONDUCTOR GRADE) IS USED TO MAKE GALLIUM ARSENIDE FOR DIPOLES AND OTHER ELECTRONIC DEVICES; AS A DOPING AGENT IN GERMANIUM AND SILICON SOLID STATE PRODUCTS. (SAARS* 0001)
(ON) Containers: BARRELS, DRUMS. SEE ALSO CACODYLIC ACID, ACCESSION NO. 8300187, FIELD 014.
(BIN) Binary Reactants: BARIUM BROMATE, BARIUM CHLORATE, BARIUM CHLORIDE, BARIUM IODATE, BROMATES, BROMINE PENTAFLUORIDE, BROMINE TRIFLUORIDE, BROMOAZIDE, CALCIUM BROMATE, CALCIUM CHLORATE, CALCIUM IODATE, CESIUM ACETYLENE CARBIDE, CHLORATES, CHLORINE, CHLORINE MONOXIDE, CHROMIUM TRIOXIDE, FLUORINE, HYPOCHLOROUS ACID, IODATES, IODINE PENTAFLUORIDE, LITHIUM MAGNESIUM BROMATE, MAGNESIUM CHLORATE, MAGNESIUM IODATE, NITROGEN TRIBROMIDE, NITROGEN TRICHLORIDE, POTASSIUM BROMATE, POTASSIUM CHLORATE, POTASSIUM IODATE, POTASSIUM NITRATE, POTASSIUM PERMANGANATE, POTASSIUM PEROXIDE, RUBIDIUM CARBIDE, RUBIDIUM ACETYLENE CARBIDE, SILVER NITRATE, SODIUM BROMATE, SODIUM CHLORATE, SODIUM IODATE, SODIUM PEROXIDE, ZINC BROMATE, ZINC CHLORATE, ZINC IODATE. (NFICAM 0001) POWDERED ALUMINUM; BROMINE AZIDE (BROMOAZIDE); DIRUBIDIUM ACETYLIDE; FLUORIDES OF BROMINE, CHLORINE, AND IODINE; PALLADIUM; ZINC; DICHLORINE OXIDE (CHLORINE MONOXIDE); NITROSYL FLUORIDE; POTASSIUM DIOXIDE (SUPEROXIDE). (BRETH* 0001)
(SGM) Synergistic Materials: MAY BE SYNERGISTIC WITH SELENIUM WHEN PRESENT IN DRINKING WATER (R11*** 0001). INSUFFICIENT DATA ARE AVAILABLE TO PERMIT A FINAL JUDGEMENT REGARDING SYNERGISTIC TOXIC EFFECTS. HOWEVER, THERE MAY BE SYNERGISTIC TOXIC EFFECTS FROM EXPOSURE TO AIRBORNE -E-AE-E-R COMPOUNDS AND CIGARETTE SMOKING OR FROM EXPOSURE TO -E-AE-E-RE-E-SE-E-EE-E SULFUR DIOXIDE. THE DIFFICULTY IN IDENTIFYING SYNERGISTIC EFFECTS BETWEEN -E-AE-E-RE-E-SE-E-EE-E-NE-E-IE-E-CE AND OTHER ENVIRONMENTAL POLLUTANTS IS PERIOD OF ARSENICAL CANCER, PERHAPS 20 TO 30 YEARS. (DOSS** 0001)
ANT) Antagonistic Materials: SELENIUM IS APPARENTLY ANTAGONISTIC TO -E-AE-E-RE-E-SE-E-EE-E-NE-E-IE-E-CE. PHYSIOLOGICAL ANTAGONIST TO THYROID H
DL) Detection Limit (Field; Techniques, Ref) (ppm): .03, ARSENIC STAIN TEST, (BNW10* 0037)
LDL) Detection Limit (Lab.; Techniques, Ref) (ppm): .03, ARSENIC STAIN TEST. (BNW10* 0037). NEW METHODS CAN DISTINGUISH INDIVIDUAL ARSENIC COMPOUNDS. SCIENTISTS AT THE NATIONAL BUREAU OF STANDARDS AND THE U.S. DEPARTMENT OF AGRICULTURE DEVELOPED SUCH A METHOD FOR MONITORING INDUSTRIAL WASTES AND SPOT-CHECKING DRINKING WATER. ARSENIC SPECIES ARE SEPARATED BY HPLC AND AN INTERMEDIATE STRENGTH ANION EXCHANGE RESIN COLUMN. ANALYSIS IS BY ATOMIC ABSORPTION SPECTROPHOTOMETRY. DETECTION LIMIT IS 0.250 PPM. (CENEAR 0009) ROCKWELL INTERNATIONAL DEVELOPED A MORE SENSITIVE, FASTER METHOD FOR OSHA THAT ALSO DISTINGUISHES AMONG THE SPECIES. ALTHOUGH DEVELOPED FOR AIR (DETECTION LIMIT FOR ARSENATE IS 1.67 .MU.G/CU M AIR), IT COULD PRESUMABLY BE USED FOR WATER SAMPLES. AIR FILTERS WITH ADSORBED PARTICULATES ARE EXTRACTED WITH A CARBONATE/BORATE BUFFER. THE SOLUTION IS SEPARATED ON A DIONEX ANION EXCHANGE COLUMN. THE ELUENT IS MIXED WITH 15% HYDROCHLORIC ACID, THEN SODIUM BOROHYDRIDE, AND FINALLY ARGON. THE HCL CLEAVES C-AS BONDS. BOROHYDRIDE REDUCES THE INORGANIC SPECIES TO ARSINE, WHICH IS DECOMPOSED INTO ELEMENTAL ARSENIC. THE ARSENIC IS MEASURED BY ATOMIC ABSORPTION SPECTROPHOTOMETRY. THE PEAKS ARE CORRELATED WITH THE PARENT COMPOUNDS, WHOSE CHROMATOGRAPHIC RETENTION TIMES ARE KNOWN. (CENEAR 0007). INORGANIC TRIVALENT OR PENTAVALENT ARSENIC, MONOMETHYLATED AND DIMETHYLATED ARSENIC ACIDS CAN BE DETERMINED IN WATER SAMPLES BY ELECTROTHERMAL ATOMIC ABSORPTION

SPECTROMETRY AFTER APPROPRIATE ACIDIFICATION PROCEDURES (CONCENTRATED HCL OR A MIXTURE OF HCL, HCLO4, AND HBR) AND EXTRACTION BY TOLUENE IN THE PRESENCE OR ABSENCE OF KI. A WET OR DRY ASHING STEP IS NEEDED FOR THE DETERMINATION OF AROMATIC DERIVATIVES AND OF ARSENIC THIOL COMPLEXES. (IAEHDW 0002). A RADIOANALYTICAL DETERMINATION OF AS(III) AND AS(V) IN NATURAL WATERS WAS DESCRIBED BY STARY ET AL. (1980). (IJEAA3 0002) REFERENCES TO SEVERAL ANALYTICAL METHODS FOR INORGANIC OR TOTAL ARSENIC IN SPECIFIC BIOLOGICAL AND ENVIRONMENTAL MATRIXES ARE REVIEWED IN (IMEMDT 0023). METHODS INCLUDE VISIBLE SPECTROPHOTOMETRY, ULTRAVIOLET SPECTROPHOTOMETRY, FLAME ATOMIC ABSORPTION AND ATOMIC ABSORPTION SPECTROPHOTOMETRY (AAS), NEUTRON ACTIVATION ANALYSIS, SPARK SOURCE MASS SPECTROMETRY, INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY, X-RAY FLUORESCENCE, DIFFERENTIAL PULSE POLAROGRAPHY, FLUORESCENCE, AND GAS CHROMATOGRAPHY WITH AAS.

(STD) Standard Codes: ICC - POISON B, POISON LABEL; USCG - POISON B, POISON LABEL; NFPA - 3,2,-.; NIOSH NO. CG0525000.

(FLM) Flammability: MODERATE IN FORM OF DUST WHEN EXPOSED TO HEAT OR FLAME OR BY CHEMICAL REACTION WITH POWERFUL OXIDIZING AGENTS.

(TCP) Toxic Combustion Products: WHEN HEATED OR ON CONTACT WITH ACID OR ACID FUMES EMITS HIGHLY TOXIC FUMES.

(EXT) Extinquishing Method: EXTINGUISH FIRE USING AGENT SUITABLE FOR SURROUNDING FIRE. USE WATER IN FLOODING QUANTITIES AS FOG. USE FOAM, CARBON DIOXIDE, OR DRY CHEMICAL. (BUXEH* 0001)

(EXP) Explosiveness: SLIGHT - AS DUST. REACTIVE ONLY UNDER EXTREME CONDITIONS.

(MLT) Melting Point (C.): 615 (SUBLIMES WITHOUT MELTING)

(SPG) Specific Gravity: 5.727 (25/4)

(VPN) Vapor Pressure (mm Hg): 61

(PER) Persistency: WILL PERSIST IN VARIOUS FORMS. MAJOR ATMOSPHERIC ARSENIC IS PARTICULATE, BUT A GASEOUS ARSENIC SPECIES OCCURS, ESPECIALLY WHERE TOTAL ARSENIC CONCENTRATIONS ARE HIGH. THIS MAY BE GASEOUS AS4O6 AS WELL AS ARSINE AND METHYLARSINES. A MARCH 1977 STUDY IN COMMERCE, TEXAS, REPORTED FOUR TO NINE TIMES AS MUCH INORGANIC AS ORGANIC ARSENIC IN THE AMBIENT AIR. THE RESIDENCE TIME FOR ARSENIC IN THE TROPOSPHERE IS ABOUT NINE DAYS. THE FORM EMITTED FROM COMBUSTION SOURCES AND SMELTERS IS ARSENIC TRIOXIDE, WHICH FORMS AS(OH)3 AND OTHER ARSENITE SPECIES IN AQUEOUS MEDIA. ARSENITES IN THE ENVIRONMENT ARE OXIDIZED TO ARSENATES. IN WATER, SOLUBLE ARSENIC CONCENTRATIONS VARY WITH PH, DISSOLVED OXYGEN, OXIDATION-REDUCTION POTENTIAL, AND MINERALS PRESENT IN WATER OR SOIL SOLUTION. ARSENATE AND ARSENITE ARE THE PRIMARY SPECIES IN NATURAL WATERS. UNDER AEROBIC CONDITIONS, AS(V) IS STABLE IN SPECIES RANGING FROM H3ASO4 TO ASO4 SUPER 3-, DEPENDING ON PH. MILD REDUCING CONDITIONS FAVOR LESS WATER-SOLUBLE AS(III) SPECIES RANGING FROM H3ASO3 TO ASO3 SUPER 3-. THE LEAST WATER-SOLUBLE AND HIGHLY VOLATILE AS, ASH3, AND DIMETHYLARSINE ARE FORMED UNDER STRONGLY REDUCING CONDITIONS. AS(V) FORMS BONDS WITH ORGANIC S, N, AND C; AS(III) BONDS WITH ORGANIC SH GROUPS BUT NOT AMINO GROUPS. LOW MOLECULAR WEIGHT ORGANIC COMPLEXES WITH AS(V) PREVENT ADSORPTION AND COPRECIPITATION OF ARSENATE WITH SESQUIOXIDES, HUMICS, ETC. (DOSS** 0001) UNDER OXIDIZING CONDITIONS, ARSENIC MIGRATES TO SOIL B AND C HORIZONS, WHERE IT IS HELD ON IRON AND ALUMINUM COMPOUNDS. (CA(AS)4)2 FREQUENTLY OCCURS AS AN INSOLUBLE COMPOUND IN SOIL. USUALLY ARSENITE AND ARSENATE ARE IN EQUILIBRIUM; BUT UNDER WATERLOGGING (REDUCING CONDITIONS), THE MORE SOLUBLE AND MOBILE ARSENITE PREDOMINATES. LOW CONCENTRATIONS OF ARSENIC IN WASTEWATER AND LEACHATES PROBABLY WILL NOT PRECIPITATE IN SOILS. (MOVIS* 0001) IN LANDFILL LEACHATE EXPERIMENTS, ARSENIC (H2ASO4 SUPER -) WAS CLASSIFIED AS SLOWLY MOBILE, BEING LESS MOBILE THAN ZINC AND CADMIUM IN ACID SOILS AND LESS MOBILE THAN CHROMIUM IN NEUTRAL TO ALKALINE SOILS. (MOVIS* 0001). THIS EXPERIMENTAL RESULT WAS BORNE OUT IN ABOUT 85 WELLS AND SPRINGS MONITORING INDUSTRIAL WASTE DISPOSAL SITES IN 13 STATES: ARSENIC WAS FOUND IN ONLY FOUR SAMPLES AT 30

TO 5,800 .MU.G/L. (SBMIG* 0001) THE EXTENT OF LOSS OF ARSENIC APPLIED TO FIELD SOILS BY VOLATILIZATION HAS NOT BEEN QUANTIFIED. SOIL EROSION CAN BE ANOTHER SIGNIFICANT LOSS OF ARSENIC, BUT PLANT UPTAKE IS AN INSIGNIFICANT REMOVAL PATHWAY. (30ULA8 0001) BIOTRANSFORMATION-- THE THERMODYNAMICALLY STABLE ARSENATE PREDOMINATES IN DEEP OCEANS; BUT IN CONTINENTAL SHELF ENVIRONMENTS, BIOTA MEDIATE REDOX REACTIONS FAVORING REDUCED SPECIES. UP TO 20% OF THE ARSENIC IN THESE WATERS IS UNSTABLE ARSENITE AND DIMETHYLARSINE. MARINE ALGAE IN BACTERIA-FREE CULTURES TAKE UP ARSENATE FROM SEAWATER AND BIOSYNTHESIZE AND RELEASE ARSENITE AND UP TO 12 SOLUBLE ORGANOARSENIC COMPOUNDS, INCLUDING METHYLARSONATE AND DIMETHYLARSINATE. ARSENATE MAY BE CONVERTED IN THE ENVIRONMENT VIA ARSENITE, METHANEARSONIC ACID (CH2ASO(OH)2), AND DIMETHYLARSINIC ACID (CACODYLIC ACID) TO DIMETHYLARSINE ((CH3)2ASH) BY METHANOBACTERIUM UNDER ANAEROBIC CONDITIONS. ARSINES MAY BE RELEASED TO THE AIR, OXIDIZED BACK TO PRECURSORS, OR DEMETHYLATED AND RETURNED AS ARSENATE TO THE SOIL, WHERE BOTH METHYLATION AND DEMETHYLATION CAN OCCUR. DIMETHYLARSINIC ACID IS A MAJOR, UBIQUITOUS FORM OF ENVIRONMENTAL ARSENIC; IT IS VERY OXIDATION RESISTANT AND, UNLESS SUBJECT TO BACTERIAL OXIDATION, MAY HAVE A CONSIDERABLE RESIDENCE TIME IN NATURAL WATERS. SOIL MICROORGANISMS CAN DEGRADE MSMA (MONOSODIUM SALT METHANEARSONIC ACID) AND DSMA (THE DISODIUM SALT), WHICH ARE USED TO CONTROL JOHNSON GRASS ON RIGHTS OF WAY ALONG SECONDARY HIGHWAYS. PURE CULTURES OF THE ORGANISMS REQUIRE 7 DAYS TO DEGRADE 3 TO 20% OF 14C-LABELLED CO2 AND INORGANIC ARSENATE. (DOSS** 0001)

PFA) Potential for Accumulation: ARSENIC IS CONCENTRATED TO A LIMITED EXTENT BY AQUATIC LIFE. IT IS A CUMULATIVE POISON IN MAMMALS ALTHOUGH A SMALL PERCENT IS CONSIDERED ESSENTIAL FOR NORMAL LIFE. POSITIVE. CONCENTRATION FACTORS - MARINE AND FRESHWATER PLANTS, INVERTEBRATES; AND FISH 333 (R170** 0001). HALF-LIFE IN TOTAL HUMAN BODY 280 DAYS (R172** 0001). THE FDA TOTAL DIET MONITORING PROGRAM SHOWS THAT THE AVERAGE DAILY INTAKE OF ARSENIC (AS AS2O3, WHICH IS 76% AS) HAS DECREASED FROM APPROXIMATELY 130 .MU.G/DAY IN 1968 TO APPROXIMATELY 20 .MU.G/DAY IN 1974. THE FOOD GROUP COMPRISING MEAT, FISH, AND POULTRY CONTRIBUTED THE MOST ARSENIC. MEAT AND POULTRY CONTAIN ARSENIC LARGELY DUE TO THE COMMON USE OF CERTAIN ORGANOARSENICAL COMPOUNDS SUCH AS ARSANILIC ACID (4-AMINOPHENYLARSONIC ACID, 4-H2NC6H5ASO(OH)2) TO STIMULATE GROWTH OR TO PREVENT OR TREAT DISEASES. IN THE SURVEY, THE MEAN ARSENIC CONCENTRATION IN CHICKEN LIVER AND MUSCLE WAS 0.08 MG/KG (AS AS2O3) AND IN BEEF, MILK, AND EGGS, 0.02 TO 0.03 MG/KG. FINFISH CONTAINED THE HIGHEST LEVELS OF ARSENIC, RANGING FROM NOT DETECTED TO 19.1 MG/KG (ARSENIC AS AS2O3); THE MEAN OF 1.47 MG/KG WAS UP TO TWICE AS HIGH AS MEAN CONCENTRATIONS IN SHRIMP, OYSTERS, AND CLAMS. ALTHOUGH ALL SHELLFISH WERE TAKEN FROM APPROVED HARVESTING AREAS, CERTAIN INDIVIDUAL MOLLUSK SAMPLES CONTAINED MORE THAN 10 TIMES THE MEAN ARSENIC CONCENTRATION FOR THE SPECIES. IN OTHER FOOD GROUPS, RICE CONTAINED A MEAN ARSENIC (TRIOXIDE) CONCENTRATION OF 0.16 MG/KG. THE DROP IN THE TOTAL DAILY DIETARY INTAKE IS PROBABLY DUE TO THE DECLINE IN USE OF ARSENIC-CONTAINING PESTICIDES SINCE THE LATE 1960S. (EVHPAZ 0020)

EDF) Etiological Potential: APPEARS RELATED TO OCCURRENCE OF BLACKFOOT DISEASE. ARSENIC IS THOUGHT TO BE A FACTOR ITHE OCCURRENCE OF HAFF'S DISEASE IN HUMAN BEINGS.

CAG) Carcinogenicity: POTENTIALLY CARCINOGENIC IN WATER. POTENTIAL. (CWQPAV 0001) EPIDEMIOLOGICAL STUDIES INDICATE AN APPARENT CAUSAL RELATIONSHIP BETWEEN SKIN CANCER AND HEAVY EXPOSURE TO INORGANIC ARSENIC VIA MEDICATION, CONTAMINATED WELL WATER, OR OCCUPATIONAL EXPOSURE. SKIN CANCER AS A RESULT OF ARSENICAL POISONING IS CHARACTERIZED BY MULTIFOCAL LESIONS OVER THE ENTIRE BODY. AMONG THE SEVERAL TYPES OF SKIN CANCER, EPITHELIOMA DEVELOPING ON THE KERATOSES SITE IS MOST COMMON. THE CAUSAL RELATIONSHIP BETWEEN EXPOSURE TO ARSENICAL DUST AND LUNG CANCER WAS CONFIRMED BY EPIDEMIOLOGICAL OBSERVATIONS IN 1977. PINTO (1977) SHOWED A HIGHER RISK OF LUNG CANCER AMONG WORKERS EXPOSED TO ARSENIC TRIOXIDE IN

SMELTERS AND INSECTICIDE FACTORIES. RESPIRATORY CANCER MORTALITY HAS BEEN RELATED TO AN ARSENIC EXPOSURE INDEX (INTENSITY AND DURATION) AND TO THE AVERAGE LEVEL OF ARSENIC IN THE URINE. AT PRESENT THERE IS INSUFFICIENT KNOWLEDGE OR EVIDENCE ABOUT THE NATURE OF MECHANISM OF ARSENIC CARCINOGENICITY IN HUMANS TO DETERMINE A THRESHOLD LEVEL FOR ARSENIC. WICKSTROM (1972) HAS CITED AN INCREASED RELATIVE FREQUENCY OF DEATHS FROM LUNG CANCER IN POPULATIONS EXPOSED TO ARSENIC IN DRINKING WATER IN ARGENTINA. TUMORS IN OTHER ORGANS HAVE ALSO BEEN REPORTED IN THESE STUDIES IN POPULATIONS EXPOSED TO INORGANIC ARSENIC AS MEDICATION, AS AN INSECTICIDE, AS CONTAMINATED WINE, AND IN DRINKING WATER. IARC (1973), HOWEVER, CONCLUDED THAT THE RELATIONSHIP BETWEEN ARSENIC EXPOSURE AND A HIGHER RISK OF CANCER IN ORGANS OTHER THAN SKIN AND LUNGS HAS NOT BEEN CONFIRMED. IN SPITE OF THE EPIDEMIOLOGIC ASSOCIATION BETWEEN EXPOSURE TO ARSENIC AND CANCER OF THE SKIN AND LUNGS IN MAN, RELIABLE AND CONSISTENT ANIMAL MODELS OF ARSENIC CARCINOGENICITY HAVE NOT BEEN ACHIEVED. OSSWALD AND GOERTTLER (1971) SUGGESTED LYMPHOMA WAS INDUCED IN MICE THAT WERE EXPOSED TO SEVERAL ARSENICAL COMPOUNDS BY SEVERAL ROUTES. THE MECHANISM(S) OF INORGANIC ARSENIC CARCINOGENICITY IS SPECULATIVE. IT IS GENERALLY ACCEPTED BY MEDICAL AND REGULATORY AUTHORITIES THAT TRIVALENT ARSENIC IS AN OCCUPATIONAL CARCINOGEN. THE DATA REGARDING HAZARDS ARISING FROM EXPOSURE TO PENTAVALENT ARSENIC ARE CONTRADICTORY, AND DIFFERENT BIOCHEMICAL MECHANISMS FOR THE TWO FORMS OF INORGANIC ARSENIC HAVE BEEN POSTULATED. SINCE THE ACTUAL MECHANISM(S) RESULTING IN RESPIRATORY CANCER ARE NOT PROVEN, PENTAVALENT ARSENIC IS TREATED AS A CARCINOGEN UNTIL CONVINCING EVIDENCE IS PRESENTED TO THE CONTRARY. (FEREAC 0001 0004) (IMEMDT 0003) AND OTHER REFERENCES CITED IN (DOSS** 0001) IN 1979, THE INTERNATIONAL ASSOCIATION FOR RESEARCH ON CANCER (IARC) CONCLUDED THAT INFORMATION ON THE CARCINOGENICITY OF ARSENIC COMPOUNDS IN EXPERIMENTAL ANIMALS IS INADEQUATE FOR EVALUATION. THE INFLUENCE OF CONSTITUENTS OTHER THAN ARSENIC TRIOXIDE OF THE WORKING ENVIRONMENT CANNOT BE EXCLUDED IN EPIDEMIOLOGICAL STUDIES. AN ASSOCIATION BETWEEN EXPOSURE TO ARSENIC COMPOUNDS AND BLOOD DYSCRASIAS AND LIVER TUMORS HAS BEEN SUGGESTED BY CASE REPORTS. (IMEMDT 0020) THERE IS SUFFICIENT EVIDENCE THAT INORGANIC ARSENIC COMPOUNDS ARE SKIN AND LUNG CARCINOGENS IN HUMANS. DATA THAT SUGGEST AN INCREASED CANCER RISK AT OTHER SITES ARE INADEQUATE FOR EVALUATION. (IMEMDT 0023)

(UT) Mutagenicity: ARSENATES ARE KNOWN TO INHIBIT PHOSPHORYLATION. POTENTIAL. CHRONIC EXPOSURE OF MICE TO DRINKING WATER CONTAINING 50 MG ARSENIC/ML DAMAGED THE GERMINAL EPITHELIUM OF THE TESTES. OTHER EXPERIMENTS WITH INORGANIC ARSENICALS HAVE SHOWN CHROMOSOMAL CHANGES IN HUMAN LYMPHOCYTES IN VITRO. CELL DIVISION DEFECTS AND OTHER CHROMOSOMAL ABNORMALITIES OCCURRED IN HUMANS TREATED WITH DRUGS CONTAINING ARSENIC. IT IS BELIEVED THAT ARSENIC INTERFERES WITH

RMAL CHROMOSOME REPAIR BY BLOCKING SULFHYDRYL GROUPS OF KEY ENZYMES. (DOSS** 0001) OCCUPATIONALLY AND MEDICALLY EXPOSED HUMANS HAVE A HIGHER INCIDENCE OF GAPS, CHROMOSOME ABERRATIONS, CHROMATID ABERRATIONS, LESIONS, AND ANEUPLOIDY. IN VITRO HUMAN LYMPHOHOCYTE CULTURES SHOWED ADVERSE EFFECTS DURING METAPHASE AT 0.1 PPB. LEUCOCYTE CULTURES SHOWED CHROMATID BREAKS WITHIN 48 HOURS AT 1.8 E-8 MOLAR. (AWQCD* 0007)

(TER) Teratogneicity: TERATOGENIC WHEN INJECTED ON CERTAIN DAYS OF GESTATION (XNRNBT 0002). TERATOGENIC EFFECTS ATTRIBUTABLE TO SODIUM ARSENATE HAVE BEEN NOTED IN STUDIES WITH HAMSTERS, IN MICE, AND IN RATS. THE DOSE OF DIBASIC SODIUM ARSENATE WAS 15 TO 25 MG/KG AND GIVEN ONCE INTRAVENOUSLY ON DAY 8 OF GESTATION TO THE HAMSTERS. SLIGHTLY HIGHER DOSES WERE GIVEN TO THE RATS AND MICE. TISSUE MALFORMATIONS INCLUDED EYE DEFECTS (ANOPHTHALMIA AND MICROPHTHALMIA), EXENCEPHALY, AND RENAL AND GONADAL AGENESIS. RIBS AND VERTEBRAE WERE OFTEN MALFORMED. WHEN TRI- OR PENTAVALENT ARSENIC COMPOUNDS WERE INJECTED INTO FERTILIZED CHICKEN EMBRYOS, BEAK AND BRAIN MALFORMATIONS OCCURRED. (DOSS** 0001)

(TRT) Major Species Threatened: BEANS AND CUCUMBERS EXTREMELY SENSITIVE. MOST LIFE FORMS.

(INH) Inhalation limit (value): 10 (.MU.G/CU M); 0.5 (MG/CU M)

(INT) Inhalation Limit (Text): REGULATIONS-- OSHA PEL (TWA) .010 MG/M3 (29CFR* 1910). RECOMMENDATIONS-- NIOSH CEILING .002 MG/M3/15 MIN (CRSOE* 75-149,75/NIOSH) ACGIH TLV (TWA).2 MG AS/M3 (TLVADM 83/ACGIH) UPDATED 3/84

(DRC) Direct Contact: -E-AE-E-RE-E-SE-E-EE-E-NE-E-IE-E-CE ENTERS THE BODY PRI INGESTION; SKIN ABSORPTION IS A MINOR ROUTE. (DOSS** 0001)

(GNS) General Sensation: IRRITATION OF GASTROINTESTINAL TRACT, NAUSEA, VOMITING, DIARRHEA, WEAKNESS, LOSS OF APPETITE, LIVER DAMAGE, SKIN ABNORMALITIES. THROAT CONSTRICTION; HEMOLYSIS; ABDOMINAL PAIN; THIRST; MUSCLE CRAMPS; HEADACHE; DIZZINESS; RESTLESSNESS; DECREASED URINARY FLOW; CONVULSIONS; COMA. (AWQCD* 0007)

(DHI) Direct Human Ingestion (mg/kg): 3.5

(SAF) Personal Safety Precautions: EMITS HIGHLY TOXIC FUMES WHEN HEATED. WEAR SELF-CONTAINED BREATHING APPARATUS. COVERALLS OR SIMILAR FULL-BODY WORK CLOTHING; GLOVES, AND SHOES OR COVERLETS; FACE SHIELDS OR VENTED GOGGLES WHEN NECESSARY TO PREVENT EYE IRRITATION, WHICH COMPLY WITH THE REQUIREMENTS. CAUTION: FOR CLOTHING CONTAMINATED WITH INORGANIC ARSENIC DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF INORGANIC ARSENIC CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS. OSHA RESPIRATOR REQUIREMENTS FOR INORGANIC ARSENIC PARTICULATE EXCEPT FOR THOSE WITH SIGNIFICANT VAPOR PRESSURE: FOR UNKNOWN OR GREATER OR LESSER THAN 20,000 .MU.G/CU M (20 MG/CU M) OR FIREFIGHTING USE ANY FULL FACEPIECE SELF-CONTAINED BREATHING APPARATUS OPERATED IN POSITIVE PRESSURE MODE. FOR CONCENTRATIONS NOT GREATER THAN 20,000 .MU.G/CU M (20 MG/CU M) USE SUPPLIED AIR RESPIRATOR WITH FULL FACEPIECE, HOOD, OR HELMET OR SUIT AND OPERATED IN POSITIVE PRESSURE MODE. FOR CONCENTRATIONS NOT GREATER THAN 10,000 .MU.G/CU M (10 MG/ CU M) USE POWERED AIR-PURIFYING RESPIRATORS WITH HIGH EFFICIENCY FILTERS OR HALF-MASK SUPPLIED AIR RESPIRATORS OPERATED IN POSITIVE PRESSURE MODE. FOR CONCENTRATIONS NOT GREATER THAN 500 .MU.G/CU M USE FULL FACEPIECE AIR-PURIFYING RESPIRATOR EQUIPPED WITH HIGH EFFICIENCY FILTERS OR ANY FULL FACEPIECE SUPPLIED AIR RESPIRATOR OR ANY FULL FACEPIECE SELF-CONTAINED BREATHING APPARATUS. FOR CONCENTRATIONS NOT GREATER THAN 100 .MU.G/CU M USE HALF-MASK AIR-PURIFYING RESPIRATOR EQUIPPED WITH HIGH-EFFICIENCY FILTER OR ANY HALF-MASK SUPPLIED AIR RESPIRATOR. HIGH-EFFICIENCY FILTER=99.97% EFFICIENCY AGAINST 0.3 MICROMETER MONODISPERSE DIETHYL-HEXYL PHTHALATE (DOP) PARTICLES. (29CFR* 0001)

(AHL) Acute Hazard Level: 130 MG OF ARSENIC INGESTED PROVES FATAL IN HUMANS. SMALL DOSES MAY BECOME FATAL IN TIME SINCE ARSENIC ACCUMULATES IN THE BODY. SUBLETHAL DOSES CAN AFFECT LIVER. 10 PPM IN WATER ACUTE HAZARD. FOR IRRIGATION, 1 PPM IS CONSIDERED THE THRESHOLD CONCENTRATION (E188**

0001). THRESHOLD CONCENTRATION FOR FRESH AND SALT WATER FISH, 1 PPM (E188** 0001).

(CHL) Chronic Hazard Level: ACCUMULATIVE POISON - DAMAGES LIVER AND KIDNEYS 1.4 PPM AFFECTS REPRODUCTION IN DAPHNIDS OVER A 3 WEEK PERIOD.(R182** 0001); APPLICATION OF 5 MG/L AS IN DRINKING WATER LED TO RAPID DIEOFF OF RAT AND MOUSE BREEDING COLONIES (R120** 0001) ANOTHER OBSERVER SAW NO EFFECT IN THREE GENERATIONS OF MICE AT THAT LEVEL (R11*** 0001); CHRONIC POISONING HAS BEEN REPORTED FROM CONSUMPTION OF DRINKING WATER CONTAINING .21-10 MG/L WHILE LEVELS OF .05-.25 MG/L HAVE BEEN USED SAFELY (WATRAG 0028); MARINE WATERS SHOULD NOT EXCEED 1/100 OF 96 HOUR LC50 (R184** 0001). CHRONIC HUMAN EXPOSURE TO ARSENIC AT LEVELS OF 0.35 PPM AND HIGHER IN COMMUNITY DRINKING WATER SUPPLIES HAS BEEN ASSOCIATED WITH BLACKFOOT DISEASE (A PERIPHERAL VASCULAR DISORDER ASSOCIATED WITH GANGRENE), OTHER CARDIOVASCULAR DISORDERS, SKIN LESIONS, SKIN CANCER, HYPERPIGMENTATION, KERATOSIS, CHRONIC HERPES, BRONCHOPULMONARY DISEASE, CHRONIC COUGH, ABDOMINAL PAIN, AND CHRONIC DIARRHEA. A SOPHISTICATED MULTIVARIATE ANALYSIS SHOWED REDUCED NEUROLOGICAL FUNCTION ASSOCIATED WITH OCCUPATIONAL INHALATION EXPOSURE TO ARSENIC TRIOXIDE AT THE TACOMA, WASHINGTON, COPPER SMELTER. (EPIAS* 0001)

(HEL) Degree of Hazard to Public Health: IN WATER TAKEN OVER LONG PERIODS OF TIME THE FOLLOWING CONCENTRATIONS OF ARSENIC HAVE BEEN REPORTED AS POISONOUS TO HUMAN BEINGS: .21 MG/L, .3-1 MG/L AND .4-10 MG/L. HIGHLY TOXIC. MAY BE CARCINOGENIC. ARSENITE (+3) FORMS ARE MORE TOXIC THAN ARSENATE (+5) FORMS.

(AIR) Air Pollution: HIGH AT AROUND 10 TO 40 MG AS/CU M MINIMAL, SYMPTOMS AFTER SEVERAL HOURS EXPOSURE. AT AROUND 25 TO 125 MG AS/CU M MAXIMUM CONCENTRATION FOR 1 HOUR WITH REVERSAL OF EFFECTS. AT AROUND 50 TO 250 MG AS/CU M HIGH RISK TO HEALTH FROM 1 HOUR EXPOSURE. AT AROUND 1,000 MG AS/CU M LC50, FROM 1 HOUR EXPOSURE. SOURCE: REEVES, 1976, CITED IN (DOSS** 0001). EPA LISTS ARSENIC AS A HAZARDOUS AIR POLLUTANT AS DEFINED UNDER THE CLEAN AIR ACT AND THE AGENCY'S PROPOSED AIRBORNE CARCINOGEN POLICY. (CENEAR 0010)

(ACT) Action Levels: NOTIFY FIRE AUTHORITY. ENTER FROM UPWIND SIDE. NOTIFY LOCAL AUTHORITIES IN CASE OF WATER POLLUTION.

(AML) In Situ Amelioration: SEEK PROFESSIONAL ASSISTANCE FROM EPA'S ENVIRONMENTAL RESPONSE TEAM (ERT) EDISON, NJ, 24-HOUR NUMBER (201)321-6660. ALUM FLOC TIES UP IN INSOLUBLE FORM. ANION EXCHANGERS WILL PICK UP ARSENATES. FOR SMALL SPILLS OF ARSENICAL DUSTS, TAKE UP WITH SAND OR OTHER NONCOMBUSTIBLE ABSORBENT MATERIAL. THEN FLUSH AREA WITH WATER. FOR SMALL DRY SPILLS, SHOVEL INTO DRY CONTAINERS AND COVER, MOVE CONTAINERS, AND THEN FLUSH AREA WITH WATER. NOTE THAT RUNOFF FROM FIRE CONTROL OR DILUTION WATER MAY CAUSE POLLUTION. FOR LARGE SPILLS, DIKE FAR AHEAD OF SPILL FOR LATER DISPOSAL. (85EWAF 0001)

(AVL) Availability of Countermeasure Materials: ALUM - WATER TREATMENT PLANT; ANION EXCHANGERS - WATER SOFTENER SUPPLIERS.

(DIS) Disposal Methods: FOR SMALL SPILLS DISSOLVE IN MINIMUM CONCENTRATED HYDROCHLORIC ACID. DILUTE WITH WATER UNTIL WHITE PRECIPITATES FORM. ADD JUST ENOUGH 6M HCL TO REDISSOLVE. SATURATE WITH H2S. FILTER, WASH DRY AND SHIP TO SUPPLIER. FOR LARGE SPILLS--AFTER THE MATERIAL HAS BEEN CONTAINED, REMOVE IT AND THE CONTAMINATED SOIL AND PLACE IN IMPERVIOUS CONTAINERS. IF PRACTICAL, TRANSPORT MATERIAL BACK TO THE SUPPLIER OR CHEMICAL COMPANY TO RECOVER THE HEAVY METAL CONTENT. IF THIS IS NOT PRACTICAL, OR FACILITIES NOT AVAILABLE, THE MATERIAL SHOULD BE ENCAPSULATED AND BURIED IN A CALIFORNIA CLASS 1 LANDFILL. SUCH A LANDFILL OFFERS NO DANGER OF USEABLE SURFACE OR UNDERGROUND WATER CONTAMINATION. NOT ACCEPTABLE AT MUMICIPAL SEWAGE TREATMENT PLANT. (RMRNR* 0004)

(IFP) Industrial Fouling Potential: SHOULD NOT BE PRESENT IN FOOD PROCESSING WATERS.

(WAT) Major Water Use Threatened: POTABLE SUPPLY, FISHERIES, IRRIGATION.

(LOC) Probable Location and State of Material: SILVERY OR GRAYISH METAL.

TURNS BLACK ON EXPOSURE TO AIR. WILL DISSOLVE. SALTS MAY DECOMPOSE TO -E-AE-E-RE-E-SE-E-EE-E-NE-E-IE-E-CE ACID. SOME SALTS ARE SOLUBLE.

)RT) Soil Chemistry: -E-AE-E-RE-E-SE-E-EE-E-NE-E-IE-E-CE IS STRONGLY HELD BY THROUGH THE SOIL COLUMN (R174** 0001). CONCENTRATIONS AS LOW AS 1 MG/L MAY INJURE SOME PLANTS; CONCENTRATIONS IN EXCESS OF 75 PPM WILL DAMAGE FOLIAGE (R174** 0001); -E-AE-E-RE-E-SE-E-EE-E-NE-E-IE-E-CE SHOULD NOT EXCE INCHES OF SOIL. -E-AE-E-RE-E-SE-E-EE-E-NE-E-IE-E-CE IS ADSORBED STRONGLY I SOILS RICH IN IRON AND ALUMINUM ABSORPTION SITES SUCH AS CLAY. REPEATED APPLICATIONS TO SUCH SOILS LEADS TO ACCUMULATION. AS IN WATER, -E-AE-E-RE IN SOIL EXISTS IN SEVERAL FORMS DEPENDING ON OXYGEN LEVELS, REDUCING ABILITY, AND MICROBE ACTIVITY. -E-AE-E-RE-E-SE-E-EE-E-NE-E-IE-E-CE COMPETE ADSORPTION SITES. THUS PHOSPHATE FERTILIZERS RELEASE SOLUBLE -E-AE-E-RE-E- SOIL, WHICH IS THE PHYTOTOXIC FORM. EFFORTS TO LOWER PHYTOTOXICITY INCLUDE LEACHING SANDY SOILS AFTER PHOSPHATE ADDITION AND DEEP PLOWING TO EXPOSE THE -E-AE-E-RE-E-SE-E-EE-E-NE-E-IE-E-CE TO MORE ADSORPTION SITES. (ESTIMATED THAT APPROXIMATELY 12% OF THE -E-AE-E-RE-E-SE-E-EE-E-NE-E-IE-E-C THE SOIL IS LOST THROUGH VOLATILIZATION OF ALKYLARSINES EACH YEAR, WITH TOTAL LOSSES BEING 14 TO 15%. SANDBERG AND ALLEN (1975) ESTIMATED VOLATILITY LOSSES FROM SOILS OF 17 TO 35% PER YEAR. THEORETICALLY, -E-AE-E-RE-E-SE-E-EE-E-NE-E-IE-E-CE ACCUMULATION IN THE SOIL WILL REACH EQ FOR 25 TO 30 YEARS. (WEESA6 0002)

(HOH) Water Chemistry: -E-AE-E-RE-E-SE-E-EE-E-NE-E-IE-E-CE EXISTS IN NATURE I OXIDATION STATES. BASED ON AVAILABLE THERMODYNAMIC DATA, THE PENTAVALENT STATE IS THE STABLE STATE IN AERATED WATER, BUT IN VERY REDUCING SEDIMENTS AS(0) AND AS(H3) CAN EXIST. IN MORE MODERATELY REDUCING SEDIMENTS, THE TRIVALENT STATE CAN EXIST. AN EH-PH DIAGRAM HAS RECENTLY BEEN CONSTRUCTED FOR THE SYSTEM INVOLVING -E-AE-E-RE-E-SE-E-EE-E-NE-E-IE-E SULFUR. BESIDES THE INORGANIC FORMS OF -E-AE-E-RE-E-SE-E-EE-E-NE-E-IE-E-CE NUMBERING IN THE THOUSANDS HAVE BEEN PREPARED, SOME OF WHICH MAY CONTRIBUTE TO THE BEHAVIOR OF -E-AE-E-RE-E-SE-E-EE-E-NE-E-IE-E-CE IN NATUR BEHAVIOR OF AS(V) IS SIMPLE SINCE IT FORMS AN OXYACID, H3ASO4, WHOSE PROPERTIES RESEMBLE VERY CLOSELY THOSE OF H3PO4. ARSENATE FORMS INSOLUBLE SALTS WITH MANY CATIONS, AND SOLUBILITY PRODUCTS, PROBABLY GOOD TO .5 LOG UNITS WERE REPORTED FOR SIXTEEN ARSENATES BY CHUKHLANTSEV. ARSENATE IS EXPECTED TO BE ENRICHED IN PHOSPHATE MINERALS BY EXCHANGE WITH THE PHOSPHATE ION, AS WAS POINTED OUT BY FERGUSON AND GAVIS (1972). ARSENITE (+3) IS FOUND IN ABOUT EQUAL AMOUNTS WITH ARSENATE IN OCEAN WATER. IN DILUTE SOLUTIONS (LESS THAN APPROXIMATELY 0.1 MOLAL), AS(III) EXISTS AS MONONUCLEAR SPECIES BELIEVED TO BE AS(OH)3, AS(OH)4 SUPER -, ASO2OH2 SUPER -, AND ASO3 SUPER 3- THE CHEMISTRY AND IONIZATION BEHAVIOR OF AS(OH)3 RESEMBLE MORE CLOSELY THOSE OF BORIC ACID THAN OF PHOSPHOROUS ACID. THE IONIZATION CONSTANT FOR ARSENIOUS ACID IS KNOWN AS A FUNCTION OF KCL CONCENTRATION FROM THE WORK OF ANTIKAINEN AND ROSSI (1959) AND AS A FUNCTION OF TEMPERATURE FROM THE WORK OF ANTIKAINEN AND TEVANEN (1961). AS4O6 HAS A SOLUBILITY OF .103 M (AS) AT 25 DEGREES CELSIUS AND THERE IS EVIDENCE FOR POLYMER FORMATION IN SATURATED SOLUTIONS IN THE PH RANGE 9 TO 10; POSSIBLE SPECIES AS2(OH)7 SUPER - AND AS3(OH)10 SUPER -. THE FORMATION OF CHELATES WITH POLYOLS (MANNITOL, MANNOSE, CATECHOL, AND PYROGALLOL) MAY BE AN IMPORTANT PROCESS IN NATURAL SYSTEMS. A SOLUTION AT PH 9 CONTAINING 10-3 M OF THE POLYOL HAS AS MUCH AS ONE-THIRD OF THE AS(III) IN THE FORM OF THE ARSENITE-POLYOL COMPLEX. THERE IS READY INTERCONVERSION OF -E-AE-E-RE-E-SE-E-EE-E-NE-E-IE-E-CE COMPOUNDS BY THE AC AS(III) AND AS(V) FORM COMPOUNDS CONTAINING C-AS BONDS. THE PK1 FOR DISSOCIATION OF ALKYL -E-AE-E-RE-E-SE-E-EE-E-NE-E-IE-E-CE ACIDS, RASO(OH)2 PK2 IS ABOUT EQUAL TO 8. ACID DISSOCIATION CONSTANTS FOR A NUMBER OF ALIPHATIC -E-AE-E-RE-E-SE-E-EE-E-NE-E-IE-E-CE ACIDS ARE SUMMARIZED BY DOAK HYDROLYTIC BEHAVIOR OF THE IMPORTANT GROUP OF ALKYL ARSINES (R3**** 0001 AS) IS UNKNOWN, BUT (CH3)3AS IS FORMED BY MICROORGANISMS FROM INORGANIC COMPOUNDS. THE ORGANIC SALTS RISE IN THE WATER, ARE OXIDIZED AND SOON PRECIPITATE COMPLETING A CYCLE FROM SEDIMENT TO WATER. (HYCAT* 0001)

(COL) Color in Water: COLORLESS
(DAT) Adequacy of Data: GOOD

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PART 300—NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN

Subpart A—Introduction

Subpart B—Responsibility and Organization for Response

Subpart C—Planning and Preparedness

Subpart D—Operational Response Phases for Oil Removal

Subpart E—Hazardous Substance Response

Subpart F—State Involvement in Hazardous Substance Response

Subpart G—Trustees for Natural Resources

Subpart H—Participation by Other Persons

Subpart I—Administrative Record for Selection of Response Action

Subpart J—Use of Dispersants and Other Chemicals

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NOTE: Index reference sheet only - rest of information on contingency plan may be located or requested at from EPA Region 6

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SELECTION OF CONTROL TECHNOLOGIES FOR REMEDIATION OF LEAD BATTERY RECYCLING SITES

by

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Contract No. 68-C9-0033

Project Officer

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RISK REDUCTION ENGINEERING LABORATORY
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NOTE: Cover sheet only -- rest of information can be located/requested from EPA, Region 6

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OSWER Directive #9355.4-02

MEMORANDUM

SUBJECT: Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites.

FROM: Henry L. Longest II, Director
Office of Emergency and Remedial Response

Bruce Diamond, Director
Office of Waste Programs Enforcement

TO: Directors, Waste Management Division, Regions I, II, IV, V, VII and VIII
Director, Emergency and Remedial Response Division, Region II
Directors, Hazardous Waste Management Division, Regions III and VI
Director, Toxic Waste Management Division, Region IX
Director, Hazardous Waste Division, Region X

PURPOSE

The purpose of this directive is to set forth an interim soil cleanup level for total lead, at 500 to 1000 ppm, which the Office of Emergency and Remedial Response and the Office of Waste Programs Enforcement consider protective for direct contact at residential settings. This range is to be used at both Fund-lead and Enforcement-lead CERCLA sites. Further guidance will be developed after the Agency has developed a verified Cancer Potency Factor and/or a Reference Dose for lead.

BACKGROUND

Lead is commonly found at hazardous waste sites and is a contaminant of concern at approximately one-third of the sites on the National Priorities List (NPL). Applicable or relevant and appropriate requirements (ARARs) are available to provide cleanup levels for lead in air and water but not in soil. The current

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National Ambient Air Quality Standard for lead is 1.5 ug/m^3. While the existing Maximum Contaminant Level (MCL) for lead is 50 ppb, the Agency has proposed lowering the MCL for lead to 10 ppb at the tap and to 5 ppb at the treatment plant(1). A Maximum Contaminant Level Goal (MCLG) for lead of zero was proposed in 1988(2). At the present time, there are no Agency-verified toxicological values (Reference Dose and Cancer Potency Factor, ie., slope factor), that can be used to perform a risk assessment and to develop protective soil cleanup levels for lead.

Efforts are underway by the Agency to develop a Cancer Potency Factor (CPF) and Reference Dose (RfD), (or similar approach), for lead. Recently, the Science Advisory Board strongly suggested that the Human Health Assessment Group (HHAG) of the Office of Research and Development (ORD) develop a CPF for lead, which was designated by the Agency as a B2 carcinogen in 1988. The HHAG is in the process of selecting studies to derive such a level. The level and documentation package will then be sent to the Agency's Carcinogen Risk Assessment Verification Exercise (CRAVE) workgroup for verification. It is expected that the documentation package will be sent to CRAVE by the end of 1989. The Office of Emergency and Remedial Response, the Office of Waste Programs Enforcement and other Agency programs are working with ORD in conjunction with the Office of Air Quality Planning and Standards (OAQPS) to develop an RfD, (or similar approach), for lead. The Office of Research and Development and OAQPS will develop a level to protect the most sensitive populations, namely young children and pregnant women, and submit a documentation package to the Reference Dose workgroup for verification. It is anticipated that the documentation package will be available for review by the fall of 1989.

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IMPLEMENTATION

The following guidance is to be implemented for remedial actions until further guidance can be developed based on an Agency verified Cancer Potency Factor and/or Reference Dose for lead.

Guidance

This guidance adopts the recommendation contained in the 1985 Centers for Disease Control (CDC) statement on childhood lead poisoning(3) and is to be followed when the current or predicted land use is residential. The CDC recommendation states that "...lead in soil and dust appears to be responsible for blood levels in children increasing above background levels when the concentration in the soil or dust exceeds 500 to 1000 ppm". Site-specific conditions may warrant the use of soil cleanup levels below the 500 ppm level or somewhat above the 1000 ppm level. The administrative record should include background documents on the toxicology of lead and information related to site-specific conditions.

The range of 500 to 1000 ppm refers to levels for total lead, as measured by protocols developed by the Superfund Contract Laboratory Program. Issues have been raised concerning the role that the bioavailability of lead in various chemical forms and particle sizes should play in assessing the health risks posed by exposure to lead in soil. At this time, the Agency has not developed a position regarding the bioavailability issue and believes that additional information is needed to develop a position. This guidance may be revised as additional information becomes available regarding the bioavailability of lead in soil.

Blood-lead testing should not be used as the sole criterion for evaluating the need for long-term remedial action at sites that do not already have an extensive, long-term blood-lead data base[1].

EFFECTIVE DATE OF THIS GUIDANCE

This interim guidance shall take effect immediately. The guidance does not require that cleanup levels already entered into Records of Decisions, prior to this date, be revised to conform with this guidance.

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[1] In one case, a biokinetic uptake model developed by the Office of Air Quality Planning and Standards was used for a site-specific risk assessment. This approach was reviewed and approved by Headquarters for use at the site, based on the adequacy of data (due to continuing CDC studies conducted over many years). These data included all children's blood-lead levels collected over a period of several years, as well as family socio-economic status, dietary conditions, conditions of homes and extensive environmental lead data, also collected over several years. This amount of data allowed the Agency to use the model without a need for extensive default values. Use of the model thus allowed a more precise calculation of the level of cleanup needed to reduce risk to children based on the amount of contamination from all other sources, and the effect of contamination levels on blood-lead levels of children.

REFERENCES

1. 53 FR 31516, August 18, 1988.
2. 53 FR 31521, August 18, 1988.
3. Preventing Lead Poisoning in Young Children, January 1985, U.S. Department of Health and Human Services, Centers for Disease Control, 99-2230.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 29 1989

OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Update on OSWER Soil Lead Cleanup Guidance

FROM: Don R. Clay
Assistant Administrator
Solid Waste and Emergency Response

TO: Addressees

PURPOSE

This memorandum addresses the progress of the Office of Solid Waste and Emergency Response (OSWER) in updating the directive #9355.4-02 entitled "Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites" (September 1989).

BACKGROUND

Currently, as set forth by OSWER directive #9355.4-02, EPA recommends an interim soil cleanup level of 500 - 1000 ppm total lead for CERCLA sites characterized as residential. This directive is being revised to:

1. Account for the contribution of various media to total lead exposure, and the variability of each medium's contribution with location and age of the exposed population, and

2. Provide a strong scientific basis for choosing a soil lead cleanup level for a specific CERCLA/RCRA site.

OSWER believes that the best available approach is to use the EPA Uptake Biokinetic (UBK) Model as a risk assessment tool to predict blood lead levels and aid the risk management decision on soil lead cleanup levels at CERCLA/RCRA sites which are characterized as residential.

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OBJECTIVE

The EPA UBK Model, which was mentioned in OSWER directive #9355.4-02 as a tool for site-specific assessment of total lead exposure, will predict blood lead levels in the most sensitive

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populations (i.e., children 0-6 years old) exposed to lead in air, dust, drinking water, soil, and paint. The UBK Model:

1. Underwent Agency review in its use for the National Ambient Air Quality Standard (NAAQS);

2. Was used to support rulemaking for the Clean Air Act and the Safe Drinking Water Act;

3. Was adapted and reviewed for Superfund application;

4. Was validated at several Superfund sites; and

5. Has default parameters documented by the Office of Research and Development (ORD).

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The UBK Model can be run with either site-specific data or its default parameters. Concern exists, however, over the use of the default parameters versus site-specific data for input to the model. OSWER has decided to address these concerns, as well as the appropriate method to use for collecting site specific data, before issuing a directive recommending the UBK model as the preferred method for setting lead cleanup levels at CERCLA/RCRA sites. To this end, the Science Advisory Board (SAB) has agreed to review the UBK model and its applicability for developing site-specific soil lead cleanup levels at CERCLA/RCRA sites. Also, a technical workgroup consisting of Regional, ORD, and OSWER scientists in consultation with outside experts is presently developing a "Site-specific Guidance Manual" which will provide guidance to site managers for determining why and when to collect site-specific data for the model. The guidance will include appropriate protocols and sampling strategies for collecting the site-specific data (e.g., soil, indoor/outdoor dust, paint, etc.) Once this guidance is complete, and the SAB issues have been resolved, EPA expects to release this guidance in conjunction with a revised OSWER directive recommending the UBK model as a risk assessment tool to develop soil lead cleanup levels at CERCLA/RCRA sites.

To assist in the implementation of this revised directive, once it is issued, the technical workgroup mentioned above will:

1. Review inputs and technical applications of the model, within 2-4 weeks of receipt, to aid site managers in the appropriate and consistent application of the model to individual site conditions;

2. Provide clarification and assistance to the Regions in the use and interpretation of the Site-specific Guidance Manual, such as the type of data to use in the Model;

3. Provide scientific support for those cases which the workgroup has reviewed and found the use of the model to

be both appropriate and justified; and

4. Collect data pertaining to the use of the model and Regional site-specific information which will be used to refine and further validate the model.

Once the revised directive is issued, Headquarters has recommended that, whenever the UBK model is used to help determine cleanup levels for a site, the Regions should consult the workgroup on the parameters utilized in the model and the reasons for their selection.

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DISCUSSION

We are aware that a number of Regions are already using the UBK Model to develop soil lead cleanup levels at their sites and that the current directive allows for deviations from the 500 - 1000 ppm range due to site-specific conditions. We recommend a model projection benchmark of either 95% of the sensitive population having blood lead levels below 10 ug/dl or a 95% probability of an individual having a blood lead level below 10 ug/dl. This recommendation is consistent with EPA's Agency-Wide Lead Strategy.[2] When the model is run using this benchmark, as well as each of the model's default parameters (i.e. no site-specific data is input), an acceptable soil level of approximately 500 ppm is predicted for lead. For those Regions which have used or are planning on using the model prior to release of the revised directive, and who have developed soil lead cleanup levels which fall outside the 500 - 1000 ppm range, Headquarters has requested that the Assistant Administrator of OSWER be consulted prior to implementation of those cleanup levels. The use of the UBK model in these situations is considered precedent-setting and, as such, a formal consultation with Headquarters is recommended as set forth in OSWER directive #9012.10-1 entitled "Clarification of Delegation of Authority" (April 1990). Headquarters should also be consulted on removal actions which use soil lead cleanup levels derived by the UBK model and which fall outside the 500 - 1000 ppm range. For further information please contact Susan Griffin of the Toxics Integration Branch at FTS 475-9493.

DISCLAIMER

The recommendations in this document are intended solely as guidance. EPA decision makers may act at variance with any of the recommendations contained in this document. These recommendations are not intended and cannot be relied upon to create any rights, substantive or procedural, enforceable by any party in litigation with the United States. These

recommendations may change at any time without public notice.

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REFERENCES

1. USEPA, 1990. Technical Support Document on Lead. Draft. Cincinnati, OH. Office of Health and Environmental Assessment, Office of Research and Development, U.S. Environmental Protection Agency. ECAO-CIN-757

2. USEPA, 1991. Strategy for Reducing Lead Exposure. Washington D.C., Office of Toxic Substances, U.S. Environmental Protection Agency. Available from the Toxic Substances Control Act Hotline (202) 554-1404.

Addressees:

Directors, Waste Management Division, Regions I, IV, V, VII, VIII
Director, Emergency and Remedial Response Division, Region II
Directors, Hazardous Waste Management Division, Regions III, VI, IX
Director, Hazardous Waste Division, Region X
Superfund Branch Chiefs, Regions I-X
Regional Counsels, Regions I-X

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OSWER Directive 9360.4-10
November 1991

REMOVAL PROGRAM

REPRESENTATIVE SAMPLING GUIDANCE

VOLUME 1: SOIL

Interim Final

Environmental Response Branch
Emergency Response Division

Office of Emergency and Remedial Response
Office of Solid Waste and Emergency Response

U.S. Environmental Protection Agency
Washington, DC 20460

Prepared by:

The U.S. EPA Committee on Representative Sampling for the Removal Program

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DRAFT

RCRA

FACILITY ASSESSMENT

DELATTE METALS, INC.

PONCHATOULA, LOUISIANA

LAD 052510344

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

HAZARDOUS WASTE DIVISION

GROUNDWATER PROTECTION DIVISION

January 21, 1992

109737 25 001 000025

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SUMMARY AND RECOMMENDATIONS

During August 1991, the Louisiana Department of Environmental Quality (DEQ) conducted a RCRA facility assessment of a battery recycling facility owned and operated by Delatte Metals, Inc., of Ponchatoula, Louisiana.

The purpose of this investigation was to compile a comprehensive list of solid waste management units (SWMU's) at the site, to assess the potential for adverse impact on any environmental media from these units, and to make recommendations on what further investigation or corrective action may be needed.

This assessment is based on information gained from file documents kept by the Louisiana DEQ, published references listed in the bibliography, land title records kept by the Tangipahoa Tax Assessor's Office, and a visual site inspection (VSI) conducted on August 14 and 15, 1991. Thirteen SWMU's and five areas of concern (AOC's) were identified.

Corrective action, when needed, may be ordered under authority of Section 3004(u) and possibly Sections 3004(v) and 3008(h) of the Resource Conservation and Recovery Act (RCRA) as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA). These requirements will eventually be imposed as part of the HSWA section of a hazardous waste storage permit. In cases where there is a more immediate need for investigation or remediation, interim measures may be ordered under RCRA 3008(h).

Corrective action at Delatte Metals has already begun on several of the SWMU's identified in this report. Ground water assessment studies have started which are related to a surface impoundment which was closed under a December 20, 1986 order and was later the subject of a March 27, 1991 compliance order from the Louisiana DEQ. Although these activities are directed at the closed impoundment, sampling and remediation will involve soils and groundwater beneath a number of other SWMU's.

Recommendations:

1. More than half of the land surface at this site consists of contiguous SWMU's. Proven contamination from at least one of these SWMU's underlies several others. In planning corrective action, the administrative authorities should not compartmentalize this site into discrete SWMU's as this report has done. Instead, a comprehensive approach is needed so that efforts do not overlap needlessly, and so that no cleaned areas become re-contaminated. One high priority should be to learn if there is significant cross-contamination between this site and a neighboring site, the former Ponchatoula Battery Company, which is a likely source of the same set of contaminants.

2. At least one recovery well should be installed, as an interim measure, in the vicinity of the closed surface impoundment. With a screened interval between fifteen and twenty five feet, it could prevent discharge of contaminated groundwater into Selser's Creek. Delatte Metals and the Ground Water Protection Division of the Louisiana DEQ are already making plans to install such a well during early 1992 at a location due west of the closed impoundment.

A second recovery well, if installed at the property line east of the impoundment, may be the best means to prevent trans-boundary contamination between Delatte Metals and the Ponchatoula Battery Company site if this is learned to be a problem. (See AOC No. 3.)

3. The US Environmental Protection Agency should, as an interim measure, require a short-term ambient air monitoring study for lead under authority of Section 3008(h) of RCRA.

Lead emissions from the reverbatory furnace stack are regulated under Louisiana Air Permit No. 1169, and an array of baghouses keeps the lead emissions from the stack below the 0.08 pounds per hour required by Subpart L of the federal New Source Performance Standards (40CFR60.120 and LAC 33:III.3310). Fugitive emissions, however, are a routine occurrence, as was learned during the visual site inspection (see Figure 28 and SWMU No. 6). Moreover, there are a number of potential sources of airborne lead which are not governed by the air permit, such as the evaporation basin and the furnace feedstock loading operations.

Total suspended particles and not PM10 (inhalable particles) should be collected using high volume air samplers. The filters should be tested for lead and the results compared to the national ambient air quality standard.

FACILITY DESCRIPTION

Delatte Metals, Inc., formerly known as the Delatte and Fuscia Battery Company, is a battery recycling facility located at 1540 Weinberger Road, Ponchatoula, Louisiana, in Tangipahoa Parish. It is owned and operated by Mr. Larry Delatte, president.

The main activities are a battery cutting operation and a secondary lead smelter. Smelter capacity is 30 tons of lead per day, based on twelve hours operation per day, the normal practice here.

The site is bounded on the north by Selser's Creek, beyond which are a number of private residences. It is bounded on the west by a private residence. Across Weinberger Road, there are residences to the south. On the east, there is the former Ponchatoula Battery Company (See AOC No. 3).

Delatte Metals is identified by EPA number LAD 052510344. Some EPA sources spell Weinberger Road "Wineburger".

The Delatte and Fuscia Battery Company began operations at this location in 1970. Hazardous waste (recyclable material) storage facilities here are governed under interim status regulations.

Note: Basalite is a trade name of uncertain origin for a hard, black battery case material consisting of highly vulcanized rubber containing coal dust. Another applicable trade name for this material is formaplast. Several piles of basalite are discussed in this report.

VISUAL SITE INSPECTION

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On August 14 and 15, 1991, representatives of the Hazardous Waste and Groundwater Protection Divisions visited Delatte Metals and made a visual site inspection.

In attendance were:

Michael Beck	Hazardous Waste Division
Steve Chustz	Groundwater Protection Division
Kulwant Singh	Hazardous Waste Division
Paul Lancaster	Hazardous Waste Division
Michael Facundus	Hazardous Waste Division
Donnie Hackler	Hazardous Waste Division
John Garrison	Delatte Metals
Larry Delatte	Delatte Metals
Robert Melton	PRC Environmental Management, Inc.
Kent Morey	PRC Environmental Management, Inc.

PRC Environmental Management (of Dallas, TX) attended the VSI as part of an EPA-funded training exercise for the Louisiana DEQ.

Entry and exit interviews were held at the Delatte Metals front office both days.

ENVIRONMENTAL SETTING

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Land Use:

Tangipahoa Parish covers 783 square miles. Ponchatoula has a population of about 5,425 and the nearby city of Hammond has a population of about 15,871. Tangipahoa Parish has a combined population of about 85,707.

Delatte Metals, Inc. is located approximately 5.5 miles south-southeast of Hammond, Louisiana and 1.5 miles southeast of Ponchatoula, Louisiana.

The Delatte facility is in a rural area with some nearby houses. The surrounding area is used for growing agriculture crops such as bell pepper, strawberries and soybeans. Minor amounts of land are used for harvesting timber. Ponchatoula is host to the annual Louisiana Strawberry Festival, as strawberries are an important local agricultural product.

Floodplains:

Based on the 1982 Recent Geology Floodplain Deposits Map, published by the Louisiana Geological Survey, the Delatte Metals, Inc. facility is located outside the 100-year floodplain.

Hydrology:

The Delatte Metals facility lies within the Lake Pontchartrain Basin. The predominant surface water body in the immediate vicinity of this facility is Selser's Creek which is a small meandering stream. Selser's Creek receives any discharges which occur from this facility and runoff from local drainage. Surface water flow from the facility occurs via small drainage systems which channel runoff to a minimum of two discharge points on the northwestern edge of the property at Selser's Creek. Selser's Creek flows southward to South Slough thence to Owl Bayou to Lake Maurepas and Lake Pontchartrain via North Pass (See Figure 2). Flow direction into these two large lakes varies, depending largely on the effects of winds and tides at North Pass.

Hydrogeology:

Delatte Metals is located in Tangipahoa Parish, Louisiana on the youngest of the Pleistocene terraces, the Prairie Terrace. This facility is located in what has been classified to be a zone of moderate recharge potential. The geology consists largely of sand and gravel deposits with intervals of clay separating these alluvial and coastal deposits. These sand and gravel deposits produce large quantities of high quality fresh water which is used extensively for domestic and industrial purposes and act as public water supplies for municipalities in the area. Artesian conditions

are present in many of the wells in the area of the facility as evidenced by "flowing" wells which were observed on-site. There is much wastage of ground water in Tangipahoa Parish due to the significant number of these "flowing" wells. Four fresh water bearing aquifers have been documented beneath the facility. These aquifers are named the "Shallow Aquifer", the "Upper Ponchatoula Aquifer", the "Lower Ponchatoula Aquifer", and the "Tchefuncta Aquifer" (See Figure 3). There is uncertainty as to the existence of the "Abita Aquifer" which may be located between the Lower Ponchatoula Aquifer and Tchefuncta Aquifer and would be expected to be encountered at approximately 1750 to 1800 feet below land surface if present beneath the Delatte facility (Nyman & Fayard 1978). The base of fresh ground water is approximately 2900 feet below mean sea level (Winner 1963).

Shallow Aquifer:

In southern Tangipahoa Parish the shallow aquifer consists of fluvial sand and gravel deposits of the low coastal terrace and younger flood plain deposits of major streams which lie above the Ponchatoula Aquifer. The shallow aquifer is typically less than 100 feet thick in the area of the Delatte Metals facility and becomes finer grained as it thins southward. The Shallow Aquifer may locally contain silt and clay deposits making well yields highly variable. The greatest well yields in the shallow aquifer have been documented in the northern portion of Tangipahoa Parish. In the southern portion of Tangipahoa Parish, where the Delatte facility is located, lower well yields are more characteristic. The hydraulic gradient of the Shallow Aquifer near the City of Ponchatoula is estimated to be approximately 5 feet\mile (Nyman & Fayard 1978).

At the Delatte Metals facility, fluvial sand deposit(s) are present above the shallow aquifer (See Figure 4) which have a significant impact on the very shallow flow regime. Shallow ground water flow appears to be toward the sand deposit(s) from the North and South and then apparently flowing within the sand deposit(s) to the west in the direction of Selser's Creek.

Upper Ponchatoula Aquifer:

The Upper Ponchatoula Aquifer is approximately 200 feet thick at the City of Ponchatoula and thins southward. This unit appears to be the subsurface equivalent of the Cintronelle Formation (See Figure 3). The aquifer consists of coarse grained particles and becomes finer grained southward toward Manchac where the aquifer thins and contains salty water. The clay interval which separates the Upper Ponchatoula aquifer from the Shallow Aquifer thickens southward (See Figure 3) (Nyman & Fayard 1978).

The Upper Ponchatoula occurs approximately 300 to 350 feet below ground surface beneath the Delatte Metals facility. Artesian

conditions were observed at the Delatte facility in water wells which were screened in the Upper Ponchatoula Aquifer. It is reported that potable water is supplied to most residences in the immediate vicinity of this facility by private wells which are screened in this aquifer.

The most concentrated ground water development is in the Upper Ponchatoula at the City of Ponchatoula which is within 3 miles of the facility. Because of the high transmissivity of the aquifer and the small pumpage, there is no appreciable cone of depression at Ponchatoula. The average water-level gradient near the City of Ponchatoula is about 2 ft\mi, and the water is moving down gradient at a rate of about 100 ft\yr (Nyman & Fayard 1978).

Lower Ponchatoula Aquifer:

The Lower Ponchatoula Aquifer is separated from the Upper Ponchatoula Aquifer by an extensive clay bed. Beneath the Delatte Metals facility, the Lower Ponchatoula Aquifer occurs at a depth of approximately 700 to 750 feet (See Figure 3). The Lower Ponchatoula Aquifer is typically more continuous than the Upper Ponchatoula Aquifer and generally consists of medium sand although coarse sand and some gravel do occur locally. Southward, this unit becomes finer grained and contains salty water near Manchac. Water pressure head levels in the Lower Ponchatoula are generally higher than the Upper Ponchatoula by about two to three feet. Less water is withdrawn from the Lower Ponchatoula than the Upper Ponchatoula. In 1969 water pressure head levels in the Lower Ponchatoula ranged from approximately 17 feet above land surface to 2 feet below land surface. The hydraulic gradient of the Lower Ponchatoula in this area is approximately 2 ft/mi (Nyman & Fayard).

Tchefuncte Aquifer:

The Tchefuncte Aquifer, which occurs at a depth approximately 2050 to 2100 feet below the Delatte Metals facility, is the uppermost aquifer of Miocene age. This aquifer is probably the stratigraphic equivalent of the "2,000-foot" sand of the Baton Rouge area. The Tchefuncta Aquifer is typically 100 to 150 feet thick and dips at the rate of approximately 50 feet/mile in the area of the Delatte facility. This aquifer primarily consists of coarse sand with some fine to medium sand present in the Hammond area (Nyman & Fayard 1978).

The most significant usage of the Tchefuncte Aquifer occurs at Hammond where an average of 1.3 Mgal/day was pumped in 1974. Artesian conditions exist in the Tchefuncta Aquifer in this area where potentiometric levels have been reported to be 70 feet above land surface. Water levels are declining in this aquifer due to the cumulative effect of local pumping and pumping influences in Livingston and East Baton Rouge Parishes (Nyman & Fayard 1978).

Geology:

The Delatte Metals, Inc. facility lies atop the youngest of the Pleistocene Terraces, the Prairie Terrace, very near its contact with recent alluvial fill deposits of the Mississippi River. The Prairie Terrace probably was deposited during the Sangamon interglacial stage approximately 75 to 125 thousand years ago.

The Pleistocene Terraces are a result of fluctuating sea levels during Pleistocene time. These fluctuations produced typical deltaic sequences characterized by fining upward sands, silts and clays, interfingered with alluvial channel sands, gravels and overbank deposits such as floodplain clays.

Locally, this formation consists of low relief deposits of unconsolidated sands, silts and clays with some scattered deposits of gravel.

These terrace sediments were extensively deposited throughout southern Louisiana during Pleistocene time. However, much of their original thickness has eroded away during post-Pleistocene events. As a result of the subsiding Pontchartrain Basin to the south, the sediments of southern Tangipahoa parish tend to dip steeply to the south.

Sediments of Pliocene and Miocene age have lithologic sequences similar to the overlying Pleistocene terrace deposits. They are composed of the fining upward sequences of deltaic deposits such as sands, gravels and unconsolidated clays. These deposits contain the major fresh water aquifers of the Florida Parishes. Pliocene deposits extend to about 2000 feet below msl while Miocene deposits extend to over 3000 feet below msl.

While the Delatte site lies within the area served by the Southeast Louisiana Aquifer System, it is not necessarily located in an area of high recharge for the same aquifer. The Baton Rouge Fault has been projected to extend near the site, although the exact location has not been determined.

In December of 1990, fifteen soil borings were drilled and six of the borings were to be converted to monitor wells. Data obtained from the borings indicate two permeable zones that may be hydraulically connected underlie the Delatte Metals, Inc. site.

These two zones are described as the "upper zone" and the "lower zone".

The "upper zone" permeable unit consists of a grayish-white fine to coarse grained sand. This sand is discontinuous in nature and does not extend across the entire site.

The "upper zone" was encountered from 2.5 feet below the ground surface to as deep as 28 feet below the ground surface. This zone ranges in thickness from 2.0 feet to 18.0 feet. The unit is overlain by a sandy silty clay and underlain by a stiff to very stiff clay.

The "lower zone" permeable unit consists of a gray, tan and orange clayey silt with silty clay and silty sand. This zone was encountered from 10 feet below the ground surface to as deep as 38 feet below the ground surface. The "lower zone" generally ranges between 16 and 27 feet below the ground surface. Overall thickness is questionable because of the presence of an overlying sandy/silty clay which may or may not be part of the "lower zone" permeable unit. The unit is generally overlain by a silty clay and underlain by a lower clay unit.

Soils:

The soil at the Delatte Metals facility has been described as a sandy fluvial deposit that is fine upward and coarser downward, with a thin sandy, silty clay cap covering the entire site. Underlying this deposit is a clayey to silty clay strata. Thickness of the sandy deposits depends on their location with respect to the ancient streams which are believed to have served as their sources. The thickness ranges from 2.0 feet to 18.0 feet at the Delatte Metals site.

The area occupied by the Delatte Metals facility lies atop the Abita soil series. This soil consists of somewhat poorly drained, slowly permeable soils. These soils are believed to have formed in loamy sediments on low, broad stream terraces.

These terraces are generally level to gently sloping. Local relief is rarely more than 10 feet. A seasonal high water table fluctuates between depths of about 1.5 and 3.0 feet from December to April.

SOLID WASTE MANAGEMENT UNITS

004555

SWMU No. 1 - Battery Saw Building

SWMU No. 2 - Settling Tank Building

SWMU No. 3 - Sulfuric Acid Tank Farm

SWMU No. 4 - Central Parking Lot

SWMU No. 5 - Dirty Basalite Waste Pile

SWMU No. 6 - Furnace Building

SWMU No. 7 - Road To Furnace Building

SWMU No. 8 - Southwest Junkyard

SWMU No. 9 - Back Parking Lot

SWMU No. 10 - Clean Basalite Pile

SWMU No. 11 - Central Junk Yard

SWMU No. 12 - Closed Surface Impoundment

SWMU No. 13 - Slag Pile And Back Junk Yard

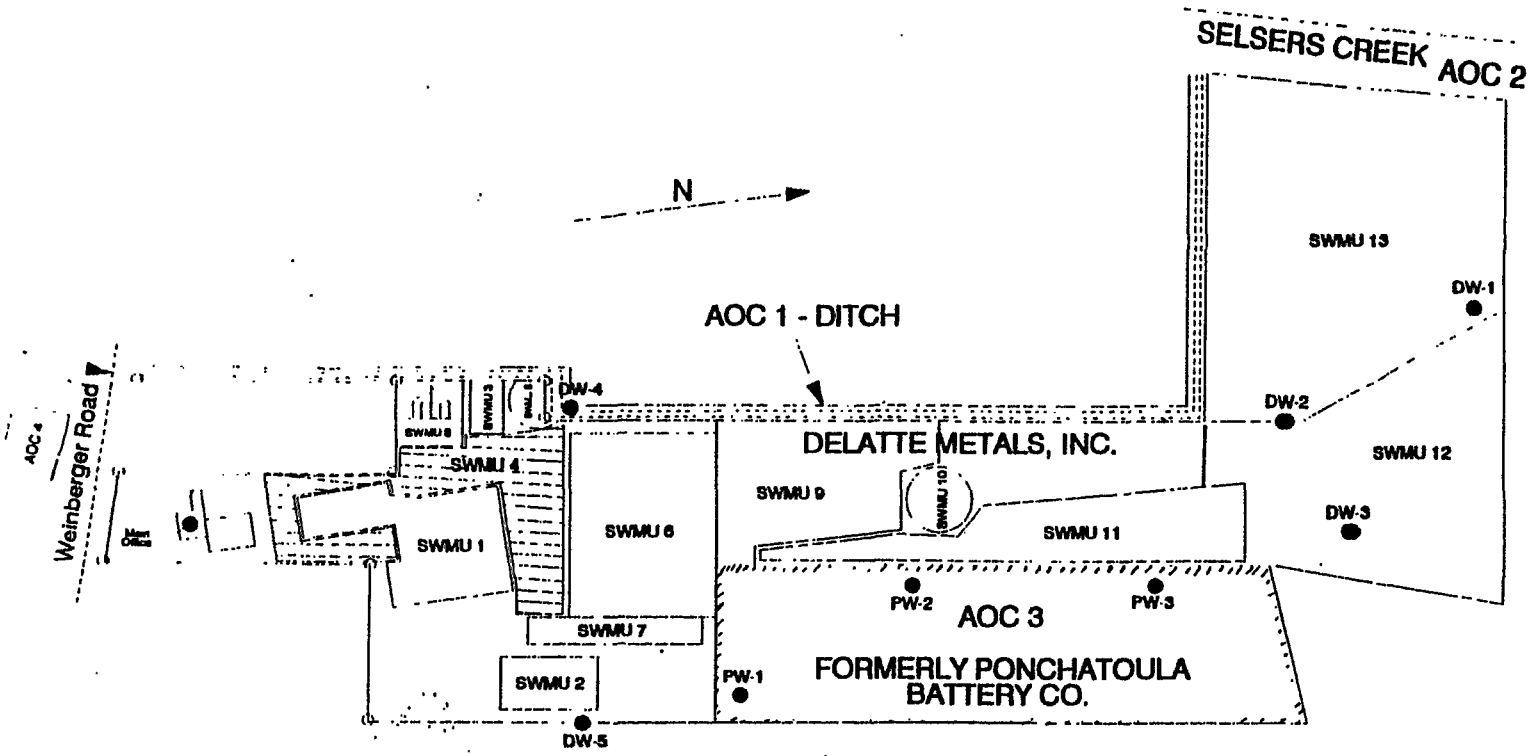
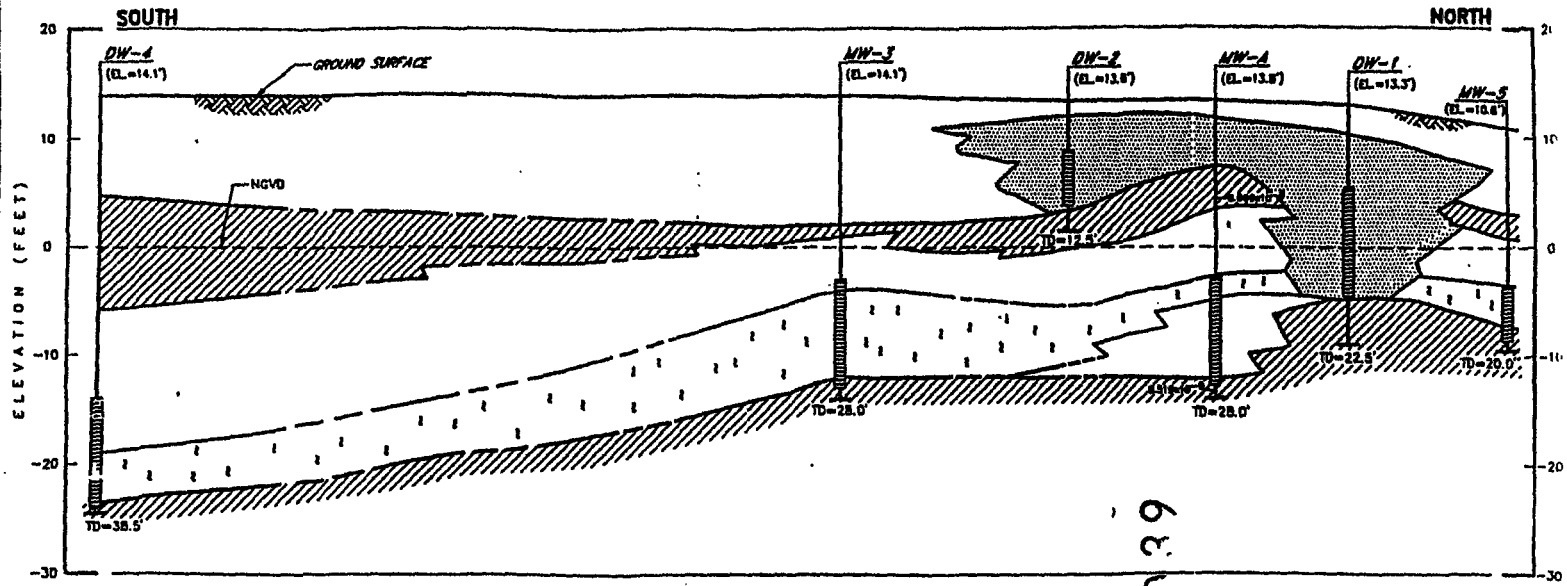


FIG. 1 SITE SCHEMATIC SHOWING LOCATION OF SWMU'S AND AOC'S.

SOURCE: KULWANT SINGH, LDEQ

004557

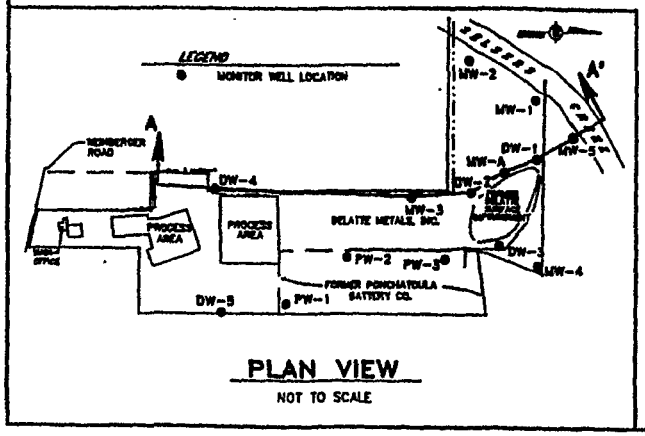
DRAWN BY | T.S.BURNS 2-05-91 | CHECKED BY | APPROVED BY | DRAWING NUMBER 435640-BE



CROSS-SECTION A-A'

0 100 200 FEET

HORIZONTAL SCALE
VERTICAL SCALE IS AS SHOWN



PLAN VIEW

NOT TO SCALE

Legend

- High Permeable Mixtures of Sand, Silty Sand, Sandy Silt and Clayey Sand
- Low Permeable Clay
- Moderately Permeable Mixtures of Silty Clay and Sandy Clay
- Moderately Permeable Mixtures of Clayey Silt and Silt
- Screened Interval of Monitor Well
- 6.96x10^{-5} Permeability Analysis of Geotechnical Sample (cm/sec)
- MW-1 Monitor Well Designation and Elevation
- Bottom of Boring (TD = Total Depth)

THE BORING LOGS AND RELATED INFORMATION DEPICT SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AND DATES INDICATED. SOIL CONDITIONS AND WATER LEVELS AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS OCCURRING AT THESE BORING LOCATIONS. ALSO THE PASSAGE OF TIME MAY RESULT IN A CHANGE IN THE CONDITIONS AT THESE BORING LOCATIONS.

THE DEPTH AND THICKNESS OF THE SUBSURFACE STRATA INDICATED ON THE SECTIONS HAVE GENERALIZED FROM AND INTERPOLATED BETWEEN THE TEST BORINGS. INFORMATION ON ACTUAL SUBSURFACE CONDITIONS EXISTS ONLY AT THE LOCATION OF THE TEST BORINGS AND IT IS POSSIBLE THAT SUBSURFACE CONDITIONS BETWEEN THE TEST BORINGS MAY VARY FROM THOSE INDICATED.

FIG.4 NORTH-SOUTH CROSS SECTION OF DELATTE PROPERTY

SOURCE: "SITE GROUNDWATER ASSESSMENT OF THE FORMER SURFACE IMPOUNDMENT AREA OF DELATTE METALS, INC.", (IT CORP., 1991)

DELATTE METALS, INC.
PONCHATOULA, LOUISIANA

IT ... Creating a Safer Tomorr

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25 015

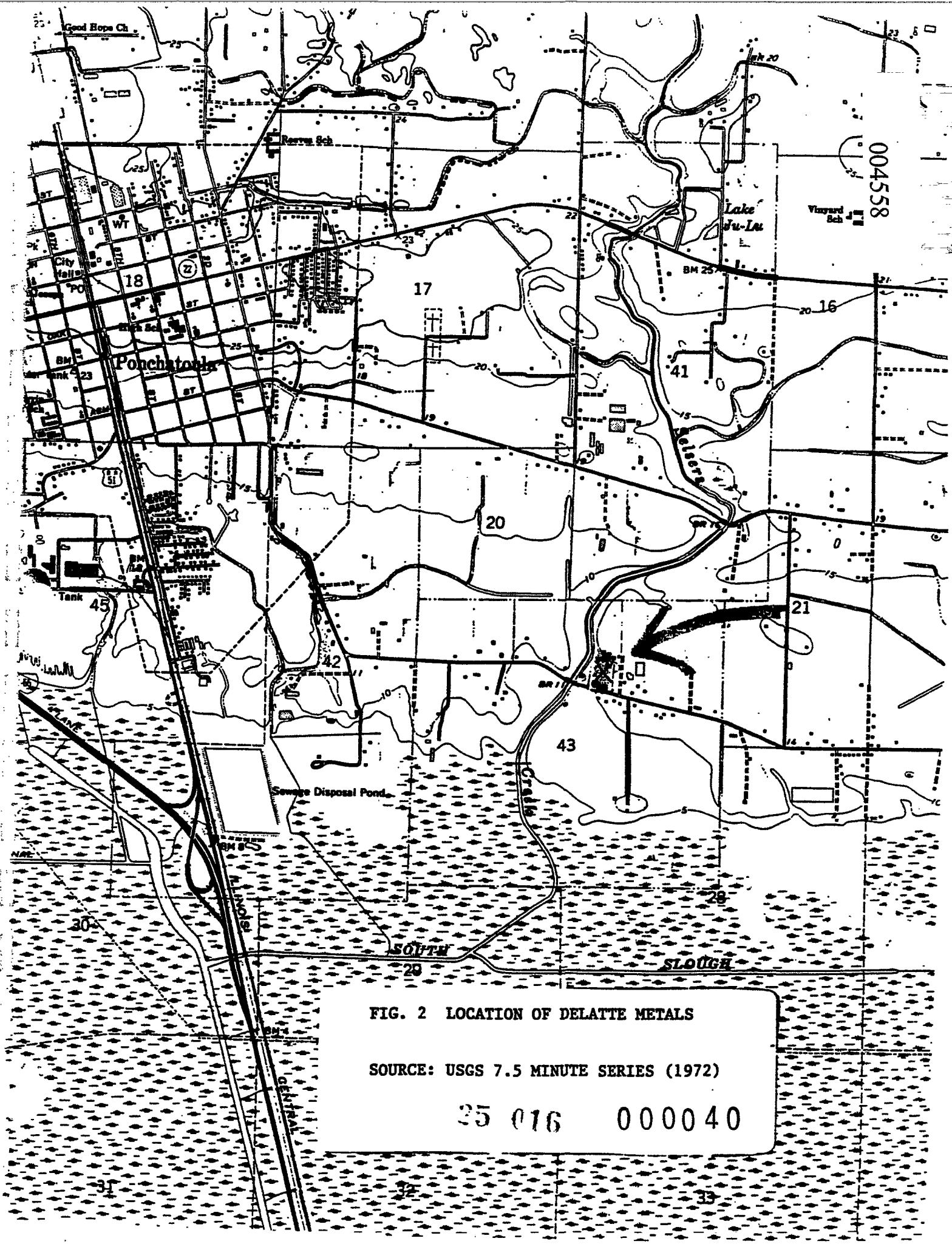

FIG. 2 LOCATION OF DELATTE METALS

SOURCE: USGS 7.5 MINUTE SERIES (1972)

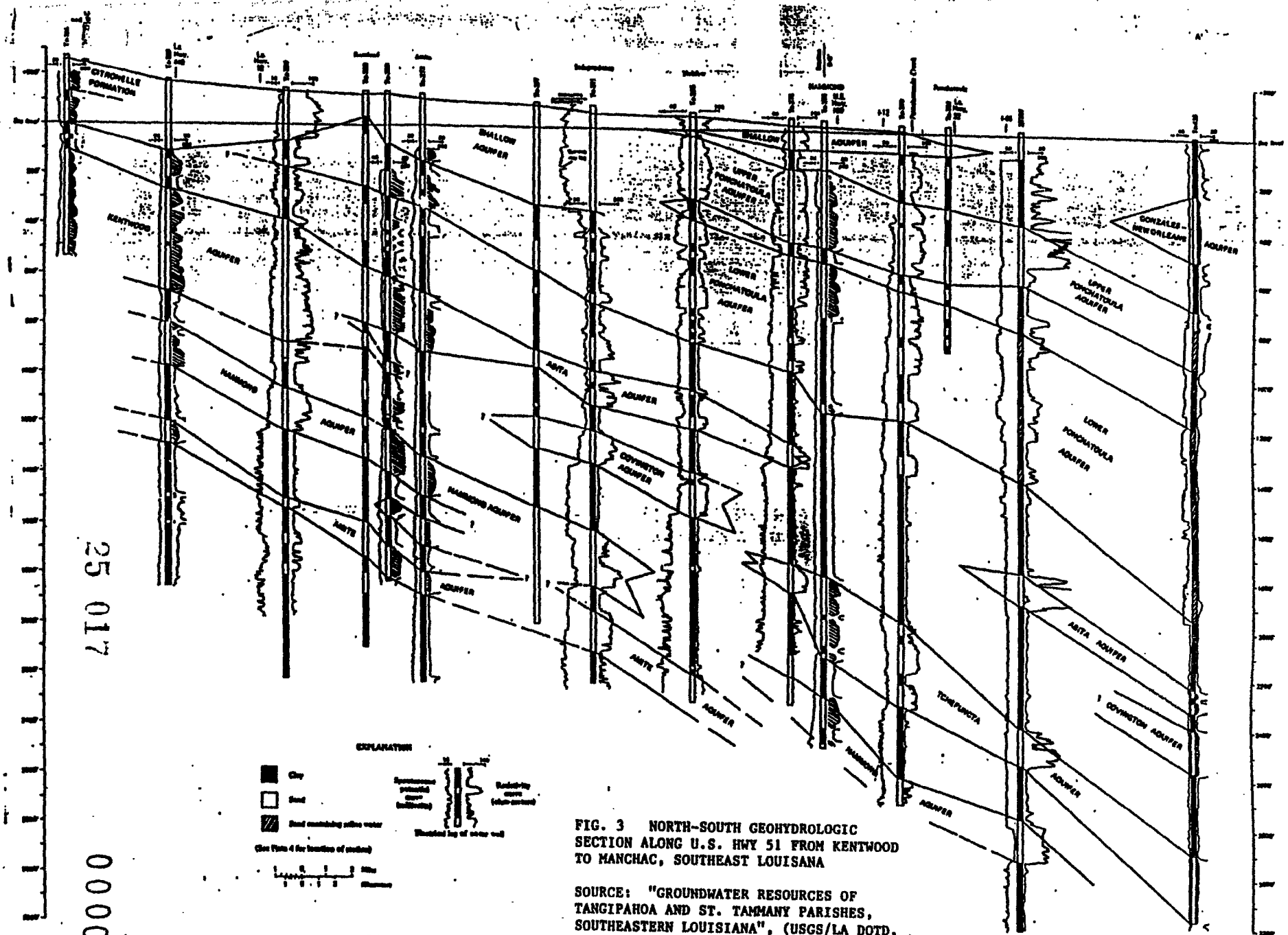

FIG. 3 NORTH-SOUTH GEOHYDROLOGIC SECTION ALONG U.S. HWY 51 FROM KENTWOOD TO MANCHAC, SOUTHEAST LOUISANA

SOURCE: "GROUNDWATER RESOURCES OF TANGIPAHOA AND ST. TAMMANY PARISHES, SOUTHEASTERN LOUISIANA", (USGS/LA DOTD, 1978)

SWMU NO. 1 - BATTERY SAW BUILDING

Description

The battery saw building is the first large building encountered after entering the site from the front entrance, being located 400 feet from Weinberger Road and measuring approximately 150 by 150 feet. There is a maintenance building connected to the southwest corner which is not considered part of this SWMU. SWMU No. 1 is shown in Figures 5 - 10.

The building is a steel beam structure covered with sheet aluminum. The foundation is eight inches of asphalt on top of eight inches of reinforced concrete. The concrete antedates the asphalt by several years. A four foot concrete dike surrounds the perimeter and controls runoff except at the entrances, which are located on the northwest and southeast sides. Low berms at these points restrict, but do not eliminate, spillage and runoff when trucks exit the building. Runoff goes into the central parking lot (SWMU No. 4).

A battery saw is operated in the center of the south side of the building. A hammer mill is operated in the center of the north side of the building.

The condition of the floor of the building is unknown, because it is covered everywhere with battery debris. The floor drains into two sumps described below.

Service

These activities are conducted here: Various types of battery debris are stored. The battery saw and hammer mill reduce the batteries into feedstock for the reverbatory furnace and the smelter. Battery acid is collected and pumped out of the building to storage tanks.

The battery saw opens the battery cases, releasing the spent battery acid, which pours onto the sloped asphalt floor, drains into a sump and is pumped through a buried pipe to the tank farm (SWMU No. 2). The sump is a sunken basin measuring three by five feet, and four feet deep. The stainless steel inside liner is supported by eight-inch thick concrete floor and walls.

The opened batteries are fed to the hammer mill, which breaks the cases and electrodes into small pieces. These pieces drop into a trough with circulating water, which rinses and segregates the various materials. The polyethylene/polypropylene battery case fragments float, allowing them to be skimmed and blown into a trailer for transportation to an offsite plastics recycler. The rinsewater runs onto the floor and into a three foot deep concrete-lined trench running to a four-foot deep sump (shown as Figure 9).

From here it is pumped to the settling tank building (SWMU No. 4) through a four-inch PVC pipe. This rinsewater from the hammermill carries battery sediment and other suspended solids consisting mainly of lead sulfate and lead oxide. Fragments from the battery electrodes and plates are piled onto the floor and loaded by conveyor onto trucks for transport to the reverbatory furnace building (SWMU No. 6).

The northwest corner of the building temporarily stores "dirty basalite," which is unrinsed basalite battery case fragments moved in from the dirty basalite waste pile (SWMU No. 5). This storage practice is in response to a compliance order from the Louisiana DEQ dated November 13, 1991. The dirty basalite, which exceeds TCLP limits for lead, is gradually being consumed as feedstock to the reverbatory furnace. Storing it here allows the operator to bring the pile in under shelter and onto containment to eliminate rainwater leaching of SWMU No. 5.

History:

The original concrete slab was poured circa 1970. The roof was built during the early 1980's. The building has always been used for battery recycling. Both sumps are part of the original construction.

Regulatory Status:

The battery saw, the hammer mill, and the battery parts segregation operation are all exempt from hazardous waste regulations. Most of the building space is devoted to hazardous waste storage, which is now regulated under interim status and is subject to permitting requirements.

Risk to Health and Environment:

Gross release of lead and sulfuric acid is limited by the physical features of the building itself. Airborne contamination by lead-bearing dust is limited by pervasive dampness of all battery debris in the building, and, since the operation is enclosed in a building, there is little opportunity for wind to pick up particles.

Release of hazardous constituents and characteristics to surface water is known to have occurred previously at this unit. Etchings on the concrete of the central parking lot at the northwest corner of the building are shown in Figure 10. The central parking lot (SWMU No. 4) drains into a regulated NPDES outfall with established limits for lead, sulfates, and pH. This runoff reaches the NPDES outfall via an unlined ditch, though, and could threaten soil and groundwater.

The condition of the Battery Saw Building floor and the sump linings is unknown. Current practices by the operator make it impossible to inspect them for leaks and defects. Although the north end of the Delatte property is being monitored extensively for soil and groundwater contamination (see SWMU No. 12), relatively little is known about soil and groundwater contamination beneath and adjacent to this unit. The underlying clay would be expected to have limited migration of constituents better than the sands that occur at the north end of the property.

Recommendations:

An RFI is recommended. Better compliance with existing regulations governing hazardous waste storage will soon allow inspection of the floor, trenches, and sumps. The administrative authorities should then decide whether to require an RFI as a HSWA permit condition or to require more immediate action as an interim measure.

SWMU NO. 2 - SETTLING TANK BUILDING

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Description:

This unit is located near the eastern boundary of the property, at the northeast corner of the battery saw building. The unit is a sloped, partitioned, concrete impoundment covered by a steel and aluminum roof. All four sides are open. Its dimensions are approximately 120 by 100 feet. The impoundment floor is made of 10-inch thick reinforced concrete, and the impoundment walls are made of 12-inch thick reinforced concrete. The impoundment slopes to a depth of about four and a half feet at the eastern side. There is an abandoned hammermill in the center of the unit. Figures 12 and 13 show the PVC pipes which conduct the wash water to and from the settling basin.

Service:

This unit is used to recover the lead-containing battery sediment carried by the wash water from the battery saw building. Lead oxide and lead sulfate (known collectively as oxide) are carried in suspension and in solution to this unit and are separated as sediment. The post-sedimentation water is recycled to the battery saw building. Figure 15 shows a concrete pad in the middle of the basin where the solids are loaded onto trucks for transportation to the reverbatory furnace building.

The unit produces no "blowdown". Some water is lost to evaporation and is made up using well water.

History:

The concrete basin was built in 1972 and has always been used exclusively for lead recovery operations. The hammer mill operated until 1977. The roof was added in 1979. During the time the hammermill operated here, the battery parts were carried here from the battery saw using front end loaders.

Regulatory Status:

The materials handled here are Category II hazardous waste because of the lead content (D008). The washwater, due to its low pH, would be classified D002 if it were spilled or discarded.

The sedimentation process is a physical separation process integral to the recycling operation, and is exempt from hazardous waste regulation. No storage requiring a permit is conducted here.

Risk to Health and Environment:

As the photographs show, the oxide powder tends to stay damp, thus limiting the potential for airborne contamination. There was

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no opportunity to observe the loading operations during the VSI, but it appears likely that small amounts could be entrained in the wind or spilled over the edge of the basin wall.
The short trip to the reverbatory furnace could routinely spill small amounts of lead salts (see SWMU No. 7). Spilled lead oxide was observed here by a DEQ inspector during an inspection in March 1990.

There is no leak detection system and no means of inspecting the basin for cracks. A groundwater monitoring well known as DW-5 is located only ten feet east of the east wall of the basin. The well is screened in a zone of moderately permeable clay and silt between 20 and 31 feet below the surface. Significant levels of lead and sulfates have been detected in a February 1991 groundwater sample taken from this well, but the settling tank is not the most likely source of this contamination.

Recommendations:

An RFI is recommended. It needs to be determined if there is any soil or groundwater contamination either from leaks in the concrete or from oxide spilling over the walls.

Additionally, soil samples should be taken in the vicinity of the washwater pipelines between the battery saw building and this SWMU.

SWMU NO. 3 - SULFURIC ACID TANK FARM

Description:

The tank farm is located on the western fenceline, about eighty feet due west of the battery saw building.

There are five tanks in all. Three of them, shown in Figure 16, are stainless steel vertical cylinders holding 2000 gallons each. The other two, shown as Figure 17, are made of salvaged carbon steel smokestacks and have stainless steel linings. These two tanks lie horizontally in an east-west orientation on the south side of the tank farm, and hold 2500 gallons each.

The tanks rest on a concrete pad at least eight inches thick. The tank farm is surrounded by an unlined earthen levee. Buried PVC pipes serve as feed and overflow lines, and run under the pavement to the battery saw building.

Service:

The tanks store spent battery acid. The acid is loaded into tank trucks here for shipment to Amax Metals in Braithwaite, Louisiana.

History:

The three stainless steel tanks were installed in 1980. The other two were installed in 1988. The earthen levees were built in 1991.

Previously, there were two 9000-gallon caustic tanks on the north side of the tank farm. The caustic (sodium hydroxide solution) was used for neutralizing the surface impoundment (SWMU No. 12). Both tanks were removed in 1991 and now reside in SWMU No. 13.

Regulatory Status:

The acid is sold to Amax for direct use as a neutralizing reagent. The definition of solid waste (LAC 33:V.109) excludes materials which are "used or reused as effective substitutes for commercial products". The sulfuric acid and the tanks, therefore, are not governed by hazardous waste regulations.

Risk to Health and Environment:

The earthen levee would provide only brief protection should any of the tanks fail catastrophically. Prompt action would be needed to prevent acid from soaking through the levee or through cracks in the slab.

There is a slight amount of seepage from a seam in the southernmost tank, and there is evidence of contamination in the ground outside of the levees. Figure 18 shows the ditch outside the west fenceline (AOC No. 1) where crystals, presumably sulfate salts left by evaporating leachate, were visible in the bare ground.

Recommendations:

An RFI is needed to learn the extent of any soil or groundwater contamination from this unit. Any contamination found here should not automatically be assumed to have come from the tank farm, however. The dirty basalite pile (SWMU No. 5) and traffic on the driveway west of the Battery saw building are also likely sources of sulfates, lead, and low pH values.

The buried PVC pipes between the tank farm and battery saw building should be included in the investigation as part of this SWMU.

SWMU NO. 4 - CENTRAL PARKING LOT

Description:

This SWMU is defined here as the paved area between the battery saw building (SWMU No. 1) and the furnace building (SWMU No. 6), the paved and unpaved areas between the battery saw building and the tank farm (SWMU No. 3), and the paved area south of the battery saw building.

These surfaces drain into a ditch that follows the western fenceline of the property. This ditch is AOC No. 1. The drainage pattern of the paved area between the furnace building and the battery saw building is shown in Figures 19 and 20.

There is a groundwater monitoring well known as DW-4 at the northwest corner of this SWMU. The well is screened in the lower zone, in the interval between 28 and 38 feet below grade. A February, 1991 ground water sample from this well was measured to contain 0.072 ppm lead, slightly above the Louisiana ground water protection standard of 0.050 ppm. Sulfate and zinc concentrations were not elevated, and the pH was 7.5. Because the groundwater sample was taken from the lower zone, it is not a safe assumption that it is influenced by seepage or runoff from this SWMU.

Service:

This SWMU serves as a surface for vehicular traffic in the plant, and occasionally for parking vehicles and equipment.

Vehicles and trailers laden with batteries and battery debris are, as a rule, not parked in the areas comprising this SWMU, but are parked instead inside the battery saw building and the furnace building. No hazardous waste or materials with hazardous constituents are stored here.

History:

These areas were used extensively before being paved.

Regulatory Status:

No activities requiring a hazardous waste permit are conducted here. Battery debris spilled in this area would be considered hazardous waste if it displayed any characteristics.

Risk to Health and Environment:

It is possible that contamination has occurred by routine spillage of battery debris from vehicular traffic between the buildings. This contamination would be most readily detected near the southwest corner of the furnace building (SWMU No. 6) and in the west ditch (AOC No. 1).

It is possible that the concrete pavement overlies spilled battery debris or contaminated soil.

Recommendations:

An RFI is necessary to learn if there is any contamination in this area. At a minimum, soil samples should be taken from the western edge of the pavement and from beneath the pavement. Some of this sampling will have to be integrated with sampling related to the adjoining SWMU's and areas of concern: the western ditch (AOC No. 1), the dirty basalite waste pile (SWMU No. 5), the sulfuric acid tank farm (SWMU No. 3), and the southwest junkyard (SWMU No. 8).

SWMU No. 5 - Dirty Basalite Waste Pile

Description:

The "dirty" basalite forming this pile is broken pieces of basalite battery cases. It is identified as "dirty" basalite because it has not been washed in the post-hammer mill flotation trough.

The pile is located at the western property line only a few feet north of the sulfuric acid tank farm. Its boundaries are the central parking lot on the east, the fenceline ditch on the west, and a groundwater monitoring well known as DW-4 on north.

The pile formerly measured 90 by 80 feet, and as of August 15, 1991 measured less than 40 by 50 feet and was approximately 8 feet high. The pile was projected to be completely removed by October 1 and carried inside the battery saw building in response to a DEQ compliance order.

This SWMU (as of August 14, 1991) is shown in Figures 21 and 22.

Service:

As mentioned above, this SWMU was an inappropriate means of storing the dirty basalite, a D008 hazardous waste.

History:

Accumulation of dirty basalite began here circa 1977. The pile has been steadily reduced in size in response to a November 13, 1991 DEQ compliance order. It is gradually being brought into the battery saw building and being consumed as feedstock to the reverbatory furnace. A telephone call on November 5, 1991 confirmed that the pile is now completely removed.

Regulatory Status:

This SWMU was cited as a regulatory violation by the Louisiana DEQ in 1991. The dirty basalite is a D008 hazardous waste. There is no exemption from classification as a solid waste; although it is being used as a feedstock, the process it serves is defined as reclamation (see definition of solid waste).

Risk to Health and Environment:

As indicated by the D008 classification, the dirty basalite contains leachable lead. The pile has no liner. Rainwater leaching through the pile could carry lead, as well as sulfates and low pH values. The pile and the soil immediately beneath it represent a risk to groundwater and surface water. (Surface runoff would pass through an NPDES outfall monitored for these mentioned parameters.)

Recommendations:

An RFI is recommended. In light of the 1991 compliance order, it is expected that corrective action will be well under way when the HSWA portion of the hazardous waste permit for this facility is written.

SWMU NO. 6 - FURNACE BUILDING

Description:

This extensive SWMU is the largest building on site, located seventy feet north of the battery saw building. It is contiguous with the central parking lot (SWMU No. 4).

Shown in Figure 20 and in Figures 23 - 29, it is a steel beam structure covered with sheet aluminum. It measures 210 by 257 feet and has a floor paved with reinforced concrete. The northeast corner of the building borders the southwest corner of the former Ponchatoula Battery Company site. This SWMU includes an uncovered (no roof) area extending 60 feet north of the furnace building paved with concrete and basalite fragments.

The eastern one-third of the building is devoted to storage for feedstock to the reverbatory furnace and consists of a series of concrete-walled bins. The reverbatory furnace and the smelter are centrally located, and the air pollution control equipment, an array of baghouses, extends onto the uncovered area north of the building (see Figure 23). The furnace stack is 137 feet above grade. West of the reverbatory furnace is another set of concrete bins (Figures 24 and 25) and storage space for the smelted lead.

Between the reverbatory furnace and the baghouse there is a bin used for storing baghouse dust from the furnace. It is fed by a conveyor from the baghouse array and measures approximately fifteen by ten feet. It is shown as Figure 26.

There are five openings in the building: two entrances on the south side, two on the north side, and a loading ramp door on the east side. Curbed drainage surrounds the building on the northeast, east, and southeast sides.

A sump (shown in Figure 27) is located outside the building on the north side. It collects floor washwater from inside the building. The sump is concrete-lined, is five feet deep, and measures ten by fifteen feet. It drains into the ditch at the west property line.

Also on the north side is an artesian well producing at least 10 gallons per minute into a shallow culvert which joins the ditch at the west property line. Dilution from this well water allows runoff from the central parking lot and the furnace building sump to meet the limits set by the water discharge permit.

Service:

The concrete-walled bins on the eastern side of the building store various furnace feedstocks: coke, recycled slag, battery

parts, lead oxide, various drosses (tin, antimony, and copper), and various iron fluxing agents. These materials are stored in bulk directly on the concrete and are typically handled with earth moving equipment.

The bins on the west side of the building store sodium nitrate, elemental arsenic, arsenic trioxide, iron sulfide, floor sweepings, sodium hydroxide, antimony trioxide, and lead debris. These materials are kept in drums.

The reverbatory furnace itself performs the functions of chemically reducing the oxidized lead compounds, melting the metallic lead contained in the battery fragments, and oxidizing the carbon in the battery fragments. The molten, reduced lead exits the furnace and is separated from impurities in open smelting kettles. The slag, consisting of kettle skimmings, is stored on the floor of the building, outside the building on the slab near the baghouse, and ultimately in an unlined slag pile at the north end of the property (SWMU No. 13).

Adulterants, such as arsenic and antimony, are added to the kettles, depending on the type of product desired for any particular batch. The lead is next cast into pigs and stored in low stacks on the floor at the west side of the building. Overall capacity is thirty tons per day.

History:

This building was built in 1976. The reverbatory furnace did not actually start up until 1981. The sump on the north side of the building was built in 1990. New baghouse components were built in 1989.

Regulatory Status:

As part of a battery reclamation operation, this secondary smelting process and its associated feedstock is exempted from most hazardous waste regulations by LAC 33:V.105.D.4 (and, federally, by 40 CFR 261.6) which says: "The owner or operator of a facility managing recyclable materials described in LAC 33:V.4105.B and C (except to the extent that the requirements of these regulations are referred to in LAC 33:V. Chapter 41 and except as otherwise provided in LAC 33:V. Chapter 41) is only required to comply with LAC 33:V. Chapter 41." Chapter 41, by reference, makes the usual requirements for notification, permitting, manifesting, closure, financial assurance, and groundwater protection requirements for all storage facilities. Many of the materials listed above are D008 hazardous waste and are subject to these requirements. Storage practices for these materials will have to be upgraded to the requirements of LAC 33:V. Chapters 19 and 21. Permits may be required for some of the storage.

The baghouse dust is a Category I hazardous waste (K069). The storage bin will not need to be permitted, but current practices will need to be upgraded. (There is still some uncertainty as to what effect regulatory changes founded on the 1987 American Mining Congress vs. EPA decision may have on storage requirements for this material, which is reclaimed by being returned to the furnace as feedstock.)

Lead and sulfur dioxide emissions are governed by Louisiana Air Permit No. 1169.

Risk to Health and Environment:

Since many lead-bearing materials are stored directly on the floor, there is ample opportunity for lead to migrate through any flaws in the pavement into the underlying soil and ground water. There is lead-bearing dust on the floor which foot and vehicular traffic carries outside the building.

Arsenic handling practices at Delatte were not closely observed during this RFA, but since packaged arsenic is stored and used here, there is some risk of arsenic contamination in, around, and under the building.

The furnace building is a significant source of airborne hazardous constituents. The baghouse serves to keep stack emissions of lead below 0.08 pounds per hour, but the stack is not the only source of air emissions. Loading and other activities inside the building mobilize lead-bearing dust which escapes through openings in the building. There are significant fugitive emissions from the smelter and from the reverbatory furnace itself. Furnace emissions are not always treated in the baghouse; just such an event was observed on August 14 during the VSI. See Figure 28.

Recommendations:

An RFI is necessary. Special attention should be given to airborne transport of hazardous constituents.

SWMU NO. 7 - ROAD TO FURNACE BUILDING

Description:

This road, paved with basalite fragments, runs along the eastern side of the furnace building in a north-south direction and connects the central parking lot and the settling tank building with the eastern door of the furnace building. Part of this SWMU is shown in Figure 29.

Service:

Trucks, trailers, and other equipment have used and continue to use this route to carry battery debris from the battery saw building and oxide from the settling tank building to the furnace building.

Regulatory Status:

This SWMU is not governed by hazardous waste regulations and does not need a permit.

History:

DEQ inspectors indicate that small amounts of lead-bearing materials have routinely been spilled here during transport.

Risk to Health and Environment:

The mentioned spilled materials pose a risk to soil and groundwater.

Recommendations:

An RFI is recommended.

SWMU NO. 8 - SOUTHWEST JUNKYARD

004575

Description:

This SWMU is located just south of the sulfuric acid tank farm, west of the battery saw building, and is centered around an abandoned residence. It is bounded by the property line on the west and the front parking lot fenceline on the south. The house has an abandoned well into the Upper Ponchatoula Aquifer.

Service:

Various electrical and mechanical junk is stored here, as shown in Figure 30. This area is used to store drummed waste oil on pallets (Figure 31) awaiting transport to an off site recycler. There is also a non-hazardous solid waste dumpster here.

Regulatory Status:

This SWMU does not need a hazardous waste permit, and is not governed by hazardous waste regulations.

History:

The house was formerly the residence of the manager of the bankrupt Ponchatoula Battery Company. This area has been used to store used oil since 1986.

Risk to Health and Environment:

Not enough is known about the soil in this area and the materials stored here. The used oil pallets rest on bare dirt, and thereby pose some possible risk.

Recommendations:

An RFI is recommended.

000057

25 033

SWMU NO. 9 - BACK PARKING LOT

Description:

This SWMU is an area directly north of the center and the western side of the furnace building. It measures approximately 100 feet east-west and approximately 200 feet north-south. It is bounded on the west by the property line, on the north by the clean basalite pile (SWMU No. 10), on the east by the central junkyard (SWMU No. 11), and on the south by the western half of the furnace building. The whole area is paved with basalite.

Service:

As shown in Figure 32 and 33, this area is used periodically to store machinery as well as trailers used for hauling battery debris.

History:

The property was purchased by Delatte-Fuchsia in 1974.

Regulatory Status:

This SWMU does not need a hazardous waste permit and is not governed by hazardous waste regulations.

Risk to Health and Environment:

It is likely that lead and sulfate salts have been spilled in this area and may pose a threat to soil and ground water.

The threat to surface water is lessened by the drainage pattern, which is predominantly into the ditch at the west property line (AOC No. 1). A large dilution would take place in this ditch, which feeds an NPDES permitted discharge.

Recommendations:

An RFI is recommended.

SWMU NO. 10 - CLEAN BASALITE PILE

Description:

This SWMU is a large, conical pile of basalite fragments located approximately 200 feet north of the furnace building. Shown in Figures 33 and 34, it is approximately sixty (60) feet in diameter and eighteen (18) feet tall. It is bounded on the east, northeast, and southeast by the central junkyard (SWMU No. 11). It has no liner.

Service:

The pile consists entirely of "clean" basalite battery case fragments, so named because it has been washed in the post-hammermill flotation wash. The pile does not currently accumulate basalite.

History:

This pile was started in 1978.

Regulatory Status:

The owner reports that this material does not exceed EP Toxicity levels for lead, but it is not yet known whether it passes the newer TCLP criterion. If analysis shows the clean basalite to be a D008 hazardous waste, then this SWMU will be classified as a waste pile and will need corrective action.

Risk to Health and Environment:

Lead and sulfates may be leaching from the pile, contaminating soil, surface water, and ground water.

Recommendations:

An RFI is recommended. Additionally, the material should be tested immediately for the new toxicity characteristic.

SWMU NO. 11 - CENTRAL JUNK YARD

004578

Description:

This extensive SWMU is approximately 400 feet long measured in a north-south direction, and is situated along the eastern property line. It is directly south of the former surface impoundment (SWMU No. 12), and north of the furnace building. It is shown in Figures 35 and 36.

Located just across the eastern property line, there are two ground water monitoring wells, known as PW-2 and PW-3.

Service:

Abandoned machinery (including cars and trucks), tires, scrap iron, glass battery cases, and steel drums are stored here. The north end of the junkyard is devoted entirely to steel drums. Some of these drums have been crushed, and the owner has immediate plans to sell them to a scrap dealer.

The drums, according to their labels, have contained a variety of materials, including arsenic, arsenic trioxide, lead dross, paint, and banana puree.

History:

This area of the property has been used as a junkyard since operations began.

Regulatory Status:

All of the drums are legally empty (see LAC 33:V.109, definition of empty container). No hazardous wastes are stored here. This SWMU does not require a permit and is not governed by hazardous waste regulations.

Risk to Health and Environment:

The arsenic and arsenic trioxide drums contained liners which were not disposed at this unit. The owner reports that unlined drums have always been cleaned before being placed here. The drum interiors looked clean except for some which were coated with dried paint. Soil testing will be needed to decide if there is any contamination.

000060

25 036

Samples taken from the nearby monitoring well known as PW-2 in February of 1991 indicate 0.077 ppm lead and 570 ppm sulfate in the upper zone, but this SWMU is not the most likely source of this contamination.

Recommendations:

An RFI is recommended.

SWMU NO. 12 - CLOSED SURFACE IMPOUNDMENT

004580

Description:

Located at the north end of the property, this SWMU is best demarcated by the monitoring wells known as DW-1, DW-2, and DW-3. This SWMU also includes a drainage ditch (shown in Figures 37 and 38) which follows the northeast boundary of the closed impoundment. The ditch drains the former Ponchatoula Battery Company and runs into Selser's Creek. (These boundaries do not define the extent of contamination.)Formerly an open pit, it is now filled in.

Service:

This impoundment was formerly used to store and neutralize surface runoff and runoff from process areas at Delatte Metals. It is no longer in service.

History:

A letter dated October 7, 1970 from the Louisiana Department of Health to the Louisiana Stream Control Commission indicates that this unlined impoundment was already in existence at that time and was a source of surface water contamination. Since then, it has been the subject of at least four compliance orders from the Louisiana DEQ. The impoundment was closed in 1987 as required by a DEQ compliance order dated December 20, 1986.

Subsurface contamination in this area is now being studied. Eight monitoring wells were installed in the vicinity of this impoundment in 1987. Six more were installed in 1990. The most up-to-date information on soil and groundwater testing may be found in the document "Site Groundwater Assessment/Former Surface Impoundment Area" by the IT Corporation (March, 1991). A new report is expected in February 1992, after several new wells are installed. Efforts to define the extent of contamination from the impoundment have provided information on conditions all over the Delatte property and off site.

Regulatory Status:

This SWMU is chiefly governed by the terms of a ground water corrective action plan required by the December 20, 1990 compliance order.

Risk to Health and Environment:

There is proven contamination over an extensive area which has not yet been perfectly delineated. The offending characteristics are lead, sulfate, and pH. Contamination from this basin underlies some of the other SWMU's on site. Contamination from this SWMU is a threat to surface water in Selser's Creek.

Recommendations:

An RFI is necessary. As discussed above, an RFI is already well under way. Soil and groundwater investigations related to this SWMU will have impact on determinations made for several other SWMU's.

This report, in adopting an endorsed format, has compartmentalized the Delatte property and the neighboring Ponchatoula Battery site into a number of discrete SWMU's and AOC's. A piecemeal approach to corrective action is not recommended because the contamination and its migration patterns do not respect these boundaries. Any plans for investigation or remediation should take into account the possibility of contaminant migration into or from neighboring SWMU's and the Ponchatoula Battery site.

SWMU NO. 13 - SLAG PILE AND BACK JUNK YARD

Description:

This extensive SWMU is defined to include the entire northwest section of the Delatte property, that is, everything within these boundaries: Selser's Creek on the west, the drainage ditch on the south, the property line on the north, and a line connecting the monitoring wells known as DW-2 and DW-1 on the east.

This section of the property has a number of SWMU's which are too irregular or too poorly-defined to be discussed separately. The major features are a junkyard, a one half acre unlined slag pile, and a one quarter acre pile of "clean" basalite.

The slag pile, shown in Figure 42, is located in the most extreme western corner of the north end of the property. Immediately south of the slag pile is a collection of a dozen rusting drums containing a few pounds of rock salt (see Figure 39) and some abandoned vehicles. A "clean" basalite waste pile (not SWMU No. 10) located northeast of the slag pile is shown as Figure 41. The junkyard (shown as Figure 40) contains scrap metal, unused trailers, abandoned vehicles, a 9,000 gallon steel tank, a 3,000 gallon fiberglass tank, and a collection of approximately 25 empty 55 gallon steel drums (labelled "Shell Tellus Oil," a mixture of alcohols).

Service:

Most of the materials kept here are abandoned. Some of the vessels and machinery have been salvaged from other companies and may eventually be put into service in the process areas. The scrap metal will eventually be recycled.

History:

Accumulation of slag began in 1983. The tanks mentioned above were removed from the battery acid tank farm. They formerly stored caustic soda solutions used to neutralize the contents of the closed impoundment.

Regulatory Status:

None of the materials kept here are Category 1 (listed) hazardous wastes. Some of them may be Category II (characteristic) hazardous wastes. The slag and the basalite have not yet been tested for the toxicity characteristic by the TCLP method. These materials are reported to have passed the old EP Toxicity criterion, but secondary smelter slag generated elsewhere in Louisiana is known to exceed the TCLP level for lead.

Some, if not all of this SWMU will be governed by the terms of the closure plan for the neighboring SWMU, the closed surface impoundment.

Risk to Health and Environment:

There is a significant possibility that the slag contains hazardous amounts of leachable lead. Environmental risks at this SWMU cannot be estimated without first testing the soils and materials here. This SWMU borders Selser's Creek.

Recommendations:

An RFI is necessary.

AOC No. 1 - West Drainage Ditch

AOC No. 2 - Selser's Creek

AOC No. 3 - Former Ponchatoula Battery Company

AOC No. 4 - Battery Case Pile

AOC No. 5 - Basalite Driveway

AOC NO. 1 - WEST DRAINAGE DITCH

Description:

This shallow ditch follows the L-shaped property line from the south end of the property, running due north and then due west, draining into Selser's Creek. Flow would ordinarily be intermittent, but it receives a steady flow of at least 10 gallons per minute from an artesian well near the smelter building. It is possible that the southern end of this ditch, in the vicinity of the southwest junkyard, may drain south into the roadside ditch on Weinberger Road. Part of this ditch is shown in Figure 18.

Service:

The ditch receives flow from both sides of the property line, including all of the surface runoff and some leachate from the southwest junk yard (SWMU No. 8), the sulfuric acid tank farm (SWMU No. 3), the central parking lot (SWMU No. 4), and the dirty basalite waste pile (SWMU No. 5). It receives all of the diluted floor washwater from the furnace building.

Regulatory Status:

The confluence of this ditch with Selser's Creek is a permitted NPDES outfall (Permit No. WP 0209).

Risk to Health and Environment:

Although the pH and lead concentrations of its effluent are regulated under the water permit, the ditch sediment and underlying soil could be contaminated with every hazardous constituent on site.

Recommendations:

Ditch sediment should be tested for lead, arsenic, and sulfates. It is unlikely that the soil and groundwater will go untested, since the ditch borders six SWMU's.

AOC NO. 2 - SELSER'S CREEK

Also known as Seltzer's Creek, this stream is the northwest boundary of the site. There is a long history of water pollution complaints resulting from the closed surface impoundment and runoff from the neighboring Ponchatoula Battery Company. Recommendation: Sediment samples from Selser's Creek should be analyzed for lead, arsenic, pH, sulfates, and reactive sulfides.

AOC NO. 3 - FORMER PONCHATOULA BATTERY COMPANY

This lot borders Delatte metals on the east. It was closed and cleaned under a 1983 closure plan negotiated between the Office of Environmental Affairs of the Louisiana Department of Natural Resources and Industrial Safety and Health Consultants, the appointed agents for the bankrupt Ponchatoula Battery Company.

Present standards for clean closure are stricter than those that were applied to this site. Any cleanup at Delatte Metals will be complicated by the possibility of re-contamination from a site which has already been declared "clean", and which may be administratively outside the purview of corrective action at Delatte Metals.

004587

AOC NO. 4. - BATTERY CASE PILE

Description:

Directly across Weinberger Road, in the back yard of Ruth Robertson, there is a ten-foot pile of empty basalite battery cases measuring approximately 100 feet east to west and 150 feet north to south. There are oyster shells mixed in with the battery cases, possibly an effort to neutralize any residual acid. This site is shown as Figure 43.

There are two ponds on the edge of the pile, one on the east side and one on the west. Both ponds are overgrown with cow lilies.

Service:

Ponchatoula Battery Company used this site to dispose battery cases. The extent to which these cases were cleaned prior to disposal is not known. The electrodes have been removed, but there may be residual sediment or sulfuric acid.

History:

Ponchatoula Battery Company began dumping battery cases here circa 1964. Ruth Robertson (tel. 504-386-3772), who lives in the house directly north of the pile, bought the property at a sheriff's auction during the 1980's.

Regulatory Status:

Sampling will be needed to determine whether the pile contains hazardous waste. The Inactive and Abandoned Sites Division of the Louisiana DEQ has been notified by a memorandum dated ..... 1991.

Risk to Health and Environment:

These cases may be leaching lead, sulfate, and low pH into ground water and surface water.

Recommendations:

Samples should be taken from the water and sediment in the two ponds. Contamination resulting from rainwater draining through the battery cases would certainly show up here.

AOC NO. 5 - BASALITE DRIVEWAY

004589

There is a road paved with "clean" basalite one tenth of a mile east of Delatte Metals on Weinberger Road. The basalite paving extends approximately 250 yards south on property owned by Larry Delatte. Mr. Delatte has ben advised to test this material for TCLP lead before covering it with any other paving material.

Surface Water:

Selser's Creek is a small surface water body which is used for recreational purposes such as canoeing and fishing. Contamination of this stream by past and present surface water discharges and contaminated ground water discharges is an important concern. Lake Pontchartrain and Lake Maurepas are both heavily used as recreational areas and for the propagation of fish and wildlife.
Although these surface water bodies are some distance from the Delatte facility, Selser's Creek does contribute to their water quality.

Ground Water:

Shallow ground water contamination at this site is of concern chiefly because of its potential for discharge to Selser's Creek. The Louisiana Department of Transportation's listing of water wells in the immediate area of the Delatte facility does not include any wells screened at a depth less than 100 feet which are used for purposes other than ground water monitoring (see appendix). In addition, the low well yields of the Shallow Aquifer in this area are not conducive to extensive use.

The artesian nature of the Upper Ponchatoula and deeper aquifers reduces the potential for vertical contaminant movement from the shallow sands to aquifers which are used for domestic purposes.

Air:

There are a number of lead-containing materials on site which are capable of producing fine particles small enough to become airborne and be carried off site. This threat is not limited to particles small enough to be inhaled; all airborne lead will eventually fall out and impact other environmental media.

Delatte Metals' air permit only regulates stack emissions. As described in the discussion of SWMU No. 6, there are other likely sources of airborne lead on site, namely the sedimentation basin, the bulk storage bins in the furnace building, the several basalite piles, and various loading and unloading activities.

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Washington, DC 20460

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June 1992

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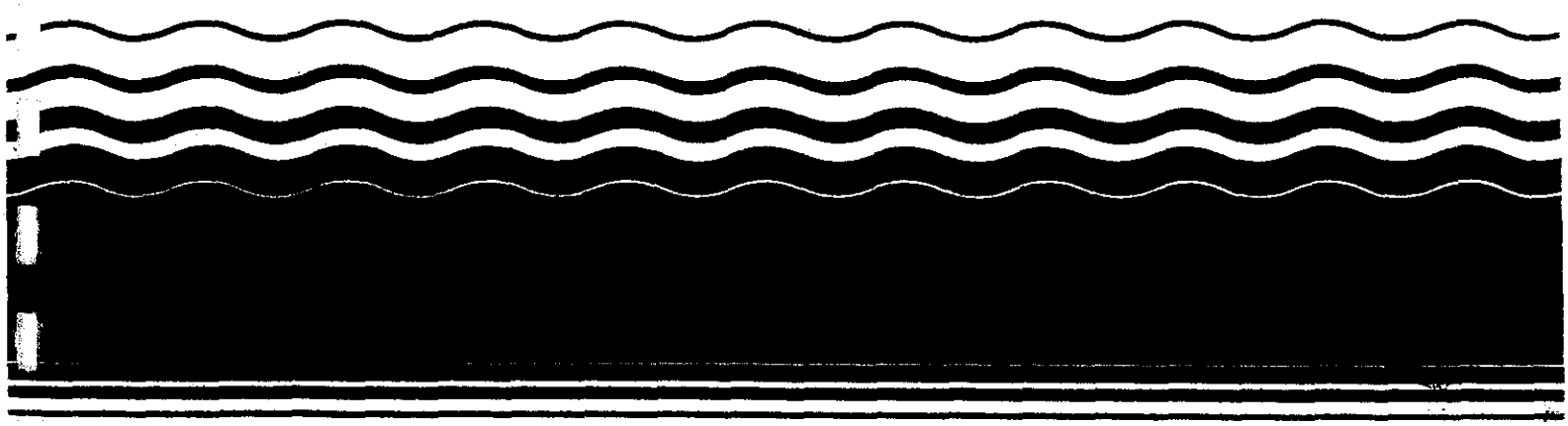
Standard Operating Safety Guides

004592



NOTE: Cover sheet only, rest of this documentation may be located/requested from EPA, Region 6

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EXPANDED SITE INSPECTION

PONCHATOULA BATTERY

CERCLIS ID #LAD062644232

Prepared For:
U. S. ENVIRONMENTAL PROTECTION AGENCY
REGION VI

ARCS CONTRACT NO: 68-W9-0025
WORK ASSIGNMENT NO. 34-6JZZ

February 25, 1994

MORRISON KNUDSEN CORPORATION
Environmental Services Group
7100 East Belleview Avenue, Suite 300
Englewood, Colorado 80111

ICF Technology, Inc.

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APPENDICES

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1.0 INTRODUCTION

Under authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), Morrison Knudsen Corporation-Environmental Services Division (MK)/ICF Technology, Inc. (ICF) under contract to the U.S. Environmental Protection Agency (EPA) Region VI (Alternative Remedial Contracting Strategy (ARCS) Contract No. 68-W9-0025, WA 34-6JZZ) completed an Expanded Site Inspection (ESI) at the Ponchatoula Battery site (CERCLIS #LAD062644232) in Ponchatoula, Tangipahoa Parish, Louisiana. The purpose of this investigation was to collect information regarding the conditions at the Ponchatoula Battery site suitable to assess the potential threat to human health and the environment and to determine the need for additional CERCLA/SARA or other action. This investigation included a review of available file information, a comprehensive target survey and interpretation and presentation of the analytical data.

1.1 Expanded Site Inspection Objectives

The ESI is the final investigation stage of the pre-remedial process. Those sites requiring further action after the Screening Site Inspection (SSI) are considered as ESI candidates.

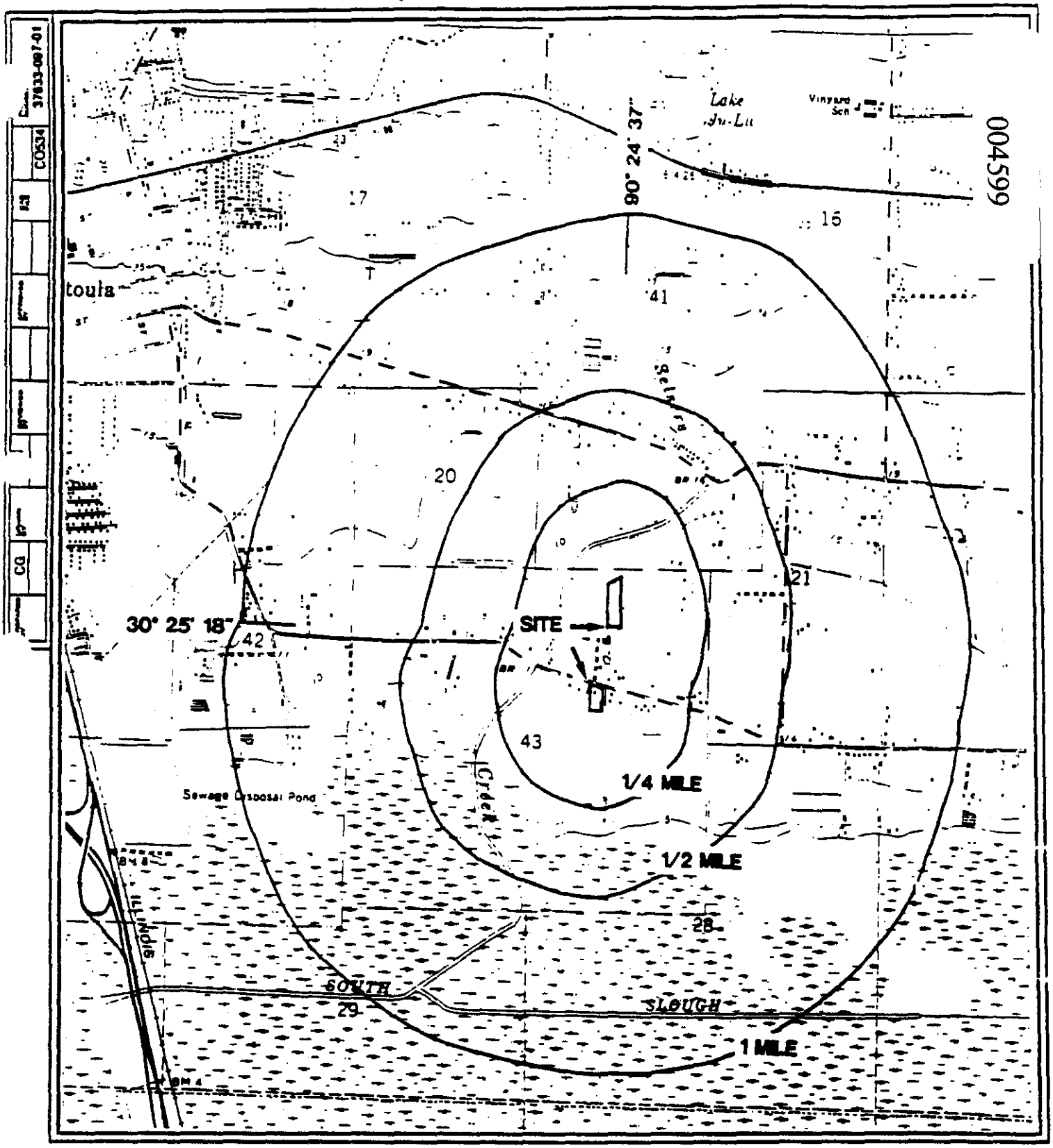
The ESI characterizes the site through Hazard Ranking System (HRS) documentation. It expands upon information obtained during the SSI; and defines site characteristics and contaminant sources through additional data collection.

The sampling objectives for this ESI included the identification of site waste sources not recognizable from visual inspection, documentation of an area of contaminated soil on the sites and residential properties, evaluation of ground water quality in nearby wells, and determination of whether an observed release to palustrine and lacustrine wetlands could be identified and documented. Source waste identification included determining the waste location, type and estimated waste quantity. Soil, sediment, and ground water samples were collected to address the ESI objectives.

FIGURES

TABLES

ICF TECHNOLOGY INCORPORATED



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0 2000

SCALE 1 : 24000

FIGURE 1

SITE LOCATION MAP 000081

PONCHATOULA BATTERY
PONCHATOULA, TANGIPAHOA PARISH, LOUISIANA

QUADRANGLE LOCATION
PONCHATOULA, LA. 1968
PHOTOREVISED 1972 & 1971

CERCLIS #LAD062644232

16 354

2.0 SITE DESCRIPTION AND OPERATIONAL HISTORY

2.1 Site Location

004600

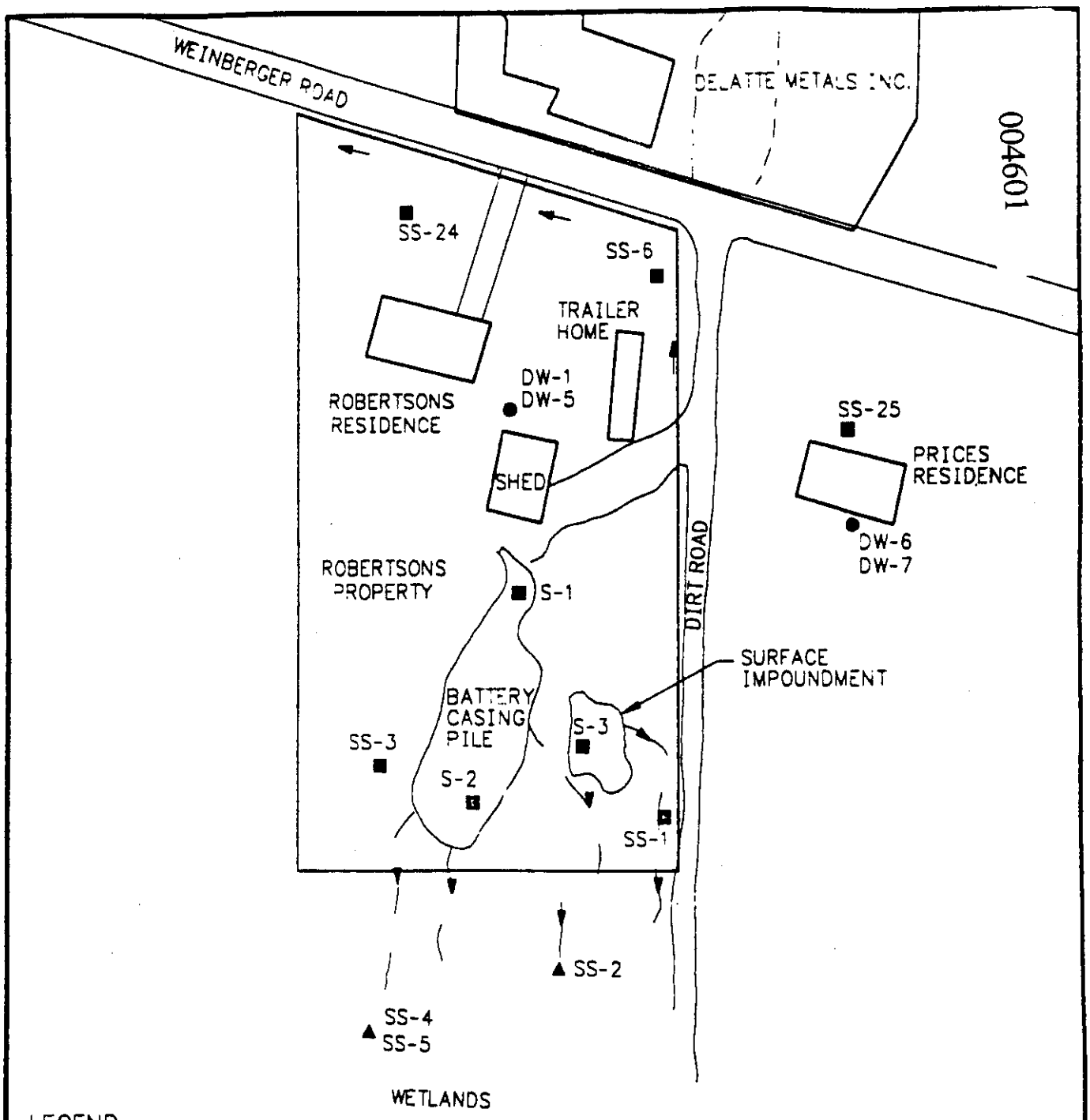
The Ponchatoula Battery site (site) is located within the northwest quarter of Section 43, Township 7 South, Range 8 East with the approximate geographical coordinates of latitude 30°25'30"N and 90°24'30"W (Ref. 1)(Figure 1). The Ponchatoula Battery site is located on Weinberger Road approximately 1.5 miles southeast of the City of Ponchatoula, Tangipahoa Parish, Louisiana (Figure 2). Selser's Creek is located approximately 800 feet west of the site and South Slough is located approximately 1.25 stream-miles south of the site.

The site is composed of two tracks of land designated as Robertson's Property and Northern Ponchatoula site. Robertson's Property is located on approximately 1.95 acres of land on the south side of Weinberger Road (Figure 2 and 3). The Northern Ponchatoula site is located on approximately 3.7 acres, approximately 700 feet north of the Robertson's Property. The Delatte Metals site borders Northern Ponchatoula site to the west and south and is located to the north of the Robertson's Property across Weinberger Road. The Northern Ponchatoula site is currently owned by Mr. Larry Delatte and the Robertson's Property is owned by Mr. Jerry Robertson (Ref. 2, pp. 1-2).

There are numerous residences within a one-mile radius of the site. The majority of the residences are located to the north, east, and west of the site. Wetlands are located to the south of the site. The area is heavily vegetated with trees and tall grasses (Ref. 3), as shown in site photographs included as Appendix A.

Relief in the vicinity of the site ranges from 0 to 20 feet above mean sea level (msl). The elevation of the site is approximately 15 feet above msl (Ref. 1).

Tangipahoa Parish has a predominantly humid climate. The area is drained by numerous small streams, and wetlands are conducive to the development of fogs. The prevailing winds in the area are from the southeast to the northwest. The average daily high temperature ranges from 65° Fahrenheit (F) in December to 90°F in August. The average daily low temperature is 45 °F in December and January and 75°F in July and August. The close proximity to Lake Pontchartrain results in abundant rainfall in the area (Ref. 4).



LEGEND

- SURFACE WATER FLOW DIRECTION
- ■ SOIL SAMPLE
- ▲ SEDIMENT SAMPLE
- ● GROUNDWATER SAMPLE
- ⊕ MONITORING WELL

north

SCALE FEET

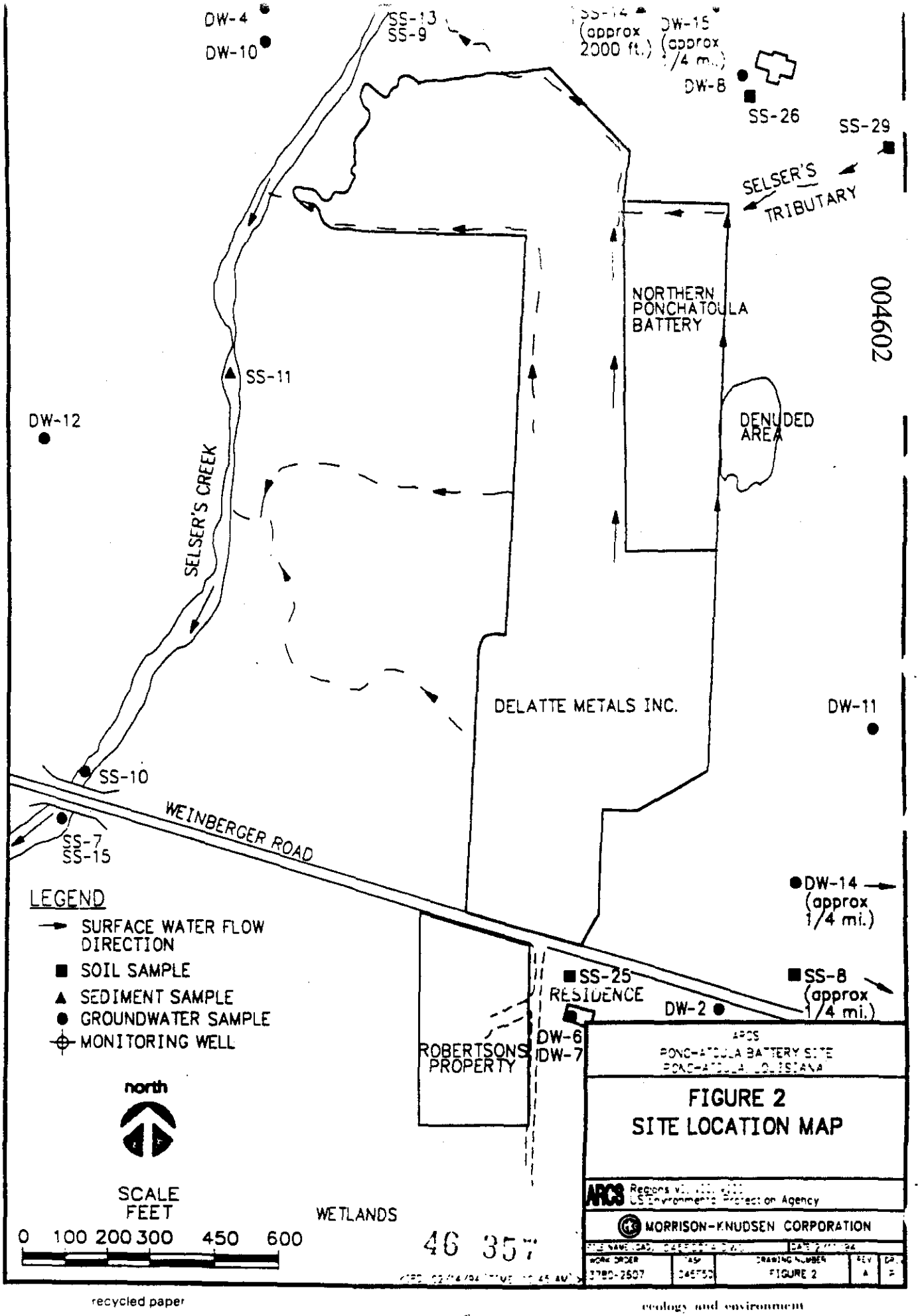
0 50 100 150 200

000083

40 356

FIGURE 3
SITE SKETCH
ROBERTSON'S PROPERTY

MORRISON-KNUDSEN CORPORATION



recycled paper

ecology and environment

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Ponchatoula site was moved to the warehouse of the Delatte Metals site and was processed along with other Delatte materials (Ref. 6).

The original Ponchatoula Battery site is presently owned by Mr. Jerry Robertson and consists of two residences and a battery casing pile with an associated surface impoundment left by Ponchatoula Battery operations. This property was purchased with the casing pile and impoundments at a Sheriff's auction by the Robertson's in the 1980s. No remedial activities have been performed on the Robertson's Property (Ref. 2, p. 1 and 2).

2.3 Source Characteristics

Waste sources at the Ponchatoula Battery sites consist of battery casing piles, surface impoundments, a slag pile, and contaminated soil. The Northern Ponchatoula site consists of three separate waste source areas which include the two concrete acid treatment pits, a lead oxide (slag) pile, and contaminated soils. The Robertson's Property consists of three separate waste source areas including the battery casing pile, the surface impoundment, and contaminated soil (Ref. 3).

Analyses of samples taken during the ESI sampling event in September 1993 indicate that onsite soils at the Ponchatoula Battery site are contaminated with varying concentrations of 10 Target Analyte List (TAL) metals. The ESI samples were not analyzed for organic constituents. The results of the ESI waste characteristic sample analyses are presented in Table 2 and in Section 3.1.

During the sampling event in September 1993, the areas of visible, surface contamination at both the Robertson's Property and the Northern Ponchatoula site were measured. Visible contamination at the waste source measured a rectangular-shaped area approximately 600 feet by 200 feet (120,000 ft^2) at the Northern Ponchatoula site and a triangular-shaped area approximately 195 feet by feet 219 feet (42,705 ft^2) at the Robertson's Property (Refs. 3 and 25).

The areas of observed soil contamination documented from the analyses of the surface soil samples was calculated by connecting the centers of the grid locations from which the samples were collected and computing the area enclosed by the lines (see Figures 3 and 4). Contaminated soil at the Northern Ponchatoula site covers an estimated

2.2 Operational History

Ponchatoula Battery was a battery recycling facility from the mid-1960s to 1981. During the 1960s, the facility was located on 1.95 acres of land on the south side of Weinberger Road (Robertson's Property) (Figures 2 and 3). Ponchatoula Battery moved its operation to the north side of Weinberger Road in the 1970s, on property covering approximately 3.7 acres (Northern Ponchatoula site). Ponchatoula Battery activities included sawing off the tops of lead batteries, removing the lead plates and crushing the remaining cases. Lead and plastic from the cases were sold and the spent acid was collected and neutralized in surface impoundments (Ref. 2, p. 1). Approximately 25,000 batteries per week were processed. The reclaimed lead and lead oxides were sold to smelting plants (Ref. 5, p. 11).

004604

The Northern Ponchatoula site is bounded on the south and the west by 11.8 acres owned by Delatte Metals, Inc., also a battery recycler as well as a lead smelter. Both facilities have been cited and fined by the State of Louisiana for unpermitted discharges to surface water. Delatte Metals is currently active and undergoing RCRA Corrective Action (Ref. 2, p.1).

Ponchatoula Battery ceased operations in 1981 as it was unable to comply with regulations established by the Occupational Safety and Health Administration and with the State of Louisiana Environmental Quality. When Ponchatoula Battery closed, the Northern Ponchatoula site contained approximately 6,000,000 empty battery casings, three leaking surface impoundments with pHs of 1, 12, and 1 respectively, and several denuded vegetative areas resulting from uncontained acid flow from the facility. The original location south of Weinberger Road contained a smaller battery casing pile and two small acidic surface impoundments. The company was declared bankrupt in 1985 (Ref. 2, p. 1).

Prior to filing for bankruptcy, the company filed closure plans with the State of Louisiana and placed money in a certificate of deposit to pay for clean-up. Clean-up activities were initiated in 1982 on the Northern Ponchatoula site and included the following actions: removing the battery casing pile, backfilling the surface impoundments, remediating soils to less than 1,000 parts per million (ppm) lead, and applying a 6 to 8 inch soil cover to the source areas (Ref. 2, p. 1). The lead contaminated material on the Northern

119,320 ft^2, and contaminated soil at the Robertson's Property covers an estimated 16,820 ft^2. The two acid treatment pits at the Northern Ponchatoula site have dimensions of 14 feet x 20 feet (2-cell treatment pit) and 20 feet x 20 feet (3-cell acid treatment pit) covering a combined surface area of 680 ft^2 (Ref. 9). The slag pile at the Northern Ponchatoula site has been mentioned as a source, however, the pile was not sampled and the dimensions of this area were not reported. The remaining sources at the Robertson's Property covers an estimated 2,970 ft^2 (45 feet x 66 feet) for the surface impoundment and an estimated 15,210 ft^2 (78 feet by 195 feet) for the battery casing pile. The background sample used to characterize the area and volume of source contamination was sample SS-8 and was collected from off-site surface soil located approximately ¼ mile east of the Robertson's Property (Ref. 3).

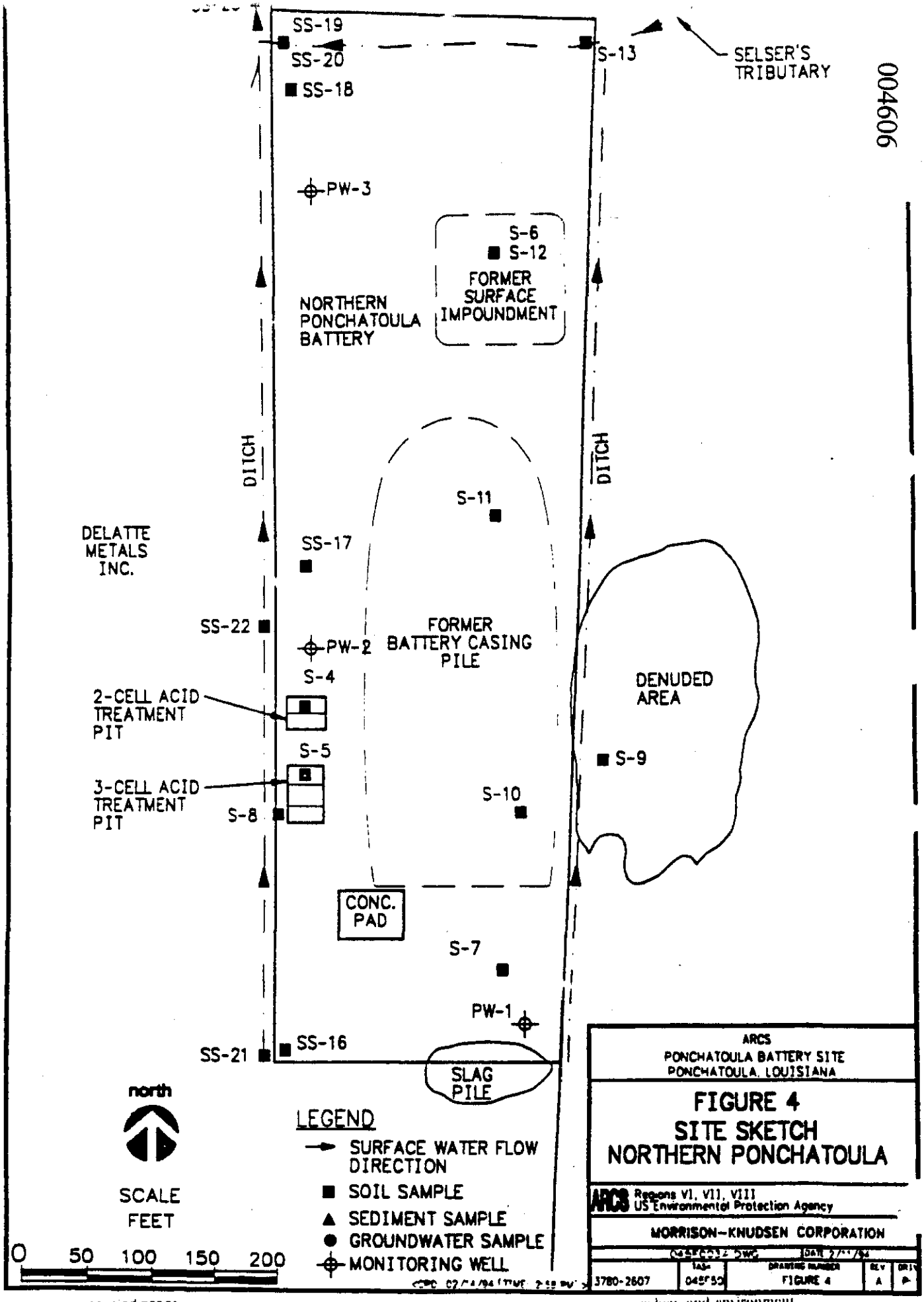
Sampling of the Northern Ponchatoula site and the Robertson's Property during the ESI investigation indicated the presence of several TAL metals. Metals detected at concentrations meeting the criteria for observed contamination in the surface soils onsite included antimony, arsenic, cadmium, chromium, copper, iron, lead, mercury, nickel, and zinc (Table 2).

During the ESI sampling investigation, samples were collected from the site at depths of 6 inches to 12 feet to characterize migration of the waste sources from areas of contaminated soil at each property. Contamination was found in the sample collected at 12 feet, however, the depth of contamination at other areas of the site is not known. An estimated 2,228 cubic yards of contaminated soil exists within the top 6 inches at the Northern Ponchatoula site and an estimated 623 cubic yards of contaminated soil exists within the top 6 inches at the Robertson's Property.

2.4 Potential Alternate Sources

The Delatte Metals site, located adjacent to the Northern Ponchatoula site to the south and west, is a battery recycling facility. The site, formerly known as Delatte and Fuscia Battery Company, Inc. has collected and processed used batteries onsite for the past 21 years. The main activities at the facility are battery cutting operations and a secondary lead smelter. Piles of coal slag currently exist at the Delatte Metals site (Ref. 3, 7, and 8).

A surface impoundment on the Delatte Metals site was closed in 1987 and eight monitoring wells were installed in the vicinity of the site during a Phase I assessment.



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casing pile, and pumping acid from holding trench behind levee. The Attorney General's office filed a lawsuit against Ponchatoula Battery ordering a cleanup of the site.

An inspection of the Northern Ponchatoula site by LDNR Hazardous Waste Management Division in January 1983 reported on the cleanup at the Ponchatoula Battery site. Most of the equipment and battery casings had been removed, however, a pile containing battery casings, dirt, and lead oxide remained at this time (Ref. 39). Soil samples were collected by LDNR on January 24, 1983. Cadmium and lead were detected in the subsurface soils at the Northern Ponchatoula site (Ref. 40).

A second site investigation was conducted by Earth Technology on July 30, 1984. The site investigation indicated that acid and lead oxides in the acids were allowed to penetrate the soil and possibly contaminate shallow ground water. Waste wash water containing sulfuric acid and lead was discharged into Selser's Creek from the surface impoundment (Ref. 5, p. 8).

Site cleanup started on April 22, 1987 by ISHC. All lead and battery casing materials from the Northern Ponchatoula site were staged on a concrete pad and covered with plastic, prior to moving the material into the adjacent Delatte Industries warehouse for processing. Contaminated soils were excavated and placed along with the other materials on the concrete pad. Closure soil samples were collected and total lead was detected at levels less than 1,000 ppm. Three monitoring wells were installed onsite. Ground water samples from the onsite monitoring wells indicated that lead was present at concentrations ranging from 0.03 ppm to 0.86 ppm. The site was proposed to be landscaped and revegetated following final cleanup activities (Ref. 10, p. 4). The final report on cleanup was submitted to the LDEQ on October 29, 1987 (Ref. 41).

3.0 ANALYTICAL RESULTS

3.1 Previous Analytical Results

Sampling conducted by the Field Investigative Team (FIT) in November of 1981 documented the presence of antimony and lead in a sediment sample collected from Selser's Tributary, located approximately 400 feet north of the Northern Ponchatoula site. Antimony was detected at 84.3 ppm and lead was detected at 21.6 ppm (Ref. 9).

Five of the monitoring wells (DW-1 through DW-5) were installed on the Delatte site and the other three monitoring wells (PW-1 through PW-3) were installed on the Northern Ponchatoula site (Ref. 7, p. 10).

The Ponchatoula Sewage Treatment Plant is located approximately 1.2 miles to the west to southwest of the Robertson's Property (Figure 1).

2.5 Regulatory Status/Activities

The Ponchatoula Battery site was brought to the attention of the Louisiana State Department of Health (LSDH) during a complaint regarding acid discharge October, 1970. Refer to Appendix B for a chronological summary of the Louisiana Department of Environmental Quality (LDEQ) files associated with the Ponchatoula Battery site.

An inspection was conducted in October 1974 by LSDH's Division of Water Control following a complaint of acid drainage into offsite ditches and discharges to Selser's Creek (Ref. 36). In September 1979, a temporary order was issued to Ponchatoula Battery by the Louisiana Stream Control Commission (LSCC) to stop discharge from surface impoundments to surface water (Ref. 38). Ponchatoula Battery submitted a permit application to discharge wastewater to the LSCC on November 19, 1979 (Ref. 37). Ponchatoula Battery was cited with a violation on October 9, 1981 from Louisiana Department of Natural Resources (LDNR) for failing to file a Louisiana Hazardous Waste Permit Application. The LDNR requested that Ponchatoula Battery immediately stop processing batteries onsite.

A site inspection of the Ponchatoula Battery site was conducted by Ecology and Environment, Inc. in November 1981. Standing liquids were observed next to the battery casing pile on the property east of the site. Evidence of overflow from treatment pits and seepage from surface impoundments into offsite ditches was observed. A surface water sample revealed elevated levels of lead in the downstream portion of Selser's tributary (Ref. 9).

The LDNR issued a notice of violation and compliance order on November 10, 1981 ordering Ponchatoula Battery to cease all discharges. Industrial Safety and Health Consultants (ISCH) were contracted to develop a closure plan for Ponchatoula Battery in November, 1981 which included constructing a levee on the north end of the battery

TABLE 1

PONCHATOULA BATTERY

SAMPLE LOCATIONS AND RATIONALE

004609

Station Number	Sample Description and Rationale
Source	
Waste Characteristic Soils	
S-1, S-2	Battery Casing Pile at Robertson's Property. Low concentration grab (soil) sample. Sample depth to 6 inches. Rationale: To determine hazardous constituents associated with the battery casing pile.
S-3	Surface impoundment on Robertson's Property. Low concentration grab (soil) sample. Sample depth to 6 inches. Rationale: To determine hazardous constituents associated with the impoundment.
S-4	Two-cell concrete acid treatment pit on Northern Ponchatoula Site. Low concentration grab (soil) sample. Sample depth to 6 inches. Rationale: To determine hazardous constituents associated with the two-cell acid treatment pit.
S-5	Three-cell acid treatment pit on Northern Ponchatoula Site. Low concentration grab (soil) sample. Sample depth to 2 feet. Rationale: To determine hazardous constituents associated with the three-cell acid treatment pit.
S-6	Northeast corner of Northern Ponchatoula Site; surface soil sample from former surface impoundment. Low concentration grab (soil) sample. Sample depth to 1 foot. Rationale: To determine hazardous constituents associated with surface soils at Northern Ponchatoula Site.

000091

Final closure soil samples were collected by ISHC from each of 19 sampling grids on the Northern Ponchatoula site during the July 1987 sampling program for site closure. Soil samples collected from a depth of 10 inches indicated lead concentrations ranging from 47 ppm to 990 ppm remained in the onsite soils. Three deep soil samples collected from 5 to 25 feet detected lead concentrations from less than 25 ppm to 73 ppm. Ground water samples collected from the onsite monitoring wells detected lead at concentrations of 0.21 ppm at the upgradient well (PW-1), and 0.03 ppm (PW-3) and 0.86 ppm (PW-2) at the wells downgradient of the onsite sources. Sulfate concentrations were detected in the ground water samples in concentrations ranging from 3,840 mg/l (PW-3) to 33,755 mg/l (PW-2) (Ref. 10, pp. 1-2, 6-9).

004610

3.2 Sampling Methodology

Sampling conducted by the ARCS team took place from September 20 through September 23, 1993. Ground water samples were collected from residential and municipal wells on September 20, 1993. Soil and sediment samples were collected from September 21 through September 23, 1993. Sample locations are described in Table 1. Photographs of sampling locations are provided in Appendix A (Ref. 3).

3.3 ESI Analytical Results

Results of the ESI sampling are summarized in Tables 2 through 5. Chemical data summaries and sample quantitation limit (SQL) tables are included as Appendix C.

Robertson's Property

A total of seven surface soil grab samples were collected from the Robertson's Property to characterize the contaminated soil, the battery casing pile, and the surface impoundment as waste sources (Figure 3). Six of the seven samples met the criteria for observed contamination for the concentration of at least one analyte. The observed contamination criteria utilized to classify the samples was an analyte concentration detected at greater than three times that analyte's concentration in the background sample or a concentration greater than the SQL if undetected in the background sample. All sample concentrations were compared to the contaminant concentration in the background sample collected from offsite soil located ¼ mile east of the Robertson's Property (sample SS-8). The analyte concentrations of the samples meeting criteria for

000092

TABLE 1

PONCHATOULA BATTERY

SAMPLE LOCATIONS AND RATIONALE

(Continued)

Station Number	Sample Description and Rationale
S-13	Confluence of Selsers Tributary and eastern drainage pathway of the Northern Ponchatoula Site. Low concentration grab (soil) sample. Sample depth to 6 inches. Rationale: To determine hazardous constituents associated with soils from upgradient sources along Selsers tributary.
SS-1	Dirt road drainage ditch at southeast corner of Robertson's Property to the south of the surface impoundment. Low concentration grab (soil) sample. Sample depth to 6 inches. Rationale: To determine if hazardous constituents associated with the surface impoundment and battery casing pile have migrated into the drainage pathway.
SS-3	West side of battery casing pile on Robertson's Property. Low concentration grab (soil) sample. Sample depth to 6 inches. Rationale: To determine if hazardous constituents have migrated from the battery casing pile into the southwest drainage pathway.
SS-6	Confluence of dirt road drainage ditch and ditch along south side of Weinberger Road on Robertson's Property. Low concentration grab (soil) sample. Sample depth to 6 inches. Rationale: To determine if hazardous constituents have migrated from Robertson's Property along the northern drainage pathway.
SS-8	Ditch paralleling the southern side of Weinberger Road, approximately ¼ mile east of Robertson's Property. Low concentration grab (soil) sample. Sample depth to 6 inches. Rationale: To provide a background soil sample from ditch paralleling the southern side of Weinberger Road.

TABLE 1

PONCHATOULA BATTERY

SAMPLE LOCATIONS AND RATIONALE
(Continued)

Station Number	Sample Description and Rationale
S-7	Southeast corner of Northern Ponchatoula Site; approximately 133 feet south of Station S-10. Low concentration grab (soil) sample. Sample depth to 10 to 12 inches. Rationale: To determine hazardous constituents associated with surface soils at Northern Ponchatoula Site.
S-8	Southwest corner of Northern Ponchatoula Battery; approximately 5 feet west of the southern portion of the 3-cell acid treatment pit. Low concentration grab (soil) sample. Sample depth to 6 inches. Rationale: To determine hazardous constituents associated with surface soils at northern Ponchatoula Battery.
S-9	Center of denuded area adjacent to former battery casing pile to the east of Northern Ponchatoula Site. Low concentration grab (soil) sample. Sample depth to 6 inches. Rationale: To determine if hazardous constituents associated with battery casing pile have migrated beyond property boundary.
S-10, S-11	Location of former battery casing pile on Northern Ponchatoula Site. Low concentration grab (soil) samples. Sample depth to 6 incnes. Rationale: To determine hazardous constituents associated with the former battery casing pile.
S-12	Subsurface soil sample from the former surface impoundment on Northern Ponchatoula Site. Low concentration grab (soil) sample. Sample depth to 12 feet (approximate base of impoundment). Rationale: To determine hazardous constituents associated with former surface impoundment.

TABLE 1

PONCHATOULA BATTERY

SAMPLE LOCATIONS AND RATIONALE

(Continued)

Station Number	Sample Description and Rationale
SS-22	Drainage ditch on Delatte Metals paralleling western drainage ditch of Northern Ponchatoula site; approximately 32 feet west of SS-17. Low concentration grab (soil) sample. Sample depth to 6 inches. Rationale: To determine if hazardous constituents associated with Delatte Metals have entered the drainage pathway.
SS-23	Selser's tributary where Northern Ponchatoula and Delate Metals meet. Low concentration grab (soil) sample. sample depth to 6 inches. Rationale: To determine if hazardous constituents associated with Delatte Metals have entered the drainage pathway.
SS-29	Selser's tributary approximately 500 feet east of Ponchatoula Battery. Low concentration grab (soil) sample. Rationale: To assess the potential contribution from upgradient sources of contaminates in Selsers Tributary.
Residential Soils	
SS-24	43 feet northwest of trailer home located on Robertson's Property. Low concentration grab (soil) sample. Sample depth to 6 inches. Rationale: To determine if hazardous constituents associated with Delatte Metals or Ponchatoula Battery have migrated to soils in nearby residences.
SS-25	78 feet north of the northwest corner of Prices residence. Low concentration grab (soil) sample. Sample depth to 6 inches. Rationale: To determine if hazardous constituents associated with Delatte Metals or Ponchatoula Battery have migrated to soils in nearby residences.

TABLE 1

PONCHATOULA BATTERY

SAMPLE LOCATIONS AND RATIONALE
(Continued)

004614

Station Number	Sample Description and Rationale
SS-16	Southwestern corner of Northern Ponchatoula Site along ditch paralleling western boundary of site. Low concentration grab (soil) sample. Sample depth to 6 inches. Rationale: To determine if hazardous constituents have migrated from Delatte Metals onto Ponchatoula Battery.
SS-17	Seventy-one feet north of monitoring well PW-2 along the western portion of the Northern Ponchatoula Site. Low concentration grab (soil) sample. Sample depth at 6 inches. Rationale. To determine if hazardous constituents associated with Ponchatoula Battery have migrated to the western portion of the Northern Ponchatoula Site.
SS-18	Western drainage ditch of Northern Ponchatoula Site, approximately 43 feet south of SS-19 on the northwestern portion of the Northern Ponchatoula Site. Low concentration grab (soil) sample. Sample depth at 1 foot. Rationale: To determine if hazardous constituents associated with northern Ponchatoula Battery have migrated into drainage pathway.
SS-19/SS-20	Confluence of western ditch of Northern Ponchatoula Site and Selsers Tributary in northwestern corner of Northern Site. Low concentration grab (soil) sample. Sample depth to 6 inches. Rationale: To determine if hazardous constituents associated with northern Ponchatoula Battery have migrated into drainage pathway.
SS-21	Western ditch along southwest corner of Northern Ponchatoula site on Delatte Metals Property. Low concentration grab (soil) sample. Sample depth to 6 inches. Rationale: To determine if hazardous constituents associated with northern Ponchatoula Battery have migrated into drainage ditch on Delatte Metals property.

TABLE 1

PONCHATOULA BATTERY

SAMPLE LOCATIONS AND RATIONALE

(Continued)

004615

Station Number	Sample Description and Rationale
Surface Water Sediment	
SS-2	Wetlands located in the drainage pathway approximatley 57 feet southeast of the battery casing pile, downstream from Robertson's Property. Low concentration grab (sediment) sample. Sample depth to 6 inches. Rationale: To determine if hazardous constituents associated with Robertson's property have migrated into the wetlands.
SS-4/SS-5	Wetlands located approximately 76 feet southwest of the battery casing pile, downstream from Robertson's Property. Low concentration grab (sediment) sample. Sample depth to 6 inches. Rationale: To determine if hazardous constituents associated with Robertson's property have migrated into the wetlands.
SS-7/SS-15	Probable point-of-entry (PP-2) from Robertson's property. The southern side of Weinberger bridge in Selser's Creek. Low concentration grab (sediment) sample. Rationale: To determine if hazardous constituents associated with Robertson's property have migrated into Selsers Creek.
SS-9/SS-13	Probable point-of-entry (PP-1) of Selser's tributary into Selsers Creek located northwest of Delatte Metals. Low concentration grab (sediment) sample. Rationale: To determine if hazardous constituents from Delatte Metals and Ponchatoula Battery have migrated into the surface water pathway. Lab QA/QC - MS/MD sample.

000097

46 370

TABLE 1

PONCHATOULA BATTERY

SAMPLE LOCATIONS AND RATIONALE
(Continued)

Station Number	Sample Description and Rationale
SS-26	100 feet southwest of the Miller's property. Low concentration grab (soil) sample. Sample depth to 6 inches. Rationale: To determine if hazardous constituents associated with Delatte Metals or Ponchatoula Battery have migrated to soils in nearby residences.
SS-27	50 feet northeast of residence at 1305 Esterbrook Road, located approximately ¼ mile east of Robertsons Property. Low concentration grab (soil) sample. Sample depth to 6 inches. Rationale: To provide a background residential soil sample.
SS-28	Swampy area behind Laird's residence, located approximately 1/4 mile southeast of Robertson's Property. Low concentration grab (soil) sample. Sample depth to 6 inches. Rationale: To determine if hazardous constituents associated with Delatte Metals or Ponchatoula Battery have migrated to soils in nearby residences.
SS-30	Approximately 200 feet south of Kuglers trailer home. Low concentration grab (soil) sample. Sample depth to 6 inches. Rationale: To determine if hazardous constituents associated with Delatte Metals or Ponchatoula Battery have migrated to soils in nearby residences.

TABLE 1

PONCHATOULA BATTERY

SAMPLE LOCATIONS AND RATIONALE

(Continued)

004617

Station Number	Sample Description and Rationale
SS-10	Confluence of ditch along the northern side of Weinberger Road bridge in Selser's Creek. Low concentration grab (sediment) sample. Rationale: To document contribution of contaminants from Delatte Metals and Northern Ponchatoula Battery prior to influence from Robertson's property.
SS-11	Selser's Creek, west of Delatte Metals. Low concentration grab (sediment) sample. Rationale: To determine if hazardous constituents associated with Ponchatoula Battery and Delatte Metals have migrated into the surface water pathway.
SS-12	Selser's Creek south of Weinberger Road approximately 1/20th mile into wetlands. Low concentration grab (sediment) sample. Sample depth to 5 feet. Rationale: To determine if hazardous constituents associated with Ponchatoula Battery and Delatte Metals have migrated into the wetlands.
SS-14	Selser's Creek at Ash Road, approximately 2,000 feet northeast of North Ponchatoula Site. Low concentration grab (sediment) samples. Rationale: To provide background sediment samples for Selser's Creek.

000099

TABLE 1

PONCHATOULA BATTERY

SAMPLE LOCATIONS AND RATIONALE
(Continued)

Station Number	Sample Description and Rationale
Drinking Water	
DW-1	Robertson's well (approximately 115 feet deep). Low concentration grab (water) sample. Rationale: To determine if hazardous constituents have migrated to ground water.
DW-2	Windecker well (approximately 112 feet deep), located approximately 300 feet east of Robertson's Property. Low concentration grab (water) sample. Rationale: To determine if hazardous constituents have migrated to ground water.
DW-3	Sheridan's well (approximately 130 feet deep), located approximately 200 feet east of Northern Ponchatoula. Low concentration grab (water) sample. Rationale: To determine if hazardous constituents have migrated to ground water.
DW-4	Kugler's shallow well (approximately 110 feet deep), located approximately ¼ mile northeast of Northern Ponchatoula Site. Low concentration grab (water) sample. Rationale: To determine if hazardous constituents have migrated to ground water.
DW-5	Duplicate sample of DW-1. Low concentration grab (water) sample. Rationale: To serve as a drinking water duplicate sample for QA/QC.
DW-6	Price's well (approximately 200 feet deep), located approximately 80 feet east of Robertson's Property. Low concentration grab (water) sample. Rationale: To determine if hazardous constituents have migrated to ground water.

TABLE 1

PONCHATOULA BATTERY

SAMPLE LOCATIONS AND RATIONALE
(Continued)

004619

Station Number	Sample Description and Rationale
DW-7	Duplicate sample of DW-6. Low concentration grab sample. Rationale: To serve as a drinking water duplicate sample for QA/QC.
DW-8	Miller's well (approximately 650 feet deep), located approximately 400 feet northeast of Northern Ponchatoula. Low concentration grab (water) sample. Rationale: To determine if hazardous constituents have migrated to ground water.
DW-9	Nicholas' well (approximately 400 feet deep), located approximately 150 feet west of Robertson's Property. Low concentration grab (water) sample. Rationale: To determine if hazardous constituents have migrated to ground water.
DW-10	Kugler's deep well (approximately 500 feet deep), located approximately ¼ mile northwest of Northern Ponchatoula. Low concentration grab (water) sample. Rationale: To determine if hazardous constituents have migrated to ground water.
DW-11	Yoes' well (approximately 400 feet deep), located approximately 150 feet east of Northern Ponchatoula. Low concentration grab (water) sample. Rationale: To determine if hazardous constituents have migrated to ground water. Lab QA/QC - MS/MD sample.
DW-12	Berner's deep well (approximately 396 feet deep), located approximately 900 feet northwest of Northern Ponchatoula. Low concentration grab (water) sample. Rationale: To determine if hazardous constituents have migrated to ground water.

TABLE 1

PONCHATOULA BATTERY

SAMPLE LOCATIONS AND RATIONALE

(Continued)

Station Number	Sample Description and Rationale
DW-13	City well #284 (approximately 650 feet deep), located approximately 2.1 miles northwest of Northern Ponchatoula. Low concentration grab (water) sample. Rationale: To determine if hazardous constituents have migrated to ground water.
DW-14	Cliffton Hills well (less than 100 feet deep), located approximately ¼ mile east of Robertson's Property. Rationale: To serve as a background shallow well sample.
DW-15	Martha's Vineyard Elementary School well (approximately 435 feet deep), located approximately 1.5 miles north of the Northern Ponchatoula site. Rationale: To serve as a background residential well sample.
DW-16	Trip Blank. Rationale: QA/QC sample to evaluate shipping and handling of samples.
DW-17	Rinsate Rationale: Disposal of decontamination water.

observed contamination of the Robertson's Property's surface soil samples are summarized in Table 2.

004621

Six of the Robertson's Property's surface soil samples contained concentrations of metals meeting the observed contamination criteria. Four surface soil samples (SS-1, SS-3, SS-6, and SS-24) were collected from the Robertson's Property to characterize the contaminated soil as a waste source. Antimony was detected in samples SS-1, SS-3, and SS-6 at concentrations ranging from 7.5 ppm to 60 ppm. Arsenic was detected samples SS-1 and SS-6 at concentrations ranging from 4.2 ppm to 12.8 ppm. Cadmium, copper, lead, mercury, nickel, and zinc concentrations were detected in sample SS-6 at 1.7 ppm, 73.6 ppm, 40,000 ppm, 0.21 ppm, 13.64 ppm, and 215 ppm, respectively.

Two surface soil samples (S-1 and S-2) were collected from the battery casing pile to characterize contaminants associated with the battery casing pile. Lead was detected in sample S-1 at 148,000 ppm. Antimony, arsenic, and zinc concentrations were detected in sample S-1 at 483 ppm, 41.8 ppm, and 190 ppm, respectively.

Surface soil sample S-3 was collected from the surface impoundment to characterize the contaminants associated with the surface impoundment. Arsenic was detected in sample S-3 at 4.9 ppm.

Northern Ponchatoula Site

A total of sixteen surface soil samples were collected from the Northern Ponchatoula site to characterize the contaminated soil and the acid treatment pits as waste sources (Figure 4). The analytical results for these samples are summarized in Table 2. The surface samples were generally collected from 6 inches to one foot below ground surface. Ten of the sixteen samples indicated levels of several metals that met the criteria for observed contamination. Constituent concentrations in the Northern Ponchatoula site were generally higher than those detected in the Robertson's Property surface soil samples.

Eight of the samples were collected from the site to characterize contaminated soil associated with the site. Surface sample S-6 and subsurface sample S-12 (12 foot sample depth) were collected to characterize contaminants associated with the former surface impoundment. Antimony was detected in seven of the samples (S-6, S-7, S-13, SS-18, SS-21, SS-22, and SS-23) at concentrations ranging from 3.9 ppm to 179 ppm. Cadmium was detected in five of the samples (S-7, S-10, S-12, SS-21, and SS-23) at

TABLE 2

Analytes Meeting Criteria for Observed Contamination in Waste Characteristic Samples
Ponchatoula Battery

(parts per million)

ffic mber	MFS479		MFS450		MFS451		MFS438		MFS445		MFS447		MFS452		MFS453	
tion mber	SS-8		S-1		S-2		S-3		SS-1		SS-3		SS-6		SS-24	
scription	Background Soil ¼ mile east of Robertsons		North end of battery casing pile (Robertsons)		South end of battery casing pile (Robertsons)		Surface impoundment (Robertsons)		Eastern drainage ditch (Robertsons)		West side of Battery Casing Pile (Robertsons)		NE Corner of Robertsons Residence		NW of Robertsons Motor home	
lyte List	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value
imony	14.9	ND	15.1	483	15.5	ND	18.0	ND	16.4	7.5	18.7	7.7	20.3	60	16.7	ND
enic	2.48	ND	25.16	41.8	2.58	3.98	3.00	4.9	2.73	4.2	3.12	3.2B	3.39	12.8	2.79	1.9B
dmium	1.24	ND	1.26	ND	1.29	ND	1.50	ND	1.37	ND	1.56	ND	1.69	1.7	1.39	ND
romium	2.48	6.8	2.52	11.7	2.58	7.5	3.00	ND	2.73	3.6	3.12	4.5	3.39	17	2.79	7.8
pper	6.2	10.1	6.3	59	6.5	13.3	7.5	12.9	6.8	13.8	7.8	26.5	8.5	73.6	7.0	19
n	24.8	7,110	25.2	5290	25.8	2,830	30.0	874	27.3	761	31.2	947	33.9	9830	27.9	5760
ad	1.238	230	25.157	148,000J	1.290	164	1.50	216J	1.366	390J	1.558	414J	1.695	40,000J	1.393	585J
rcury	0.124	ND	0.126	0.35	0.129	ND	0.150	ND	0.137	ND	0.156	ND	0.169	0.21	0.139	ND
kel	9.9	ND	10.1	ND	10.3	ND	12.0	ND	10 9	ND	12.5	ND	13.6	13.64	11.1	ND
nc	4.95	52.4	5.03	190	5.16	27.5	6.00	20	5.46	26.2	6.23	29.6	6.78	215	5.57	78.9

- = Sample Quantitation Limits.
- = Estimated Concentration due to quality control criteria not being met.
- = Not Detected.
- = Possible Laboratory Contaminant.
- = Meets criteria for an observed contamination.

TABLE 2 (Continued)

Analytes Meeting Criteria for Observed Contamination in Waste Characteristic Samples
Ponchatoula Battery

(parts per million)

Traffic Number	MFS479		MFS455		MFS474		MFS456		MFS470		MFS460	
Station Number	SS-8		S-10		S-11		S-13		S-8		SS-16	
Description	Background Soil ¼ mile east of Robertsons		S. end of former battery casing pile (N. Ponchatoula)		N. end of former battery casing pile (N. Ponchatoula)		Confluence of Seisers tributary & eastern ditch on N. Ponchatoula		5 ft west of 2 cell acid treatment pit (N. Ponchatoula)		SW corner of N. Ponchatoula site	
Analyte List	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value
Antimony	14.9	ND	15.3	ND	14.1	ND	20.1	3.9	14.4	152J	13.5	ND
Arsenic	2.48	ND	2.56	2.7 J	2.36	2.4J	2.36	ND	23.92	27J	45.096	1.8J
Cadmium	1.24	ND	1.28	4.4	1.18	ND	1.68	ND	1.20	1.4J	1.13	ND
Chromium	2.48	6.8	2.56	7.8	2.36	10.3	3.36	10.4	2.39	11.5J	2.25	2.5
Copper	6.2	10.1	6.4	5.8	5.9	6.1	8.4	7.2	6.0	15.3J	5.6	ND
Iron	24.8	7,110	25.6	11,600	23.6	7,950	33.6	2,330	23.9	5,010J	22.5	1,360
Lead	1.238	230	1.279	140B	1.18	202B	1.678	508B	1.196	89,600J	1.127	130B
Mercury	0.124	ND	0.128	ND	0.118	ND	0.168	ND	0.120	0.3	0.113	ND
Nickel	9.9	ND	10.2	10.4	9.4	ND	13.4	ND	9.6	ND	9.6	ND
Zinc	4.95	52.4	5.12	21.4	4.71	7.5	6.71	9.9	4.78	37.7J	4.51	14.5

1 = Sample Quantitation Limits.
J = Estimated Concentration.
ND = Not Detected.
B = Possible Laboratory Contaminant.
= Meets criteria for an observed contamination.

TABLE 2 (Continued)

Analytes Meeting Criteria for Observed Contamination in Waste Characteristic Samples
Ponchatoula Battery

(parts per million)

affic Number	MFS479		MFS468		MFS469		MFS458		MFS459		MFS467		MFS471	
ation umber	SS-8		S-4		S-5		S-6		S-12		S-7		S-9	
escription	Background Soil ¼ mile east of Robertsone		2 cell acid treatment pit (N. Ponchatoula)		3 cell acid treatment pit (N. Ponchatoula)		Former Surface Impoundment (surface) (N. Ponchatoula)		Former surface impoundment (subsurface) (N. Ponchatoula)		SE corner of site (N. Ponchatoula)		Center of denuded area (east of N. Ponchatoula)	
nalyte List	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value
ntimony	14.9	ND	36.3	178J	73.6	297J	13.9	5.9	16.4	ND	13.5	179	16.6	3.8J
rsenic	2.48	ND	30.21	46.8J	122.70	274J	2.32	3.8J	2.73	6.2J	44.94	75.4J	2.76	4.6J
admium	1.24	ND	3.02	20.9J	6.13	41.6J	1.16	ND	1.36	1.4	1.12	2.9	1.38	ND
hromium	2.48	6.8	6.04	12.4J	12.27	331J	2.32	24.8	2.73	8.4	2.25	22.1	2.76	5.5J
opper	6.2	10.1	15.1	3,507J	30.7	102J	5.8	5.8	6.8	13.1	8.4	24.3	6.9	4.2
on	24.8	7,110	60.4	3,870J	122.7	20,900J	23.2	22,800	27.3	20,100	33.6	3910	27.6	1,140
ead	1.238	230	30.21	55,500J	6.135	150,000J	1.61	920	6.821	11.3	1.124	156,000J	1.381	166J
lercury	0.124	ND	0.302	37	0.613	0.82	0.116	ND	0.136	ND	0.112	0.32	0.138	ND
lickel	9.9	ND	24.2	ND	49.1	ND	9.3	ND	10.9	23.1	9.0	11.2	11.0	ND
inc	4.95	5.24	12.08	137J	24.34	194J	4.65	10.3	5.46	50	4.49	71.9	5.52	3.9J

- = Sample Quantitation Limits.
- = Estimated Concentration.
- = Not Detected.
- = Possible Laboratory Contaminant.
- = Meets criteria for an observed contamination.

TABLE 2 (Continued)

Analytes Meeting Criteria for Observed Contamination in Waste Characteristic Samples Ponchatoula Battery

(parts per million)

Traffic Number	MFS479		MFS461		MFS462		MFS466		MFS467		MFS463		MFS464		MFS465	
Station Number	SS-8		SS-17		SS-18		SS-19		SS-20		SS-21		SS-22		SS-23	
Description	Background Soil ¼ mile east of Robertsons		Eastern edge of N. Ponchatoula site		NW portion of N. Ponchatoula in drainage		NW corner of N. Ponchatoula in Selsers Tributary		Dup of SS-19		Drainage ditch along SW corner of N. Ponchatoula on Delatte site		32' west of SS-17 on Delatte site.		Selsers Tributary on Delatte site NW of N. Ponchatoula	
Analyte List	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value
Antimony	14.9	ND	13.8	ND	14.1	5.2	15.8	ND	15.6	ND	14.7	24.7	14.6	9.0	19.0	[illegible]
Arsenic	2.48	ND	13.8	2.7J	14.1	ND	2.64	ND	2.60	ND	2.45	63.5J	2.43	3J	15.82	[illegible]
Cadmium	1.24	ND	1.15	ND	1.18	ND	1.31	ND	1.30	ND	1.22	13.9	1.21	ND	1.58	[illegible]
Chromium	2.48	6.8	2.30	4.4	2.36	8.6	2.64	4.8	2.60	4.8	2.45	70.7	2.43	5.7	3.16	[illegible]
Copper	6.2	10.1	5.8	6.2	5.9	5.9	6.6	ND	6.5	4.3	6.1	41	6.1	11.9	7.9	[illegible]
Iron	24.8	7,110	23.0	3,031	23.6	8,540	26.4	548	26.0	591	24.5	17,600	24.3	7,580	31.6	[illegible]
Lead	1.238	230	1.151	193B	1.178	2,790	1.319	47.7B	1.299	29.6B	1.22	9,460	1.214	4,210	1.582	[illegible]
Mercury	0.124	ND	0.115	ND	0.118	ND	0.132	ND	0.130	ND	0.122	2.0	0.121	0.19	0.158	[illegible]
Nickel	9.9	ND	9.2	ND	9.4	ND	10.6	ND	10.4	ND	9.8	12.8	9.7	17.7	12.7	[illegible]
Zinc	4.95	52.4	4.60	6.5	4.71	9.4	5.28	11.5	5.19	11.2	4.90	168	4.85	56.5	6.33	[illegible]

SQL - Sample Quantitation Limits.
J - Estimated Concentration.
ND - Not Detected.
B - Possible Laboratory Contaminant.
▒ - Meets criteria for an observed contamination.

concentrations ranging from 1.4 ppm to 13.9 ppm. Chromium was detected in three of the samples (S-6, S-7, and SS-21) at concentrations ranging from 22.1 ppm to 70.7 ppm. Copper was detected in one sample (SS-21) at 41 ppm. Iron was detected in one sample (S-6) at 22,800 ppm. Lead was detected in six samples (S-6, S-7, S-8, SS-18, SS-21, and SS-22) at concentrations ranging from 920 ppm to 156,000 ppm. Mercury was detected in four of the samples (S-7, S-8, SS-21, and SS-22) from concentrations ranging from 0.19 ppm to 2.0 ppm. Nickel was detected in five of the samples (S-7, S-10, S-12, SS-21 and SS-22) at concentrations ranging from 10.4 ppm to 23.1 ppm. Zinc was detected in one of the samples (SS-21) at 168 ppm and lead concentrations ranging from 55,500 ppm to 150,000 ppm.

004626

Two soil samples were collected from the bottom of the acid treatment pits to characterize contaminants associated with the acid treatment pits. Sample S-4, collected from the 2-cell acid treatment pit and sample S-5, collected from the 3-cell acid treatment pit, had mercury concentrations ranging from 0.82 ppm to 37 ppm and lead concentrations ranging from 55,500 ppm to 150,000 ppm.

Portions of a slag pile were reportedly located on the southeastern portion of the Northern Ponchatoula site. No samples were collected from this area (Ref. 3).

All sample concentrations were compared to the contaminant concentration in the background reference sample (SS-8) collected from offsite soil located ¼ mile east of the Robertson's Property.

Residential Soil Pathway

Four surface soil samples were collected from residential properties surrounding the Ponchatoula Battery site to determine if hazardous constituents associated with the site have migrated to nearby residential soils. The analytical results for these samples are summarized in Table 3. Refer to Figures 3, 4, and 5 for approximate sample locations. The residential surface samples were generally collected from 6 inches to one foot below ground surface. One of the four samples indicated levels of metals that met the criteria for observed contamination. Sample SS-25, collected from soil adjacent to the Price residence, located immediately east of the Robertson's Property, contained arsenic at 2.4 ppm and lead detected at 329 ppm. All sample concentrations were compared to the contaminant concentration in the background reference sample (SS-27) collected from 1305 Esterbrook Road, approximately ¼ miles east of the Northern Ponchatoula site.

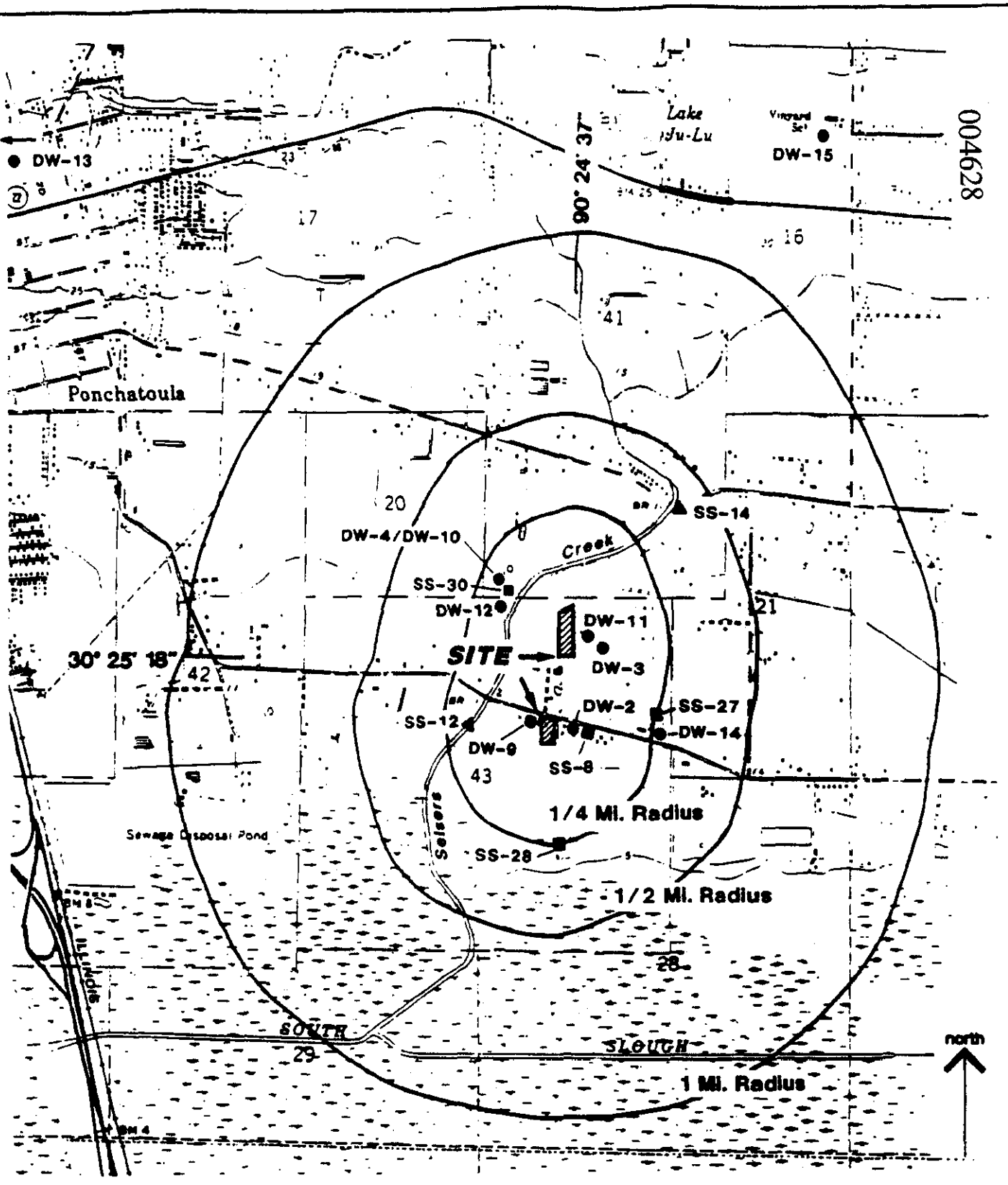
TABLE 3

Analytes Meeting Criteria for Observed Contamination in Residential Soil Samples
Ponchatoula Battery

(parts per million)

Traffic Number	MFS484		MFS482		MFS483		MFS486		MFS486	
Station Number	SS-27		SS-25		SS-26		SS-30		SS-28	
Description	Background Residential Soil (1305 Esterbrook Rd.)		Northwest corner of Price Residence		Southwest Corner of Miller Residence		South Corner of Kuglers Residence		Marshy area behind Lair Residence (¼ miles SE of Roberts	
Analyte List	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Val
Antimony	14.9	ND	12.4	ND	13.8	ND	12.8	ND	14.9	N
Arsenic	2.48	ND	2.07	2.4	2.29	ND	2.13	ND	2.48	N
Cadmium	1.24	ND	1.04	ND	1.15	ND	1.06	ND	1.24	N
Chromium	2.48	7.3	2.07	4.7	2.29	5.3	2.13	7.4	2.48	5
Copper	6.2	6.3	5.2	6.0	5.7	6.0	5.3	5.4	6.2	9
Iron	24.8	5,840	20.7	3,220	22.9	4,040	21.3	6,490	24.8	3,4
Lead	6.196	25.8	1.036	329	5.734	24.2	5.319	10.3	1.241	9
Mercury	0.124	ND	0.104	ND	0.115	ND	0.106	ND	0.124	0
Nickel	9.9	ND	8.3	ND	9.2	ND	8.5	ND	9.9	N
Zinc	4.96	31.6	4.15	31.1	4.59	25.5	4.26	22.6	4.96	4

SQL = Sample Quantitation Limits.
J = Estimated Concentration.
ND = Not Detected.
B = Possible Laboratory Contaminant.
▒ = Meets criteria for an observed contamination.



Legend

- Soil Sample
- Sediment Sample
- Groundwater Sample

0 2000

Scale in Feet

LOUISIANA

000110

Figure 5

Offsite Sample Location Map

PONCHATOULA BATTERY
Ponchatoula, Tangipahoa Parish, La.

Source: CERCLIS # LAD062644232

Surface Water Pathway

Sediment samples were collected from within the surface water migration pathways from both Robertson's Property and the Northern Ponchatoula site to determine if hazardous constituents associated with these sites have migrated into surface water pathways. According to the field logbook, eight sediment samples were collected from perennial surface water bodies. Sediment sample SS-14, collected from Selser's Creek, approximately 2,000 feet northeast and upstream from the Northern Ponchatoula site, was used as the background sample for all surface water pathway samples. Samples SS-7, SS-9, SS-12, SS-13, and SS-15 were collected from Selser's Creek in areas where drainage is received from both the Northern Ponchatoula site and Delatte Metals site. Sediment samples SS-2, SS-4, and SS-5 were collected from a wetlands area, located in the drainage pathways to the south of the Robertson's Property. The analytical results of the surface water pathway sediment samples and those results qualifying as observed releases are presented in Table 4. Approximate sample locations are provided in Figures 2, 3, and 4.

004629

According to the logbook entry from September 23, 1993, sample number SS-29 is described as a background sediment sample having been collected from the tributary to Selser's Creek, which is considered an intermittent stream. Since the intermittent stream is not considered part of the perennial surface water body, sample SS-29 cannot be used to document an observed release to the surface water pathway. However, this sample can be used as a background surface soil sample attributing contaminants to the site (Ref. 3).

The probable point of entry (PPE) of surface water runoff from the Northern Ponchatoula site into Selser's Creek is approximately 800 feet northwest of the Northern Ponchatoula site. Sediment samples SS-9 and SS-13 were collected from the confluence of Selser's Creek and the tributary to Selser's Creek, which receives drainage from both Northern Ponchatoula site and the Delatte Metals site. These three sediment samples contained concentrations of lead that met the criteria for an observed release. Lead is also elevated at a downstream location (SS-10) within Selser's Creek; however, attribution to the Northern Ponchatoula site is not clear. Although sample SS-7, a sediment sample collected from Selser's Creek at the PPE for drainage from Robertson's Property, has lead detected at 46.4 ppm, it is less than 3 times the concentration in the sediment sample collected just upgradient (SS-10) in Selser's Creek, and therefore does not establish a significant increase attributable to the Robertson's Property. Sediment

TABLE 4

Summary of Analytes in Surface Water Pathway Samples
Ponchatoula Battery

(parts per million)

Traffic Number	MFS481		MFS476		MFS476		MFS472		MFS478		MFS74		MFS480		MFS473	
Station Number	SS-14		SS-29		SS-7		SS-9		SS-10		SS-11		SS-12		SS-13	
Description	Background Selsers Creek 2000 ft. upstream from N. Ponchatoula site		Background Selsers tributary east of the N. Ponchatoula site		Selsers Creek south of Weinberger Rd. bridge (at PPE-2)		Confluence of Selsers Creek & tributary NW of N. Ponchatoula (at PPE-1)		Northern side of bridge in Selsers Creek		Selsers Creek, West of Delatte Metals		Selsers Creek in wetland SW of bridge		Dup of SS-9	
Analyte List	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value
Antimony	16.2	ND	14.8	ND	16.4	ND	14.1	ND	15.6	ND	14.1	ND	18.0	ND	15.1	ND
Arsenic	2.71	ND	2.47	1.67	13.70	ND	2.35	ND	2.60	ND	2.36	ND	3.01	ND	2.52	ND
Cadmium	1.35	ND	1.23	ND	1.37	ND	1.18	ND	1.30	ND	1.18	ND	1.50	ND	1.26	ND
Chromium	2.71	11.4	2.47	3.3	2.74	15.5	2.35	4.9	2.60	9	2.36	1.9	3.01	3.5	2.52	5.3
Copper	6.8	14.9	6.2	6.9	6.8	17.1	5.9	10.2	6.5	10.2	5.9	7.2	7.5	8.6	6.3	7.9
Iron	27.1	9320	24.7	3320	27.4	10900	23.5	1710	26.0	2,920	23.6	261	30.1	1930	25.2	1940
Lead	1.00	7.0	1.233	7.1	1.370	46.4 J	23.53	76.7	1.300	26.4	11.779	ND	7.52	ND	1.258	53.3
Mercury	0.135	ND	0.123	ND	0.137	ND	0.118	ND	0.130	ND	0.118	ND	0.150	ND	0.126	ND
Nickel	10.8	11.9	9.9	ND	11.0	11.5	9.4	ND	10.4	ND	9.4	ND	12.0	ND	10.1	ND
Zinc	5.41	57.0	4.93	18.8	5.48	51.5	4.71	29.9	5.20	31.3	4.71	17.9	6.02	33.3	5.03	24.8

- = Sample Quantitation Limits.
- = Estimated Concentration.
- = Not Detected.
- = Possible Laboratory Contaminant.
- = Meets criteria for an observed release, but attribution is questionable.

000112

004630

TABLE 4 (Continued)

Summary of Analytes in Surface Water Pathway Samples
Ponchatoula Battery

(parts per million)

Traffic Number	MFS481		MFS477		MFS446		MFS448		MFS449	
Station Number	SS-14		SS-15		SS-2		SS-4		SS-5	
Description	Background Selsers Creek 2000 ft. NE of N. Ponchatoula site		Dup of SS-7		Wetlands in SE drainage from battery casing pile (Robertsons)		SW drainage pathway into wetlands from battery casing pile (Robertsons)		Dup of SS-4	
Analyte List	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Valu
Antimony	16.2	ND	16.3	ND	17.1	ND	16.8	ND	17.6	ND
Arsenic	2.71	ND	13.55	ND	2.86	ND	2.80	ND	2.93	2.1
Cadmium	1.35	ND	1.36	ND	1.43	ND	1.40	ND	1.46	ND
Chromium	2.71	11.4	2.71	9.0	2.86	7.9	2.80	3.9	2.93	4.8
Copper	6.8	14.9	6.8	16.1	7.1	15.3	7.0	11.5	7.3	15
Iron	27.1	9,320	27.1	6,820	28.6	7,110	28.0	1,080	29.3	1,3
Lead	1.00	7	6.775	11.2 J	1.429	187 J	1.399	125J	1.464	22
Mercury	0.135	ND	0.136	ND	0.143	ND	0.140	ND	0.146	NI
Nickel	10.8	11.9	10.8	16.0	11.4	ND	11.2	ND	11.7	NI
Zinc	5.41	57.0	5.42	56.3	5.71	35.2	5.59	24	5.86	29

SQL = Sample Quantitation Limits.
J = Estimated Concentration.
ND = Not Detected.
B = Possible Laboratory Contaminant.
▒ = Meets criteria for an observed release.

samples SS-2, SS-4, and SS-5 collected from the wetlands south of Robertson's Property, exhibited observed release concentrations of lead ranging from 125 ppm and 229 ppm.

Ground Water Pathway

Twelve ground water samples were collected from domestic and municipal wells located in the vicinity of the Ponchatoula Battery site to determine if hazardous substances associated with the site have migrated to ground water. Both shallow ground water wells and deep ground water wells were sampled. The analytical results for these samples are summarized in Table 5. Total depths of the shallow wells ranged from less than 100 feet (DW-14) to approximately 200 feet (DW-6). Total depths of the deep wells ranged from approximately 400 feet (DW-9 and DW-10) to approximately 650 feet (DW-8 and DW-13). Ground water sample DW-13 was collected from the City of Ponchatoula's municipal well (#284), located approximately 2.1 miles northwest of the Northern Ponchatoula site.

Lead was not detected in either the shallow or the deep background samples. Lead was detected in three deep ground water samples (DW-8, DW-11, and DW-13) at concentrations greater than the SQL, ranging from 0.0045 ppm (DW-8) to 0.0114 ppm (DW-13). These contamination levels are below the maximum contaminant level (MCL) of 0.05 ppm for lead. Iron was detected in shallow ground water samples (DW-1, DW-2, DW-5, DW-3, DW-4, DW-6, and DW-7) at concentrations ranging from 0.049 ppm to 0.143 ppm. Iron was detected in deep ground water samples (DW-10 through DW-13) at concentrations ranging from 0.033 ppm (DW-12) to 0.408 ppm (DW-11). Potassium was detected in several of the ground water samples, however, this metal has not been associated with the site sources.

Ground water sample DW-14, collected from the Cliffton Hills residence well (total well depth < 100 feet), was used as the background reference sample for all shallow ground water pathway samples. Ground water sample DW-15, collected from the Martha's Vineyard Elementary School well (total depth 435 feet), was used as a the background reference sample for all deep ground water pathway samples.

The results of the regional well sampling indicates lead and iron in the drinking water supply, but based on the position of these wells relative to the Ponchatoula Battery and Delatte Metals sites, neither contaminant is clearly attributable to the Ponchatoula Battery site.

TABLE 5

Summary of Analytes in Ground Water Pathway Samples
Ponchatoula Battery

(parts per million)

Traffic Number	3TFAD47-14		3TFAD47-15		3TAFD47-01		3TFAD47-05		3TFAD47-02		3TFAD47-03	
Station Number	DW-14		DW-15		DW-1		DW-5		DW-2		DW-3	
Description	Background Clifton Hills Residential Supply (Shallow)		Background Vinyard School Well Public Supply (Deep)		Robertsons onsite well		Dup DW-1		Windecker well		Sheridans well SE of N Ponchatoula	
Analyte List	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value
Aluminum	0.100	ND	0.100	ND	0.100	ND	0.100	ND	0.100	ND	0.100	ND
Antimony	0.060	ND	0.060	ND	0.060	ND	0.060	ND	0.060	ND	0.060	ND
Arsenic	0.0058	ND	0.0058	ND	0.0058	ND	0.0058	ND	0.0058	ND	0.0058	ND
Cadmium	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Chromium	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND
Copper	0.020	0.026	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND
Iron	0.025	ND	0.025	ND	0.025	0.052	0.025	0.049	0.025	0.084	0.025	0.14
Lead	0.0033	ND	0.0033	ND	0.0033	ND	0.0033	ND	0.0033	ND	0.003	ND
Mercury	0.0022	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
Potassium	1.000	ND	1.000	ND	1.000	ND	1.000	ND	1.000	ND	1.000	1.41

SQL = Sample Quantitation Limits.
J = Estimated Concentration.
ND = Not Detected.
B = Possible Laboratory Contaminant.
[shaded] = Elevated relative to the background wells, but may not be attributable to the site.

000115

004633

TABLE 5 (Continued)

Summary of Analytes in Ground Water Pathway Samples
Ponchatoula Battery

(parts per million)

ffic umber	3TFAD47-14		3TFAD47-15		3TFAD47-04		3TFAD47-10		3TFAD47-06	
ation umber	DW-14		DW-15		DW-4		DW-10		DW-6	
escription	Background Clifton Hills Residential Supply (Shallow)		Background Vinyard School Well Public Supply (Deep)		Kuglers Shallow well, NW of N. Ponchatula		Kuglers deep well, NE of N. Ponchatula		Price well, east of Robertsons	
alyte List	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value
uminum	0.100	ND	0.100	ND	0.100	ND	0.100	ND	0.100	ND
timony	0.060	ND	0.060	ND	0.060	ND	0.060	ND	0.060	ND
senic	0.0058	ND	0.0058	ND	0.0058	ND	0.0058	ND	0.0058	ND
dmium	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
romium	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND
pper	0.020	0.026	0.020	ND	0.020	ND	0.020	ND	0.020	ND
n	0.025	ND	0.025	ND	0.025	0.068	0.025	0.033	0.025	0.073
ad	0.0033	ND	0.0033	ND	0.003	ND	0.003	ND	0.003	ND
rcury	0.0022	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
tassium	1.000	ND	1.000	ND	1.000	1.45	1.000	ND	1.000	1.20

- = Sample Quantitation Limits.
- = Estimated Concentration.
- = Not Detected.
- = Possible Laboratory Contaminant.
- = Elevated relative to the background wells, but may not be attributable to the site.

TABLE 5 (Continued)

Summary of Analytes in Ground Water Pathway Samples
Ponchatoula Battery

(parts per million)

Traffic Number	3TFAD47-15		3TFAD47-07		3TFAD47-08		3TFAD47-09		3TFAD47-11		3TFAD47-12		3TFAD47-13	
Station Number	DW-15		DW-7		DW-8		DW-9		DW-11		DW-12		DW-13	
Description	Vinyard School Background		Dup DW-6		Millers Well (Deep)		Nicholas Well (Deep) West of Robertsons		Yoes Well (Deep) East of N. Ponchatoula		Berners Well west of N. Ponchatoula (Deep)		City Public Well (2 mi NW of N. Ponchatoual) (Deep)	
Analyte List	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value	SQL	Value
Aluminum	0.100	ND	0.100	ND	0.100	ND	0.100	ND	0.100	0.326	0.100	ND	0.100	ND
Antimony	0.060	ND	0.060	ND	0.060	ND	0.060	ND	0.060	ND	0.060	ND	0.060	ND
Arsenic	0.0058	ND	0.0058	ND	0.0058	ND	0.0058	ND	0.0058	ND	0.0058	ND	0.0058	ND
Cadmium	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Chromium	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND
Copper	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	0.16
Iron	0.025	ND	0.025	0.058	0.025	ND	0.025	ND	0.025	0.408	0.025	0.032	0.025	0.36
Lead	0.0033	ND	0.0033	ND	0.0033	0.0046	0.0033	ND	0.0033	0.006	0.0033	ND	0.0033	0.01
Mercury	0.0022	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
Nickel	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND
Potassium	1.000	ND	1.000	ND	1.000	ND	1.000	ND	1.000	ND	1.000	ND	1.000	ND
Zinc	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	0.03

SQL = Sample Quantitation Limits.
J = Estimated Concentration.
ND = Not Detected.
B = Possible Laboratory Contaminant.
▒ = Elevated relative to the background wells, but may not be attributable to the site.

Air Monitoring

During the sampling activities, the ARCS team surveyed the site area and performed air monitoring with an organic vapor analyzer (OVA). The OVA background readings were not recorded in the field logbook. No readings were detected above background levels (Ref. 3).

3.4 Data Validation

Data generated from the ESI sampling event underwent a validation that is contained in Appendix D. Specific qualifications were placed on the analytical results for some of the metals. Lead was cited as a possible laboratory contaminant for several of the samples (B validation code).

Estimated concentrations were due to quality control criteria not being met in the laboratory. Several lead values in the waste characteristic soil samples and wetland sediment samples were qualified as estimated because the values exceeded the linear range of the instrument. These values represent a significantly elevated concentration over that in the background samples and are deemed usable for characterizing the waste sources and establishing an observed release to the wetlands.

4.0 PATHWAY ASSESSMENT

4.1 Ground Water Pathway

4.1.1 Ground Water Characteristics

There is no liner, engineered cover, functional runoff control system or leachate collection system in place at the Robertson's Property or the Northern Ponchatoula site according to the file material (Ref. 3).

Although precipitation is high in the site area, the onsite soil is reportedly somewhat impermeable to moisture infiltration due to several confining clay layers below the ground surface (Ref. 11, p. 11). The mean annual precipitation is 61.08 inches, with monthly precipitation ranging from 8 inches in July to 2.69 inches in October. The two year 24-hour rainfall for Tangipahoa Parish is 5.5 inches and the mean annual lake evaporation is 49 inches (Ref. 4).

The regional soils along the Selser's Creek are generally sandy fluvial deposits underlain by confining layers of clayey to silty clay strata. The thickness of the sandy deposits ranges from 2 to 18 feet below the ground surface of the site. The Abita soil series lies at the site surface. This soil consists of rather poorly drained, slowly permeable soils. The vertical permeability value of the upper confining clay layer was measured at 6.7 x 10^{-7} centimeters/second (cm/s) (Ref 7, p. 13; Ref. 11, p. 11).

The site is located on the Prairie Terrace, the youngest of the Pleistocene terraces. The site has been classified as being located on a zone of moderate recharge potential. The geology consists of sand and gravel deposits with intermittent clay layers separating the alluvial and coastal deposits. Large quantities of high quality fresh water is produced from these sand and gravel deposits (Ref. 11, p. 7).

The geohydrologic units present within the four mile-radius are the Shallow, Upper Ponchatoula, and Lower Ponchatoula Aquifers (Ref. 11, pp. 7-9). The structure and stratigraphy of these aquifers is very complex; therefore, delineation of the aquifers is extremely difficult. There is some interconnection between the Shallow, Upper Ponchatoula, and Lower Ponchatoula Aquifers. These 3 aquifers have approximately the same potentiometric head and water quality (Ref. 12).

The Shallow Aquifer consists of fluvial sand and gravel deposits of the low coastal terrace. The thickness of the shallow aquifer is typically less than 100 feet. The Shallow Aquifer may contain silt and clay deposits, making lower well yields in the vicinity of the site. The hydraulic gradient of the Shallow Aquifer near the City of Ponchatoula is estimated to be approximately 5 feet/mile. Shallow ground water flow appears to be toward the sand deposits which flow to the west of the site toward Selser's Creek. (Ref. 11, p. 8). Depth to ground water in the Shallow Aquifer near the site ranges from approximately 4 to 14 feet (Ref. 7).

The Upper Ponchatoula aquifer is the most important source of fresh ground water in the Ponchatoula metropolitan area, consisting of layers of coarse grained particles. This aquifer is estimated to occur at approximately 300 to 350 feet below ground surface at the site. A confining clay layer separates this aquifer from the Shallow Aquifer. Most of the potable water in the vicinity of the site is supplied from the Upper Ponchatoula Aquifer. The average water-level gradient near the City of Ponchatoula is about 2 feet/mile, and the flow rate of the downgradient ground water is approximately 9.67 x 10^{-5} cm/s (Ref.

11, p. 9). The aquifer is considered to have a high transmissivity. The average water level gradient is about 2 feet/mile, and the water is moving downgradient at a rate of approximately 100 feet/year. Approximately 1 million gallons/day is withdrawn from the upper Ponchatoula and 0.2 million gallons/day from the Lower Ponchatoula (Ref. 13, p. 24).

The Lower Ponchatoula Aquifer typically consists of medium sands, with some coarse sand and gravels present. This aquifer is separated from the Upper Ponchatoula Aquifer by an extensive clay bed. The Lower Ponchatoula Aquifer is estimated to occur at a depth of approximately 700 to 750 feet beneath the site. Although this aquifer is more continuous than the Upper Ponchatoula Aquifer, less water is withdrawn from the Lower Ponchatoula than the Upper Ponchatoula. The hydraulic gradient of the Lower Ponchatoula aquifer in the area of the site is approximately 2 feet/mile (Ref. 11, p. 9).

The largest category of water use in the vicinity of the site is that discharged from uncontrolled flowing wells, amounting to nearly 20 million gallons per day (Ref. 13). Regional flow of the ground water is to the south (Ref. 13, p. 24). Local ground water flow is believed to be in a northwesterly direction toward Selser's Creek (Ref. 7, p.13).

Water in the Upper and Lower Ponchatoula Aquifers is considered excellent quality for most uses, although several contaminants may be present. Hydrogen sulfide may be present locally up to 0.5 mg/l. Iron and manganese are generally present in concentrations of less than 0.3 and 0.05 mg/l, respectively. The pH of the ground water generally ranges from 7.5 to 9.0 (Ref. 13, p. 19).

Ground water sampling conducted during the ESI sampling events indicates the presence of contaminants in both the Shallow and Upper Ponchatoula Aquifers (Ref. 13). Analyses of one subsurface soil sample indicated that contamination had migrated to 12 feet (Table 2). Ground water samples collected from offsite wells contain contaminants that have been associated with onsite sources. However, the offsite wells were either located hydraulically upgradient or were located downgradient of the Delatte Metals site and the Ponchatoula Battery site. Historic ground water samples collected from the onsite monitoring wells in 1987 indicated an observed release in onsite well PW-2 (Ref. 10).

4.1.2 Ground Water Receptors

Ground water within four miles of the site is used for domestic, municipal, and industrial purposes. Forty-seven registered wells were identified within the four-mile radius of the site (Ref. 26).

The City of Ponchatoula uses 2 ground water wells: An unnamed municipal well is screened at 2,015 feet and is located approximately 1.8 miles west of the site; and Well #284 is screened at 608 feet and is located approximately 2.1 miles northwest of the site. (See Figure 6). The majority of residences located east of the city limits receive their drinking water from private wells (Refs. 8 and 34).

Ponchatoula's water supply serves approximately 1,900 water connections, and approximately 7,000 people (Ref. 8). The 1989 population of the Ponchatoula area (including areas outside the city limits) is 6,408 people. Approximately 80% of the water is used for residential purposes, 15% for commercial purposes, and 5% for industrial use (Ref. 14).

Five community wells were identified within the four-mile radius of the site. The Baywood Estates Subdivision well, located approximately 3.4 miles northwest of the site, services 24 connections to approximately 70 people (Ref. 27). The Kay Gibbs Mobile Home Park utilizes three wells, located approximately 3.6 miles northwest of the site, services 28 connections to approximately 78 people (Ref. 28). The L and J Trailer Park well, located approximately 2.8 miles northeast of the site, is approximately 150 feet deep and services 13 connections to approximately 36 people (Ref. 29). The Hoover Mobile Home Park well, located approximately 3.4 miles northwest of the site, is screened to 1,600 feet and services 22 connections to approximately 60 people (Ref. 30). The Rose Mobile Home Park well, located approximately 1.6 miles northwest of the site, is screened at 218 feet and services 20 connections to approximately 56 people (Ref. 31).

Three school wells were identified approximately 1.5 miles northeast of the site. Martha's Vineyard Elementary School utilizes two wells, approximately 200 feet and 435 feet deep, which service approximately 583 people. The Ponchatoula High School well, approximately 1,912 feet deep, services approximately 1,116 people (Ref. 32).

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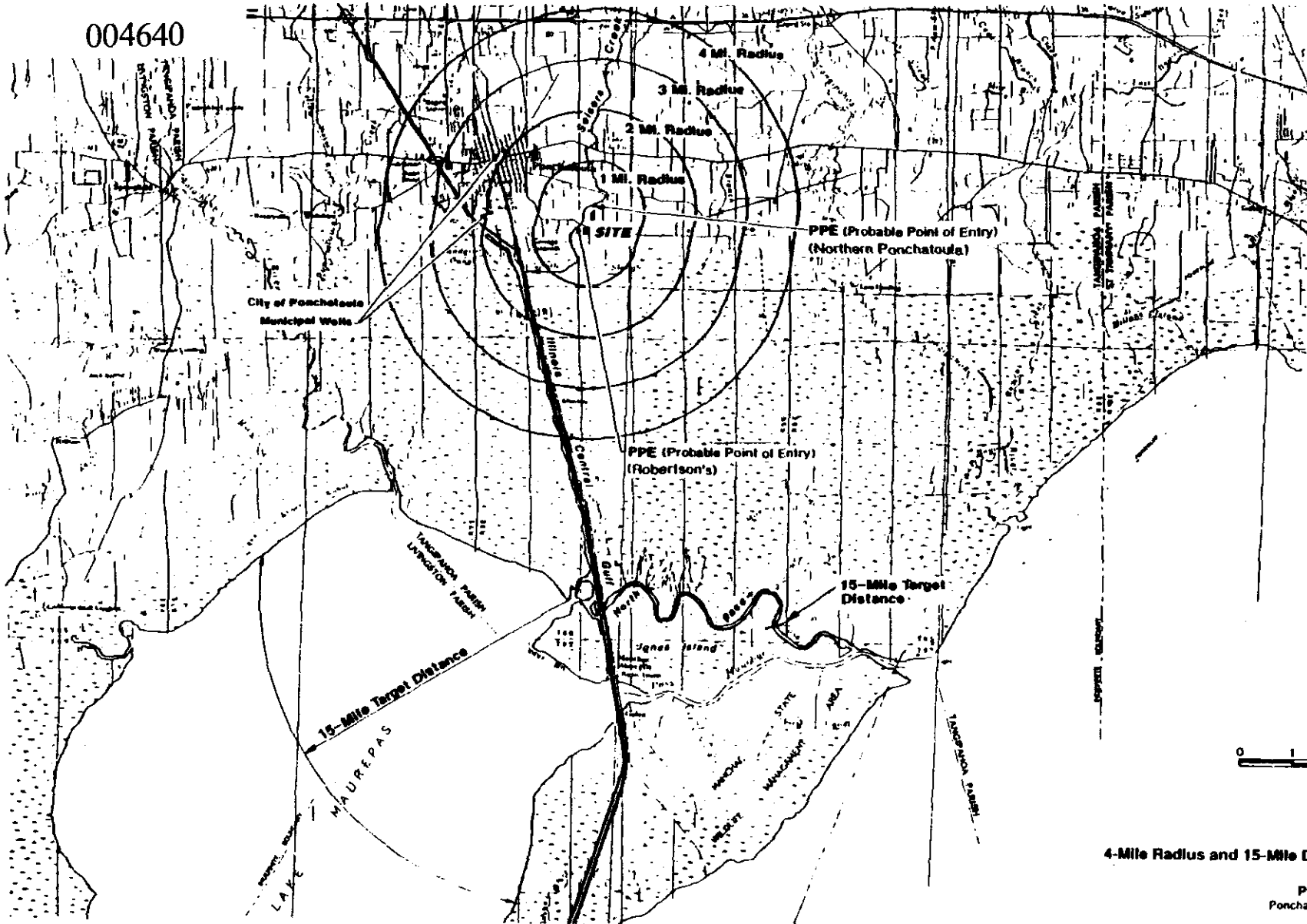

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Figure 6

4-Mile Radius and 15-Mile Downstream Segment

PONCHATOULA BATTERY
Ponchatoula, Tangipahoa Parish, La

Source: 1 : 100 000-Scale Metric Topo. Map of Ponchatoula, La

The nearest domestic well is located on the central portion of the Robertson's Property (DW-1/DW-5) and is owned by Mr. Jerry Robertson. This well is approximately 115 feet deep (Ref. 3).

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Seven domestic wells are located within 0 to ¼ mile from the site, approximately two domestic wells are within ¼ to ½ miles, five domestic wells are within ½ to 1 mile, seven domestic wells are within 1 to 2 miles, five domestic wells are within 2 to 3 miles, and two domestic wells are within 3 to 4 miles. A total of 28 domestic wells used for drinking water were identified to be located within four miles of the site (Refs. 3 and 26).

According to the LDEQ Ground Water Protection Division, there are no wellhead protection areas located within 4 miles of the site (Ref. 15).

4.2 Surface Water Pathway

4.2.1 Surface Water Characteristics

The PPE for the Northern Ponchatoula site (PPE-1) is located on Selser's Creek, approximately 800 feet west of the Northern Ponchatoula site. The PPE for the Robertson's Property (PPE-2) is where the drainage ditch empties to Selser's Creek, approximately 2,100 feet downstream of the PPE for the Northern Ponchatoula site. Runoff from the Robertson's Property also flows south into a drainage ditch which discharges to a designated wetlands area approximately 800 feet to the south (Ref. 3). Selser's Creek flows into South Slough approximately 1.25 stream-miles south of PPE-1. South Slough runs into Highway 51 Canal approximately 2.25 stream-miles southwest of PPE-1. Portions of Highway 51 Canal flow into Owl Bayou approximately 8.8 stream miles south of PPE-1. Other portions of Highway 51 Canal flow into North Pass, approximately 9.5 stream-miles, and into Manach Pass, approximately 11 stream-miles south of PPE-1. Lake Maurepas receives drainage from Owl Bayou approximately 9.6 stream-miles south of PPE-1.

The mean annual precipitation for Tangipahoa Parish is 61.08 inches and the mean annual lake evaporation is 49 inches. The two year, 24-hour rainfall for the site is 5.5 inches (Ref. 4). The site is located in zone C flood area. Zone C is associated with minimal flooding and not associated with any type of floodplain (Ref. 19).

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Selser's Creek and South Slough are considered to have minimal flow rates and Owl Bayou and Highway 51 Canal are considered to have medium flow rates (Ref. 16). Lake Maurepas has an estimated flow rate of approximately 4,671 cubic feet per second (Ref. 23, pp. 184, 186, 199, and 352). The downstream portions of Selser's Creek are occasionally influenced by tides to the degree that reverse flows are not uncommon. The substrate in Selser's Creek consists entirely of unstable sand and silt (Ref. 18, p. 20).

A fish kill was reported to the Louisiana Department of Wildlife and Fisheries in Highway 51 Canal, South Slough, and Selsers Creek in December 1983 (Ref. 35). As a result of fish kills in Selser's Creek, a stream survey was conducted for the USEPA in July of 1983 to determine the levels of cadmium, nickel, and lead in Selser's Creek sediments. Sample stations were designated near PPE-1 and PPE-2 to document the physical, chemical, and biological characteristics of Selser's Creek upstream and downstream from the battery plant discharge. With the exception of cadmium, all toxic parameters were below existing national ambient water quality acute and chronic criteria or below detection limits (Ref. 18, p. 20).

The breaches noted in the concrete dikes of the acid treatment pits have allowed contaminants to migrate into the sediment of offsite intermittent ditches that drain the Northern Ponchatoula site (Ref. 3).

According to the ARCS logbook entry from September 23, 1993, sample number SS-29 is described as a background sediment sample having been collected from the tributary to Selser's Creek, which is considered an intermittent stream. Since the intermittent stream is not considered part of the perennial surface water body, sample SS-29 cannot be used to document an observed release to the surface water pathway. However, this sample can be used as a background surface soil sample attributing contaminants in the drainage to the site (Ref. 3).

Although there is an indication of an observed release in sediment samples SS-9, SS-10, and SS-13 collected from Selser's Creek, the elevated metals cannot be attributed to the Northern Ponchatoula site. The flow pathway sampled at SS-9 (and SS-13) incorporates flow from Delatte Metals as well as from the Northern Ponchatoula site. Station SS-10 is downgradient of additional runoff discharged from Delatte Metals. Results of samples collected from Stations SS-7 and SS-15 did not establish a significant increase to metal

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concentrations in Selser's Creek sediments associated with drainage from the Robertson's Property.

An observed release to the wetlands south of the Robertson's Property is documented by the lead concentrations in SS-2 and SS-4. The wetlands are contiguous to perennial streams/lakes and therefore are considered perennial surface water bodies.

4.2.2 Surface Water Receptors

According to the State of Louisiana Department of Wildlife and Fisheries (LDWF), three federally endangered active bald eagle nests are documented to be located along the north shores of Lake Maurepas, approximately 12 to 15 stream-miles southwest of the site. Four species of special concern and sensitive habitats have been identified to be located within four miles downstream from the site. However, according to the LDWF, these sensitive species are not listed as threatened or endangered under state of federal laws. The name, location, and protective status of these species was not specified by the LDWF (Ref. 20).

Selser's Creek, South Slough and Owl Bayou are small recreational fisheries (Ref.16). Lake Maurepas is considered both a fresh and brackish lake, depending on the time of year. This lake is somewhat tidally influenced; water levels rise several inches per year. The Lake is classified as both a commercial and recreational fishery with both freshwater and saltwater game fish extracted for human consumption (Ref. 23). Approximately 29,704 pounds of fish were reportedly caught by commercial fisherman in Lake Maurepas in 1989 (Ref. 33). No domestic water supply intakes could be identified within 15 downstream miles from the site (Ref. 21 and 34).

Extensive wetlands are located to the south of the Ponchatoula Battery site. Although the closest wetlands are depicted on the topographic map as being located approximately 800 feet south of the Robertson's Property, ARCS personnel identified and sampled a wetlands area approximately 57 feet south of Robertson's Property (Ref. 1 and 3). Forested palustrine wooded wetlands are located along approximately 14.5 miles of the downstream segment (Ref. 22) (Figure 5). The Joyce Wildlife Management Area is located along Owl Bayou (Ref. 21).

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4.3 Ground Water Release to Surface Water Pathway

Ground water contamination in the Shallow Aquifer underlying the Ponchatoula Battery site has been documented in the past (Ref. 10). Due to the presence of shallow ground water and the site's proximity to surface water, the potential of ground water to surface water migration of site wastes exists.

4.4 Soil Exposure Pathway

4.4.1 Resident Threat Receptors

The area of surface contamination documented from the analyses of the ESI surface soil samples was calculated to be 119,320 ft^2 at the Northern Ponchatoula site and 16,820 ft^2 at the Robertson's Property. Although the Northern Ponchatoula site is inactive, residents reside on the Robertson's Property. There is an evidence of observed contamination from a surface soil sample collected from the Price Residence, located approximately 80 feet east of the Robertson's Property. Arsenic and lead concentrations detected in this sample are components of the waste sources at Robertson's Property (Ref. 3).

4.4.2 Nearby Threat Receptors

The site is not secured against entry by the public and is overgrown with vegetation in several areas (Ref. 2). Vegetation has failed to become completely reestablished along the denuded area which is adjacent to the eastern portion of the Northern Ponchatoula site. The exact area of stressed (absent) vegetation is unknown. No schools are known to be in tne site vicinity. A day care center, reportedly run by the Kugler's residence, is located approximately ¼ mile northwest of the site (Ref. 3). The nearest resident is located on the northern portion of the Robertson's Property. There are a total of approximately 92 persons living within ¼ mile of the site, approximately 257 persons living within ½ mile of the site, and approximately 650 persons living within one mile of the site (see distance/population breakdown in Section 4.5.2) (Ref. 24, p. 73).

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4.5 Air Pathway

4.5.1 Air Pathway Characteristics

The ARCS team conducted health and safety air monitoring in the breathing zone with an OVA. Background levels were not exceeded. (Ref. 3)

Surface soil contaminants at the Ponchatoula Battery site are metals which have a low mobility potential in the air pathway. Organic compounds were not detected in surface soil samples collected from the site during previous investigations. No sampling of the air onsite was conducted during the ESI. A release from the site to the air pathway has not been documented (Ref. 3).

4.5.2 Air Receptors

Although the potential for site source air contaminants migrating offsite exists, the potential is low. The complete human target population associated with the air migration route is estimated, based on USGS quadrangle maps in each distance category and multiplying the number of residences by an average household population of 2.79 for Tangipahoa Parish (Ref. 24), below. Wetlands within the 4-mile radius of the site are also listed below. Eleven species of special concern and sensitive habitats have been identified to be located within a 4 mile radius from the site. However, according to the LDWF, these sensitive species are not listed as threatened or endangered under state of federal laws. The name, location, and protective status of these species was not specified by the LDWF (Ref. 20).

Distance (miles)	Population (people)	Wetlands (acres)	Species of Special Concern and Sensitive Habitats
onsite	2	0	0
0 - ¼	92	0	0
¼ - ½	165	90	0
½ - 1	393	268	0
1 - 2	2,598	2,205	2
2 - 3	4,459	4,086	7
3 - 4	1,450	6,470	2
Total	9157	13,119	11

5.0 SUMMARY

Ponchatoula Battery was a battery recycling facility from the mid-1960s to 1981. Ponchatoula Battery ceased operations when it was unable to comply with regulations established by the Occupational Safety and Health Administration and with the State of Louisiana Environmental Quality. When Ponchatoula Battery closed, the Northern Ponchatoula site contained approximately 6,000,000 empty battery casings, three leaking surface impoundments with a pH of 1, 12 and 1 respectively, and several denuded vegetative areas resulting from uncontained acid flow from the facility. The original location south of Weinberger Road contained a smaller battery casing pile and two small acidic surface impoundments. The company was declared bankrupt in 1985 (Ref. 2, p. 1)

Site cleanup started at the Northern Ponchatoula site on April 22, 1987 by ISHC. All lead and battery casing materials were staged on a concrete pad and covered with plastic, prior to moving the material into the adjacent Delatte Industries warehouse for processing. Contaminated soils were excavated and placed along with the other materials on the concrete pad. Closure soil samples were collected and total lead was detected at levels less than 1,000 ppm. Ground water monitoring was conducted at this time. Monitoring wells PW-1 through PW-3 were installed to depths ranging from 13.5 to 20.5 feet. Ground water was encountered in these wells at depths ranging from 3.76 feet to 4.92 feet. Lead and sulfate concentrations were detected in the onsite monitoring wells.

In 1992, MK/ICF initiated an Expanded Site Inspection (ESI) that included sampling of site soils for TAL metals. Analyses of samples taken during the ESI sampling event documented that onsite soils at the Ponchatoula Battery site were contaminated with varying concentrations of 10 TAL metals. The ESI soil samples exhibited observed contamination at several of the onsite sample locations. Metals detected at concentrations meeting the criteria for observed contamination in the surface soils onsite included antimony, arsenic, cadmium, chromium, copper, iron, lead, mercury, nickel, and zinc. Waste sources at the Ponchatoula Battery site consist of battery casing piles, surface impoundments, and contaminated soils.

Four surface soil samples were collected from residential properties surrounding the Ponchatoula Battery site. One of the four samples indicated levels of metals (arsenic and lead) that met the criteria for observed contamination.

The site is not fenced and is open to public access. There are no schools or daycare centers within 200 feet of known or suspected contamination. Two residences are located on the Robertson's Property.

During the ESI sampling investigation, samples were collected from the site at depths of 6 inches to 12 feet to characterize migration of the waste sources from areas of contaminated soil at each property. Contamination was found in the sample collected at 12 feet, however, the depth of contamination at other areas of the site is not known. The surficial areas of soil contamination at the Northern Ponchatoula site and the Robertson's Property are 119,320 ft^2 and 16,820 ft^2, respectively. An estimated 2,228 cubic yards of contaminated soil exists within the top 6 inches at the Northern Ponchatoula site and an estimated 623 cubic yards of contaminated soil exists within the top 6 inches at the Robertson's Property.

A sediment sample was collected downstream from the drainage pathways of both the Robertson's Property and the Northern Ponchatoula site. Contamination was detected in two sediment samples, collected from the confluence of Selser's Creek and the tributary to Selser's Creek, which receives drainage from both Northern Ponchatoula site and the Delatte Metals site. It is not known whether Ponchatoula Battery or Delatte Metals is responsible for the elevated metals in Selser's Creek. The concentration of lead at the PPE for drainage from Robertson's Property is elevated, but it does not exhibit a significant increase from the sample collected just upgradient. An observed release to the wetlands south of Robertson's Property is documented by the ESI sample results. Surface water targets along the 15-mile downstream segment include wetlands present along most of the surface water frontage. Four species of special concern and sensitive habitats along with three bald eagle nests are located along the 15-mile downstream segment. No surface water intakes have been identified within this area. The entire downstream segment is a fishery, and significant commercial fishing occurs in Lake Maurepas.

Twelve ground water samples were collected from both domestic and municipal wells located in the vicinity of the Ponchatoula Battery site. Both shallow ground water wells (Shallow Aquifer) and deep ground water wells (Upper Ponchatoula Aquifer) were sampled. Three of the deep ground water samples indicated levels of lead were present at elevated concentrations in the Upper Ponchatoula Aquifer. Ground water collected from the City of Ponchatoula's well was one of the Upper Ponchatoula Aquifer samples

found to contain lead. The results of the regional well sampling indicates lead and iron in the drinking water supply, but based on the position of these wells relative to the Ponchatoula Battery and Delatte Metals sites, neither contaminant is clearly attributable to the Ponchatoula Battery site.

The City of Ponchatoula uses ground water from the Upper and Lower Ponchatoula aquifers for their municipal water source. The City currently draws ground water from two municipal wells which are located within the site's four-mile radius. Approximately 7,000 people are served by the City of Ponchatoula's municipal ground water system. Three school wells and five community wells were identified to be located within the four-mile radius from the site. Domestic use of ground water also occurs within four miles. The closest well is privately owned for domestic use and is located onsite at the Robertson's Property.

Surface soil contaminants at the Ponchatoula Battery site are metals which have a low mobility potential in the air pathway. Organic compounds were not detected in surface soil samples collected from the site during previous investigations. No sampling of the air onsite was conducted during the ESI. A release from the site to the air pathway has not been documented. An estimated 92 persons live within a ¼ mile radius from the site. The total estimated population within four miles of the site is 9,157. Wetlands located within the 4-mile radius cover an approximate total area of 13,119 acres with 90 acres within ½ mile of the site. Four species of special concern and sensitive habitats have been identified within a 4-mile radius from the site. However, according to the LDWF, these sensitive species are not listed as threatened or endangered under state of federal laws.

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State of Louisiana

Department of Environmental Quality

Edwin W. Edwards
Governor

William A. Kucharski
Secretary

March 8, 1995

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VIA FEDERAL EXPRESS
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RECEIVED
MAR 21 1995
LA. DEPT. OF ENVIRONMENTAL QUALITY

Mr. Larry Delatte, President
Delatte Metals, Incorporated
1540 Weinberger Road
Ponchatoula, Louisiana 70454

RE: Delatte Metals, Inc. Tangipahoa Parish
Ponchatoula, Louisiana
LAD 052 510 344
Final Denial of the Hazardous Waste Operating Permit Application

3-21-95-27

Dear Mr. Delatte:

Enclosed is the administrative authority's final denial of the hazardous waste operating permit application for the Delatte Metals, Inc. facility. The final permit decision shall become effective thirty (30) days after service of notice of this decision unless review is requested under Louisiana Revised Statutes, Title 30, Section 2024 (La. R.S. 30:2024).

Pursuant to La. R.S. 30:2024, Delatte Metals, Inc. (Delatte) may request an adjudicatory hearing within thirty (30) days from the date of service, or any person aggrieved by a final decision or order of the Secretary may appeal to the Court of Appeal, First Circuit, if a motion for appeal is filed with the Secretary within thirty (30) days after the administrative authority's final permit decision or order is served upon Delatte.

This letter constitutes notification that Delatte is required to submit eight (8) copies of a revised Facility Closure Plan for Delatte's three (3) hazardous waste management units, as specified in the enclosed "Final Denial of the Hazardous Waste Operating Permit Application", to the Louisiana Department of Environmental Quality - Hazardous Waste Division (LDEQ-HWD). The revised Facility Closure Plan shall be submitted no later than fifteen (15) days after the effective date of the administrative authority's final permit decision. Delatte is hereby notified that failure or refusal to submit a revised facility Closure Plan within fifteen (15) days after the effective date of the administrative authority's final permit decision, may subject Delatte Metals, Inc. to possible enforcement procedures as mandated by the Louisiana Environmental Quality Act (Act), La. R.S. 30:2001 et seq., and particularly Section 2025 C (3) of the Act.

If you have any questions regarding this action, please contact Mr. William B. DeJean or Mr. Gene Nance at (504) 765-0272.

Sincerely,

Glenn A. Miller
Assistant Secretary

GAM/KL/CWH/SG/WBD/GN

Enclosure

c: Ms. Laurie King, USEPA, Region 6
Ms. Ann Zimmerman, USEPA, Region 6
Mr. Mike Stewart, USEPA, Region 6
Mr. John Jones, USEPA, Region 6 (6H-MA)
Mr. Wayne Desselle, LDEQ-HWD, Enforcement Section
Mr. Perry Theriot, LDEQ Legal Division
Mr. John Halk, LDEQ Inactive and Abandoned Sites Division
Ms. Debra Bendily, LDEQ Inactive and Abandoned Sites Division

PONCHATOULA BATTERY
1 square mile study area

Minority Ranking Value (DVMAV)	: 1	Percent Minority	= 2.2
Economic Ranking Value (DVECO)	: 3	Percent Economically Stressed	= 54.7
Population Ranking Value (PF)	: 1	Total Population	= 181

Potential Environmental Justice Index (DVMAV * DVECO * PF) = 3

004651

METHODOLOGY CRITERIA

Environmental Justice Indexes are indicators of potential EJ concern. 1990 Census data for a Study Area is evaluated and ranked in relationship to state percentages. Ranking variables are multiplied to produce an index for prioritizing applications. The ranking variables are:
Minority Status, Degree of Vulnerability (DVMAV),
Economic Status, Degree of Vulnerability (DVECO),
and Total Population, Population Factor (PF).

MINORITY STATUS (DVMAV) - For LA the percent minority is 34.2%.

ECONOMIC STATUS (DVECO) - Economically Stressed is defined as Households making less than $15,000 a year. For LA the percent economically stressed is 36.3%.

The Methodology for ranking values associated with Degrees of Vulnerability is

Ranking	Criteria
1	<= the State Percentage
2	> the State Percentage but <= 1.33 times the State %
3	> 1.33 times the State Percentage but <= 1.66 times the State %
4	> 1.66 times the State Percentage but <= 1.99 times the State %
5	>= 2 times the State %

POPULATION RANKING FACTOR
Total Population is ranked using the following criteria.

Ranking	Criteria (evaluated on a 1 square mile basis)
0	Total Population = 0
1	Total Population > 0 and < 200
2	Total Population > 200 and < 1000
3	Total Population > 1000 and < 5000
4	Total Population > 5000

Reference for Quality Assurance Resources

1	Personal Verification	6	CERCLIS
2	Reconciliation with Quad maps	7	AIRS
3	Reported from archived files	8	PCS
4	TRIS	9	GIS Verified
5	RCRIS	10	Professional Judgement

109744

M2

000137

POTENTIAL ENVIRONMENTAL JUSTICE (EJ) INDEX PILOT

004652

Date : 02 May 95 16:07:59 Tuesday
Requestor : TAT TAT
Site Id Number : LAD062644232
Site Name : PONCHATOULA BATTERY
Parish : TANGIPAHOA
State/Parish FIPS Code : 22105
Location : -90 24 39 30 25 11
Quality Assurance Resource : 2

PONCHATOULA BATTERY
50 square mile study area

Minority Ranking Value (DVMAV)	: 1	Percent Minority	= 25.2
Economic Ranking Value (DVECC)	: 2	Percent Economically Stressed	= 47.1
Population Ranking Value (PF)	: 2	Total Population	= 11534

Potential Environmental Justice Index (DVMAV * DVECO * PF) = 4

000138

M1

United States
Environmental Protection
Agency

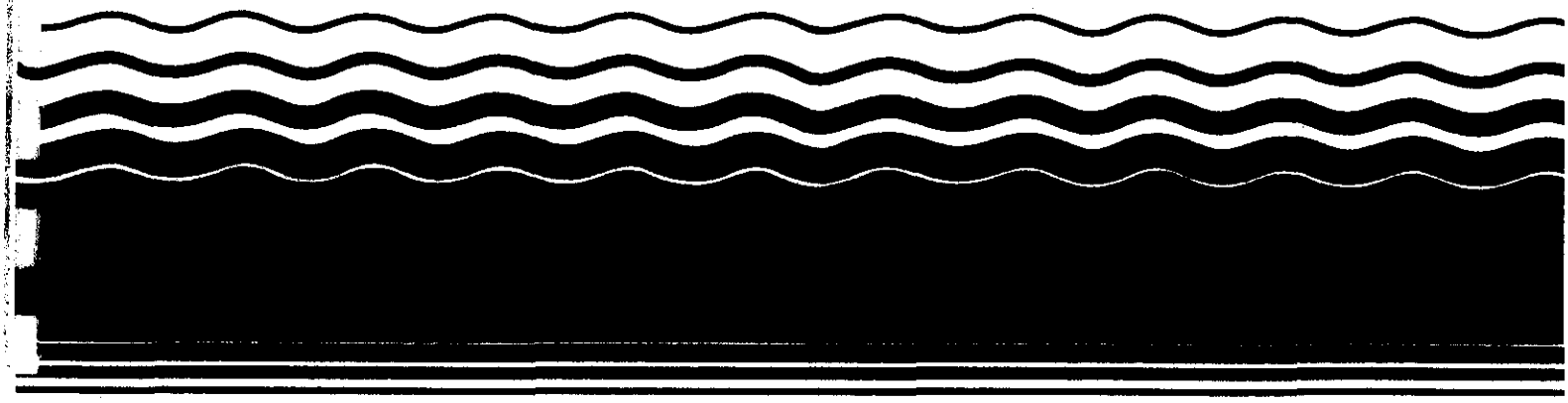
Office of Research and
Development
Washington DC 20460

EPA/540/R-95/512
July 1995

EPA

Contaminants and Remedial Options at Selected Metal-Contaminated Sites

NOTE: Cover sheet only, rest of this summary/report may be located/ requested at EPA, Region 6 Library.



OSWER Directive 9360.4-09
EPA 540/R-95/140
PB96-963206
December 1995

SUPERFUND PROGRAM

REPRESENTATIVE SAMPLING GUIDANCE

VOLUME 2: AIR (SHORT-TERM MONITORING)

Interim Final

Environmental Response Team
Office of Emergency and Remedial Response
Office of Solid Waste and Emergency Response

U.S. Environmental Protection Agency
Washington, D.C. 20460

NOTE: Cover sheet only, rest of this summary or guidance may be located/requested from EPA, Region 6 Library.

OSWER Directive 9360.4-14
EPA 540/R-95/141
PB96-963207
December 1995

004655

SUPERFUND PROGRAM

REPRESENTATIVE SAMPLING GUIDANCE

VOLUME 4: WASTE

Interim Final

Environmental Response Team

Office of Emergency and Remedial Response
Office of Solid Waste and Emergency Response

U.S. Environmental Protection Agency
Washington, DC 20460

NOTE: Cover sheet only, the remaining summary or guidance may be located/ requested from EPA, Region 6 Library.

110725

Louisiana Department of Environmental Quality

WILLIAM A. KUCHARSKI
SECRETARY

GLENN A. MILLER
ASSISTANT SECRETARY

INTEROFFICE CORRESPONDENCE

004656

CASE REFERRAL
March 11, 1996

? ! 8 1995

MEMORANDUM

LOG #3/18/96 146

TO: Glenn Miller, Administrator
Inactive and Abandoned Sites Division

VIA: James H. Brent, Ph.D., Administrator
Hazardous Waste Division

FROM: Steve Aguillard, Program Manager
Hazardous Waste Division

SUBJECT OF REFERRAL: Delatte Industries Site (formerly Delatte Metals), Ponchatoula Louisiana

The Hazardous Waste Enforcement Section issued a series of actions which included compliance orders, an administrative order, and a penalty notice. No battery recycling activities have taken place in the last two years and all compliance orders have been completed.

The Hazardous Waste Enforcement Section is referring the Delatte Industries site to the Inactive and Abandoned Sites Division. If you have any questions, please contact Mr. Freddie Desselle of the Capitol Regional Office at 295-8430.

JHB:SRA:CKO

cc: Chris Simms

110730

000142

State of Louisiana

Department of Environmental Quality

M.J. "MIKE" FOSTER, JR.
GOVERNOR

June 14, 1996

J. DALE GIVENS
SECRETARY

004657

Ms. Stacey Bennett (6SF-RA)
Site Assessment Team Leader
U.S. Environmental Protection Agency
1445 Ross Avenue
Dallas, Texas 75202-2733

Dear Ms. Bennett:

Re: Transfer to EPA Site Assessment Section
Site Name: Delatte Metals Incorporated
Ponchatoula, Tangipahoa, Louisiana
IASD ID #: 00276

The Inactive and Abandoned Sites Division (IASD) has received information which states that the Delatte Metals Incorporated site (LAD052510344) in Tangipahoa Parish is no longer an active facility. A final denial of a Hazardous Waste Operating Permit was issued on March 8, 1995 by the Louisiana Department of Environmental Quality's Hazardous Waste Division. The site was transferred to IASD on March 11, 1996. Current information indicates that this site may be better addressed under CERCLA authority. Additional site information is attached to this letter.

If you have any questions or need further information, please contact Kirby Thompson at (504) 765-0487.

Sincerely,

Glenn A. Miller
Administrator
Inactive and Abandoned Sites Division

GAM:KGT:jl
Attachments
cc: Terri Gibson
Lon Biasco, USEPA, Region 6
Rita Engblom, USEPA, Region 6

000143

004658

Purpose

Section 121(b) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) mandates the U.S. Environmental Protection Agency (EPA) to select remedies that "utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable" and to prefer remedial actions in which treatment "permanently and significantly reduces the volume, toxicity, or mobility of hazardous substances, pollutants, and contaminants as a principal element." The *EPA Engineering Bulletins* are a series of documents that summarize the available information on demonstrated treatment and site remediation technologies and related issues. They provide summaries and references of the latest information to help remedial project managers, on-scene coordinators, contractors, and other site cleanup managers understand the type of data and site characteristics needed to evaluate a technology for potential applicability to their hazardous waste sites. Documents that describe individual site remediation technologies focus on remedial investigation scoping needs. Addenda are issued periodically to update the original bulletins.

Introduction

This bulletin provides remedial project managers, on-scene coordinators, and other state or private remediation managers and their technical support personnel with information to facilitate the selection of appropriate remedial alternatives for soil contaminated with arsenic (As), cadmium (Cd), chromium (Cr), mercury (Hg), and lead (Pb). This bulletin primarily condenses information that is included in a more comprehensive Technical Resource Document (TRD) entitled "Contaminants and Remedial Options at Selected Metal-Contaminated Sites [1]".

Common compounds, transport, and fate are discussed for each of the five elements. A general description of metal-contaminated Superfund [illegible] covered are immobilization [illegible] zontal barriers), solidification/[illegible] mer microencapsulation), and [illegible] concentration (soil washing, pyrom[illegible]). Use of treatment trains is also [illegible]

Electrokinetics is addressed in [illegible] ment, but not here, since it had not [illegible] scale in the U.S. for metals [illegible] status of in situ electrokinetics for [illegible] nated soil is in progress and should [illegible]

Contents

110743

000144

federal register

Tuesday
May 26, 1998

Part II

Environmental Protection Agency

40 CFR Parts 148, 261, 266, 268, and 271 Land Disposal Restrictions Phase IV: Final Rule Promulgating Treatment Standards for Metal Wastes and Mineral Processing Wastes; Mineral Processing Secondary Materials and Bevill Exclusion Issues; Treatment Standards for Hazardous Soils, and Exclusion of Recycled Wood Preserving Wastewaters; Final Rule

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

004660

MEMORANDUM

SUBJECT: Request for a Removal Action and Exemption from the $2 Million Statutory Limitation at the Delatte Metals-North Ponchatoula Battery Site, Ponchatoula, Tangipahoa Parish, Louisiana

FROM: Althea C. Foster, On-Scene Coordinator, Removal Team 1
Response and Prevention Branch (6SF-R)

Althea C. Foster

THRU: Charles A. Gazda, P.E., Chief
Response and Prevention Branch (6SF-R)

TO: Myron O. Knudson, P.E., Director
Superfund Division (6SF)

I. PURPOSE

This memorandum requests approval for a time-critical removal action pursuant to Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9601 et seq., at the Delatte Metals-North Ponchatoula Battery Site in Ponchatoula, Tangipahoa Parish, Louisiana. The proposed action involves a large source control time-critical removal action. The action will include institution of site controls to address active areas of residential properties as well as stabilization, removal, and off-site disposal of crushed battery casings, slag, ash, and containerized waste. The $2 million exemption is necessitated by the large volume of waste material to be addressed.

This action meets the criteria for initiating a removal action under the National Contingency Plan (NCP), 40 C.F.R. §300.415 (b)(2), and the criteria for a $2 million exemption under Section 104 of CERCLA, 42 U.S.C. Section 9604 (c). This action is expected to require less than twelve months to complete.

110756

II. SITE CONDITIONS AND BACKGROUND

CERCLIS # LAD052510344
Category of removal: Time-Critical
Site ID #DF

004661

A. Site Description

1. Removal site evaluation

The Delatte Metals-North Ponchatoula Battery Site is an aggregation of the inactive Delatte Metals facility and the abandoned North Ponchatoula Battery Site. The Delatte Metals facility consists of approximately 17.6 acres of land at 19113 Weinberger Road (previously 1540 Weinberger Road), Ponchatoula, Louisiana, in Tangipahoa Parish. The facility began battery recycling and smelting operations during the 1960's under the name Delatte and Fuscia Battery Co. In the early 1980's the facility name was changed to Delatte Metals, Inc., with Mr. Larry Delatte its sole owner and president. Delatte Metals shut down smelting operations in June 1992 .

There is a long history of releases from and enforcement actions against the Delatte Metals facility. Examples include releases of lead, cadmium and arsenic to surrounding residential properties. There are also documented releases of both acidic and metallic wastes into Selser's Creek, surface discharge of caustic water (pH 13), and an unpermitted injection of caustic water in an attempt to neutralize acidic groundwater.

In March 1994 the Louisiana Department of Environmental Quality (LDEQ) Hazardous Waste Division issued an Administrative Order to Delatte Metals regarding control and remediation of waste piles at the facility. A July 1994 Environmental Protection Agency (EPA) Region 6 Resource Conservation and Recovery Act (RCRA) compliance inspection revealed numerous violations, including unpermitted hazardous waste storage, failure to submit annual or biannual reports, inadequate closure plans, and inadequate financial assurances for closure. In March 1995, LDEQ denied Delatte's Hazardous Waste operating permit application. Although smelting operations have ceased, limited operation as a scrap dealer continues. In March 1996 LDEQ Hazardous Waste Division referred the Delatte Metals site to LDEQ's Inactive and Abandoned Sites Division (IASD) which referred the Delatte Metals site to the EPA Site Assessment Section in June 1996. The EPA completed a Site Investigation for the Delatte Metals site in March 1997, and began an Expanded Site Inspection in October 1997.

Ponchatoula Battery was a battery recycling facility from the mid 1960's to 1981. During the 1960's the facility was located on 3.7 acres of land on the south side of Weinberger Road (the South Ponchatoula Battery site). Ponchatoula Battery moved its operation to the north side of Weinberger Road in the 1970's, on property adjacent to the Delatte Metals facility (the North Ponchatoula Battery site). Operations at both locations included battery breaking, resale of lead plates and plastic casings, and acid neutralization.

Ponchatoula Battery ceased operations in late 1981, claiming inability to comply with state and Federal regulations. In late 1982, Ponchatoula Battery Company conducted a cleanup action at the North Ponchatoula Battery location that included closure of surface impoundments and removal of battery casings and contaminated soil. The Ponchatoula Battery Company filed for bankruptcy in 1985. A second cleanup of the North Ponchatoula Battery location was conducted in 1987 to remove the remaining battery casings. According to LDEQ's 1992 RCRA Facility Assessment report for Delatte Metals, "present standards for clean closure are stricter than those that were applied to this site".

In 1993 the EPA Region 6 Alternative Remedial Contracting Strategy (ARCS) contractor conducted an Expanded Site Investigation (ESI) at the Ponchatoula Battery Site. Soil lead concentrations up to 156,000 parts per million (ppm) were detected, but the site did not score high enough to be evaluated further as a potential National Priorities List (NPL) site. Between 1994 and 1995 the EPA Region 6 Technical Assistance Team (TAT) contractor conducted removal assessment to delineate the extent of contamination at the Ponchatoula Battery Site, and the EPA Region 6 Response and Prevention Branch (RPB) conducted a time-critical removal action at the South Ponchatoula Battery location between 1996 and 1997. The North Ponchatoula Battery location was not addressed because of concerns of recontamination from the Delatte Metals site.

In November 1996 LDEQ requested that EPA regard Ponchatoula Battery and Delatte Metals as a single unit, to avoid recontamination problems during remediation and attribution problems in site ranking. The Site is proposed for listing on the National Priorities List.

2. Physical location

The Delatte Metals/North Ponchatoula Battery Site is approximately 5.5 miles south-southeast of Hammond, Louisiana, and 1.5 miles southeast of Ponchatoula, Louisiana. The site lies to the north of Weinberger Road, in a rural area with numerous residences within a one-mile radius of the site. A site location map of the facility is included as attachment 2. The surrounding area is used for growing crops such as bell peppers, strawberries and soybeans. Minor amounts of land are used for harvesting timber. The March 1997 Site Inspection Report for Delatte Metals included an Environmental Justice Report. A copy of this report is included as Attachment 7. Ponchatoula is the host to the annual Louisiana Strawberry Festival. Tangipahoa Parish covers 783 square miles and has a population of about 85,707. Ponchatoula has a population of about 5,425 and the nearby city of Hammond has a population of about 15,871. The site is bounded by Weinberger Road and residences to the south, drainage ditches and residences to the north and east, and Selser's Creek and a residence to the west.

3. Site characteristics

The Delatte Metals/North Ponchatoula Battery site sits on approximately 21.3 acres on the north side of Weinberger Road. A map, included as Attachment 3, shows the general layout of the site. A two-story brick building immediately north and west of Weinberger Road is a combination facility business office and residence. A chain link fence bounds the southern edge of the facility north of the facility offices. Most of the soil covering the site is contaminated with

lead levels averaging 8000 ppm on the surface and decreasing at depth. Battery chips are visible in soil throughout the site. Rainwater leaching through the waste piles on site probably carries lead, cadmium and arsenic into the soil. Two office-type fixed trailers are directly north and west past the chain link fence. Beyond the trailer offices is an 8,000 square foot building (designated as the "Maintenance Building" for assessment purposes) where the facility actively received batteries and scrap during its operation. The building currently contains assorted debris and small quantities of lubricating oil. An acid tank farm on the facility contains five tanks. Three 2000-gallon capacity upright tanks contain low-pH acidic liquids (sulfuric acid). Two horizontal tanks in the tank farm, approximately 2500 gallons each in capacity, are empty. The Battery Saw Building covers approximately 33,000 square feet and contains the battery breaking and sawing equipment from the facility former operations. The building also contains several piles of mixed fines (particles less than .075 millimeters in diameter), debris and battery chips, and drums of organic liquids. The Settling Basin sits under an open sided tin roof and contains some settled fine solids and some equipment. The Furnace Building, which houses the actual smelter, smelting equipment and the130-foot smelter stack, is very deteriorated, with a rusted and dilapidated roof. The Furnace Building contains approximately 70 tote bags of smelter ash from the pollution control equipment, drums of granular solids, bags of firing range bullet sand, debris and scrap metal. Slag Pile #1 contains approximately 409 cubic yards of slag from the smelter. Battery Chip Pile #1 contains approximately 5,016 cubic yards of battery chips. The Former Acid Pond was used to store and neutralize surface runoff and runoff from process areas. The pond was closed in 1987 as required by an LDEQ compliance order. Battery Chip Pile #2 contains approximately 1,144 cubic yards of chips and, Slag Pile #2 contains approximately 4,652 cubic yards of slag. Both piles are sources of contamination for Selser's Creek.

The North Ponchatoula Battery property is east of the Delatte Metals Facility. The property contains a small waste pile of dross (the waste material formed on the surface of molten metal), a small storage building and several small below ground concrete treatment cells. Most of the soil on this property is contaminated both at the surface and increasing with depth in some areas.

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

Releases of hazardous substances are plainly visible on most of the site soils. Battery chips cover most areas and are used as road material on most site roadways. A site assessment of the waste identified material contaminated with lead in excess of 72,000 ppm in on site soils and as much 11,300 ppm in residential soils. Previous investigations at the site detected soil lead levels up to 156,000 ppm. Arsenic contamination in soil has been detected as high as 6,230 ppm. Cadmium levels as high as 10,800 ppm have been detected in soil. Lead, arsenic and cadmium contamination has been shown in all on-site drainage ditches as well as roadside drainage ditches. Samples of sediments in Selser's Creek show lead levels of 112 ppm and cadmium levels of 35.2 ppm.

Lead, arsenic and cadmium are hazardous substances as defined by CERCLA Section 101(14), 42 U.S.C. § 9601(14), and further defined at 40 C.F.R. § 302.4.

5. NPL status

The Site is proposed for listing on the National Priorities List.

004664

6. Maps, pictures and other graphic representations

Attachment 1 Enforcement Addendum
Attachment 2 Site location map
Attachment 3 Site sketch
Attachment 4 Oil and Hazardous Materials/Technical Assistance Database (OHM/TADS) Material Safety Data Sheets (MSDS) for lead.
Attachment 5 OHM/TADS MSDS for cadmium
Attachment 6 OHM/TADS MSDS for arsenic
Attachment 7 Environmental Justice Report

B. Other Actions to Date

1. Previous actions

There have been several previous investigations conducted at the Delatte Metals facility. In 1987, IT Corporation, a consultant for the owner/operator installed several monitoring wells for a Phase I subsurface investigation. In 1989, LDEQ conducted groundwater sampling. Between 1990 and 1991, IT Corporation conducted a Phase II subsurface investigation for the owner/operator. In 1992 Ware Lind Furlow, another consultant for the owner/operator, conducted a groundwater investigation, and that same year LDEQ performed a RCRA Facility Assessment. In 1997, EPA conducted a Site Investigation (SI) of Delatte Metals. No previous response actions have been taken at Delatte Metals.

Previous investigations at the North Ponchatoula Battery property include an SI conducted by EPA in 1981. In 1982, the Ponchatoula Battery Company conducted cleanup action at the North Ponchatoula Battery property under a closure plan negotiated between the Office of Environmental Affairs of the Louisiana Department of Natural Resources and Industrial Safety and Health Consultants. This cleanup included closure of surface impoundments and removal of battery casings and contaminated soil. A second cleanup in 1987 removed additional battery casings. According to LDEQ's 1992 RCRA Facility Assessment report for Delatte Metals, "present standards for clean closure are stricter than those that were applied to this site." In 1993 an ESI was conducted by EPA. Between 1995 and 1996, EPA conducted a Removal Assessment of the Ponchatoula Battery facility. Between 1996 and 1997, the EPA Region 6 RPB conducted a Time-Critical Removal Action at the South Ponchatoula Battery property. The North Ponchatoula Battery property was not addressed because of concerns of recontamination from the Delatte Metals facility.

2. Current actions

There are no current actions taking place at the Site.

C. State and Local Authorities' Roles

1. State and local actions to date

As previously described above the LDEQ has had a history of investigation and enforcement activity at this site. In June 1996, the LDEQ IASD referred the Delatte Metals site to the EPA Site Assessment Section. In November 1996, LDEQ requested that EPA regard Ponchatoula Battery and Delatte Metals as a single unit in order to avoid recontamination problems during remediation and attribution problems in site ranking.

2. Potential for continued State/local response

LDEQ will assist in the cleanup through a State Superfund Contract (SSC) and within the limits of their resources.

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

A. Threats to Public Health or Welfare or the Environment

Current site conditions meet the following factors, which indicate that the site is a threat to the public health, welfare, and the environment, and that a removal action is appropriate under Section 300.415(b)(2) of the National Contingency Plan (NCP), 40 C.F.R. § 300.415(b)(2). Any or all of these factors may be present at a site, yet any one factor may determine the appropriateness of a removal action under CERCLA authority.

1. Exposure to Human Populations, Animals or the Food Chain, NCP Section 300.415(b)(2)(i)

There is potential for exposure of human populations and animals to lead, cadmium, arsenic and sulfuric acid, which are hazardous substances as defined at CERCLA Section 101(14), 42 U.S.C. § 9601(14), and further defined at 40 C.F.R. § 302.4. Release of these contaminants has been identified through site assessment, and the potential for further release is great. People or animals coming into contact with the contaminated waste and soil could become exposed to these contaminants and related compounds.

Lead is a highly toxic metal, producing a range of adverse human health and environmental effects, particularly in children and pregnant women. Lead behaves like calcium in the body and accumulates in bone. At times of calcium deficiency or greater calcium requirements, such as during pregnancy, lead can be mobilized from bone and enter the bloodstream, where it creates elevated levels in the blood. Lead affects the human nervous system, the production of blood cells, kidneys, reproductive system, and behavior. The symptoms

of lead poisoning, unless it is acute, may mimic other conditions. Children are at high risk because of their potentially greater ingestion of lead particles and because harmful effects begin at lower blood lead levels. Pregnant women are at high risk because lead can cross the placenta and damage the developing fetal nervous system.

Arsenic is a metallic-like substance. Lung cancer from inhaling arsenic and skin cancer from swallowing it are the two most dangerous effects of arsenic exposure. Lung cancer from breathing arsenic is an occupational disorder for workers in the smelting industry. Other disorders resulting from chronic arsenic exposure are noncancerous skin lesions, peripheral nerve effects, and cardiovascular changes. Skin disorders include increased pigmentation, wart-like lesions on the palms and soles, and transverse white lines across the nails. Nervous system effects begin with tingling and numbness of the soles and palms and progress to widespread and painful neuritis of the upper and lower limbs.

Cadmium is a soft, silvery metal. It tends to stick to fly ash dust, soil particles, and sediments. Cadmium washed into rivers, lakes, and estuaries is strongly attracted to sediments or organic material, from which it enters the aquatic food chain. Inhaled cadmium is associated with lung cancer in humans. Chronic exposure to low levels of cadmium may also result in progressive lung diseases such as emphysema and chronic bronchitis. Chronic exposure to cadmium is also associated with a wide range of other diseases, including heart disease, anemia, skeletal weakening, depressed immune system response, and kidney and liver disease.

Sulfuric acid is a clear colorless oily liquid. It is very corrosive and has a great affinity for water, abstracting it from air and also from many organic substances. Sulfuric acid is corrosive to all body tissues. Inhalation of concentrated vapor may cause serious lung damage. Contact with eyes may cause total loss of vision. Skin contact may cause severe necrosis. Ingestion may cause severe injury and death. Frequent skin contact with dilute solution has caused dermatitis.

The proximity of residences to the contaminated areas on site increases the potential for exposure to human populations. There are four nearby residences with soils affected by these contaminants. Blood lead analysis of two children under 6 years of age showed significantly elevated blood lead levels. There is also potential exposure to animals and the food chain from these contaminants leaching rainwater directly into Selser's Creek. Drainage from the site enters three drainage ditches, which discharge to Selser's Creek. These ditches are known to be contaminated. Two contaminated waste piles are on the bank of Selser's Creek, and persons have been observed fishing from a bridge over the creek just downstream from the site.

2. Contamination of Drinking Water Supplies or Sensitive Ecosystems, NCP Section 300.415(b)(2)(ii)

Three aquifers underneath the site include a shallow aquifer, the Ponchatoula Aquifer and the Tchefuncta Aquifer. Releases of lead, cadmium and arsenic to the shallow aquifer have been documented by analytical data from groundwater samples. The Ponchatoula Aquifer and the Tchefuncta Aquifer are used for drinking water by the city of Ponchatoula and the Tangipohoa Rural Water District. The connectivity of these aquifers is unknown. Drainage from the site enters three drainage ditches, which discharge to Selser's Creek A release to Selser's Creek of

lead and cadmium was documented at the discharge points of the drainage ditches. Two sensitive environments were documented within 15 miles downstream of the site. The Joyce Wildlife Management Area is 1.4 miles downstream and the Manchac Wildlife Management Area is 12.5 miles downstream. Both are owned and managed by the Louisiana Department of Wildlife and Fisheries.

3. Hazardous Substances in Drums or Tanks, NCP Section 300.415(b)(2)(iii)

Three tanks in the Acid Tank farm all contain low pH acidic liquids (sulfuric acid). The tanks are open at the tops and connected to each other by PVC pipe. Overflow from these tanks enters another large PVC pipe, with an unknown discharge point. The Battery Saw Building contains some drums of organic liquid.

4. Contaminants in Soils, NCP Section 300.415(b)(2)(iv)

Lead and lead compounds are hazardous substances as defined by CERCLA Section 101(14), U.S.C. § 9601(14), and further defined at 40 C.F.R. § 302.4. There are areas of visible releases of lead-contaminated battery chips and slag into soil around the site. Sample results indicate that soil contaminated by lead, cadmium, and arsenic migrating from on site and contaminating surrounding areas, especially along drainage pathways.

5. Weather Conditions That May Cause the Release or Migration of Hazardous Substances, NCP Section 300.415 (b)(2)(v)

Southeastern Louisiana is subject to seasonal heavy rains, and flooding of low lying areas is not uncommon. These weather conditions could cause further dispersion of contamination.

6. Availability of Other Mechanisms, NCP Section 300.415 (b)(2)(vii)

The LDEQ has referred the site to EPA. There are no other mechanisms available to respond to the situation at the Site.

B. Threats to the Environment

Drainage from the site goes directly into Selser's Creek, which is adjacent to the site. Two contaminated waste piles are situated on the bank of Selser's Creek. Lead, arsenic and cadmium contamination has been found in sediments in Selser's Creek. If the lead-contaminated waste and soil continue to be available, the drainage pathway from the Site would further contaminate the creek. Lead, cadmium and arsenic have similar toxic effects in wildlife as in humans. Two sensitive environments were documented within 15 miles downstream of the site. The Joyce Wildlife Management Area is 1.4 miles downstream and the Manchac Wildlife Management Area is 12.5 miles downstream. Both are owned and managed by the Louisiana Department of Wildlife and Fisheries.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances, pollutants or contaminants from this Site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to the public health or welfare or the environment.

V. EXEMPTION FROM STATUTORY LIMITS

As outlined below, the conditions at this Site meet the "consistency exemption" criteria outlined in CERCLA Section 104(c)(1)(C), 42 U.S.C. § 9604 (c)(1)(C). Continued response actions are otherwise appropriate and consistent with the remedial action to be taken.

The Site is proposed for listing on the NPL. The institution of drainage controls and establishment of soil and/or vegetative barriers in active residential areas and the removal of on-site waste piles will not interfere with likely remedial alternatives to address soil and groundwater contamination. The removal action is also appropriate because it will prevent further migration of contaminants to residential areas.

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed Action Description

The proposed action involves institution of site controls on the active areas of all residences affected by contamination from this site, and the removal and off-site disposal of all hazardous materials in the containers. Site control measures will consist of one or more of these options: removal of soil, placement of a soil and/or vegetation barrier to remove the contact threat from contaminated soil and surface water and drainage diversion to avoid recontamination. Removal of the large piles of waste material on site is also proposed as this is a major source of contamination.

All disposal will be in accordance with EPA's Off Site Rule, CERCLA Section 121(d)(3), 42 U.S.C. § 9621(d)(3), and all transportation will be in accordance with Department of Transportation rules and regulations.

Other requirements under the Occupational Safety and Health Act (OSHA) of 1970, 29 U.S.C. § 651 et seq., and under the laws of a State with an approved equivalent worker safety program, as well as other applicable safety and health requirements, will be followed. Federal OSHA requirements include, among other things, Hazardous Materials Operation, 20 C.F.R. Part 1910, as amended by 54 Fed. Reg. 9317 (March 1989), all OSHA General Industry (29 C.F.R. Part 1910) and Construction (29 C.F.R. Part 1926) standards wherever they are relevant, as well as OSHA record keeping and reporting regulations, and the EPA regulations set forth in 40 C.F.R. Part 300 relating to the conduct of work at Superfund sites.

2. Contribution to Remedial Performance

The proposed action is consistent with any conceivable remedial response at this Site. The site is proposed for listing on the National Priorities List. While the proposed action will not remove all sources of contamination, the current site strategy was developed from discussions with members of the Region's remedial program.

3. Description of Alternative Technologies

There are several technologies being investigated for treatment and/or stabilization of the waste piles before ultimate disposal. These technologies will be evaluated for feasibility and effectiveness for application.

4. Applicable or Relevant and Appropriate Requirements

This removal action will be conducted to abate the actual or potential release of a hazardous substance, pollutant, or contaminant to the environment, in accordance with CERCLA, 42 U.S.C. § 9601 et seq., and in a manner consistent with the National Contingency Plan, 40 C.F.R. Part 300, as required at 33 U.S.C. § 1321(c)(3) and 42 U.S.C. § 9604 (a)(1). As stated at 40 C.F.R. Part 300.415(j), fund-financed removal actions under CERCLA Section 104 and removal actions under CERCLA Section 106 shall, to the extent practicable considering the exigencies of the situation, attain the applicable or relevant and appropriate requirements (ARARs) under Federal environmental law.

Because consolidation and off-site disposal are the principal elements of this removal action, RCRA waste analysis requirements found at 40 C.F.R. §§ 261.20 and 261.30, RCRA manifesting requirements found at 40 C.F.R. § 262.20, and RCRA packaging and labeling requirements found at 40 C.F.R. § 262.30, are deemed to be appropriate requirements for this removal action. Because on-site storage of repackaged hazardous wastes or excavated contaminated soil and debris is not expected to exceed ninety days, specific storage requirements found at 40 C.F.R. Part 265 are neither applicable, relevant or appropriate. See 40 C.F.R. § 262.34.

5. Project Schedule

The order of site priorities will be: placement of the soil/vegetation barrier and diversion of surface water from residences affected by contamination, removal and off-site disposal of containerized waste, removal and off-site disposal of wastes in piles exposed to the elements, and the removal and off-site disposal of sheltered waste in piles. The waste will be sampled and analyzed to analytically profile all materials for disposal purposes. After the disposal is arranged, the materials will be properly placed in containers and transported to the disposal and/or recycling facilities. The entire duration of the project is expected to be approximately five months from the initial mobilization.

B. Estimated Costs

ESTIMATED COSTS

Extramural Costs

ERRS	$ 4,748,667.00
START	$ 108,000.00
Subtotal, Extramural Costs	$ 4,856,667.00
Extramural Costs Contingency 20%	$ 971,333.00
TOTAL, EXTRAMURAL COSTS	$ 5,828,000.00

Intramural Costs

EPA Regional Direct Costs	$ 54,000.00
EPA Regional Indirect Costs	$ 108,000.00
EPA Headquarters Costs	$ 10,000.00
TOTAL, INTRAMURAL COSTS	$ 172,000.00

TOTAL, CERCLA REMOVAL PROJECT CEILING ...$ 6,000,000.00

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

If this action is not taken at the Site, the potential for human exposure to contaminants at the site will remain unabated. The contamination will continue to be dispersed into the surrounding area resulting in further exposure to the public and wildlife from the lead, arsenic and cadmium contamination.

VIII. OUTSTANDING POLICY ISSUES

These are no outstanding policy issues associated with this site.

IX. ENFORCEMENT

See Attachment 1.

X. RECOMMENDATION

This decision document represents the selected removal action for the Delatte Metals-North Ponchatoula Battery Site, in Ponchatoula, Tangipohoa Parish, Louisiana, developed in accordance with CERCLA, 42 U.S.C.§ 9601 et seq., and consistent with the NCP, 40 C.F.R. Part 300. This decision is based on the administrative record for the Site.

Conditions at the Site meet the criteria as defined by Section 300.415(b)(2) of the NCP, 40 C.F.R. § 300.415(b)(2), for a removal, and the CERCLA Section 104 (c) consistency exemption from the $2 million limitation, and I recommend your approval of the proposed removal action and the $2 million exemption. The total project ceiling, if approved, will be $6,000,000. An estimated $4,748,667 comes from the Regional removal allowance.

APPROVED: _____ DATE: 7/24/98

Attachments

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TEXAS 75202-2733

004672

July 29, 1998

MEMORANDUM

SUBJECT: Wetland Determination - Delatte Metals (LAD052510344)

FROM: William Kirchner /WK/
Professional Wetland Scientist (6SF-RA)

TO: Stephen Tzhone
Remedial Project Manager (6SF-LP)

On July 9 - 10, 1998, I traveled to the site subject above in order to identify and document any wetland environments that may be affected by contamination at the site and/or impacted by removal/remedial activities currently being planned. The following are the conclusions about the jurisdictional status of areas identified during the field investigation:

- The onsite inspection revealed five significant areas (see map, Attachment 1), that met the criterion (i.e., predominance of hydrophytic vegetation, hydric soil and wetland hydrology) necessary to establish wetlands subject to federal regulatory jurisdiction under the Clean Water Act. Wetlands were jointly defined by EPA and the Corps of Engineers (COE) in 1977, as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support and under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (EPA, 40 CFR 230.3).

- The attached map and field data forms (Attachment 2) document the visual observations made during the field investigation.

- The following is an estimate of the size (in acres) of the wetland resources:

  - east side of site - 3.8
  - north drainage pathway - 0.3
  - Selser's Creek - 0.4
  - south drainage pathway - 1.8
  - isolated wetland - 0.1 (west of Furnace Bldg.)
  - Total = 6.4 acres

- The same general areas were previously mapped by John Murell, Ecology and Environment, during his removal investigation (i.e., Mr. Murell documented areas that were inundated by surface water from January through March 1998, Attachment 3).

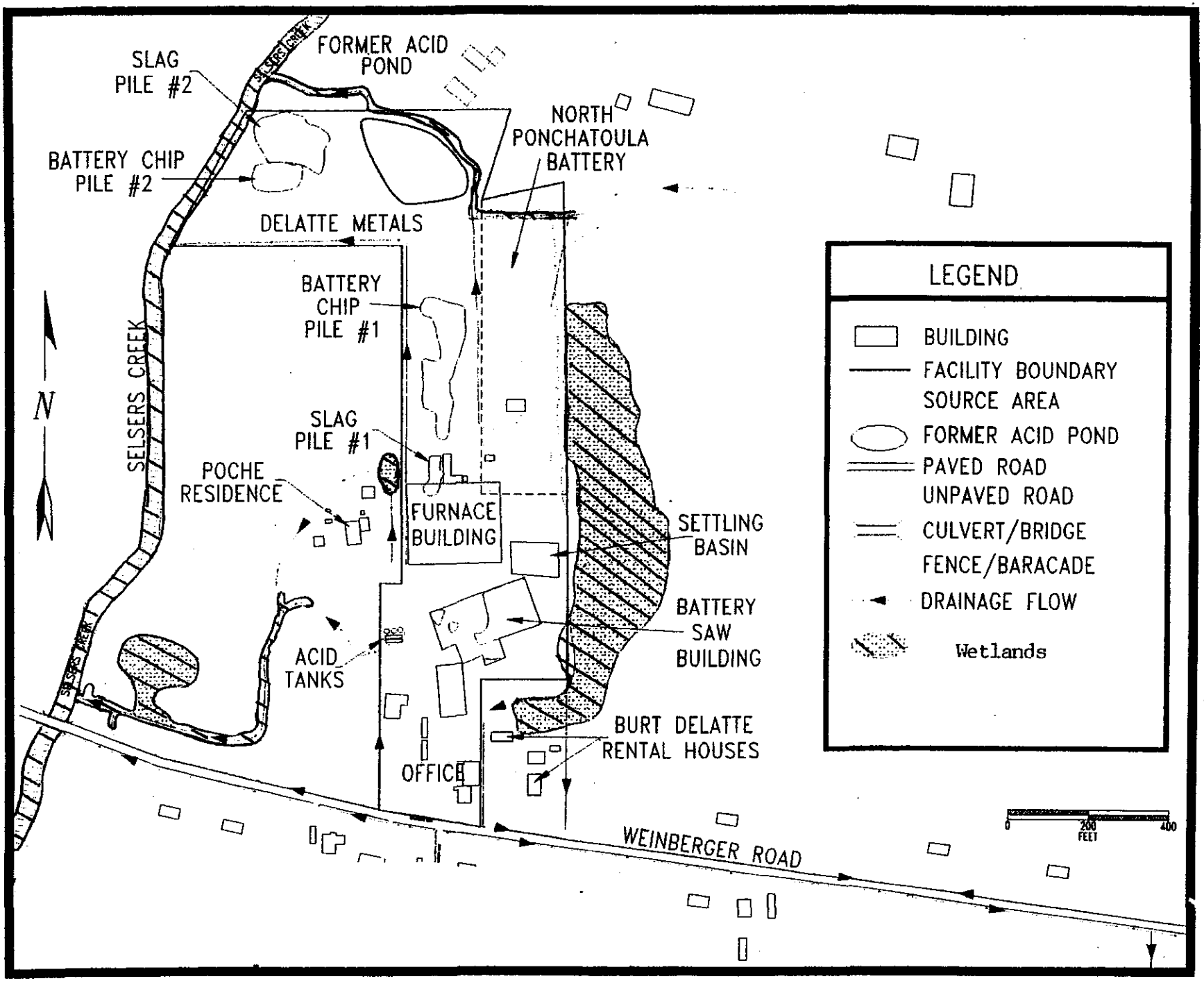
110764

- The wetland resources that were historically found adjacent to Selser's Creek have been significantly impacted by previous dredging operations (i.e., most likely the Tangiapahoa Parish Police Jury for flood control purposes). Presently the wetlands in this area are represented only by narrow vegetated strips (i.e., approximately five to ten feet in width below the plane of ordinary high water) on either side of the improved channel.

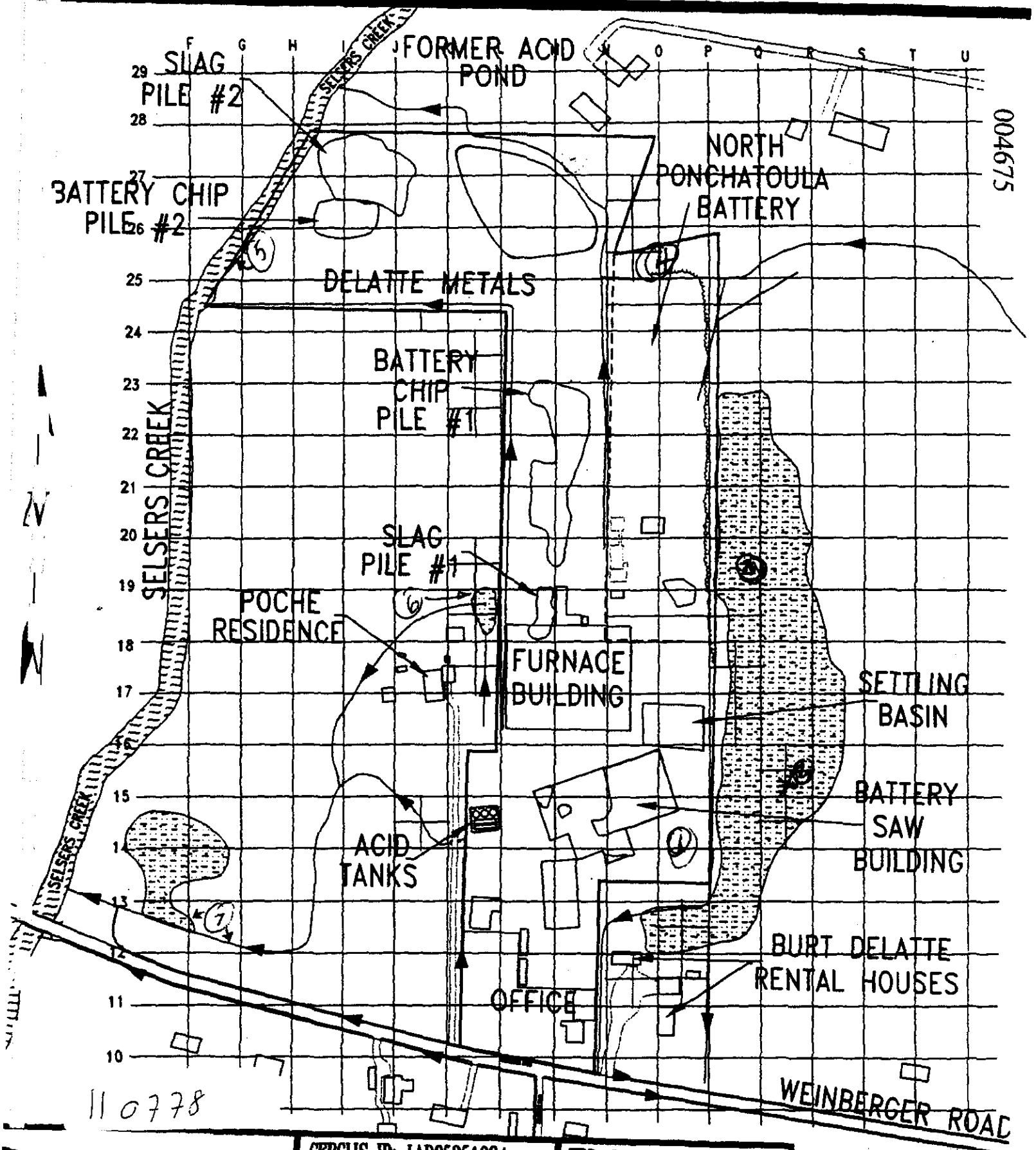
- Finally, significant wetland resources (i.e., coastal swamp and Bottomland hardwoods) are located approximately 0.35 miles downstream of the site. The downstream resources were also identified by Steve Cowan, Ecology and Environment, while conducting sampling activities for EPA's Site Investigation Report, dated March 31, 1997. These resources are also indicated on the 1994 1:24,000 USGS Quadrangle Map, Ponchatoula, Luoisiana.

Attachments

Attachment 1. Wetlands.



Attachment 2. Sample location map and data forms.



004675

110778

ecology and environment, inc.
Superfund Technical Assessment

CERCLIS ID: LAD05251034 | TDD # S06-97-10-0004

SITE SKETCH
DELATTE METALS

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

004676

Project/Site: Dolatte Metals Applicant/Owner: Investigator: KIRCHMAN / [illegible]	Date: 7-9-98 County: TANGIPAHOA State: LA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: [illegible] Plot ID: 1

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Juncus effusus	H	OBL	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100% are FAC or wetter

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ✓ Local Soil Survey Data
- ✓ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Visual observations of inundation were made in January - March by E.E employee, John Mitchell. - Inundation was 1 to 6 inches for that 3 month duration

110789

P1CV

SOILS

Map Unit Name (Series and Phase): Guyton

Drainage Class:

Taxonomy (Subgroup):

Field Observations
Confirm Mapped Type? (Yes) No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1	C				
1-5	A	10YR 4/2			silty clay loam
5-13	B	10YR 5/1 4/2	10YR 5/6	common medium distinct	clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ✓ Listed on Local Hydric Soils List
- ✓ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks: sample location hydrology is influenced by a small spoil mound from ditch construction resulting in longer duration of inundation/saturation after rainfall events.

Approved by HQUSACE 2/92

004677

000163

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

0004678

Project/Site: Dellatte Wetlands	Date: 7-16-98
Applicant/Owner:	County: TANGIPAHOA
Investigator: KIRCHNER / PHOTOGRAPHY	State: LA
Do Normal Circumstances exist on the site? (Yes) No	Community ID: 1
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: 2
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Pinus Taeda	T	FAC
2. Nyssa Sylvatica	T	OBL
3. Myrica cerifera	SS	FAC+
4. Quercus nigra	SS	FAC
5. Chasmanthium Sessil.	H	FAC+
6. Carex ~~glaucodea~~	H	OBL
7. Interior		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100% are FAC or wetter

Remarks: Minor swelling on Nyssa at base

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated see remarks
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ✓ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ✓ Local Soil Survey Data
- ✓ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Visual Observation Jan-March by John Murrell 1-6"

SOILS

Map Unit Name (Series and Phase): Guyton

Drainage Class:

Field Observations

Taxonomy (Subgroup):

Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1	O				
1-6	A	10YR 4/2			
6-	B	10YR 4/1-4/2	10YR 4/6	few, faint, 10% distinct	silty clay loam
			7.5YR 4/6		

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ✓ Listed on Local Hydric Soils List
- ✓ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)

Wetland Hydrology Present? (Yes) No

Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks:

Approved by HQUSACE 2/92

004679

000165

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

004680

Project/Site: Delatte Metals	Date: 7-10-98
Applicant/Owner:	County: Tangipahoa
Investigator: Kirchner / Rotenberry	State: LA
Do Normal Circumstances exist on the site? (Yes) No	Community ID: 3
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: 1
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Pinus taeda	T	FAC
2. Liquidambar	T	FAC
3. "	SS	FAC
4. Myrica cerifera	SS	FACT
5. Smilax rotund.	V	FAC
6. Vitis rotundifolia	V	FACU
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100% are FAC or Wetter

Remarks: Vegetation along Selser's Creek

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated – plane of OHW
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: stream has been dredged - vegetation or soil OHW call

000170

SOILS

Map Unit Name (Series and Phase): Ouachita, Ochlockonee, Guyton (?) Drainage Class: Frequently flooded

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks: Vegetation below plane of ordinary high water width is 5 to 10 feet both sides of improved channel

Approved by HQUSACE 2/92

0046681

000171

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

004682

Project/Site: Detailed Metals Applicant/Owner: _____ Investigator: Kirchner / Photography	Date: 7-10-98 County: Tangipahoa State: LA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: 4 Transect ID: _____ Plot ID: 1

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Juncus effusus	H	OBL	9.		
2. Paspalum urvelii	H	FAC	10.		
3. Salix Nigra	SS	OBL	11.		
4. Brunnichia ovata	V	FACW	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100% are FAC or better

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ✓ Sediment Deposits
- ✓ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ✓ Local Soil Survey Data
- ✓ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Graded area

004683

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations
Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1	O				
1-4	A				
4-18	B	10YR 5/2	10YR 4/6	Common, distinct	silty clay

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks:

Approved by HQUSACE 2/92

000173

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

004684

Project/Site: Delatte Metals	Date: 7-10-98
Applicant/Owner:	County: TANGIPAHOA
Investigator: Kincannon / Robertson	State: LA
Do Normal Circumstances exist on the site? Yes No	Community ID: #4
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID:
Is the area a potential Problem Area? Yes No	Plot ID: 1
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Acer rubrum	T	OBL	9.		
2. Cypress	T	OBL	10.		
3. Acer rubrum	SS	OBL	11.		
4. Cypress	SS	OBL	12.		
5. Saururus cernuus	H	OBL	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100% are FAC or wetter

Remarks: 30' Swale

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ✓ Water Marks
- ___ Drift Lines
- ✓ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ✓ Water-Stained Leaves
- ✓ Local Soil Survey Data
- ✓ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: 1 of 13 lateral extent of Forest

DITCH 800

000174

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-.5	O				
.5-4	A	10YR 4/2			
4-18	B	10YR 3/2	10R 3/4	few/faint	clay, silty clay

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ✓ Listed on Local Hydric Soils List
- ✓ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: 7 distinct sediment layers - area subject to back and headwater flooding

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No	(Circle)
Wetland Hydrology Present?	(Yes)	No	
Hydric Soils Present?	(Yes)	No	

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks:

Approved by HQUSACE 2/92

004685

000175

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

004686

Project/Site: Delotte Metals Applicant/Owner: Investigator: Kirchner CE / Rieder Ecology	Date: 7-10-96 County: Tangipahoa State: LA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: 1 Transect ID: Plot ID: 3

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Pinus taeda	T	FAC	9.		
2. Quercus Nigra	T	FAC	10.		
3. Quercus marilandica	SS	UPL	11.		
4. Liquidambar styraciflua	SS	FAC+	12.		
5. Myrica cerifera	SS	FAC+	13.		
6. Vaccinium elliottii	SS	FACT	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 83% are FAC or wetter

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Mirell documented surface inundation January 96 - March 96 1-4"

SOILS

Map Unit Name (Series and Phase): Guyton

Drainage Class:

Taxonomy (Subgroup):

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1	O				
1-7	A	10YR 5/2			
7-	B	10YR 6/2	10YR 5/8	Common, Fine distinct	silty clay loam
		10YR 5/1			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ✓ Concretions soft
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ✓ Listed on Local Hydric Soils List
- ✓ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	
Is this Sampling Point Within a Wetland?	(Yes) No	(Circle)

Remarks:

Approved by HQUSACE 2/92

004687

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

004688

Project/Site: Delatte Applicant/Owner: Investigator: Kirchner / Klapetzberry	Date: 7-10-98 County: TANGIPAHOA State: LA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: 2 Transect ID: Plot ID: 1

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Baccharis H.	SS	OBL	9.		
2. Juncus effusus	H	OBL	10.		
3. Jasmine (Gelsemium)	H	FAC	11.		
4. Smartweed	H		12.		
5. Polygonum hydropiperoides	H	OBL	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100% are FAC or wetter

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ✓ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ✓ Water-Stained Leaves
- ✓ Local Soil Survey Data
- ✓ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: overflow from ditch - area is approximately 15-20 feet wide

SOILS

Map Unit Name (Series and Phase): Guyton

Drainage Class:

Taxonomy (Subgroup):

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-5	O				
5-6	A				
6-12	B	10YR 5/2	10YR 4/6	common medium distinct	silty clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- v Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- v Listed on Local Hydric Soils List
- v Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

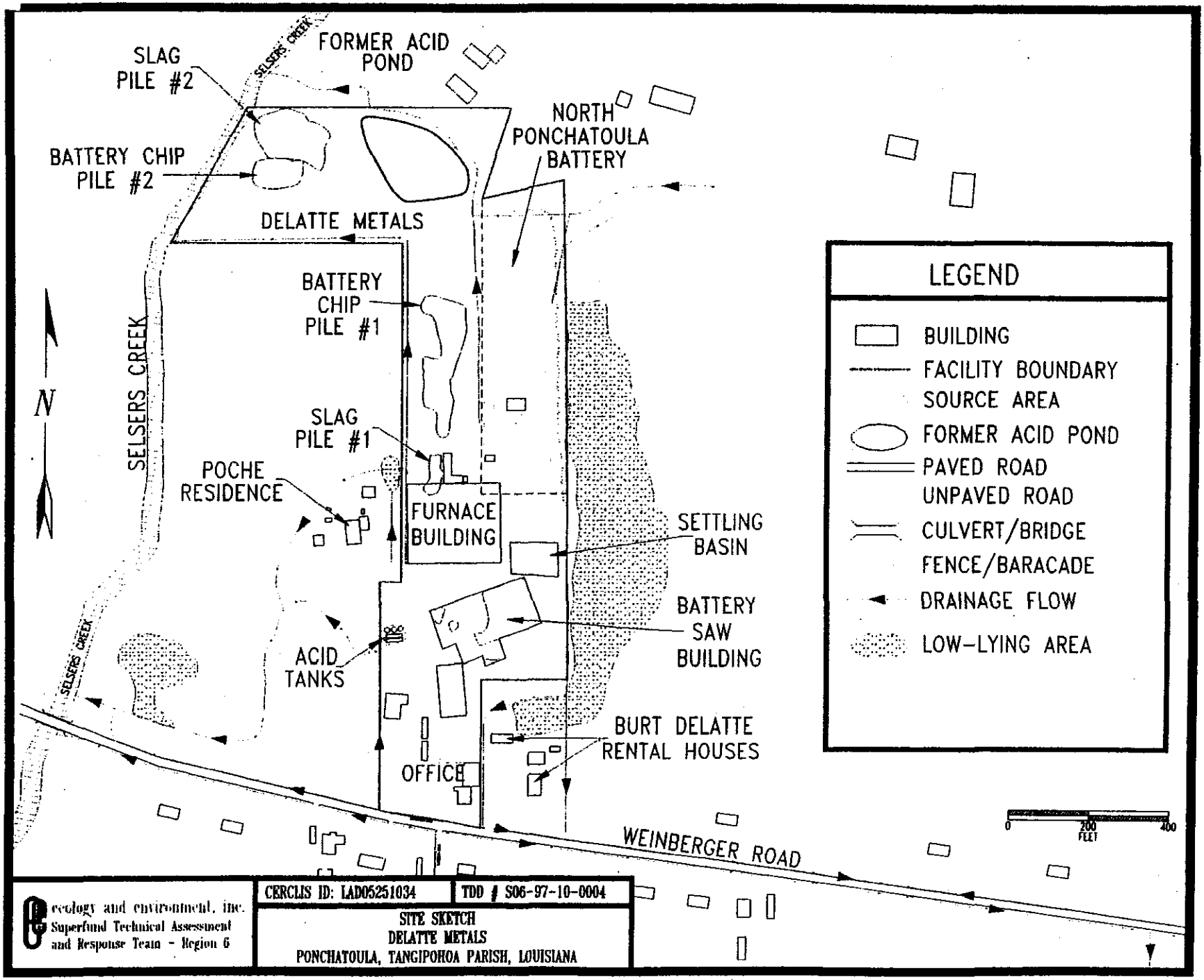
Remarks:

Approved by HQUSACE 2/92

004689

000169

Attachment 3. E&E map of low lying areas that were inundated.



Date: September 16, 1998 JCP
Subject: Delatte Metals-North Ponchatoula Battery Site, Ponchatoula, Tangipahoa Parish, LA
From: Althea C. Foster, OSC, U.S. EPA, Region 6 (214-665-2268)
To: Director, OERR
Charles A. Gazda, RPB, EPA Region 6
Director, Inactive and Abandoned Sites, LDEQ

004691

POLREP No.: 1

Event: Time Critical Removal Action
Site ID Nos.: CERCLIS ID-LAD052510344, SSID-DF
Start Date: September 9, 1998
Demobilization Date: N/A
Completion Date: N/A
Site Type: Inactive Lead Battery Recycler
Site Latitude/Longitude: 30° 25' 21" N
90° 24' 37" W

I. SITUATION

The Delatte site is an aggregation of the Delatte Metals facility and the north Ponchatoula Battery Company site. The site is located on Weinberger Road in Ponchatoula, Tangipahoa Parish, Louisiana. The 21.3-acre site is bound by a tributary of Selser's Creek to the north, private residences to the east and west, and Weinberger road to the south.

Operations at the two facilities have been described as the following: spent lead-acid batteries were transported to the site by trucks or railroad cars. The batteries were cut open at the battery hammer saw mill and the acid was allowed to drain from them. The waste liquid was directed into holding ponds at each site. The lead was recovered from the batteries and smelted to form ingots, which were sold to lead recycling facilities located throughout the southern United States and other countries. The Delatte Metals facility operated a secondary lead smelter to recover additional lead material.

Drainage from the site is channeled to Selser's Creek through various ditches. The northernmost drainage ditch exits the Ponchatoula Battery Company property and immediately enters the Delatte Metals site. Process water from the Ponchatoula Battery Company site joined a drainage ditch on the Delatte Metals site. This ditch exited the back portion of the Delatte Metals property through a slough that empties into Selser's Creek.

On-site waste sources include battery chip piles, slag piles, settling basins, tote bags and waste inside the battery saw buildings. On-site soils have lead concentrations as high as 31% and lead concentrations in off-site drainage samples as high as 11%. All sources failed TCLP criteria for lead and tote bags failed TCLP for lead. Wastes sources are un-contained and concentrations of lead range from 30-50% in these sources. All waste sources are exposed to the elements. On-site soils, off-site soils, drainage ditches, streambed sediments and residential yards have been

contaminated from on-site waste sources.
Cleanup of the residences is sensible only after source control operations on-site have been completed.

II ACTIONS TAKEN

An Action Memorandum to address the waste piles at the site was signed by Superfund Division Director, Myron Knudsen on July 24, 1998. A time critical removal action was initiated after completion of enforcement notification of the known potentially responsible parties. On-site activities began with the mobilization of EPA, ERRS, and START contractors to the site on September 9, 1998. Command post and associated utilities have been setup. Heavy equipment and other materials have been delivered and additional equipment and materials will be mobilized as needed. Staging areas for the loading of trucks are being prepared and one dilapidated building will be partially demolished for safety and to ease on-site truck traffic. Off-site truck traffic routes were investigated. Potential routes were driven to determine feasibility. Discussions will be held with local officials prior to implementing off-site truck routes. Evaluation of disposal options continues. Last week one vendor requested and was given a sample truckload of the various wastes on site to prepare a recipe for stabilization in aid of their preparation of a bid for disposal. This was done at no cost to the site and the same offer was made to other potential vendors.

III FUTURE PLANS

Because of the high volume of characteristic waste, the cost of source control operation will be extreme. Continued refinement of cost estimate show the need for additional funds to complete the activities proposed in the Action Memorandum. Removal efforts are being integrated with Remedial program assessment. Final levels of remediation will be consistent with any ultimately proposed in the Remedial Record of Decision.

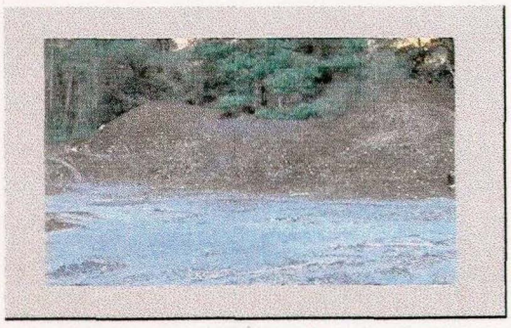
IV KEY ISSUES

Weather conditions in the Gulf of Mexico continue to be turbulent as hurricane season is upon us. Mobilization activities were hampered by the large amounts of rain produced by Tropical Storm Frances. If current weather patterns hold, site activities could be significantly impacted.

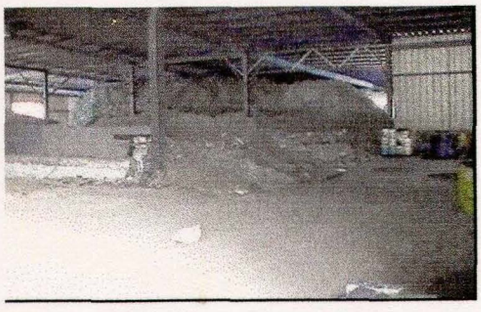
V. ATTACHMENTS

Photograph: Battery Chip Pile #1, Slag Pile #2 and Battery Chip Pile #2, and Battery Saw Building.

Battery Chip Pile # 1



Slag Pile #2 and Battery Chip Pile #1



Battery Saw Building

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

004693

SEP 25 1998

MEMORANDUM

SUBJECT: **Request for Approval of a Project Ceiling Increase for the Removal Action at the Delatte Metals-North Ponchatoula Battery Site, Ponchatoula, Tangipahoa Parish, Louisiana**

FROM: Althea C.. Foster, On-Scene Coordinator, Removal Team 1
Response and Prevention Branch (6SF-R1)

THRU: Charles A. Gazda, P.E., Chief
Response and Prevention Branch (6SF-R)

TO: Myron O. Knudson, P.E., Director
Superfund Division (6SF)

I. PURPOSE

This memorandum requests approval for an increase in the project ceiling to complete the site actions at the Delatte Metals-North Ponchatoula Battery Site, Ponchatoula, Tangipahoa Parish, Louisiana. This increase raises the total project ceiling from $6,000,000 to $13,302,885. Extramural costs will increase by $6,876,360, while intramural costs will increase by $426,525. This ceiling increase request is based on revised volume and cost estimates for the disposal of the high concentration wastes at the Site.

This action continues to meet the criteria for a removal action under the National Contingency Plan ("NCP"), 40 C.F.R. §300.415 (b)(2), and the criteria for a $2 million exemption under Section 104 of CERCLA, 42 U.S.C. Section 9604 (c), documented in the original Action Memorandum approved July 24, 1998. This action is expected to require less than twelve months to complete.

110887

II. SITE CONDITIONS AND BACKGROUND

CERCLIS # LAD052510344
Category of removal: Time-Critical
Site ID #DF

The original Action Memorandum was approved on July 24, 1998. Field mobilization to begin the removal action was on September 9, 1998. Current on site activities include mobilization of equipment and materials to the site, preparing on-site truck haul roads, constructing decontamination stations for trucks/equipment leaving the site, demolition of unsafe building structures, clearing of on-site debris, staging wastes for offsite transportation, and arranging contracts for transportation and disposal of source waste material covered under the original Action Memorandum.

Because of the very large amounts of material in waste piles on site, an accurate estimate of the volume and costs for transportation and disposal was unavailable at the writing of the original Action Memorandum. In the early stages of the assessment it was believed that most of the material would achieve the current landfill treatment standards through traditional stabilization techniques. About one third of the total waste volume is a slag material that can not be adequately treated for landfill by traditional stabilization. The removal program engineering studies have now matured, and discussions with EPA's Risk Reduction Engineering Laboratory and various vendors have yielded more accurate although higher cost estimates for the offsite disposal. The proposed ceiling increase will be used to complete the scope of actions described in the original Action Memorandum.

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

Current site conditions continue to meet the factors described in the original Action Memorandum, which indicate that the site is a threat to the public health, welfare, and the environment, and that a removal action is appropriate under Section 300.415(b)(2) of the National Contingency Plan (NCP), 40 C.F.R. § 300.415(b)(2).

III. EXEMPTION FROM STATUTORY LIMITS

As outlined in the previous Action Memorandum, the conditions at this Site continue to meet the "consistency exemption" criteria outlined in CERCLA Section 104(c)(1)(C), 42 U.S.C. § 9604 (c)(1)(C). Continued response actions are appropriate and consistent with the remedial action to be taken.

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

004695

A. Proposed Actions

1. Proposed Action Description

The scope of actions is the same as proposed in the original Action Memorandum. Specifically, institution of site controls on the active areas of all residences affected by contamination from this site, and the removal and off-site disposal of all hazardous materials in the containers. Site control measures will consist of one or more of these options: removal of soil, placement of a soil and/or vegetation barrier to remove the contact threat from contaminated soil and surface water and drainage diversion to avoid recontamination. Removal of the large piles of high concentration wastes accounts for the bulk of the removal program activity and costs.

B. Estimated Costs

ESTIMATED COSTS

Extramural Costs	Current Ceiling	Proposed Ceiling
ERRS	$ 4,748,667.00	$10,261,351.00
START	$ 108,000.00	$ 325,616.00
Subtotal, Extramural Costs	$ 4,856,667.00	$10,586,967.00
Extramural Costs Contingency 20%	$ 971,333.00	$ 2,117,393.00
TOTAL, EXTRAMURAL COSTS	$ 5,828,000.00	$12,704,360.00
Intramural Costs		
EPA Regional Direct Costs	$ 54,000.00	$ 257,750.00
EPA Regional Indirect Costs	$ 108,000.00	$ 315,000.00
EPA Headquarters Costs	$ 10,000.00	$ 25,775.00
TOTAL, INTRAMURAL COSTS	$ 172,000.00	$ 598,525.00
TOTAL, CERCLA REMOVAL PROJECT CEILING	**$ 6,000,000.00**	**$13,302,885.00**

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

If this action is not taken at the Site, the potential for human exposure to contaminants at the site will remain unabated. The contamination will continue to be dispersed into the surrounding area resulting in further exposure to the public and wildlife from the lead, arsenic and cadmium contamination.

VIII. OUTSTANDING POLICY ISSUES

This action may require a request for a Treatability Variance for the Land Disposal Restrictions rule (40 CFR 268.44), but that will be treated separately if required .

IX. ENFORCEMENT

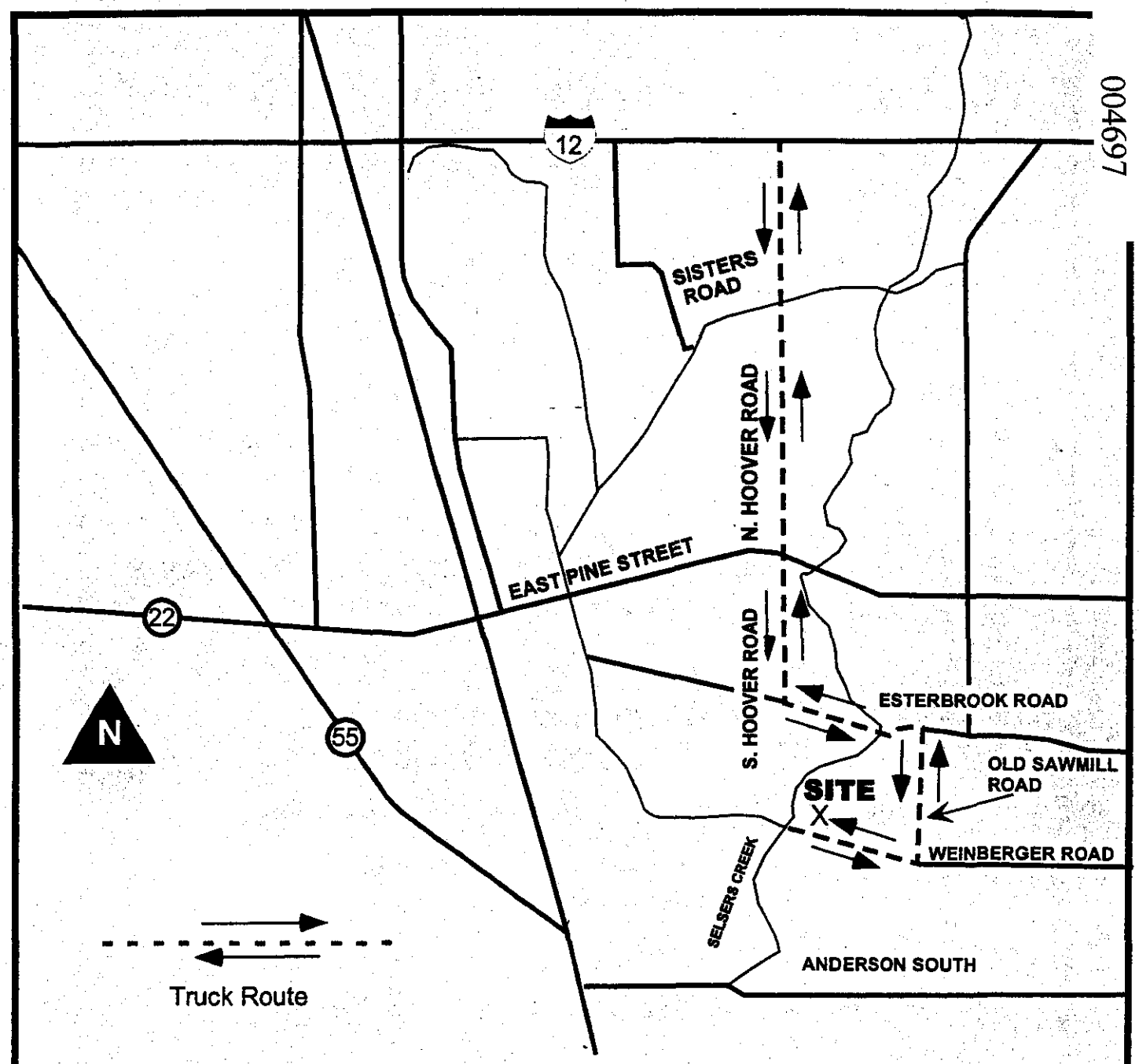
No changes from original Action Memorandum

X. RECOMMENDATION

This decision document represents the request for approval for an increase in the project ceiling to complete the site actions at the Delatte Metals-North Ponchatoula Battery Site, Ponchatoula, Tangipahoa Parish, Louisiana, developed in accordance with CERCLA, 42 U.S.C.§ 9601 et seq., and consistent with the NCP, 40 C.F.R. Part 300. This decision is based on the administrative record for the Site.

Conditions at the Site meet the criteria as defined by Section 300.415(b)(2) of the NCP, 40 C.F.R. § 300.415(b)(2), for a removal, and the CERCLA Section 104 (c) consistency exemption from the $2 million limitation, and I recommend your approval of the proposed removal action and the $2 million exemption. The total project ceiling, if approved, will be $13,302,885.

APPROVED: Pamela Phillips DATE: 9/25/98



DELATTE METALS SITE TRANSPORTATION ROUTE

The United States Environmental Protection Agency is conducting a cleanup at the former Delatte Metals, Inc. facility on Weinberger Road. The cleanup includes the removal of approximately 41,000 tons of contaminated material from the site. The material will be transported to a permitted disposal facility. Transportation of contaminated material begins on Monday, October 12. For your information, the route for the trucks in shown on the map above.

110892

Date: October 15, 1998
Subject: Delatte Metals-North Ponchatoula Battery Site, Ponchatoula, Tangipahoa Parish, LA
From: Althea C. Foster, OSC, U.S. EPA, Region 6 (214-665-2268)
To: Director, OERR
Charles A. Gazda, RPB, EPA Region 6
Director, Inactive and Abandoned Sites, LDEQ

004698

POLREP No.: 2

Event: Time Critical Removal Action
Site ID Nos.: CERCLIS ID-LAD052510344, SSID-DF
Start Date: September 9, 1998
Demobilization Date: N/A
Completion Date: N/A
Site Type: Inactive Lead Battery Recycler
Site Latitude/Longitude: 30° 25' 21" N
90° 24' 73" W

I. SITUATION

The Delatte site is an aggregation of the Delatte Metals facility and the north Ponchatoula Battery Company site. The site is located on Weinberger Road in Ponchatoula, Tangipahoa Parish, Louisiana. The 19-acre site is bound by a tributary of Selser's Creek to the north, private residences to the east and west, and Weinberger road to the south. The population within 1 mile is approximately 645. An Action Memorandum to address the large contamination sources and residential contamination at the site was signed by Superfund Division Director, Myron Knudson on July 24, 1998. On-site contamination sources include battery chip piles, slag piles, settling basins solids, waste in tote bags and waste piles inside the battery saw building. On-site activities began with the mobilization of EPA, ERRS, and START contractors to the site on September 9, 1998. POLREP 1 contains more detailed site information.

II ACTIONS TAKEN

During the present reporting period ERRS crews completed preparations for loading trucks. Truck staging areas have been prepared and on-site traffic control signs have been posted. Discussions with local officials have yielded agreements on an a truck route. Parish road officials have posted warning signs on the road near the site entrance and at other key points on the truck route and performed some minor road maintenance to improve roads for truck use. Also, since the truck route crosses a main road used by students attending the local high school a visit to the high school principal was made to inform him of the impending activity. Site activities were briefly interrupted due to the threat from Hurricane Georges. The crew prepared the site for the high winds and heavy rains that were predicted, prior to demobilization on Saturday. Although Georges' path shifted to the north prior to landfall, the site was subject to some rain and wind.

110897

Despite a short break due to the threat posed by Hurricane Georges site activities continued. With the exception of the pollution control equipment containing the contaminated material the Furnace Building has been demolished. The ERRS crew began fluffing the piles of battery chips to loosen them, making loading of trucks easier. Preparation of truck decontamination areas was completed.

Transportation and disposal of contaminated battery chips, battery mud and debris began on Monday, October 12 at the Delatte Metals site. An estimated 714 tons of material have been removed from the site for disposal at a facility in Andrews, Texas. Transportation is being carried out via truck and rail.

An Action Memorandum ceiling increase request was signed by Superfund Division Director, Myron Knudson on September 25, 1998. As stated in the previous POLREP, continued refinement of cost estimate showed the need for additional funds to complete the activities proposed in the original Action Memorandum.

III FUTURE PLANS

Transportation and disposal activities for source waste material will continue. Disposal arrangements are currently being made for the slag material. Excavation of contaminated soil in active areas of residences will begin when appropriate.

IV KEY ISSUES

Although we are past the halfway mark on the current hurricane season, we continue to monitor weather conditions.

SUPERFUND SITE UPDATE
DELATTE METALS

Ponchatoula, Louisiana
October 16, 1998

004700

EPA PROPOSES SITE TO NATIONAL PRIORITIES LIST

RECENT ACTIVITIES

On July 28, 1998, the Delatte Metals Site was proposed for addition to the U.S. Environmental Protection Agency's (EPA) list of hazardous waste sites, otherwise known as the National Priorities List (NPL). Under the Comprehensive Environmental Response, Compensation, and Liability Act, also known as Superfund, EPA is responsible for locating, assessing and cleaning up abandoned hazardous waste sites. EPA will be working with support from the Louisiana Department of Environmental Quality (LDEQ) and the Louisiana Department of Health and Hospitals (LDHH) to address contamination at the Delatte Metals site.

WHAT HAPPENS NEXT

A time critical source control removal action is planned for the site in early Fall of 1998. The action will include stabilizing, removing and disposing of crushed battery casings, slag, ash and containerized waste. Residential activities will include excavation and removal of contaminated soil in active areas of residential properties and prevention of contamination using berms and drainage enhancement.

BACKGROUND INFORMATION

The Delatte Metals site includes the inactive Delatte Metals facility and the inactive Ponchatoula Battery Company (see Figure 1). The site is located on Weinberger Road in Ponchatoula, Tangipahoa Parish, Louisiana. The 19-acre site is bound by a tributary of Selsers Creek to the north, private residences to the east and west, and Weinberger Road to the south. The population within 1 mile is approximately 645. The two adjacent sites performed almost identical lead salvage operations, and generated the same type of waste material. Delatte Metals also operated a lead smelter to recover additional lead material. The facilities shared a common drainage pathway, the northern tributary of Selsers Creek, and they contributed heavy metal contamination to the tributary and Selsers Creek.

The Delatte Metals facility reportedly began operations in 1970 as the Fuscia Battery Company. The Ponchatoula Battery Company moved its operation to the property north of Weinberger Road and adjacent to the Delatte and Fuscia Battery Company between 1972 and 1978. Operations at the two facilities have been described as follows:

- Spent lead-acid batteries were transported to the site by trucks or railroad cars.
- The batteries were cut open at the battery hammersaw mill. The acid was drained from the batteries and directed into holding ponds at each site. No containment structures have been observed at the holding ponds.
- The battery casings were then stockpiled on site.
- The lead was recovered from the acid and smelted to form lead ingots, which were sold to lead recycling

THIS SITE UPDATE WILL TELL YOU ABOUT:

- ✓ Information on site background and recent activities
- ✓ What happens next
- ✓ How to get more information about the Delatte Metals Proposed Superfund Site
- ✓ Information on the Technical Assistance Grant for the site

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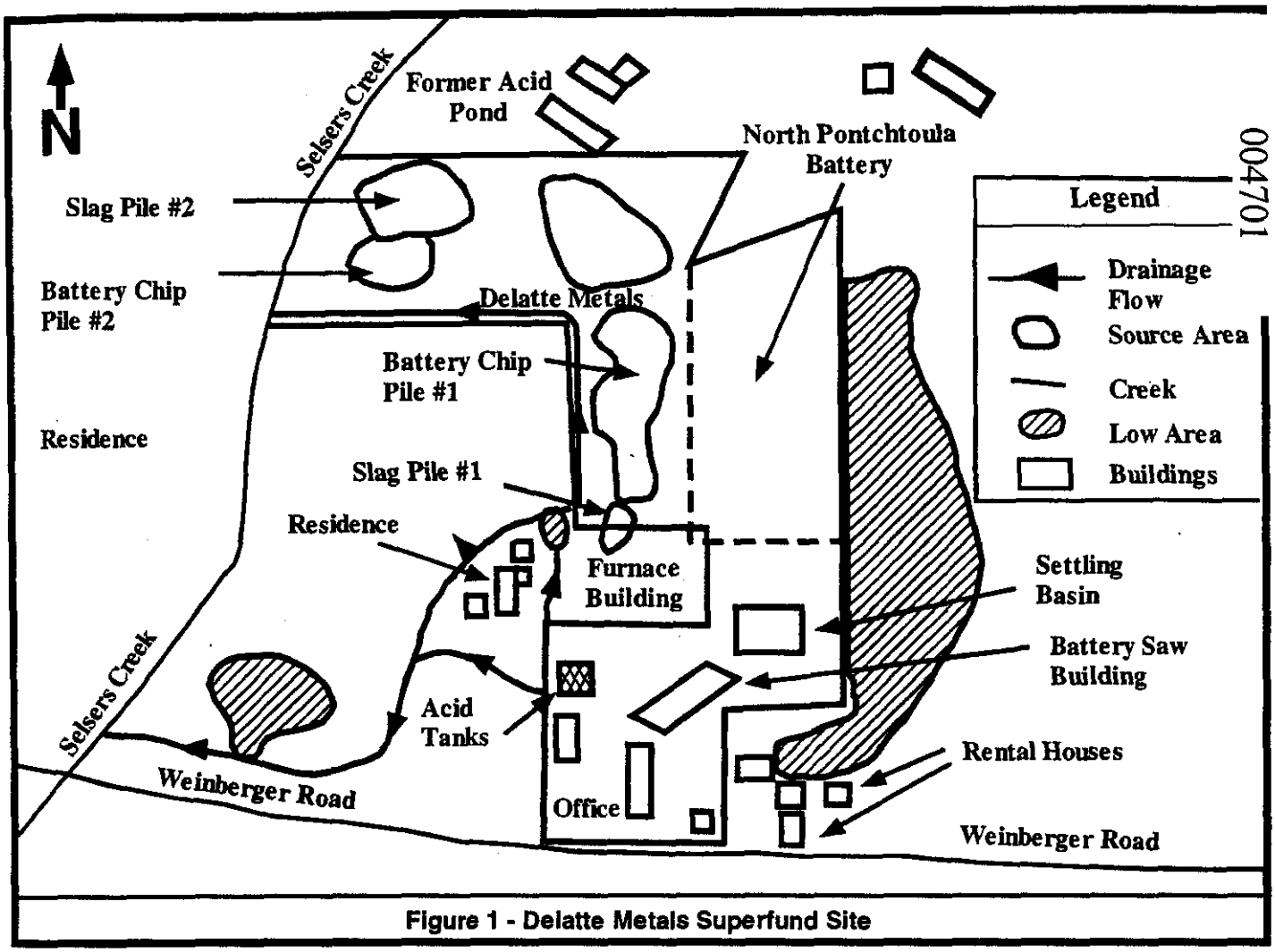


Figure 1 - Delatte Metals Superfund Site

facilities located throughout the southern United States and other countries.

Contamination is plainly visible on most of the site. Battery chips cover most areas and are used as road material on most site roadways. Piles of slag, battery chips and other contaminated material are stored throughout the site. Several tanks of sulfuric acid are also located on site.

A site assessment identified soil contaminated with lead, arsenic, and cadmium. Additionally, similar contamination was found in all on-site drainage ditches along site boundaries.

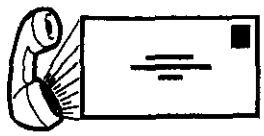
COMMUNITY ADVISORY GROUPS (CAGs) AT SUPERFUND SITES

The U. S. EPA is committed to early, direct, and meaningful public involvement in the Superfund process. One of the ways communities can participate in the site cleanup decisions is by forming a Community Advisory Group (CAG). A CAG is made up of representatives of diverse community interests. Its purpose is to provide a public forum for community members to present and discuss their needs and concerns related to the Superfund decision-making process.

A CAG can assist EPA in making better decisions on how to clean up a site. It offers EPA a unique opportunity to hear, and seriously consider, community preferences for site cleanup and remediation. The existence of a CAG does not eliminate the need for the Agency to keep the community informed about plans and decisions throughout the Superfund process.

If you are interested in obtaining more information about CAGs, please call Nancy Stonebarger, Community Involvement Coordinator/S.E.E, Region 6, at (214) 665-6619 or 1-800-533-3508.

ADDITIONAL INFORMATION



If you have questions about the activities at the Delatte Metals Site, please contact:

Stephen Tzhone
Remedial Project Manager (6SF-LP)
U. S. EPA, Region 6
1445 Ross Avenue
Dallas, Texas 75202
(214) 665-8409 or 1-800-533-3508 (Toll Free)

Althea Foster
On-Scene Coordinator (6SF-R1)
U. S. EPA, Region 6
1445 Ross Avenue
Dallas, Texas 75202
(214) 665-2268 or 1-800-533-3508 (Toll Free)

Nancy Stonebarger
Community Relations Coordinator/S.E.E. (6SF-PO)
U.S. EPA, Region 6
1445 Ross Avenue
Dallas, Texas 75202
(214) 665-6619 or 1-800-533-3508 (Toll Free)

Arnold Ondarza
Superfund Region 6 Ombudsman (6SF)
U.S. EPA, Region 6
1445 Ross Avenue
Dallas, Texas 75202
(214) 665-6790 or 1-800-533-3508 (Toll Free)

Raye Gendron
Community Relations Coordinator
Louisiana Department of Environmental Quality
Inactive and Abandoned Sites
7290 Bluebonnet
Baton Rouge, Louisiana 70810
(225) 765-0439

Kirk David
Project Manager
Louisiana Department of Environmental Quality
Inactive and Abandoned Sites
7290 Bluebonnet
Baton Rouge, Louisiana 70810
(225) 765-0473

Erica Caesar
Louisiana Office of Public Health
234 Loyola, Suite 620
New Orleans, Louisiana 70112
(504) 568-3626

004702

Questions from the media should be directed to EPA Region 6 Office of External Affairs at (214) 665-2200.

INFORMATION REPOSITORIES

Information about the Delatte Metals Site is available at the following locations:

Ponchatoula Branch Library
Ms. Lenore Johnson, Manager
380 N. 5th Street
Ponchatoula, LA 70454
(504) 386-6554

Louisiana Department of Environmental Quality
Inactive and Abandoned Sites
7290 Bluebonnet
Baton Rouge, Louisiana 70810

U.S. Environmental Protection Agency
7th Floor
1445 Ross Avenue
Dallas, Texas 75202
(214) 665-6548

ON THE WEB...

Information can also be accessed via the USEPA Internet Homepage at:

USEPA Headquarters: **http://www.epa.gov**

USEPA Region 6: **http://www.epa.gov/earth1r6**

USEPA Region 6 Superfund Division:
http://www.epa.gov/earth1r6/6sf/6sf.htm.

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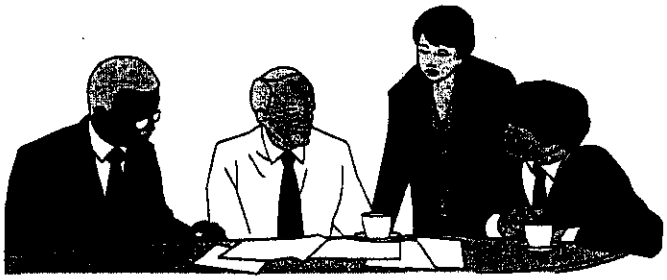
Citizens Grant Available for Delatte Metals Site



The U. S. EPA is announcing the availability of a Technical Assistance Grant (TAG) for the Delatte Metals Site. This TAG is available to a local citizens' group to secure the services of a technical advisor to increase citizen understanding of information that will be developed about the site in the Superfund process. By law, only one grant for up to $50,000 may be awarded to a citizens' group at any one Superfund site. To be eligible for a grant, a group must incorporate. Also, the applicant must meet a 20 percent matching requirement, which may be in cash or donated services.

If you are interested in applying for this grant, or if you need additional information, please call or write:

Beverly Negri
TAG Coordinator
U.S. EPA Region 6 (6SF-PO)
1445 Ross Avenue
Dallas, Texas 75202
(214) 665-8157 or 1-800-533-3508 (Toll Free)

U.S. EPA REGION 6
1445 Ross Avenue (6SF-PO)
Dallas, Texas 75202-2733

Superfund Open House
October 29, 1998
7-9 p.m.
Ponchatoula Community Center