EPA Region 5 Records Ctr.
265070

FIVE-YEAR REVIEW REPORT

Second Five-Year Review Report

for

NL Industries/Taracorp Site

Granite City

Madison County, Illinois

March 2004

PREPARED BY:

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for Richard C. Karl, Acting Director
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Date: 3/30/04

FYR

Five-Year Review Report

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List of Acronyms
(In Order of Appearance)

NAME OR TERM	ACRONYM
United States	U.S.
Environmental Protection Agency	EPA
Supplemental Environmental Project	SEP
Comprehensive Environmental Response, Compensation and Liability Act (Superfund)	CERCLA
National Contingency Plan	NCP
Code of Federal Regulations	CFR
Record of Decision	ROD
parts per million	ppm
Decision Document/Explanation of Significant Differences	DD/ESD
Potentially Responsible Parties	PRPs
Unilateral Administrative Order	UAO
Remedial Design/Remedial Action	RD/RA
Consent Decree	CD
National Priorities List	NPL
Operation and Maintenance	O&M

Executive Summary

This report documents the Second Five-Year Review for the NL Industries/Taracorp Site in Granite City, Illinois (the Site). In 2003, ENTACT, a consultant for the Generators at the Site, collected soil samples and inspected the cap over the slag pile at the Site in accordance with the approved Operation and Maintenance Plan for the Site. On September 5, 2003, ENTACT submitted the "Five Year Review Final Report" for the Site to the United States (U.S.) Environmental Protection Agency (EPA). The EPA approved this report on October 2, 2003. This report utilizes the data in the ENTACT Report and provides an analysis of the protectiveness of the remedy implemented at the Site. The findings indicate that the NL Industries/Taracorp Site remedy continues to be protective of human health and the environment. The next Five-Year Report is due in March 2009.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name ***(from WasteLAN)***: NL Industries/Taracorp		
EPA ID ***(from WasteLAN)***: ILD096731468		
Region: 5	**State:** IL	**City/County:** Granite City/Madison
SITE STATUS		
NPL status: x Final ☐ Deleted ☐ Other (specify)		
Remediation status (choose all that apply): ☐Under Construction x Operating ☐ Complete		
Multiple OUs?* ☐ YES x NO	**Construction completion date:** PCOR 09/26/00	
Has site been put into reuse? ☐ YES x NO		
REVIEW STATUS		
Lead agency: x EPA ☐ State ☐ Tribe ☐ Other Federal Agency		
Author name: Brad Bradley		
Author title: Remedial Project Manager	**Author affiliation:** U.S. EPA Region 5	
Review period: 10/2002 to 03/31/2004		
Date(s) of site inspection: 12/11/2002, 5/15/03, and 3/22/04		
Type of review: X Post-SARA ☐ Pre-SARA ☐ NPL-Removal only ☐ Non-NPL Remedial Action Site ☐ NPL State/Tribe-lead ☐ Regional Discretion		

Review number: ☐ 1 (first) X 2 (second) ☐ 3 (third) ☐ Other (specify)	
Triggering action: ☐ Actual RA Onsite Construction at OU #____ ☐ Actual RA Start at OU#____ ☐ Construction Completion X Previous Five-Year Review Report ☐ Other (specify)_____	
Triggering action date ***(from WasteLAN)***: 03/31/1999	
Due date ***(five years after triggering action date)***: 03/31/2004	

* ["OU" refers to operable unit.]

Issues:

There are no current contamination issues related to the Site; however, the deed restrictions for the Taracorp pile required by the Record of Decision have not yet been implemented. During an inspection on March 22, 2004, EPA noted seven areas where cap erosion had occurred. Also, lead-based paint continues to be an issue at some homes within the Site area. The Consent Decree between EPA and the Generator-Defendants for the Site provides $2,000,000 for a Supplemental Environmental Project (SEP) for assessment and abatement of lead-based paint within the Site area, and this project will get underway in 2004. When sampled by ENTACT as part of the five-year review monitoring, several of the residences that were cleaned up under the Site remedy had recontamination with lead in the drip zone area around the house. These residences are to be included in with the homes to be addressed under the paint SEP. EPA will monitor this situation to continue to provide a multi-media cleanup to the residents in the Site area.

Recommendations and Follow-up Actions:

There is one follow-up action related to the operation and maintenance (O&M) for the cap on the Taracorp pile. Erosion of the cap soil was observed in seven separate locations during an inspection on March 22, 2004. Repair of the cap is part of routine O&M and will be performed by May 15, 2004. EPA will also need to work with the generator-defendants to ensure that the deed restrictions for the Taracorp pile are put into place. EPA will need to continue to monitor the implementation of the paint SEP until it is complete. EPA has reviewed and approved the SEP Work Plan and will monitor its implementation, which is scheduled to begin in 2004.

Protectiveness Statement(s):

The remedy at the NL Industries/Taracorp Site is protective of human health and the environment because the final remedy has been implemented for the Site and the results of the five-year review sampling indicate that the remedy continues to be protective. EPA will need to continue to monitor the progress of the paint SEP, which is required by the Generator Consent Decree but is not part of the selected remedy.

Other Comments: None.

Five-Year Review Report

I. Introduction

The NL Industries/Taracorp Site in Granite City, Illinois (the Site) is a former secondary lead smelter that operated from the early 1900s to 1983. The remedy for the Site was implemented from early 1993 through May 2000 pursuant to a March 30, 1990 Record of Decision issued by the United States Environmental Protection Agency (EPA).

EPA conducted a first Five-Year Review in 1998, while the remedy was still underway. EPA issued the first Five-Year Review Report on March 31, 1999. ENTACT, the Generator-Defendants' contractor, conducted sampling and prepared a "Five Year Review Final Report" in September 2003 (the Monitoring Report), which was approved by EPA on October 2, 2003. The Monitoring Report is included in this Second Five-Year Review Report as Appendix 1. The Monitoring Report provides much of the information used to prepare the Second Five-Year Review Report and is frequently referenced to avoid duplication of effort.

The Purpose of the Review

The purpose of five-year reviews is to determine whether the remedy at a site continues to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues found during the review, if any, and recommendations to address them.

Authority for Conducting the Five-Year Review

EPA is preparing this five-year review pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121 and the National Contingency Plan (NCP). CERCLA Section 121 states:

> *If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgement of the President that action is appropriate at such site in accordance with section 104 or 106, the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is*

required, the results of all such reviews, and any actions taken as a result of such reviews. EPA interpreted this requirement further in the NCP; 40 Code of Federal Regulations (CFR) Section 300.430(f)(4)(ii) states:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for the unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.

Who Conducted the Five-Year Review

The Generator-Defendants, through their contractor, ENTACT, conducted all of the sampling that was required for the five-year review. Representatives of ENTACT performed inspections of the Site, and the EPA Remedial Project Manager visited the site and monitored the integrity of the cover systems at the Site. EPA completed the review based on this information.

Other Review Characteristics

This is the second five-year review for the NL Industries/Taracorp Site. The triggering action for this review is the completion of the First Review in March 31, 1999. This review is being conducted 1) because the capping remedy at the site allowed hazardous substances to be left on site above levels that allow for unlimited use and unrestricted exposure and 2) to ensure that residential yards were not recontaminated with lead from neighboring yards where owners refused the cleanup.

II. Site Chronology

The site chronology is tabularized below:

Event	Date
National Priorities List Listing	6/10/86
Remedial Investigation/Feasibility Study complete	3/30/90
Record of Decision signature	3/30/90
EPA issued Unilateral Order to PRPs	11/27/90
Remedial Design start (EPA-Lead)	3/8/91
Remedial Design complete (EPA-lead)	3/15/93

Remedial Action start (EPA-lead)	3/15/93
Decision Document/Explanation of Significant Differences	9/29/95
Remedial Action Continues (PRP-lead)	7/13/98
First Five-Year review	3/31/99
Remedial Action complete (PRP-lead)	5/30/00
Explanation of Significant Differences	9/19/00
Preliminary Close-out Report	9/26/00
Remedial Design/Remedial Action Consent Decree Entry	3/20/03

III. Background

Physical Characteristics

The NL Industries/Taracorp Site in Granite City, Illinois is a former secondary lead smelter that operated from the early 1900s through 1983. Metals, including lead, were released to the environment via 1) airborne emissions from the tall stack on-site and fugitive dust from the 250,000 ton on-site slag pile; 2) crushed hard rubber battery casing material that was used as fill in nearby alleys, parking lots, driveways, and residential yards; and 3) ground water contamination resulting from releases of metals from the slag pile. The Main Industrial Site is 15.9 acres, but the contamination was spread via stack emissions and fill activities throughout a three-city area (Granite City, Madison, and Venice, Illinois) and isolated areas in neighboring communities.

Land and Resource Use

The Site is bounded by 16th Street on the east, Niedringhaus Road to the north, a rail corridor to the west and State Street to the south (See Figure 1). However, the contamination was spread throughout Granite City, Madison, and Venice, Illinois and isolated areas in neighboring communities. The nearest residences are immediately adjacent to the Site to the east, northeast. southwest, and south.

History of Contamination

Airborne metal (primarily lead) emissions from the facility's secondary smelting operations and fugitive dust from the 250,000 ton on-site slag pile contaminated approximately 1500 residences around the site. The furthest residences contaminated in this manner were located approximately

two miles from the former smelter, to the northeast. Additionally, crushed hard rubber battery casing material was sold or given away by NL Industries, and residents and local street crews used this material in alleys, parking lots, driveways, and to fill in some flood-prone areas which were ultimately developed into residential lots. The fill material was found as far as 16 miles away from the site, but the majority was located within two miles of the site. Last, ground water was contaminated by metals leaching from the on-site slag pile.

Lead contamination from the site came to be located in home interiors and surficial soils in many nearby residences, alleys, parks, and parking lots. Children in the area were impacted by the lead released from the site. A 1991 blood lead study indicated that 16% of the children in Granite City, Madison, and Venice aged 6 months to 6 years had blood lead levels exceeding 10 micrograms per deciliter (ug/dl), the Centers for Disease Control level of concern. Within one-quarter mile of the smelter, 25% of the kids had blood lead levels in excess of 10 ug/dl.

Initial Response

In 1993, EPA and the U.S. Armys Corps of Engineers performed a rapid response action at the site to remove the most highly contaminated site areas, approximately 50 locations where battery casing fill material was located and readily accessible to children. This action was completed in 1994.

Basis for Taking Action

The primary exposure pathway identified during the Remedial Investigation/Feasibility Study for the site was direct contact and ingestion of lead-contaminated soil and dust by small children. There was a known blood lead problem in the communities near the site. Inhalation of lead-bearing dust from the on-site slag pile was an additional exposure pathway of concern. Although the ground water in the immediate vicinity of the slag pile was contaminated with lead, cadmium, and zinc, this exposure pathway was not considered to be complete because all of the residents were on city water.

IV. Remedial Actions

Remedy Selection

The Remedial Action selected for the Site in the March 30, 1990 Record of Decision (ROD) was excavation and off-site disposal of soil and fill material from residential yards, parks, schools, alleys, parking lots, and driveways that exceeded 500 parts per million (ppm) lead; excavation and consolidation with the slag pile of Main Industrial Area soils and debris that exceeded 1000 ppm lead; capping of the slag pile; and expanded (deeper) ground water monitoring around the slag pile. The ROD also indicated that a blood lead study should be performed in the area around the Site. The remedy was modified slightly via the September 29, 1995 Decision Document/Explanation of Significant Differences (DD/ESD). The DD/ESD required off-site

monitoring and containment of the ground water plume emanating from the slag pile. After results of off-site monitoring indicated that the ground water contaminant plume was not migrating more than 100-200 feet from the edge of the slag pile, EPA issued a second Explanation of Significant Differences on September 19, 2000 that removed the requirement for a ground water containment remedy and required continuation of the expanded monitoring program and the development of a contingency plan in the event that the plume expanded in the future.

Remedy Implementation

On November 27, 1990, after negotiations with the potentially responsible parties (PRPs) failed, EPA issued a Unilateral Administrative Order (UAO) to NL Industries (former owner/operator) and the top 49 generators at the Site to conduct the remedial action for the Site. After these PRPs failed to comply with the UAO, EPA undertook the Remedial Design (RD) and the Remedial Action (RA) for the Site using Superfund funding. The RD, which involved gaining access to and sampling approximately 3000 residential yards, was started in 1991 and finished in 1993. EPA , with the U.S. Army Corps of Engineers, conducted a rapid response action from 1993-1994 to clean up the most highly-contaminated yards, parking lots, driveways, and alleys where crushed battery casing material from the Site was used as fill. In August 1994, EPA began implementation of the remedial action for the approximately 1500 residential yards that were contaminated via smelter stack emissions. After several starts and stops due to legal matters that are discussed below, EPA finished its portion of the cleanup (approximately 740 residential yards) in summer 1998, and the Generator-Defendants took over the remedial action and finished the residential yard cleanups (approximately 770 yards), the remaining fill area cleanups, capping of the slag pile, and installing and sampling the expanded ground water monitoring system by May 30, 2000.

On the legal side, EPA filed a lawsuit against NL Industries and the top 9 generators in July 1991 for recovery of costs EPA was expending to perform the cleanup and penalties for failure to comply with the UAO. In 1994, the defendants and the City of Granite City filed a temporary restraining order against EPA in an effort to halt the cleanup. In 1996, the judge ruled in favor of EPA, and the Generator-Defendants and NL Industries each negotiated settlement agreements with EPA. The Generators took over the work from EPA in July 1998. The consent decree between the United States and six Generator-Defendants was entered on March 20, 2003. This Consent Decree (CD) required that the Generator-Defendants finish all remaining remedial work at the Site (which had already happened by the time the CD was entered), pay EPA $8,970,000 in past costs, perform a $2,000,000 Supplemental Environmental Project (SEP) for paint assessment and abatement in the Site area, and pay EPA a $400,000 civil penalty. The CD with NL Industries, which was entered on May 12, 2003, required NL Industries to pay EPA $29,780,000 in past costs and a $1,000,000 civil penalty.

Due to the fact that wastes were left in place, via capping of the slag pile, inspections to determine the integrity of the cap and ground water and leachate monitoring must be conducted.

Additionally, since the cleanup involved over 1600 residential yards, alleys, etc, EPA required that the Generator-Defendants resample approximately 20 residential yards as part of the five-year review monitoring to assess whether recontamination with lead from yards where residents refused access or other sources may be occurring. Given that the monitoring programs will continue for a minimum of 30 years, the NL Industries/Taracorp Site will not be deleted from the National Priorities List (NPL) for a number of years.

V. Progress Since the Last Review

The first five-year review was conducted in 1999, when all aspects of the remedy were still underway. No issues were identified during this five-year review, and this second five-year review is the first post-construction five-year review for the Site. Monitoring was performed pursuant to the Operation and Maintenance Plan for the Site, and the Monitoring Report was prepared by ENTACT, the Generator-Defendants' contractor.

VI. Five-Year Review Process

Administrative Components

The sampling activities, which are required pursuant to the Operation and Maintenance Plan for the Site, that were performed during the five-year review process are detailed in the attached Monitoring Report. Illinois EPA was notified of the five-year review and notice was published in the local newspaper in December 2002. The completed five-year review report will be placed in the site information repository, and notice of completion of the five-year review will be published in the local newspaper.

Community Involvement /Interviews

EPA conducted three public availability sessions on December 11-12, 2002. No one raised any concerns that were specific to the five-year review or the protectiveness of the remedy. The only concerns raised were property restoration issues, which were referred to ENTACT for follow-up action.

Document and Data Review

The list of documents and data reviewed in preparing for this Five-Year Review Report is listed in the attachment entitled "List of Documents Reviewed".

Site Inspection

The NL Industries/Taracorp Site is physically inspected twice per year in accordance with the Operation and Maintenance manual for the Site. The results of these inspections are included in the Monitoring Report. The EPA inspected the site three times in conjunction with the five-year

review: December 11, 2002, May 15, 2003, and March 22, 2004. The inspection involved observations of the integrity of the cap on the slag pile, which was acceptable; however, several erosion areas were observed that require repairs.

VII. Technical Assessment

Question A: Is the remedy functioning as intended by the decision documents? Yes.

Remedial Action Performance

The primary exposure pathway at the Site was direct contact and ingestion of lead-contaminated soil and dust, and the secondary pathway was inhalation of fugitive dust from the slag pile. As indicated by the yard soil monitoring data in the Monitoring Report, the remedy has been effective in addressing the primary exposure pathway. There were several yards that were sampled that had recontamination with lead in the drip zone of the house, a pathway that would be likely be associated with lead-based exterior paint. Although not required by the ROD, the SEP to address paint issues in the Site area will be monitored by EPA to ensure that these homes with high lead concentrations in the drip zone are assessed and addressed, as necessary. The inspections of the cap on the slag pile by EPA and by ENTACT indicated that the cap is in good condition, thus preventing the generation of fugitive dust that contains lead. The inspection conducted on March 22, 2004, did identify seven areas where damage from erosion has recently occurred. These inspections indicated that the remedy was effective in addressing the secondary exposure pathway. Last, the ground water monitoring performed by ENTACT indicated that the lead, cadmium, and zinc in the ground water in the vicinity of the slag pile did not migrate further. The levels of these constituents generally decreased in the wells adjacent to the slag pile, which was expected since the cap diverts most of the runoff away from the pile.

In summary, the data gathered during the second five-year review indicate that the remedy continues to function as designed, is performing as expected, and that the containment of contaminants is effective.

System Operation and Maintenance

The remedy for the Site does not include any operating systems; other than data collection for five-year reviews, the Operation and Maintenance (O&M) for the Site consists of twice annual site inspections to assess the integrity of the soil cap and make repairs, as needed. These inspections have been and will continue to be an effective means to ensure the cap integrity. There have been no significant problems observed during any of the recent cap inspections; however, the inspection conducted on March 22, 2004, did identify seven areas where damage from erosion has recently occurred.

Opportunities for Optimization

Since there are no operating systems at the Site, there are limited opportunities for optimization of O&M. Prior to each five-year review, EPA and/or the Generator-Defendants may identify any sampling constituents that may be eliminated from the list of analytes. Since this was the first post-construction five-year review, this will be discussed prior to the third five-year review for the Site.

Early Indicators of Potential Issues

Since there are no operating systems at the Site, the only early indicators of potential issues would be increasing lead concentrations in the residential yards that were cleaned up, physical observations of breeches in the cap, changes in the quantity and/or chemical composition of the leachate from the pile, or increases in the area and/or contaminant concentrations in the ground water plume. The data collected for the five-year review indicate that none of these issues are currently present. There was recontamination of the drip zones of several of the homes, and although not required by the ROD, EPA will ensure that these homes are included in the assessment performed during the paint SEP. The work plan for the SEP has been approved by EPA, and the physical work is expected to start in 2004. EPA will provide oversight for the implementation of the SEP.

Implementation of Institutional Controls and Other Measures

Access controls, in the form of fencing and warning signs, are in place at the slag pile. These controls, along with the continued presence of Metalico (current owner of the former smelter property) employees at the site, are effective measures to limit access to the slag pile. The ROD requirement for deed restrictions on the Taracorp pile has not yet been implemented, so EPA needs to work with the generator-defendants to ensure that these restrictions are put into place. EPA will continue to require monitoring of residential yards that are adjacent to yards where the residents refused access for the cleanup so that recontamination, if it occurs, can be addressed before it becomes a potential health issue. EPA will also periodically check the residences with the highest lead concentrations that were not cleaned up due to access refusal (there are nine of them) to see if the owners have reconsidered their access refusal or if new owners would like to have the properties cleaned up, and take action as appropriate.

Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid? Yes.

Changes in Standards and To Be Considered Criteria

There have been no changes in standards or To Be Considered criteria since the first five-year review.

Changes in Exposure Pathways

There have been no changes in the potential exposure pathways at the Site since the implementation of the remedy for the Site. There have been no land use changes at the Site nor are any expected in the near future. There is currently no redevelopment or reuse proposed for the slag pile.

Changes in Toxicity and Other Contaminant Characteristics

Neither the toxicity factors for the contaminants of concern nor other contaminant characteristics have changed in a way that could affect the protectiveness of the remedy. The primary contaminants of concern for the site (lead and other metals) are basically inert.

Changes in Risk Assessment Methods

Standardized risk assessment methods have not changed in a way that could affect the protectiveness of the remedy.

Expected Progress Toward Meeting Remedial Action Objectives

The remedy for the Site is progressing as expected. Remedial Action Objectives have been met at the Site, and the monitoring programs will continue to ensure that any changes in contaminant levels will be detected and addressed, if necessary.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy? No.

There have been no newly identified ecological risks, impacts from natural disasters, or any other information that has been identified that could affect the protectiveness of the remedy for the Site.

VIII. Issues

Issue	Currently Affects Protectiveness (Y/N)	Affects Future Protectiveness (Y/N)
Institutional Controls-Not implemented	N	Y
Erosion of Cap Soils	N	Y
Implementation of Paint SEP	N	N

Based on the Monitoring Report and physical observations made during the inspections of the Site, there are two issues which may affect the protectiveness of the remedy outlined in the ROD in the future. First, the institutional controls required by the ROD have not yet been put in place. Second, during an inspection on March 22, 2004, EPA observed erosion of the Taracorp pile cap in seven separate locations. There is one issue that is not required by the ROD that EPA will continue to monitor, the paint SEP. The paint SEP is part of the Consent Decree with the Generator-Defendants and provides $2,000,000 for paint assessment and abatement at residences within the Site area. EPA does not have authority to address interior lead-based paint; however, the paint SEP was negotiated as part of the CD with the Generator-Defendants in lieu of penalties. EPA will provide oversight of the paint SEP and has already approved the SEP Work Plan. The SEP is scheduled to begin in 2004, and one of EPA's comments was to include the properties (identified by the sampling results in the Monitoring Report) that had lead recontamination in the drip zone in the list of properties to be addressed by the SEP. EPA will continue to monitor the SEP under the terms of the CD and attain a multi-media cleanup at the Site.

IX. Recommendations and Follow-up Actions

Issue	Recommendations/Follow-up actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness (Y/N)
Institutional Controls	Need to be implemented	PRP Group and EPA	EPA	June 30, 2005	N-current Y-future
Cap Erosion	Fill/reseed	PRP Group	EPA	May 15, 2004	N-current Y-future
SEP implementation	EPA Oversight	Madison County Community Development	EPA	ongoing until 2008	N-current N-future

EPA will work with the generator-defendants to make sure that the required deed restrictions for the Taracorp pile are put in place. EPA will make sure that the routine repair of erosion channels on the Taracorp pile cap are undertaken as soon as weather permits. EPA will continue to provide oversight of the paint SEP and the twice-annual inspections of the slag pile to ensure that the multi-media cleanup envisioned in the CD is properly implemented and that the cap over the slag pile continues to provide a protective barrier over the wastes that were left in place at the Site. EPA will also continue to require sampling for lead in soil in a representative number of the residential yards that were cleaned up to ensure that recontamination is identified and addressed, where appropriate. So far, the only recontamination identified was in the drip zone of the homes, which is something that can and will be addressed by the paint SEP.

X. Protectiveness Statement

The remedy at the NL Industries/Taracorp Site is protective of human health and the environment because the final remedy has been fully implemented, and the sampling data presented in the Monitoring Report indicate that the remedy continues to be effective in addressing the exposure pathways that were identified at the Site. The CD provides an extra measure of protection that cannot be provided under Superfund authority by requiring the implementation of an SEP to address lead-base paint issues in the Site area. This SEP helps to provide a multi-media cleanup that goes beyond the requirements in the ROD for the Site.

XI. Next Review

The sampling activities for the next five-year review for the NL Industries/Taracorp Site will be performed in year 2008, with the Third Five-Year Review Report due five years from the date of signature of this Second Five-Year Review Report (March 2009).

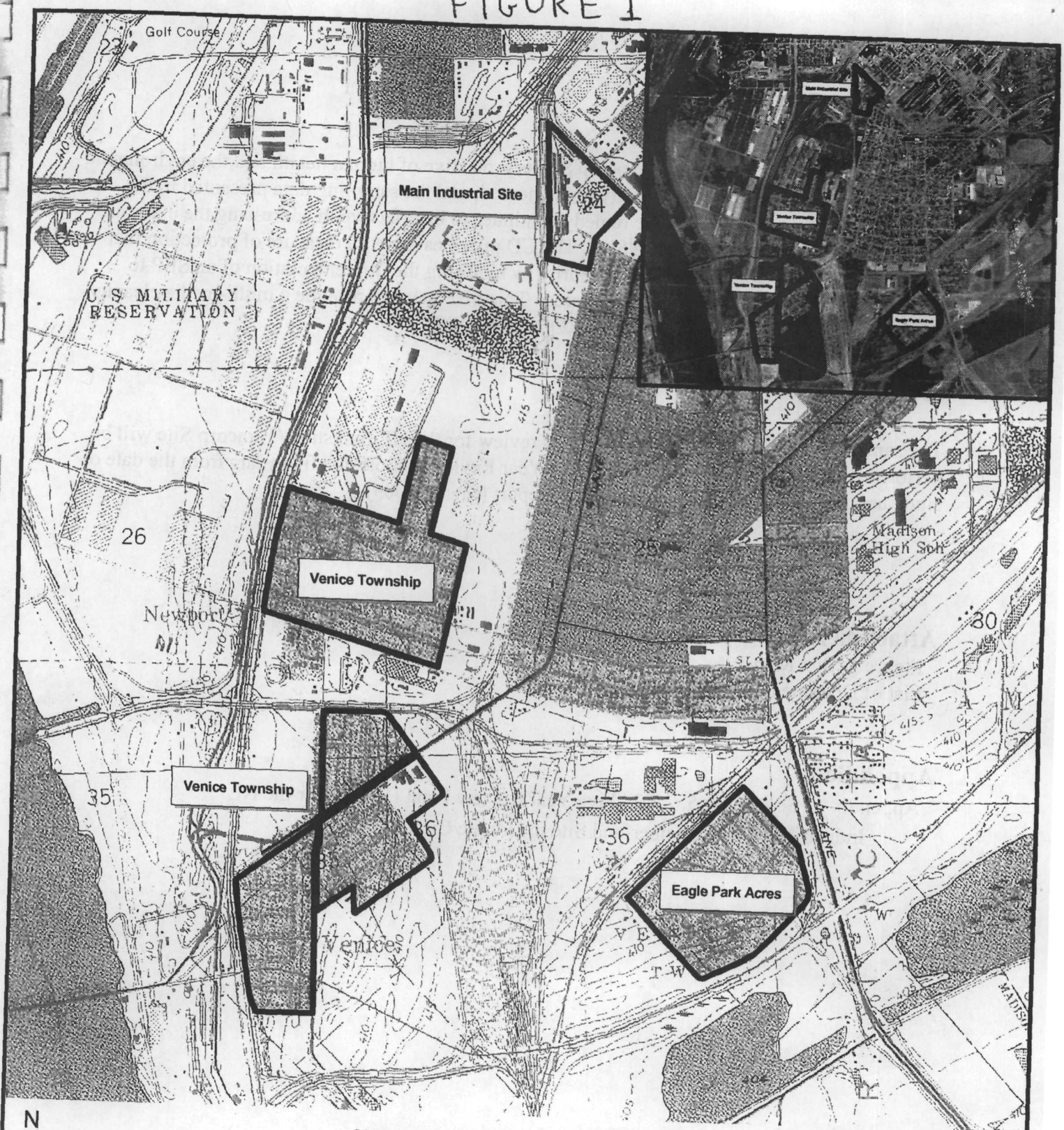
Attachments

Figure 1- Site Map
List of Documents Reviewed

Appendices

Appendix 1- September 5, 2003 "Five Year Review Final Report" for the NL Industries/Taracorp Superfund Site in Granite City, Illinois

FIGURE 1



Topographical Map Source: United States Geological Survey 7.5 minute Digital Raster Graphics. Quadrangles used: Granite City, IL-MO; 1993.

Aerial Photo Source: Photographed 1999 by the National Aerial Photography Program and digitized by the USGS DOQ Program in 2001.

ArcView Version 3.2b

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Drawing Date:	File Name:	File Location:	Drawn By:	Checked By:	Project Manager:
09/04/2002	nl.apr	G:\GIS\Mapping\NL\CI001003.0007\	M. Eiseman	K. Lala	J. Kratzmeyer
				Dept. Manager:	View: Site Location Map
				Project Number: CI001003.0007	Figure: 1

NL Industries/Taracorp Superfund Site

Site Location Map

Granite City, Illinois

LIST OF DOCUMENTS REVIEWED
(In Chronological Order)

1. **Record of Decision for the NL Industries/Taracorp Site in Granite City, Illinois- March 30, 1990 (EPA)**

2. **Decision Document/Explanation of Significant Differences- September 29, 1995 (EPA)**

3. **First Five-Year Review Report- March 31, 1999 (EPA)**

4. **Explanation of Significant Differences- September 19, 2000 (EPA)**

5. **Comprehensive Five-Year Review Guidance- June 2001 (EPA)**

6. **Five Year Review Final Report for NL Industries/Taracorp Superfund Site- Granite City, Illinois- September 5, 2003 (ENTACT)**

APPENDIX 1