THIRD FIVE-YEAR REVIEW REPORT FOR RSR CORPORATION SUPERFUND SITE DALLAS COUNTY, TEXAS

Prepared by

U.S. Environmental Protection Agency
Region 6
Dallas, Texas

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Third Five-Year Review Report
RSR Corporation Superfund Site
EPA ID No. TXD079348397
Dallas, Dallas County, Texas

This memorandum documents the U.S. Environmental Protection Agency's performance, determinations, and approval of the RSR Corporation Superfund Site (Site) third five-year review under Section 121(c) of the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S. Code § 9621(c), as provided in the attached Third Five-Year Review Report.

Summary of the Third Five-Year Review Findings

The selected remedies at the Site included excavation of contaminated soil and sediment, demolition and removal of impacted equipment and building materials, construction of a containment cap, and implementation of institutional controls in the form of deed notices. The cap has been inspected annually and maintained as necessary to ensure it remains effective at containing contaminants. The site inspection identified only minor maintenance issues with site access and vegetation control, as well as minor erosion that will require continued monitoring and repair as necessary. Several properties were lacking deed notices, including one currently under development.

Actions Needed

To achieve the long-term effectiveness of the remedy, it will be necessary to complete the following:

- Monitor and repair damaged fencing as needed within OU 3 and OU 5;
- Work with property owners on deed notices in OU 3 Sites 3 and 4 and ensure current development does not impact the remedy;
- Monitor and repair erosion as needed at the toe of the cover on the western edge of OU 5 Subarea 2;
- Remove the brush at the north part of the consolidation area in OU 5 Subarea 1; and
- Based on sampling and analysis, the shallow groundwater for OU 5 Subarea 1 is considered a Class 3 aquifer (not a drinking water source) and no further groundwater monitoring is necessary. The monitor wells should be plugged.

Determinations

I have determined that the selected remedy for the RSR Corporation Superfund Site is protective of human health and the environment in the short term and will remain so provided the action items identified in the Five-Year Review Report are addressed as described above.

By: Pam Phillips, Acting _____ 9/1/15
Carl E. Edlund, P.E. Date
Director, Superfund Division
U.S. Environmental Protection Agency Region 6

CONCURRENCES:

THIRD FIVE-YEAR REVIEW REPORT
RSR CORPORATION SUPERFUND SITE
EPA ID NO. TXD079348397

for Philip H. Allen, U.S. Environmental Protection Agency — Date
Remedial Project Manager

Carlos A. Sanchez, U.S. Environmental Protection Agency — Date
Chief, Texas/Arkansas Section

John C. Meyer, U.S. Environmental Protection Agency — Date
Associate Director, Remedial Branch

George Malone, U.S. Environmental Protection Agency — Date
Attorney, Office of Regional Counsel

Mark Peycke, U.S. Environmental Protection Agency — Date
Chief, Superfund Branch, Office of Regional Counsel

Pamela Phillips, U.S. Environmental Protection Agency — Date
Deputy Director, Superfund Division

RSR THIRD FIVE YEAR REVIEW

ISSUES/RECOMMENDATIONS AND FOLLOW-UP ACTIONS

OU #	Issue	Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness? (Y/N)	
						Current	Future
OU 5 Subarea 1	The O&M Plan for OU 5 Subarea 1 called for annual groundwater monitoring for a period of 5 years following completion of the remedial action – 1 round of monitoring was performed in 2004.	Based on groundwater sampling and analyses, and since the shallow water bearing zone is considered a "Class 3" aquifer, not a drinking water source; no further groundwater monitoring is necessary. The monitor wells should be plugged.	EPA	EPA	9/30/2016	No	No
OU 5 Subarea 1	A large bush growing on the north part of the consolidation area threatens the integrity of the soil cap.	Remove the bush to preserve the integrity of the soil cap. Maintain the soil cap to prevent vegetation from compromising protectiveness of the remedy.	EPA	EPA	9/30/2016	No	Yes
OU 5 Subarea 2	Erosion at the toe of the cover on the western edge of OU 5 Subarea 2 may extend toward the cover and threaten remedy protectiveness.	Continue to monitor the area and implement repairs before protectiveness of the remedy is affected.	PRP	EPA	9/30/2016	No	Yes
OU 3 Sites 3 and 4	Deed notices have not been filed for seven impacted properties, one of which is currently being developed for use.	Work with property owners to ensure that deed notices are filed and that development activities do not impact protectiveness of the remedy.	PRP	EPA	9/30/2016	No	Yes
OU 3 and OU 5	Portions of fencing within OU 3 and OU 5 are damaged	Access control measures should be monitored and repaired as needed to discourage trespassing.	PRP	EPA	9/30/2016	No	Yes

RSR CORPORATION SUPERFUND SITE
THIRD FIVE-YEAR REVIEW REPORT

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LIST OF ACRONYMS AND ABBREVIATIONS

µg/dl	Microgram(s) per deciliter
ACM	Asbestos containing material
ARAR	Applicable or Relevant and Appropriate Requirement
AOC	Administrative Order on Consent
bgs	Below ground surface
BHHRA	Baseline Human Health Risk Assessment
CDC	Centers for Disease Control and Prevention
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Contaminant of concern
DHA	Dallas Housing Authority
EA	EA Engineering, Science, and Technology, Inc., PBC
EPA	U.S. Environmental Protection Agency
ERA	Ecological Risk Assessment
FS	Feasibility Study
ft	Feet/foot
FYR	Five Year Review
HHRA	Human Health Risk Assessment
HI	Hazard Index
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
PCB	Polychlorinated by-phenyls
ppm	Parts per million
PRP	Potentially Responsible Party
RA	Remedial Action
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI	Remedial Investigation
ROD	Record of Decision
Site	RSR Corporation Superfund Site

LIST OF ACRONYMS AND ABBREVIATIONS (concluded)

TBC	To Be Considered
TCEQ	Texas Commission on Environmental Quality
TNRCC	Texas Natural Resources Conservation Commission
UST	Underground storage tank

EXECUTIVE SUMMARY

This is the third Five-Year Review (FYR) for the RSR Corporation Superfund (Site) located in Dallas, Dallas County, Texas. The purpose of this FYR is to review information to determine if the remedy is and will continue to be protective of human health and the environment. The triggering action for this statutory FYR was the signing of the previous FYR on September 21, 2010.

For approximately 50 years, a secondary lead smelting facility, located at the southeast corner of the intersection of Westmoreland Road and Singleton Boulevard, processed used batteries and other lead-bearing materials into pure lead, lead alloys, and other lead products. The former battery wrecking facility was located on the southwest corner of the Westmoreland Road and Singleton Boulevard intersection. The smelter ceased operating in 1984.

The Site encompasses approximately 13.6 square miles and was divided by the U.S. Environmental Protection Agency (EPA) into five Operable Units (OUs), which are summarized below. Arsenic, lead, antimony, and cadmium were identified as contaminants of concern (COCs).

Operable Unit 1

OU 1 consists of residential properties located at the Site. The Record of Decision (ROD) for OU 1, signed May 9, 1995, stated that no further response or Remedial Action (RA) was necessary based on the results of the Remedial Investigation (RI) and Human Health Risk Assessment (HHRA), and the successful completion of the emergency removal action.

Operable Unit 2

OU 2 consists of single and multi-family housing units. The Dallas Housing Authority (DHA) completed a removal action at OU 2 on March 10, 1995. The ROD for OU 2 was signed May 9, 1995. The ROD determined that no further response was necessary based on the results of the RI and HHRA.

Operable Unit 3

OU 3 is divided into Sites 1, 3, and 4 where slag and battery chips from smelting and battery breaking operations were disposed. The ROD for OU 3 was signed on September 20, 1997, and consisted of the following elements:

Site 1

- Excavation and removal of slag, battery chips, and metals contaminated soils exceeding action levels to a depth of two feet;
- Excavation and removal of sediments in the intermittent creek exceeding action levels;
- Backfilling and re-grading of excavated areas using clean soil;
- Offsite disposal of excavated materials (soil, sediment, battery chips, and slag) in an appropriate landfill based on the results of testing to determine if the material is

hazardous (as defined by 40 Code of Federal Regulations [CFR] 261);

- No action was recommended for shallow groundwater; and,
- An institutional control in the form of deed notices or restrictions.

Site 3

- Containment (2-foot protective soil cap) of the southern portion and isolated areas of the northern cell of the West Davis landfill where there is exposed slag, battery chips, and metals contaminated soils that exceed action levels;
- Annual monitoring of surface water at four locations and groundwater at four monitor wells for a period of five years;
- Annual inspection of the capped areas;
- No action was recommended for shallow groundwater; and,
- An institutional control in the form of deed notices or restrictions.

Site 4

- Containment (2-foot protective soil cap) of areas within the Nomas and West Dallas landfills where there is exposed slag, battery chips, and metals contaminated soil that exceeds action levels;
- Excavation of areas of surficial contamination where action levels are exceeded in Jaycee Park and placement under the protective cover in the West Dallas Landfill (non-hazardous materials) or transported and disposed of offsite (hazardous materials);
- Annual monitoring of surface water at two locations and groundwater at three monitor wells for a period of five years;
- No action was recommended for shallow groundwater; and,
- An institutional control in the form of deed notices or restrictions (EPA 1997b).

Operable Unit 4

OU 4 is the former smelter facility, including facility buildings and structures, the smelter stack, equipment, and soils, located at the southeastern corner of the intersection of Singleton Boulevard and Westmoreland Road. The ROD for OU 4 was signed on February 28, 1996, and consisted of the following elements:

- Removal, treatment, and disposal of residual materials estimated at a volume of 540 cubic yards;
- Demolition and decontamination of approximately 190,000 square feet of buildings, structures, and equipment, including concrete pavement floors and connected drains and

sumps (and associated sediments), and plug and properly abandon remaining open conduits that are not removed;

- Disposal of all building debris (estimated at 8,900 cubic yards) offsite at appropriate landfill facilities;

- Demolition of the smelter stack and disposal offsite at a Resource Conservation and Recovery Act (RCRA) Subtitle C (hazardous waste) landfill (estimated at 1,300 cubic yards);

- Excavation of 13,500 cubic yards of contaminated soil and/or battery chips and lead slag that exceed action levels and disposal offsite (up to one foot beneath pavements and up to two feet in the unpaved northeast area); and,

- Cap and/or backfill the areal extent of the Site with two feet of clean soil.

- No action was recommended for the shallow groundwater at OU 4.

Operable Unit 5

OU 5 is divided into Subareas 1, 2, 3, and 4 and consists of a former battery breaking facility and other industrial tracts of land including the facility buildings and structures, a surface impoundment, a former landfill, the slag burial area/other soils, and storm water runoff and sediments (EPA 1997a). Site 2 of OU 3 was consolidated into OU 5. The ROD for OU 5 was signed on April 3, 1997, and consisted of the following elements:

- Decontamination of the former battery wrecking building and the vehicle maintenance building (estimated at 60,600 square feet);

- Demolition of the former battery wrecking building using conventional methods and offsite disposal of debris (estimated 55,800 square feet);

- Evaluate existing cap on the former surface impoundment. Upgrade or replace as necessary in order to complete RCRA closure (estimated 45,000 square feet); and,

- Cap the former landfill in accordance with applicable landfill closure requirements (estimated 503,000 square feet).

As an alternate component to address the former landfill to promote future redevelopment options:

- Re-grade the former landfill area in order to support an asphalt or concrete surface cover;

- Cap the slag burial area/other soils areas that exceed action levels (estimated 1,480,000 square feet) with two feet of clean backfill and re-vegetate with native grasses; and,

- No action was recommended for the shallow groundwater at OU 5.

The selected remedies for OUs 3 and 5 (Subareas 2, 3, and 4) were implemented through a Consent Decree agreed to in 2003 between the EPA, the State of Texas, RSR Corporation, and

its subsidiaries. The Consent Decree required RSR Corporation and its subsidiaries to implement the Remedial Design (RD) and RA for each OU. The selected remedy for OU 4 was implemented through a Consent Decree between EPA and a group of seven Potentially Responsible Parties (PRPs), agreed to in 1998. The Consent Decree required the PRPs to implement the RD/RA for OU 4. EPA completed the RD/RA for OU 5 Subarea 1.

The RA at OU 4 was completed in December 2001, at OU 3 in August 2004, and at OU 5 in September 2004.

Government Performance and Results Act Measures Review

As part of this FYR, the Government Performance and Results Act Measures have also been reviewed. The measures and their status are as follows:

Environmental Indicators

Human Health: long-term human health protection has been achieved

Groundwater Migration: Groundwater migration is under control.

Sitewide Ready for Anticipated Use

The Site has achieved Sitewide Ready for Anticipated Use status.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: RSR Corporation Superfund Site		
EPA ID: TXD079348397		
Region: 6	**State:** TX	**City/County:** Dallas, Dallas County

SITE STATUS	
NPL Status: Final	
Multiple OUs? Yes	**Has the site achieved construction completion?** Yes

REVIEW STATUS
Lead agency: EPA ***[If "Other Federal Agency", enter Agency name]*:** N/A
Author name (Federal or State Project Manager): Philip Allen
Author affiliation: EPA Region 6
Review period: 9/21/2010 – 9/21/2015
Date of site inspection: 12/16/2014
Type of review: Statutory
Review number: 3
Triggering action date: 9/21/2010
Due date *(five years after triggering action date)*: 9/21/2015

Issues/Recommendations				
Issues and Recommendations Identified in the FYR:				
OU(s): *OU 5 Subarea 1*	**Issue Category: Monitoring**			
	Issue: The groundwater at OU 5 Subarea 1 is not considered a drinking water source and no action was required. The O&M Plan for OU 5 Subarea 1 called for annual groundwater monitoring for a period of 5 years following completion of the remedial action – 1 round of monitoring was performed in 2004. There are no Remedial Action Goals for the groundwater and therefore, no additional groundwater monitoring is needed.			
	Recommendation: Groundwater monitoring is not necessary and it is recommended that the monitor wells be plugged.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**

No	Yes	PRP	EPA	9/30/2016

Protectiveness Statement(s)

Operable Unit:	*Protectiveness Determination:*	*Addendum Due Date (if applicable):*
OU 3	Short-term Protective	

Protectiveness Statement:
The remedy at OU 3 is protective of human health and the environment in the short term. However, in order for the remedy to be protective in the long-term, missing deed notices should be filed for impacted properties. Additionally, development activities noted within Site 3 should be reviewed by EPA to ensure they are compatible with the remedy and do not result in any unacceptable risks to site workers.

Operable Unit:	*Protectiveness Determination:*	*Addendum Due Date (if applicable):*
OU 4	Protective	

Protectiveness Statement:
The remedy at OU 4 is protective of human health and the environment.

Operable Unit:	*Protectiveness Determination:*	*Addendum Due Date (if applicable):*
OU 5	Protective	

Protectiveness Statement:
The remedy at OU 5 is protective of human health and the environment and will remain so provided the action items identified in the FYR Report are addressed as described above.

No	No	EPA	EPA	9/30/2016

Five-Year Review Summary Form (continued)

Issues/Recommendations

Issues and Recommendations Identified in the FYR:

OU(s): *OU 5 Subarea 1*	**Issue Category: Operations and Maintenance**			
	Issue: A large bush growing on the north part of the consolidation area threatens the integrity of the soil cap.			
	Recommendation: Remove the bush to preserve the integrity of the soil cap. Maintain the soil cap to prevent vegetation from compromising protectiveness of the remedy.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	EPA	EPA	9/30/2016
OU(s): *OU 5 Subarea 2*	**Issue Category: Operations and Maintenance**			
	Issue: Erosion at the toe of the cover on the western edge of OU 5 Subarea 2 may extend toward the cover and threaten remedy protectiveness.			
	Recommendation: Continue to monitor the area and implement repairs before protectiveness of the remedy is affected.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA	9/30/2016
OU(s): *OU 3 Sites 3 and 4*	**Issue Category: Institutional Controls**			
	Issue: Deed notices have not been filed for seven impacted properties, one of which is currently being developed for use.			
	Recommendation: Work with property owners to ensure that deed notices are filed and that development activities do not impact protectiveness of the remedy.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA	9/30/2016
OU(s): *OU 3 and OU 5*	**Issue Category: Site Access/Security**			
	Issue: Portions of fencing within OU 3 and OU 5 are damaged.			
	Recommendation: Access control measures should be monitored and repaired as needed to discourage trespassing.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**

I. INTRODUCTION

The purpose of a Five Year Review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) prepares FYRs 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 judgment 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 CFR Section 300.430(f)(4)(ii), which states:

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

EPA conducted a FYR on the remedy implemented at the RSR Corporation Superfund Site in Dallas, Dallas County, Texas. EPA is the lead agency for developing and implementing the remedy for the Site. Texas Commission on Environmental Quality (TCEQ), as the support agency representing the State of Texas, has reviewed all supporting documentation and provided input to EPA during the FYR process.

This is the third FYR for the RSR Corporation Superfund Site. The triggering action for this statutory review is the completion date of the previous FYR. The FYR is required because hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure. The Site consists of five Operable Units; OU 3, OU 4, and OU 5 are addressed in this FYR.

II. PROGRESS SINCE LAST REVIEW

Table 1: Protectiveness Determinations/Statements from the 2010 FYR

OU #	Protectiveness Determination	Protectiveness Statement
OU 3, OU 4, OU 5	Protective	The remedy at the RSR Corporation Superfund Site remains protective of human health and the environment. However, to ensure long-term protectiveness of human health and the environment, the follow-up actions described in Section 10.0 [of the Second Five Year Review Report] should be implemented.

Table 2: Status of Recommendations from the 2010 FYR

OU #	Issue	Recommendations/ Follow-up Actions	Party Responsible	Oversight Party	Original Milestone Date	Current Status	Completion Date (if applicable)
OU 3 Sites 1, 3, and 4	Deed restriction notices needed for 8 properties.	Filing date should be specified. EPA and TCEQ should review and comment prior to filing.	PRP	EPA	9/30/2011	Ongoing	
OU 4 and OU 5 Subarea 1	Cover vegetation has not been recently mowed.	Site maintenance should be conducted.	PRP	EPA	9/30/2011	Ongoing	
OU 5 Subarea 1	Groundwater monitoring results were not available for Subarea 1 of OU 5.	Groundwater is not a drinking water source and there are no Remedial Action Goals. Therefore groundwater monitoring is not needed for Subarea 1 of OU 5.	EPA	EPA	9/30/2011	Under Discussion	
OU 3 Site 3	Erosion caused by beaver activity threatens protectiveness of cover.	Erosion should be repaired and monitored to maintain protectiveness of the cover.	PRP	EPA	9/30/2011	Completed	1/9/2014
OU 5 Subarea 2	Erosion downhill from the top of the cover threatens remedy protectiveness.	Erosion should be repaired and monitored to maintain remedy protectiveness.	PRP	EPA	9/30/2011	Ongoing	
OU 3 Site 1	Evidence of development activities noted during site visit.	Ensure site redevelopment does not affect protectiveness of remedy.	EPA	EPA	9/30/2011	Ongoing	

Status of Recommendation 1

- Deed notices were filed for two of the eight remaining properties identified in the second FYR. However, during the third FYR, additional properties requiring deed notices were also identified;

deed notices should be filed for seven properties located in OU 3 Site 3 and Site 4. Additional detail regarding these properties is provided in Section IV.

Status of Recommendation 2

- Site mowing is adequate and is being conducted on an as-needed basis.

Status of Recommendation 3

- According to the Operation and Maintenance (O&M) Plan for Subarea 1 OU 5, annual groundwater monitoring was recommended for a period of 5 years following completion of the remedial action. One round of groundwater monitoring was completed in 2004, the results of which were presented in the first FYR report. The groundwater at the site is not considered a drinking water source, and no action was recommended. In addition, no Remedial Action Goals were established and therefore, groundwater monitoring for Subarea 1 of OU 5 is not needed. The monitor wells should be plugged.

Status of Recommendation 4

- Erosion was repaired using compacted fill material that was sloped to facilitate drainage and protected against further erosion with 4 to 8-inch rip rap. Repair was completed on January 9, 2014. The site should continue to be monitored for erosion issues as part of the annual inspection process to ensure the remedy remains protective.

Status of Recommendation 5

- The area of erosion located downhill from the toe of the cover in Subarea 2 of OU 5 was monitored throughout the review period. The erosion was limited to an area that did not pose any threat of exposing contaminated material, so no repairs were made. This area of erosion should continue to be monitored and repairs will be made as needed to ensure the remedy remains protective.

Status of Recommendation 6

- No further indication of site redevelopment has been identified at OU 3 Site 1. Deed restrictions require EPA review and concurrence for any future site development. Oversight and review of redevelopment plans should be conducted on an ongoing basis to ensure the remedy remains protective.

Remedy Implementation Activities

Remedy implementation activities during the review period were limited to deed notice recordation. Deed notices were filed for the following two properties during the review period:

- 1300 N. Walton Walker Blvd. – TXI Operations, LP

  — TXI Operations, LP filed a deed notice for this property on 10 July 2010

- 5900 W. Davis St. – 4GG Homes, LLC
  - The deed notice was filed on 7 January 2013 by Es Su Casa Nueva Investment and Management, LLC. However, the deed notice was filed the week after the property had been transferred to 4GG Homes, LLC. The new property owner may not be aware of the deed notice.

Copies of deed notices filed during the review period are included in Appendix C.

Deed notices have not yet been filed for seven impacted properties. At the time of the site visit, one of the impacted properties was found to be undergoing redevelopment. Additional detail regarding the outstanding properties is provided in Section IV.

No additional remedy implementation activities occurred during the review period.

System Operation/Operation and Maintenance Activities

None of the remedies in place at OU 3, OU 4, or OU 5 include active components that require on-going operation. Therefore, no system operation activities were conducted during the review period.

OUs 3 and 5 are currently in the O&M phase. O&M was not required by the Record of Decision (ROD) for OU 4. Additional detail regarding the requirements identified in the Site O&M Plans is presented in Appendix A.

RSR Corporation is responsible for O&M activities at OU 3 Sites 1, 3, and 4, and OU 5 Subareas 2, 3, and 4. In accordance with the Consent Order between EPA and Murmur Corporation (Murmur), the EPA is responsible for continued O&M at OU 5 Subarea 1.

Mowing was conducted on an as-needed basis throughout the review period and ENTACT completed annual post-remedial inspections for OUs 3 and 5 on behalf of RSR. Details of the post-remedial inspection reports are provided in Appendix A.

On January 9, 2014, ENTACT completed a corrective action at OU 3 Site 3 to repair an area of erosion that threatened the protectiveness of the cover. The impacted area was repaired with compacted fill material that was sloped to facilitate drainage and was protected against further erosion with 4 to 8-inch rip rap. Additional detail regarding the corrective action is provided in Appendix A.

No other significant O&M activities were performed at the site during the review period.

III. FIVE-YEAR REVIEW PROCESS

Administrative Components

The RSR Corporation Superfund Site FYR was led by Philip Allen, EPA Remedial Project Manager for the Site. Ms. Nancy Johnson, Project Manager with TCEQ, assisted in the review as the representative for the support agency.

The review, which began on September 12, 2014, consisted of the following components:

- Community Involvement;
- Document Review;
- Data Review;
- Site Inspection; and
- FYR Report Development and Review.

Community Notification and Involvement

An electronic press release was issued by the EPA on December 2, 2014, wherein the EPA listed 22 Superfund sites undergoing FYR. A copy of the press release is provided in Appendix D. The results of the review and the report will be made available at the Site information repository located at EPA Region 6, 1445 Ross Avenue, Dallas, Texas.

Document Review

This FYR included of a review of relevant documents including O&M records and inspection reports. Applicable soil cleanup standards, as listed in the RODs, were also reviewed.

Data Review

No data collection was performed during the review period; therefore, no data were available for this review.

Applicable or Relevant and Appropriate Requirement Review

As part of this third FYR, applicable or relevant and appropriate requirements (ARARs) identified in the RODs prepared for OUs 3, 4 and 5 were reviewed. The intent of the review was to determine if any newly-promulgated regulations or newly-modified requirements of federal and state environmental laws have significantly changed the current understanding of the protectiveness of the remedies implemented at the RSR Corporation Superfund Site. No ARAR changes were identified that would impact the protectiveness of the remedy. The ARARs cited in the RODs continue to be met.

Site Inspection

The inspection of the Site was conducted on December 16, 2014. In attendance were Philip Allen, EPA; Nancy Johnson, TCEQ; Jenny Self, ENTACT; Gerry Manley, RSR Corporation; and Ted Telisak, EA Engineering, Science, and Technology, Inc., PBC (EA). The purpose of the inspection was to assess the protectiveness of the remedy. Photographs taken during the inspection are included in Appendix E and a copy of the completed inspection checklist is included in Appendix F.

The team observed significant development activity in the central portion of OU 3 Site 3, where the site had been cleared of vegetation and graded. Fill material was being hauled to the site and spread on the ground surface. Survey stakes had been placed in the southern portion of OU 3 Site 3. Both of these areas were within the property located at 1000 N. Walton Walker Blvd., Dallas, TX 75211. The deed notice has not been filed for this property and the property was sold to Match Box Auto Recyclers, LLC in November 2013. The property owner did not respond to requests for information during the site visit

or to follow-up telephone calls, so it could not be determined if site development plans are compatible with the soil cover and institutional control requirements of the remedy. The property owner may not be aware of the soil cap and the importance of maintaining protectiveness of the remedy because the deed notice has not been filed for this property. Deed notices have not yet been filed at a total of seven impacted properties throughout OU 3 Site 3 and Site 4; additional detail regarding these properties is provided in Section IV.

At the time of the inspection, the soil covers were generally in good condition with well-established vegetation. An area of erosion was noted along the toe of the cover on the western edge of OU 5 Subarea 2. Brush in the southwest corner of OU 5 Subarea 2 was found to have penetrated the fence-line. A large bush was found on the north side of the consolidation area of OU 5 Subarea 1, with roots in the soil cap.

Portions of the fencing and walls within OU 4 were down at the time of inspection and other portions of fencing within OU 3 and OU 5 were damaged. However, there were no signs of intrusive activity or loss of protectiveness of the remedy as a result of trespassing. Signs and security measures are located in many locations around the site and they appear to help discourage trespassing and protect the remedy.

Interviews

During the FYR process, interviews were conducted with parties impacted by the Site, including the current landowners, the state regulatory agency, and the PRP subcontractor involved in site maintenance activities. The purpose of the interviews was to document any perceived problems or successes with the remedy. Interviews forms were distributed during the site visit on December 16, 2014. Interview responses are summarized below and the complete interviews are included in Appendix G.

The following is the list of individuals contacted to provide interviews, along with their titles and organizations:

- Nancy Johnson, Project Manager, TCEQ
- Gerry Manley, Vice President of Environmental, Health & Safety Compliance, RSR Corporation
- Jennifer Self, Project Manager, ENTACT, December 16, 2014

All respondents provided positive responses when asked about the overall impression of the RA conducted at the site. The RA also seems to have had a positive impact on the surrounding community as properties are maintained and there appears to be an increased interest in development in the area. Ms. Johnson noted that the TCEQ had been contacted by the City of Dallas, Office of Environmental Quality regarding citizens who voiced health concerns to the City, and that a 2012 news piece by the *Dallas Morning News* had documented lingering doubts in the community regarding the extent and effectiveness of remedial actions at the site. Ms. Johnson noted that there was evidence of trespassing and vandalism that should be repaired. Ms. Johnson also stated that property deeds should be reviewed periodically to ensure that restrictions are documented and to ensure compliance with the deed restrictions.

IV. TECHNICAL ASSESSMENT

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

Remedial Action Performance

- The remedial action continues to operate and function as designed.
- The remedial action is performing as expected and cleanup levels were achieved in a reasonable time frame.
- Minor areas of erosion and damage to the perimeter fencing were observed during the site inspection, however, containment remains effective.

System Operations/O&M

- Based on the visual observations of the site conditions, it was apparent that the present O&M scheme is generally adequate in maintaining the effectiveness of the remedy.

Opportunities for Optimization

- The present O&M scheme is considered adequate to maintain the protectiveness of the remedy. No significant opportunities were identified to improve performance or reduce costs associated with O&M at the site.

Early Indicators of Potential Issues

- Areas of erosion observed at the site indicate that without ongoing monitoring and repair the integrity of the soil cover may become threatened in the future.
- Deed notices have not yet been filed for seven properties (see below); without proper notification, landowners may unknowingly develop contaminated property in an inappropriate manner. One of these properties was sold at auction to Match Box Auto Recyclers and it is currently being redeveloped for commercial use. It is not known at this time whether the site development plans are compatible with the soil cap and institutional controls.

Implementation of Institutional Controls and Other Measures

- Many areas of the site are fenced to restrict access, but there were several signs of trespassing noted during the site inspection. Although the soil cover remained effective at preventing exposures, continuing repair efforts are necessary to maintain site security.

- The following two deed notices were filed during the review period:
    - 1300 N. Walton Walker Blvd. – TXI Operations, LP
        - TXI Operations, LP filed a deed notice for this property on 10 July 2010
    - 5900 W. Davis St. – 4GG Homes, LLC
        - The deed notice was filed on 7 January 2013 by Es Su Casa Nueva Investment and Management, LLC. However, the deed notice was filed the week after the property had been transferred to 4GG Homes, LLC. It is therefore not clear that the current owner is aware of the soil cap or deed notice.
- Deed notices have not been filed for the following seven impacted properties:
    - 1000 N. Walton Walker Blvd. – Match Box Auto Recyclers, LLC
        - RSR Corporation attempted to contact the previous property owner (Trinity Development, JV) in 2009 without success. The property was sold at auction in November 2013 to Match Box Auto Recyclers, LLC. During the site visit in December 2014, it was apparent that the site was being developed for use. The current owner may not be aware of the contamination left in place at the site, and it is uncertain if site development plans and intended site use are compatible with the soil cap and institutional controls.
    - 1000 N. Walton Walker Blvd. – Texas Utilities Elec. Co.
        - Property owner had been contacted during the second FYR and was contemplating recordation of the deed notice in August 2010. No deed notice has been filed for this property.
    - 1000 N. Walton Walker Blvd. – Ex Tex LaPorte, LP
        - In August 2010 the property owner was reportedly willing to conduct a metes and bounds survey and file a deed restriction that was limited to areas of buried contamination. No deed notice has been filed for this property.
    - 5900 and 6035 W. Davis St. – Kamy Real Property Trust
        - In June 2010 the property owner requested to meet with RSR to evaluate the extent of the survey that would be necessary to establish the metes and bounds of the impacted area for deed notice recordation. No deed notices have been filed for either of these two properties.

- 3310 and 3314 Lapsley St. – Amir Ali Rupani
    - In February 2010 the property owner filed deed notices for 17 properties located within OU 3 Site 4, as requested. Since then, an error has been identified in the property map that was used to determine which properties required deed notices; as a result of the error, the two properties located at 3310 and 3314 Lapsley Street were not among the properties for which deed notices were filed. Deed notices should be filed for these two properties.

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

Changes in Standards and To Be Considered (TBCs)

- This FYR did not identify any changes to the standards identified in the ROD that would affect the protectiveness of the remedy.
- This FYR did not identify newly promulgated standards that would affect the current understanding of the protectiveness of the remedy.

Changes in Exposure Pathways

- Redevelopment within OU 3 Site 3 is consistent with expected land use and should not result in new exposures, provided that developers comply with the requirements of deed restrictions. Deed notices should be filed for the seven properties identified above, and Match Box Auto Recyclers (1000 N. Walton Walker Blvd.) should be contacted to ensure they are aware of the soil cap and to verify that site development and anticipated site use do not threaten the protectiveness of the remedy.
- There were no newly identified routes of human health or ecological exposure identified.
- No new contaminants or contaminant sources were identified.
- With the possible exception of development noted in OU 3 Site 3, physical site conditions and the understanding of these conditions have not changed in a way that could affect the protectiveness of the remedy.

Changes in Toxicity and Other Contaminant Characteristics and Changes in Risk Assessment Methods

- In areas where capping was implemented as the site remedy, changes to chemical toxicity and other characteristics do not affect the protectiveness of the remedy.
- The remedial action goals established in the RODs for OUs 3, 4, and 5 were calculated using risk assessment methods that have been revised since the RODs were issued.

Revisions have included changes to exposure methods and toxicity values; however, review of these changes indicates that use of updated values would have negligible impact on calculated risks and would not significantly change the action levels established in the RODs. Based on this evaluation, action levels established in the RODs for these OUs remain protective of the receptor groups under the evaluated exposure scenarios. The following tables present the residential and industrial action levels established for OUs 3, 4, and 5.

Table 3: Summary of Remedial Action Goals Established in the ROD for OU 3

Media	**Remedial Action Goals (Action Levels) (ppm)**		
	Arsenic[1]	Lead	Antimony
Residential			
Site 1, Soils and Sediments	20	500	NA
Jaycee Park	20	500	108[2]
Industrial			
Site 3, Soils and Sediments	32.7	2,000	NA
Site 4 (excluding Jaycee Park) Soils and Sediments	32.7	2,000	NA

1. Action level established to achieve $1x10^{-5}$ risk level (for arsenic only)
2. Established to reduce non-cancer Hazard Index to less than 1

ppm - parts per million.
NA - Not a COC for this area

Table 4: Remedial Action Goals Established in the ROD for OU 4

Media	**Remedial Action Goals (Action Levels) (ppm)**			
	Arsenic[1]	Lead	Antimony	Cadmium
Industrial				
Buildings, Structures, Smelter Stack, and Equipment	32.7	2,000	818[2]	2,044
Soils	32.7	2,000	NA	NA

1. Action level established to achieve $1x10^{-5}$ risk level (for arsenic only)
2. Established to reduce non-cancer Hazard Index to less than 1

ppm - parts per million.
NA - Not a COC for this area

Table 5: Remedial Action Goals Established in the ROD for OU 5

Media	Remedial Action Goals (Action Levels) (ppm)		
	Arsenic[1]	Lead	Antimony
Industrial			
Surface	32.7	2,000	NA
Former Landfill	32.7	2,000	818[2]
Buildings and Structures	32.7	2,000	NA
Slag Burial Area/Other Soils	32.7	2,000	NA

1. Action level established to achieve $1x10^{-5}$ risk level (for arsenic only)
2. Established to reduce non-cancer Hazard Index to less than 1

ppm - parts per million.

NA - Not a COC for this area

Expected Progress Towards Meeting RAOs

- The implemented remedy continues functioning as intended and meets the RAOs.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

- No other information has come to light that could affect the protectiveness of the remedy

Technical Assessment Summary

According to documents and data reviewed from 2011 to 2015 and the results of the site inspection and interviews, the remedy appears to be functioning as intended by the RODs for OUs 3, 4, and 5. The ARARs cited in the RODs have been met. A summary of remedial action goals is provided in the tables above. Changes to chemical toxicity and other characteristics have been evaluated and do not affect the protectiveness of the remedy. Deed notices remain unfiled for seven properties in OU 3, one of which was found in 2014 to be undergoing redevelopment. Recordation of the remaining deed notices and continuing maintenance of the soil cap (as needed) are necessary to ensure the remedy remains protective. It has also been determined that no further groundwater monitoring will be necessary since there has been no impact to groundwater.

V. ISSUES/RECOMMENDATIONS AND FOLLOW-UP ACTIONS

Table 6: Issues and Recommendations/Follow-up Actions

OU #	Issue	Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness? (Y/N)	
						Current	Future
OU 5 Subarea 1	The O&M Plan for OU 5 Subarea 1 called for annual groundwater monitoring for a period of 5 years following completion of the remedial action – 1 round of monitoring was performed in 2004.	Based on groundwater sampling and analyses, and since the shallow water bearing zone is considered a "Class 3" aquifer, not a drinking water source; no further groundwater monitoring is necessary. The monitor wells should be plugged.	EPA	EPA	9/30/2016	No	No
OU 5 Subarea 1	A large bush growing on the north part of the consolidation area threatens the integrity of the soil cap.	Remove the bush to preserve the integrity of the soil cap. Maintain the soil cap to prevent vegetation from compromising protectiveness of the remedy.	EPA	EPA	9/30/2016	No	Yes
OU 5 Subarea 2	Erosion at the toe of the cover on the western edge of OU 5 Subarea 2 may extend toward the cover and threaten remedy protectiveness.	Continue to monitor the area and implement repairs before protectiveness of the remedy is affected.	PRP	EPA	9/30/2016	No	Yes
OU 3 Sites 3 and 4	Deed notices have not been filed for seven impacted properties, one of which is currently being developed for use.	Work with property owners to ensure that deed notices are filed and that development activities do not impact protectiveness of the remedy.	PRP	EPA	9/30/2016	No	Yes
OU 3 and OU 5	Portions of fencing within OU 3 and OU 5 are damaged	Access control measures should be monitored and repaired as needed to discourage trespassing.	PRP	EPA	9/30/2016	No	Yes

The following recommendation that improves effectiveness of the remedy but does not affect current protectiveness was also identified during the FYR:

- Portions of the fencing and walls within OU 4 were down at the time of inspection. Although there were no signs of intrusive activity or loss of protectiveness of the remedy as a result of trespassing, access control measures should be monitored and repaired as needed to discourage trespassing.

VI. PROTECTIVENESS STATEMENT

Protectiveness Statement(s)		
Operable Unit: OU 3	*Protectiveness Determination:* Short-term Protective	*Addendum Due Date (if applicable):*
Protectiveness Statement: The remedy at OU 3 is protective of human health and the environment in the short term. However, in order for the remedy to be protective in the long-term, missing deed notices should be filed for impacted properties. Additionally, development activities noted within Site 3 should be reviewed by EPA to ensure they are compatible with the remedy and do not result in any unacceptable risks to site workers.		
Operable Unit: OU 4	*Protectiveness Determination:* Protective	*Addendum Due Date (if applicable):*
Protectiveness Statement: The remedy at OU 4 is protective of human health and the environment.		
Operable Unit: OU 5	*Protectiveness Determination:* Protective	*Addendum Due Date (if applicable):*
Protectiveness Statement: The remedy at OU 5 is protective of human health and the environment and will remain so provided the action items identified in the FYR Report are addressed as described above.		

VII. NEXT REVIEW

The next FYR report for the RSR Corporation Superfund Site is required five years from the completion date of this review.

APPENDIX A
EXISTING SITE INFORMATION

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APPENDIX A – EXISTING SITE INFORMATION

A. SITE CHRONOLOGY

Table A-1: Site Chronology

Date	Event
1934	Battery wrecking and smelting operations began at the RSR Corporation Superfund Site (Site) by Murph Metals, Inc.
1971	RSR Corporation (RSR) acquired the Site and continued operations under the name Murph Metals, Inc.
1983	The City of Dallas and Texas Air Control Board filed a lawsuit to get RSR to take corrective measures at the smelter facility and address residential soil contamination at the Site.
May 1984	The smelter and battery wrecking facilities were acquired by Murmur Corporation.
1984	Operations at the Site ceased when the City of Dallas declined to renew the facility's operating permit.
1984 - 1985	An RSR funded cleanup was conducted at residential yards, public play areas, day care centers, and gardens within a one-half mile radius of the smelter facility.
August 1991	U.S. Environmental Protection Agency (EPA) began investigating the Site at the request of the Texas Natural Resources Conservation Commission (TNRCC).
October 1991 - June 1994	Emergency Removal Action was conducted at 420 residential properties for Operable Unit (OU) 1 to remove contaminated soils.
September 1992 - February 1993	The TNRCC surveyed 6,200 properties as part of OU 1 to determine which properties might contain waste slag or battery chips.
1993	EPA initiated the Remedial Investigation/Feasibility Study (RI/FS) for OU 3.
May 10, 1993	EPA proposed the Site for inclusion on the National Priorities List (NPL).
August 9, 1993	EPA signed an Administrative Order on Consent with the Dallas Housing Authority (DHA) to conduct the RI and removal action for OU 2.
Spring 1994	EPA initiated the RI/FS for OUs 4 and 5.
July 1994	DHA began building demolition and removal or lead contaminated materials and soils for OU 2.
March 1995	DHA completed cleanup activities for OU 2.
May 9, 1995	EPA signed the Records of Decision (RODs) for OUs 1 and 2.
May - July 1995	EPA conducted a non-time critical removal action to remove waste drums, waste piles, and waste laboratory chemicals from OU 4.
September 29, 1995	The Site was finalized on the NPL.
February 28, 1996	EPA signed the ROD for OU 4.
April 1996	The RI/FS for OU 5 was completed.
early 1997	The RI/FS for OU 3 was completed.
spring 1997	Remedial Design (RD) for the OU 4 Remedial Action (RA) was completed.
April 3, 1997	EPA signed the ROD for OU 5.

Table A-1: Site Chronology (continued)

Date	Event
September 20, 1997	EPA signed the ROD for OU 3.
February 6, 1998	EPA signed a Consent Decree with a group of 7 major generator Potentially Responsible Parties (PRPs) (known as the Customer Group) to conduct the RD/RA for OU 4.
June 22, 2000	The U. S. District Court approved the Consent Decree for OU 4.
September 2000	Activities for the OU 4 RA began.
October 2000	EPA and the Texas Commission on Environmental Quality (TCEQ) conducted additional soil sampling at residences and schools based on ongoing community concerns.
October 2001	Construction activities for the OU 4 RA were completed.
November 6, 2001	EPA conducted the final inspection of the RA for OU 4.
November 2001 - January 1, 2002	EPA sampled an additional 126 residential properties and 6 public schools at the Site.
December 2001	RA for OU 4 was completed.
December 2001	EPA completed the RD for OU 5 Subarea 1.
June 2002	EPA completed additional remediation activities at 10 residential properties (OU 1) as a result of the sampling conducted during 2000 and 2001.
April 15, 2003	EPA, The State of Texas, and the U.S. Department of Justice entered into a Consent Decree with RSR, whereby RSR Corporation and its subsidiaries agreed to conduct the remaining response actions at the Site (OU 3 and OU 5 Subareas 2, 3, and 4). The Consent Decree also provided for reimbursement of past response costs to EPA and State of Texas.
June 2003	RSR began construction activities for OU 5 Subareas 2, 3, and 4.
July 21, 2003	The Consent Decree for OU 3 and OU 5 Subareas 2, 3, and 4 was entered by the court.
October 2003	RSR completed the RA for OU 5 Subareas 2, 3, and 4. EPA and TCEQ conducted the Final Inspection of the OU 5 Subareas 2, 3, and 4 RA.
December 16, 2003	ENTACT on behalf of RSR completed "Final Operation and Maintenance Plan for RSR Corporation Superfund Site Operable Unit No. 5 Subareas 2, 3, and 4".
January 2004	RSR began construction activities for the OU 3 RA.
January 2004	EPA began RA construction activities for the OU 5 Subarea 1 RA.
July 2004	RA construction activities for OU 5 Subarea 1 were completed.
August 2004	RSR completed the RA for OU 3.
August 3, 2004	EPA and TCEQ conducted the Final Inspection of the OU 5 Subarea 1 RA.
September 2004	EPA completed the RA for OU 5 Subarea 1.
September 14, 2004	EPA conducted the Final Inspection of the OU 3 RA.
September 28, 2004	EPA issued the Preliminary Close Out Report for the Site.
October 15, 2004	ENTACT on behalf of RSR completed "Draft Operation and Maintenance Plan for RSR Corporation Superfund Site Operable Unit No. 3 Sites 1, 3, and 4 - Revision 1".
November 9, 2004	ENTACT on behalf of RSR completed "Final Remedial Action Report for RSR Corporation Superfund Site Operable Unit 3 Site 1, 3, and 4."

Table A-1: Site Chronology (continued)

Date	Event
February 2, 2005	Gardner, Bickel, and Brewer Attorney and Counselors on behalf of RSR and Quemetco transmitted a letter to the U.S. EPA with the Notice of Obligations to Successor-In-Title.
February 15, 2005	ENTACT on behalf of RSR completed "Final Operation and Maintenance Plan for RSR Corporation Superfund Site Operable Unit No. 3 Sites 1, 3, and 4".
July 7, 2005	ENTACT on behalf of RSR completed a post-remediation action inspection report.
August 1, 2005	EPA sent a letter to RSR containing a certification of Ready to Reuse Determination.
September 29, 2005	First FYR is completed.
December 13, 2005	ENTACT on behalf of RSR completed repair activities at OU 5 Subarea 2 and OU 3 Sites 1, 3, and 4.
December 14, 2005	ENTACT on behalf of RSR completed a post-remediation action inspection report.
April 25, 2006	EPA sent a letter to RSR requesting the RSR to work with the property owners to place deed restrictions.
July 31, 2006	ENTACT on behalf of RSR completed a post-remediation action inspection report.
April 13, 2007	Bickel & Brewer Attorneys and Counselors on behalf of RSR sent a letter to EPA indicating that RSR's efforts to secure cooperation with TXI, Irma Monzon, and Mark Calabria in the lodging of institutional controls failed.
October 16, 2007	ENTACT on behalf of RSR completed a post-remediation action inspection report.
November 18, 2008	ENTACT on behalf of RSR completed a post-remediation action inspection report.
November 19, 2009	ENTACT on behalf of RSR completed a post-remediation action inspection report.
July 31, 2009	Bickel & Brewer Attorneys and Counselors on behalf of RSR sent a letter to Es Su Casa Nueva Investment and Management and Khosrow Sadeghian informing the addressees of the requirement to record a deed notice and providing an EPA-approved draft notice.
December 10, 2009	Bickel & Brewer Attorneys and Counselors on behalf of RSR sent a letter to Es Su Casa Nueva Investment and management, ExTex La Porte LP, Khosrow Sadeghian, Texas Utilities Elec. Co., State and Local Tax Department, Trinity Development JV, and TXI Operation LP informing the addressees of the requirement to record a deed notice and providing an EPA-approved draft notice.
December 14, 2009	Bickel & Brewer Attorneys and Counselors on behalf of RSR sent a letter to Amir Ali Rupani and Irwin Real Estate Company informing the addressees of the requirement to record a deed notice and providing an EPA-approved draft notice.
June 10, 2010	ENTACT sent e-mail transmission to EPA documenting well plugging at OU 5 Subareas 2 and 3 and OU 3 Sites 1, 3, and 4.
July 10, 2010	TXI Operations, LP filed a deed notice for their property located at 1300 N. Walton Walker Blvd.
September 21, 2010	Second FYR is completed
December 8, 2011	ENTACT on behalf of RSR completed a post-remediation action inspection report.
January 7, 2013	Es Su Casa Nueva Investment and Management, LLC filed a deed notice for the property located at 5900 W. Davis St.
February 6, 2013	ENTACT on behalf of RSR completed a post-remediation action inspection report.
January 6-9, 2014	ENTACT on behalf of RSR repaired an erosion rill and cover in OU 3 Site 3.
January 9, 2014	ENTACT on behalf of RSR completed a post-remediation action inspection report.

B. BACKGROUND

This section describes the physical setting of the site, including a description of the land use, resource use, and environmental setting. This section also describes the history of contamination associated with the site, the initial response actions, and the basis for the response.

Physical Characteristics

The RSR Corporation Superfund Site (Site) is located in the City of Dallas, Dallas County, Texas, in the north central portion of the state (see Figure 1 of Appendix B for a site location map). The Site encompasses an area of approximately 13.6 square miles in west Dallas, and approximately 17,000 residents live within the Site. The Site was divided by EPA into five OUs for purposes of conducting the various response actions at the Site. OU 1 includes private residential properties located at the Site. OU2 includes single and multi-family housing units. OU 3 consists of three separate sites (Sites 1, 3, and 4) where waste slag and battery chips from smelting and battery breaking operations were disposed. OU 4 is the former smelter facility, located at the southeast corner of the intersection of Singleton Boulevard and Westmoreland Road. The former battery breaking facility and other industrial tracts of land (divided into Subareas 1, 2, 3, and 4) comprise OU 5. The contamination at the Site resulted from past activities associated with secondary lead smelting operations and the disposal of waste slag and battery chips at the various OUs (EPA 1997b and 2004).

OU 3 consists of three separate sites (Sites 1, 3, and 4) where waste slag and battery chips were disposed (see Figure 1 of Appendix B for the location of each site). Site 2 of OU 3 was consolidated into OU 5. Site 1, also known as the Westmoreland Road Property, is approximately 50 acres in size. Site 1 is located on the west side of Westmoreland Road in the 1000 block. Surface dumping of waste slag, battery chips, and other material (mainly municipal debris) occurred at Site 1. Site 3, also known as the Walton Walker Property, is approximately 130 acres in size. Site 3 is located northwest of the Walton Walker Boulevard (Loop 12) and Davis Street Intersection. The City of Dallas leased this property and operated three (3) sanitary landfills from the mid-1960s through the early 1980s. Waste slag, battery chips, and battery casings were disposed on the surface at Site 3. Site 4, also known as the Claibourne Boulevard Property, is approximately 60 acres in size. Site 4 is located at the northern terminus of Claibourne Boulevard, and includes the nearby Jaycee Park. The City of Dallas leased this property and operated four (4) sanitary landfills from the 1950s through the mid-1970s. Waste slag and battery chips were present on the surface of portions of Site 4 (EPA 1997b and 2004).

OU 4 is the former smelter facility and contained the former smelter building, 300-foot (ft) concrete stack, and other associated site buildings (see Figure 1 Appendix B for the location of OU 4). OU 4 is 6.5 acres in size and is located at the southeast corner of the intersection of Singleton Boulevard and Westmoreland Road (EPA 1996). No structures remain on OU 4, and within the last 5 years the property was being leased by the property owner (Murmur Corporation [Murmur]) to a construction company working on the road project to widen Westmoreland Road near the site. By May 2010 it was no longer in use.

OU 5 is divided into four Subareas (identified as 1, 2, 3, and 4) and is located on the west side of Westmoreland Road, across from the former smelter facility (OU 4). OU 5 consists of the former battery wrecking facility and other industrial land associated with the smelter facility. A capped landfill area is present on Subarea 2. A closed surface impoundment, the former Vehicle Maintenance Facility, a buried slag disposal area, and remaining building foundations are present on Subarea 1 (EPA 2004).

The Site is located on the margin between the Blackland Prairie and the Eastern Cross-Timbers physiographic provinces. The overall topography is characterized by low, flat to gently undulating surfaces. Most of the Site is located within the floodplain terrace of the Trinity River, with the northern and western edges being bounded by the Trinity River Levee. A portion of the western area of the Site is located within the flood plain of Mountain Creek. The Trinity River and its tributaries are the major surface water bodies. Smaller drainage systems flowing through the site eventually discharge to the Trinity River. All segments of the Trinity River are designated for recreational use, but none of the river segments are specified for domestic water supply (EPA 1996; 1997a; and 1997b).

Hydrology

The predominant geologic units in the area are of the Upper Cretaceous age. The geologic formations include the Austin Chalk Formation, Eagle Ford Shale Formation, Woodbine Formation, Grayson Marl, and the Main Street Limestone Formation (in descending order). Quaternary Alluvial deposits are also present across the Site. OU 3, Site 1 is underlain by, approximately 20 to 25 ft of weathered Austin Chalk. OU 3, Site 3 is underlain by 26 to 66 ft of alluvium lying unconformably over the Eagle Ford Shale. OU 3, Site 4 is underlain by 12 to 37 ft of alluvium lying unconformably over the Eagle Ford Shale. At OUs 4 and 5, the bottom of the surface expression of the contact between the Eagle Ford Shale and the overlying Austin Chalk is present, and the full thickness of the Eagle Ford Shale is present. Quaternary Alluvium is present at both OUs at thicknesses ranging from a few ft up to 37 ft, and the Eagle Ford Shale was encountered at both OUs below the Quaternary Alluvium (EPA 1996; 1997a; and 1997b).

The Woodbine Group and the Trinity Group both source major aquifers in the area. Both aquifers supply water for municipal, domestic, industrial, and irrigation uses in the north-central portion of Texas. Residents at the Site are provided water from the City of Dallas water system, which is supplied by surface reservoirs located many miles from the Site. At the Site, the depth to the Woodbine Aquifer is between 200 and 250 ft below ground surface (bgs). The Trinity Group Aquifer, comprised of Lower Cretaceous age formations, is encountered at depths of 1,300 to 1,500 ft bgs (for the Paluxy Formation) and 2,500 ft bgs (for the Twin Mountains Formation) in the area of the Site. The primary source of recharge to both the Woodbine and Trinity Group Aquifers is direct precipitation on the outcrop. No primary recharge areas (outcrops) for either aquifer are located within 10 miles of the RSR Site. The Quaternary Alluvium deposits in the vicinity of the Site contain small amounts of groundwater. These deposits are not classified as a minor or major aquifers, and the shallow groundwater encountered at the Site is not generally considered a water supply aquifer. This is due primarily to the low yield of the alluvial deposits and the slightly saline water quality. The alluvial deposits are not thought to be hydraulically connected to the deeper Woodbine aquifer due the presence of the 300-ft thick Eagle Ford Shale (considered to be an aquitard) beneath the site. At OUs 3, 4, and 5, groundwater is generally encountered at depths between 5 and 10 ft of ground surface (EPA 1996; 1997a; and 1997b).

Land and Resource Use

Land use includes a mixture of industrial, commercial, and residential uses. Zoning at each OU unit varies. OU 3, Site 1 is currently zoned for light industrial and multi-family use. Site 1 is currently vacant property. An electrical substation is located on the south end of Site 1.

OU 3, Site 3 is zoned for agricultural and light industrial use. The southern end of Site 3 is currently vacant property. The central and northern end of Site 3 contains several closed landfills. At the time of the site visit, the central portion of Site 3 was being redeveloped. The area had been cleared of vegetation and graded, piles of aggregate and fill material had been placed on the site, and dump trucks

operating in the area. Survey stakes were also noted towards the southern portion of the site. The owner could not be reached during the review process and it is currently unknown if development activities are compatible with the soil cover and the institutional controls of the selected remedy. Development at the site will need to be coordinated with EPA to ensure activities do not threaten the protectiveness of the remedy.

OU 4 is currently zoned for industrial/manufacturing uses. The ROD states that the reasonable expected future use of the site is commercial/industrial (EPA 1996). Prior to 2010, the property was being leased to a construction company to support road construction activities on Westmoreland Road. By May 2010, it was no longer in use.

OU 5 is currently zoned for industrial/manufacturing uses. The ROD states that the reasonable expected future use of the site is commercial/industrial (EPA 1997a). OU 5 is currently not being used.

History of Contamination

Secondary lead smelting operations (OU 4) and the associated battery wrecking operation (OU 5) at the RSR site began in approximately 1934. The lead smelter and battery wrecking facility were operated from that time until 1971 by Murph Metals, Incorporated (Murph Metals) or its predecessors. In 1971, RSR Corporation acquired the lead smelter and battery wrecking facilities and operated the site under the Murph Metals name until 1984. The smelter facility and battery wrecking facility (OU 4 and OU 5 Subarea 1) were acquired by Murmur in 1984 (EPA 2004).

The smelting operation at the Site used lead scrap and lead from used car batteries as the basic inputs to the smelting process. The batteries were first disassembled at the battery wrecking facility using hammer mills. The hammer milling process broke the batteries down into small pieces (battery chips), that were then sent to the smelter facility across the street. The smelter facility produced soft pure lead and specialty alloys. As part of the process, alloy elements such as antimony, arsenic, and cadmium were added as necessary to produce the final desired product. Slag, made up of oxidized impurities and lead, was the primary byproduct of the smelting process. Some slag and battery chips were reprocessed. The slag and battery chips that were not reprocessed were considered waste materials requiring disposal (EPA 2004).

Portions of Site 1 of OU 3 were used for the surface dumping of waste slag and battery chips. In addition, municipal debris was also disposed of at Site 1. Site 3 of OU 3 was leased by the property owners to the City of Dallas, which operated three sanitary landfills (the Dahlstrom, TXI, and West Davis landfills) from approximately 1964 through 1982. The northern landfill area (Dahlstrom landfill) was redeveloped after the landfill closed and is now the site of an auto salvage yard. The TXI and West Davis landfills have not been redeveloped. Waste slag and battery chips were also present on the surface at Site 3. Site 4 of OU 3 was used as a sand and gravel mining area prior to about 1956. The City of Dallas leased this land, starting in the mid-1950s, and operated four sanitary landfills (the Nomas, West Dallas landfills) through the mid-1970s. In the late 1950s, the Dallas Park Board purchased the property that is now Jaycee Park. The area was brought up to grade through landfilling, and by 1964, a park, baseball field, and recreation center had been built. After landfilling ceased, the property was released back to the owner. The property was subdivided, and some of the lots were sold. However, the area was never redeveloped. Waste slag and battery chips, as well as municipal debris, were present on the ground surface at the Nomas and West Dallas landfills (EPA 1997b).

OU 4 was the location of the smelter facility. The facility consisted of the smelter facility, smelter stack, warehouses, repair shops, a laboratory, offices, storage facilities, docks, a gas station, and employee

lunch and locker rooms. In addition, four underground storage tanks (USTs) were known to be present at the smelter facility at the time the ROD was signed (EPA 1996).

OU 5 was the location of the battery wrecking facility (Subarea 1) and a former landfill (Subarea 2). Subarea 1 included the battery wrecking facility building, a vehicle maintenance building, two USTs, a former surface impoundment, and a waste slag burial area. The surface impoundment was used to contain, neutralize, and settle wastewater and waste byproducts from the battery crushing operation. The surface impoundment was originally addressed as part of a Resource Conservation and Recovery Act (RCRA) closure action conducted in 1988 and 1989 by Murmur. The surface impoundment was closed by backfilling with soil stabilized with cement kiln dust. A four to six foot thick clay cap was then constructed over the impoundment. During 1994 Remedial Investigation (RI) activities, erosion gullies were noted on the cap, but the cap was determined to be intact and stable. A slag burial area was also identified as part of the 1988 RCRA closure activities. Portions of the slag burial area were present under existing pavement at Subarea 1. A landfill was identified at Subarea 2 based on a review of historical aerial photographs. No records, permits, or other documents regarding the landfill were located. Based on the RI, the surface of the landfill was covered with a two to three-ft thick clay layer. Below the clay layer, the landfill contained waste ground and shredded automobile parts, battery casings, slag, white powder, and metal fragments (EPA 1997a).

In 1983, the City of Dallas decided not to renew the smelter facility's operating permit. The decision was based on the facility's past operational practices and a change in the City's zoning ordinances. As a result, smelting operations ceased and the smelter closed in 1984. The facility has not operated since that time. Contamination at the RSR Site resulted from the approximately 50 years of secondary lead smelting that occurred at the Site. Contamination resulted from the fallout of air emissions from the RSR smelter stack. Lead slag and battery casing chips were used in residential driveways and yards as fill material. Also, waste slag and battery chips were disposed of on the surface in several disposal areas across the Site (EPA 1995a).

Initial Response

On May 10, 1993, the EPA proposed the Site for inclusion on the National Priorities List (NPL). The Site was finalized on the NPL on September 29, 1995 (EPA, 2005). The EPA, the State of Texas, and the City of Dallas took various initial actions to respond to the human health and environmental risks posed by contamination. These initial actions occurred prior to the EPA signing RODs for the various OUs. The following paragraphs describe the initial actions.

OU 1

The City of Dallas and the Texas Air Control Board (now a part of the TCEQ) brought a lawsuit against RSR Corporation in 1983. As a result of the lawsuit, the court ordered RSR Corporation to take corrective measures at the smelter, which included the installation of stack emission controls to reduce fugitive emissions. Also, RSR Corporation was required to fund a cleanup of the residential community within one-half mile of the smelter. This cleanup was funded by RSR Corporation and directed by a court-appointed special master, and the cleanup occurred in 1984 and 1985. The cleanup required the removal of soils in residential areas that exceeded a lead concentration of 1,000 parts per million (ppm) a depth of six inches, replacement with clean fill, and covering with sod. In addition, soils in contaminated public play areas, day care centers, and gardens were removed to depths of between 12 and 18 inches and replaced with washed sand or clean soil. This cleanup exceeded recommendations

made by the Centers for Disease Control and Prevention (CDC) and was considered protective at the time (EPA 1995a).

In 1991, the Texas Natural Resources Conservation Commission (TNRCC, now the TCEQ) began receiving complaints from residents in the west Dallas area about residual slag piles and battery chips allegedly originating from the RSR facility. As a result, the TNRCC requested that the EPA re-evaluate the clean-up activities conducted in 1984 and 1985. EPA began soil sampling activities at the RSR Site in August 1991. The sampling results indicated that the areas cleaned up in 1984 and 1985 had not become re-contaminated and did not require additional clean-up. However, the results did indicate that contamination existed in other areas near the smelter and in areas where battery chips were used as fill (EPA 1995a).

On October 24, 1991, the EPA issued an Action Memorandum authorizing the completion of a removal action to address contamination of residential and high risk areas (schools, parks, and a recreation facility) impacted by air deposition of contaminants from the RSR smelter stack (EPA 1991). This removal action was known as the Phase I Removal Action. The EPA established clean-up levels for the removal action at 500 ppm lead, 20 ppm arsenic, and 30 ppm cadmium. The objective of the removal action was to eliminate the threat to human health from ingestion, inhalation, and direct contact with soils contaminated with lead, arsenic, and cadmium. The EPA conducted excavation of contaminated soils and restoration of excavated areas. As a result of the Phase 1 Removal Action, two elementary schools, two church play areas, two parks, one children's recreational facility, and 211 residential properties were cleaned-up. The clean-up resulted in the removal and offsite disposal of approximately 22,900 cubic yards of non-hazardous soils and approximately 6,400 cubic yards of hazardous soils. The hazardous soils were treated prior to disposal, and all soils were disposed of at permitted landfills. The Phase I Removal Action was completed in June 1993 (EPA 1995b).

The TNRCC conducted house-to-house surveys at the site from July 1992 through February 1993. The purpose of the surveys was to identify properties where contamination was present as a result of the use of battery chips as fill material (primarily in driveways). As a result of these surveys, the EPA conducted a Phase II Removal Action at the RSR Site to address these areas of contamination. The EPA used the same cleanup levels established for the Phase 1 Removal Action to complete the Phase II Removal Action. The Phase II Removal Action commenced in June 1993 and was completed in June 1994. As a result of the Phase II Removal Action, 202 residential properties were cleaned-up. The clean-up resulted in the removal and offsite disposal of approximately 13,800 cubic yards of non-hazardous soils and approximately 1,400 cubic yards of hazardous soils. The hazardous soils were treated prior to disposal, and all soils were disposed of at permitted landfills (EPA 1995b).

As a result of the Phase I and Phase II Removal Action, the EPA cleaned-up contamination at 420 properties. The EPA only sampled and cleaned-up properties where access was granted. Several properties declined to grant EPA access for either sampling or removal activities. At these locations, the EPA did not perform removal associated activities on properties where access was declined (EPA 1995b).

The EPA also completed a RI, Baseline Human Health Risk Assessment (BHHRA), and an Ecological Risk Assessment (ERA) for OUs 1. Based on the RI, BHHRA, and ERA, the EPA determined that:

- OU 1 was contaminated through airborne deposition from the smelter facility and the use of chips as fill material;

- The primary exposure pathway of site contaminants was through soil;
- Based on a residential exposure scenario, the non-cancer hazard index (HI used to evaluate non-cancer related health effects to contaminants) for both children and adults were less than the EPA threshold of one. The excess lifetime cancer risk to both children and adults was within the EPA acceptable range of between $1x10^{-6}$ and $1x10^{-4}$;
- Results using the Integrated Exposure Uptake Biokinetic model for lead indicated that less than one percent of the child population exposed to lead in soils at the site would have blood lead levels greater than the CDC recommended value of 10 micrograms per deciliter (µg/dl);
- Based on a commercial exposure scenario, the non-cancer HI for workers was less than the EPA threshold of one. The excess lifetime cancer risk to workers was within the EPA acceptable range of between $1x10^{-6}$ and $1x10^{-4}$;
- The screening level ERA indicated that site soils did not pose a significant risk to the environment; and,
- The removal actions reduced exposure risks to below levels of concern and provided long-term protection by eliminating the sources of contamination (thus removing human and environmental exposure pathways).

As a result of these findings, the EPA signed a ROD on May 9, 1995, that stated no further action was necessary to address protection of human health and the environment for OU 1. Also, the ROD stated that, because hazardous substances would not remain at OU 1 above health-based levels, a FYR was not required (EPA 1995a).

OU 2

OU 2 is an area encompassing approximately 460 acres within the RSR Site. OU 2 is comprised of public multi-family housing units, schools, parks, recreation facilities, and a day care center. On August 9, 1993, the EPA entered into an Administrative Order on Consent (AOC) with the DHA. Under the AOC requirements, DHA agreed to conduct a RI/FS, demolition, and removal activities on its property (EPA 1995b).

The results of the RI, BHHRA, and ERA conducted for OU 2 indicated that:

- OU 2 was contaminated through airborne deposition from the smelter facility;
- The primary exposure pathway of site contaminants was through soil;
- Based on a residential exposure scenario, the non-cancer HI for both children and adults were less than the EPA threshold of one. The excess lifetime cancer risk to both children and adults was within the EPA acceptable range of between $1x10^{-6}$ and $1x10^{-4}$;
- Results using the Integrated Exposure Uptake Biokinetic model for lead indicated that no children exposed to lead in soils at the site would have blood lead levels greater than the CDC recommended value of 10 µg/dl. There were some variations between the modeled results and

actual measured results, but actual measured blood-lead concentrations in children at OU 2 were not high enough to require medical evaluation or intervention based on the CDC's criteria; and,

- The screening level ERA indicated that site soils did not pose a significant risk to the environment (EPA 1995b).

Under the AOC, DHA was required to conduct a removal action at OU 2 in the same manner as the removal action conducted at OU 1. Contaminated soils were to be excavated and removed using the same clean-up levels (500 ppm lead, 20 ppm arsenic, and 30 ppm cadmium). DHA conducted the removal action from July 1994 through March 10, 1995. Approximately 24,000 cubic yards of soil were excavated and disposed of at offsite hazardous and non-hazardous permitted landfills. Excavated areas were backfilled, graded, and hydro seeded to promote grass growth and reduce erosion potential. In addition, the DHA demolished 167 buildings at OU 2. The demolition debris was also disposed of at offsite permitted hazardous and non-hazardous waste landfills. All DHA conducted removal activities at OU 2 were conducted with EPA and TNRCC approval and oversight (EPA 1995b).

At the completion of the DHA removal action, the EPA determined that the activities conducted to remediate OU 2 had addressed risks associated with OU 2 and provided overall protection of human health and the environment. On May 9, 1995, the EPA signed a ROD for OU 2 that stated no further action was necessary to ensure protection of human health and the environment. Also, the ROD stated that, because hazardous substances would not remain at OU 2 above health-based levels, a FYR was not required (EPA 1995b).

OU 3

EPA served notices to several Potentially Responsible Parties (PRPs) for the RSR Site, providing them with the opportunity to perform or finance the RI/FS for OU 3. No PRPs agreed to perform or finance the RI/FS, and as a result, the EPA conducted the RI/FS for OU 3. The EPA initiated the RI for OU 3 in 1993. Through the RI, BHHRA, and ERA conducted for OU 3, the EPA determined that soils and sediments at Sites 1, 3, and 4 posed a risk to human health due to arsenic, lead, and antimony contamination. The possible risks to aquatic and terrestrial receptors were generally minimal, and no ecological cleanup criteria were developed. The groundwater, although contaminated, was not a source or potential source of drinking water due to its low yield and slightly saline quality (EPA 1997b).

OU 4 and OU 5

EPA served notices to several PRPs for the Site, providing them with the opportunity to perform or finance the RI/FS for OUs 4 and 5. No PRPs agreed to perform or finance the RI/FS, and as a result, the EPA conducted the RI/FS for OUs 4 and 5. The EPA initiated the RI for OUs 4 and 5 in the spring of 1994. During the RI for OUs 4 and 5, approximately 500 waste drums, 73 uncontained residual waste/debris piles, and approximately 50 laboratory containers were found at OUs 4 and 5. These materials were identified as an immediate concern that needed to be addressed by EPA (EPA 1997b).

On December 22, 1994, the EPA issued an Action Memorandum authorizing the performance of a non-time critical removal action to address the waste materials discovered at OUs 4 and 5 (EPA 1994). The non-time critical removal action commenced on May 30, 1995 and was completed on July 14, 1995. As a result of this action, more than 600 drums of waste material and 60 containers of waste laboratory chemicals were removed and disposed of offsite. The removal of approximately 90 waste debris piles

and the drums resulted in approximately 740 cubic yards of hazardous wastes being sent offsite for treatment and disposal. Approximately 20 cubic yards of non-hazardous debris was disposed of offsite. 1,700 gallons of hazardous liquids were shipped offsite to an incineration facility, and 15,500 gallons of accumulated storm water and monitor well purge and development water were permitted and discharged to the sanitary sewer system. An additional 110 gallons of liquids were disposed of as non-hazardous wastes. Twenty-two lab packs of chemicals were incinerated at an offsite facility, and one box of medical waste was incinerated at an offsite medical waste incineration facility. Finally, 11 gas cylinders and 8 lead/acid batteries were sent offsite for recycling (CH2M HILL 1995).

Through the RI, BHHRA, and ERA completed for OU 4, the EPA concluded that incidental ingestion of soil and residual contaminated materials contributed the greatest percentage to the overall risk to human health posed by OU 4 contamination. Arsenic was attributed with the majority of the cancer and non-cancer risk. However, cadmium and antimony were also determined to contribute to the non-cancer risk. The ERA determined that OU 4 did pose risks to onsite ecological receptors. The EPA identified arsenic, cadmium, and lead contaminated dust and residual materials present on and within site buildings, structures, the smelter stack, and equipment as a principal threat (due to high toxicity and/or high mobility). Contaminated soils in the unpaved northeast area of the facility and subsurface soils under paved areas were deemed to be low-level threats (due to low to medium toxicity and low mobility) (EPA 1996).

Through the RI, BHHRA, and ERA completed for OU 5, the EPA concluded that incidental inhalation and ingestion of soil and dust contributed the greatest percentage to the overall risk to human health posed by OU 5 contamination. Arsenic was attributed with the majority of the cancer risk. Cadmium was attributed with the majority of the non-cancer risk. The ERA determined that OU 5 did pose risks to onsite ecological receptors through soil. No principal threat wastes were found to be present at OU 5.

Contaminated materials in the former surface impoundment, former landfill, the slag burial area, dust in site buildings, and contaminated soils were deemed to be low-level threats. The groundwater, although contaminated, was not a source or potential source of drinking water due to its low yield and slightly saline quality (EPA 1997a).

Basis for Taking Action

The purpose of the response actions conducted was to protect public health and welfare and the environment from releases or threatened releases of hazardous substances from the Site. RAs completed were deemed necessary based on the results of the various site investigations, the BHHRAs, and ERAs.

For OU 3, Site 1, exposure of children and adults due to soil ingestion, inhalation of dusts, and dermal contact resulted in exposures to excess cancer risks between 1×10^{-3} and 1.0×10^{-4}. The non-cancer HI exceeded one for children, adults, trespassers, and site workers. For OU 3, Site 4, Jaycee Park, the non-cancer HI for children exposed to soil exceeded one. At all sites at OU 3, lead concentrations in soil resulted in unacceptable risk of lead exposure (more than five percent of each population exhibiting elevated blood-lead levels), and hazard indices for children and adults of 1.1 and 193.5, respectively (well above the EPA recommended index of 1).

For OU 4, exposures to site contamination resulted in excess cancer risks of between 4×10^{-2} and 5×10^{-5} and non-cancer HI values between 1.7 and 340 for each population evaluated (adult and child trespassers, onsite process workers, and onsite non-process workers).

At OU 5, exposures to site contamination resulted in excess cancer risks of between 4×10^{-4} and 8×10^{-9} and non-cancer HI values between 0.001 and 10 for the various exposure scenarios evaluated. At OU 4, the modeling predicted that both onsite process and non-process workers would have blood-lead levels above the permissible levels (EPA 1996; 1997a; and 1997b).

C. REMEDIAL ACTIONS

This section provides a description of the remedy objectives, selection, and implementation for OU 3 (waste slag and battery chip disposal areas), OU 4 (smelter facility), and OU 5 (battery wrecking facility and other industrial properties) at the Site. Two additional OUs have been designated at the Site: OU 1 (residential areas) and OU 2. Both OUs 1 and 2 were addressed through removal actions. EPA signed RODs for both OUs 1 and 2 on May 9, 1995, which stated that no further action was necessary (EPA 1995a and 1995b).

Remedy Objectives

The EPA signed the ROD and for OU 3 of the Site on September 20, 1997. The specific Remedial Action Objectives (RAOs) for OU 3 RA, as provided in the ROD, were:

- Minimize exposure to lead, arsenic, and antimony present in the slag piles/landfills by direct contact inhalation, and ingestion; and,
- Reduce the potential for migration of these contaminants (EPA 1997b).

In order to achieve the RAOs, the OU 3 ROD established remediation goals (referred to as RA goals or action levels in the ROD) for contaminated site soils and sediments. The RA goals for OU 3 soils and sediments are provided in Table 3 of this FYR document.

The EPA signed the ROD and for OU 4 of the Site on February 28, 1996. The specific RAOs for OU 4 RA, as provided in the ROD, were:

- Minimize exposure to lead, arsenic, antimony, and cadmium present in the buildings, structures, smelter stack, equipment, and soils by direct contact, inhalation, and ingestion; and,
- Reduce the potential for migration of these contaminants (EPA 1996).

In order to achieve the RAOs, the OU 4 ROD established remediation goals (referred to as RA goals or action levels in the ROD) for contaminated site buildings, structures, the smelter stack, equipment, and soils. The RA goals for OU 4 buildings, structures, the smelter stack, equipment, and soils are provided in Table 4 of this FYR document.

The EPA signed the ROD and for OU 5 of the Site on April 3, 1997. The specific RAOs for OU 5 RA, as provided in the ROD, were:

- Minimize exposure to lead, arsenic, and antimony present in the former surface impoundment, former landfill, buildings and structures, and slag burial area/other soils by direct contact, inhalation, and ingestion; and,

- Reduce the potential for migration of these contaminants (EPA 1997a).

In order to achieve the RAOs, the OU 5 ROD established remediation goals (referred to as RA goals or action levels in the ROD) for the former surface impoundment, former landfill, buildings and structures, and slag burial area/other soils. The RA goals for OU 5 former surface impoundment, former landfill, buildings and structures, and slag burial area/other soils are provided in Table 5 of this FYR document. In addition, the ROD for OU 5 established a RA level for storm water runoff and sediments to manage and control offsite migration through these pathways during remediation. The RA goal established by the OU 5 ROD for storm water runoff and sediments was to meet federal storm water requirements and federal and State RCRA closure and disposal requirements for sediments (EPA 1997a).

Remedy Selection

EPA has signed five RODs for the Site. The OU 1 ROD pertained to contaminated soils present in residential areas of the Site, and the OU 2 ROD pertained to contaminated soils and buildings present at the site. The OU 3 ROD addressed the soil and sediment contamination present at three separate waste disposal areas located within the Site. The OU 4 ROD addressed the principal and low-level threats posed by contamination present at the smelter facility. Finally, the OU 5 ROD addressed low-level threats due to contamination present at the battery wrecking facility and other associated industrial properties located across Westmoreland Road from the smelter facility.

The Site was also addressed through other response actions (an Emergency Removal Action conducted for OU 1, the removal action conducted by the DHA under the AOC for OU 2, and the non-time critical Removal Action conducted at OUs 4 and 5, as described under initial response). The RODs for OU 1 and OU 2 determined that response actions were completed at each OU and that no further response or RA was necessary (EPA 1995a and 1995b).

The ROD for OU 3 was signed on September 20, 1997, to address the cleanup of lead, arsenic, and antimony contaminated soils and sediments that posed a risk through direct contact, ingestion, and/or inhalation and to prevent further migration of contaminants to offsite areas. Elements of OU 3 included three separate sites where waste slag and battery chips had been disposed of on the surface.

The remedy described in the 1997 ROD for OU 3 consisted of the following elements:

Site 1

- Excavation and removal of slag, battery chips, and metals contaminated soils exceeding action levels to a depth of 2 feet;

- Excavation and removal of sediments in the intermittent creek exceeding action levels;

- Backfilling and re-grading of excavated areas using clean soil;

- Offsite disposal of excavated materials (soil, sediment, battery chips, and slag) in an appropriate landfill based on the results of testing to determine if the material is hazardous (as defined by 40 CFR 261);

- No action was recommended for shallow groundwater; and,
- An institutional control in the form of deed notices or restrictions.

Site 3

- Containment (protective soil cap) of the southern portion and isolated areas of the northern cell of the West Davis landfill where there is exposed slag, battery chips, and metals contaminated soils that exceed action levels;
- Annual monitoring of surface water at four locations and groundwater at four monitor wells for a period of five years;
- Annual inspection of the capped areas;
- No action was recommended for shallow groundwater; and,
- An institutional control in the form of deed notices or restrictions.

Site 4

- Containment (protective soil cap) of areas within the Nomas and West Dallas landfills where there is exposed slag, battery chips, and metals contaminated soils that exceed action levels;
- Excavation of areas of surficial contamination where action levels are exceeded in Jaycee Park and placement under the protective cover in the West Dallas Landfill (non-hazardous materials) or transported and disposed of offsite (hazardous materials);
- Annual monitoring of surface water at two locations and groundwater at three monitor wells for a period of five years;
- No action was recommended for shallow groundwater; and,
- An institutional control in the form of deed notices or restrictions (EPA 1997b).

The ROD for OU 4 was signed on February 28, 1996, to address the cleanup of principal and low-level threat contamination present at the smelter facility that posed a risk through direct contact, ingestion, and/or inhalation and to prevent further migration of contaminants to offsite areas. Elements of OU 4 included the facility buildings and structures, the smelter stack, equipment, and soils (EPA 1996).

The remedy described in the 1996 ROD for OU 4 consisted of the following elements:

- Removal, treatment, and disposal of residual materials estimated at a volume of 540 cubic yards;
- Demolition and decontamination of approximately 190,000 square ft of buildings, structures, and equipment, including concrete pavement floors and connected drains and sumps (and associated sediments), plug and properly abandon remaining open conduits that are not removed;
- Disposal of all building debris (estimated at 8,900 cubic yards) offsite at appropriate landfill facilities;

- Demolition of the smelter stack and disposal offsite at a RCRA Subtitle C (hazardous waste) landfill (estimated at 1,300 cubic yards);

- Excavation of 13,500 cubic yards of contaminated soil and/or battery chips and lead slag that exceed action levels and disposal offsite (up to 1 ft beneath pavements and up to two ft in the unpaved northeast area);

- Cap and/or backfill the areal extent of the Site with 2 ft of clean soil; and,

- As a common element to each alternative evaluated in the ROD, the existing perimeter fence would be repaired, and storm water and air monitoring would be conducted during the RA (EPA 1996).

The ROD for OU 5 was signed on April 3, 1997, to address the cleanup of low-level threat contamination present at the battery wrecking facility and other Site industrial property that posed a risk through direct contact, ingestion, and/or inhalation and to prevent further migration of contaminants to offsite areas. Elements of OU 5 included the facility buildings and structures, a surface impoundment, a former landfill, the slag burial area/other soils, and storm water runoff and sediments (EPA 1997a).

The remedy described in the 1997 ROD for OU 5 consisted of the following elements:

- Decontamination of the former battery wrecking building and the vehicle maintenance building (estimated at 60,600 square ft);

- Demolition of the former battery wrecking building using conventional methods and offsite disposal of debris (estimated 55,800 square ft);

- Evaluate existing cap on the former surface impoundment. Upgrade or replace as necessary in order to complete RCRA closure (estimated 45,000 square ft); and

- Cap the former landfill in accordance with applicable landfill closure requirements (estimated 503,000 square ft).

As an alternate component to address the former landfill to promote future redevelopment options:

- Re-grade the former landfill area in order to support an asphalt or concrete surface cover;

- Cap the slag burial area/other soils areas that exceed action levels (estimated 1,480,000 square ft) with 2 ft of clean backfill and re-vegetated with native grasses;

- No action was recommended for the shallow groundwater at OUs 4 and 5; and,

- As a common element to each alternative evaluated in the ROD, the existing perimeter fence would be repaired, short-term groundwater monitoring would be conducted, long-term groundwater monitoring would be conducted for the former landfill, and storm water and air monitoring would be conducted during the RA (EPA 1997a).

D. REMEDY IMPLEMENTATION

The selected remedies for the RSR Corporation Superfund Site for OUs 3 and 5 (Subareas 2, 3, and 4) were implemented through a Consent Decree agreed to in 2003 between the EPA, the State of Texas, RSR Corporation, and its subsidiaries. The Consent Decree required RSR Corporation and its subsidiaries to implement the RD and RA for each OU. The selected remedy for OU 4 was implemented through a Consent Decree between EPA and a group of seven PRPs agreed to in 1998. The Consent Decree required the PRPs to implement the RD/RA for OU 4. EPA completed the RD/RA for OU 5 Subarea 1. Implementation of the ROD selected remedies for each OU is further described in the following paragraphs.

OU 3

RSR Corporation contracted ENTACT to perform the RA construction activities for OU 3. Mobilization for the RA construction occurred in February 2004, and major construction activities were completed in September 2004. The EPA and TCEQ conducted the final inspection for OU 3 on September 14, 2004. Based on the final inspection, all RA construction activities were determined to be completed (ENTACT 2004c).

RA construction activities for OU 3 began with mobilization of contractor personnel and equipment to the site. The mobilization activities included the following:

- Establishing support facilities;
- Establishing work zones at each site;
- Setting up site-security (including fencing);
- Installation or implementation of temporary erosion, sedimentation, storm water, and dust suppression controls;
- Construction of temporary access roads;
- Surface preparation (including removal of excess vegetation and debris removal); Surveying and establishing a coordinate grid system at each site; and,
- Locating utilities (ENTACT 2004c).

RA construction for OU 3 began at Site 4 in February 2004. Locations where soil concentrations exceeded the Site 4 action levels, as identified in the ROD were first field located by a surveyor. A grid system was established to perform sampling and identify the extent of the area where soil contaminant concentrations exceeded the action levels. Based on the sample results, grid locations where soil concentrations for lead and/or arsenic exceeded the Site 4 action levels were covered with a two-ft thick soil cover. The soil cover consisted of a minimum 20 inches of clay, four inches of topsoil, and vegetation consisting of native grasses. Storm water and erosion controls were left in place until the vegetation was established over a minimum of 70 percent of the area (ENTACT 2004c).

In May 2004, an investigation was conducted at the Jaycee Park to assess whether soil concentrations for lead, arsenic, and antimony exceeded the action levels established in the ROD for the park. Soil

samples were collected for both field screening and analysis at an offsite laboratory. The analytical results indicated that the concentrations of lead, arsenic, and antimony in soils at the park did not exceed the action levels. The EPA concurred with this conclusion, and it was determined that no RA was required at the Jaycee Park. Figure 4 of Appendix B shows the work area addressed by the RA at OU 3, Site 4 (ENTACT 2004c).

RA construction for OU 3 proceeded to Site 1 in April 2004. Locations where soil concentrations exceeded the Site 1 action levels and areas of visible slag and battery chips, as identified in the ROD were first field located by a surveyor. Due to the presence of large accumulations of visible slag and battery chips on the sloped surface of Site 1, eight investigative trenches were installed to determine visual extent of contamination. The trenches were installed to depths ranging from 5 to 30 ft bgs. Battery chips, slag, and decayed municipal solid waste were observed in each trench, and it was determined that Site 1 was the location of a former unidentified landfill (ENTACT 2004c).

After trenching activities were complete, remediation activities at Site 1 continued. Construction activities at Site 1 were divided between two general areas (southern, main area and northern, remote area). In the southern area, a grid system was established around the visual limits of the former landfill to further define the extent of contaminated soils exceeded the action levels for Site 1. Field screening was then conducted to determine which grids required remediation. Contaminated soils and visible accumulations of slag and battery chips were then excavated. Excavation was considered complete when field screening results indicated that lead soil concentrations were below 2,000 mg/kg (50 mg/kg in Jaycee Park) and arsenic soil concentrations were below 32.7 mg/kg (20 mg/kg in Jaycee Park) or a depth of two ft bgs was reached. Post-excavation confirmation samples were collected from areas where excavation depths were less than 2 ft bgs and sent to an offsite laboratory for analysis to ensure that the action levels had been achieved. Each excavated area was then backfilled with clean soil to a maximum of 20 inches, and then 4 inches of topsoil was placed on top. The backfill was graded and compacted to tie the cover into existing site grades and to promote drainage. In transition areas, additional soil was added when necessary to bring the site to final grade and prevent the ponding of water. The site was then seeded to establish vegetation and storm water and erosion controls were left in place until the vegetation was established over a minimum of 70 percent of the area (ENTACT 2004c).

In the northern remote area, locations where soil concentrations exceeded the Site 1 action levels, as identified in the ROD, were field located by a surveyor. A grid system was then established to perform sampling and identify the extent of the area where soil contaminant concentrations exceeded the action levels. Based on the sample results, grid locations where soil concentrations for lead and/or arsenic exceeded the Site 1 action levels were then excavated to depths of between 6 inches and 3.5 ft. Excavation was considered complete when field screening results indicated that lead and/or arsenic were below the field screening concentration numbers or all visible slag and battery chips were removed. Post-excavation confirmation samples were collected from areas where excavation depths were less than 2 ft bgs and sent to an offsite laboratory for analysis to ensure that the action levels had been achieved. The excavated areas were then backfilled with soil and graded as necessary to promote drainage and match surrounding natural ground levels. Figure 2 of Appendix B shows the work area addressed by the RA at OU 3, Site 1 (ENTACT 2004c).

Soils excavated from Site 1 were staged temporarily at the site. Sampling was conducted to classify the soils as a Texas Class 1 or Class 2 non-hazardous industrial waste. Soils exceeding the Class 1 levels were stabilized at the site to meet the criteria for a Class 2 non-hazardous industrial waste. Approximately 2,160 cubic yards of material required stabilization. The soils were then disposed of at

an offsite landfill permitted to accept Class 2 non-hazardous industrial waste (approximately 7,416 cubic yards) (ENTACT 2004c).

RA construction for OU 3 began at Site 3 in June 2004. Locations where soil concentrations exceeded the Site 3 action levels and areas of visible slag and battery chips, as identified in the ROD were first field located by a surveyor. A grid system was established to perform sampling and identify the extent of the area where soil contaminant concentrations exceeded the action levels. Contaminated soils and surface deposits of slag and battery chips on City of Dallas property, within the TXU Energy Right-of-Way, and within 100 ft of Davis Street were excavated. In these areas, grid locations where soil concentrations for lead and/or arsenic exceeded the Site 3 action levels were excavated to depths of between 1 and 2 ft. Excavation was considered complete when field screening results indicated that lead and/or arsenic were below the field screening concentration numbers or all visible slag and battery chips were removed. Post-excavation confirmation samples were collected from the bottom of each excavation sent to an offsite laboratory for analysis to ensure that the action levels had been achieved. The excavated areas were then backfilled with soil and graded as necessary to promote drainage and match surrounding natural ground levels (ENTACT 2004c).

The excavated soils at Site 3 were taken to portions of Site 3 where a soil cover was to be installed for consolidation. The excavated material was spread out and compacted to the elevations required to promote drainage and prevent ponding. A soil cover consisting of a minimum 20 inches of clay, 4 inches of topsoil, and vegetation consisting of native grasses, was then placed over the consolidation areas and other areas of Site 3 requiring remediation. Storm water and erosion controls were left in place until the vegetation was established over a minimum of 70 percent of the area. Figure 3 of Appendix B shows the work area addressed by the RA at OU 3, Site 1 (ENTACT 2004c).

OU 4

RSR Corporation contracted ENTACT to perform the RA construction activities for OU 4. Mobilization for the RA construction occurred in October 2000, and major construction activities were completed in October 2001. The EPA conducted the final inspection for OU 4 on November 6, 2001. Based on the final inspection, all RA construction activities were determined to be completed (ENTACT 2001).

RA construction activities for OU 4 began with mobilization of contractor personnel and equipment to the site. The mobilization activities included the following:

- Establishing support facilities and air monitoring system;
- Establishing work zones at each site;
- Setting up site-security (including fencing);
- Installation or implementation of temporary erosion, sedimentation, storm water, and dust suppression controls;
- Identification of hazardous materials; and,
- Locating utilities (ENTACT 2001).

The RA construction activities for OU 4 included decontamination of buildings, structures, and equipment, asbestos abatement, demolition of site buildings and structures, removal of concrete foundations and pavement, excavation of contaminated soils, monitoring well abandonment, and site restoration activities. During the RA, dust suppression measures were implemented at all times to contain airborne emissions of contaminants. Also, air monitoring was conducted onsite and near the site to ensure that construction activities were not resulting in offsite impacts from airborne contaminants (ENTACT 2001).

Decontamination of buildings and equipment was the first activity performed during the RA. The decontamination procedures were designed to meet required standards for scrap metal recycling or disposal purposes for non-recyclable materials. During decontamination, wash water was allowed to accumulate in low areas of the site and reused either for decontamination purposes or for dust suppression. Over-spray of clean surfaces was controlled using polyethylene sheeting. Cracks in floors were sealed and floor drains and sumps were blocked to prevent seepage of the wash water into underlying areas or the site piping system. Testing was conducted to ensure the adequacy of the decontamination procedures and to ensure components met the treatment standards for hazardous debris. A total of 1,088 tons of steel were sent offsite for recycling. Miscellaneous wood, brick, and concrete materials, totaling approximately 915 cubic yards, were disposed of as Class 1 non-hazardous waste at an offsite permitted landfill, and approximately 2,137 cubic yards of construction debris were disposed of as Class 2 non-hazardous waste at an offsite permitted landfill (ENTACT 2001).

Prior to demolition activities, polychlorinated-biphenyls (PCB) containing light ballasts, fluorescent, bulbs, and non-friable asbestos containing materials (ACM) were removed from the site. The PCB-containing light ballasts and fluorescent light bulbs were transported to an offsite facility for recycling. The non-friable ACM was transported offsite and disposed of at a permitted landfill (ENTACT 2001).

Building demolition began in October 2000. Prior to demolition, utilities were located and abandoned. Debris and sediments were removed from the storm sewer, and the storm and sanitary sewers were abandoned. All site buildings were demolished and the resultant debris removed from the site. During demolition activities, dust suppression procedures were conducted to prevent airborne contaminant emissions. The demolition debris was segregated into metal and non-metal categories. Testing was performed to characterize the materials for disposal. The metal debris was decontaminated and sent offsite for recycling. The non-metal debris was disposed of as Class 2 non-hazardous waste at an offsite permitted landfill. The smelter stack, constructed with an interior brick liner and exterior concrete shell, was demolished by removing the inner brick liner and then demolishing the outer concrete shell. The brick liner material was decontaminated and disposed of as Class 2 non-hazardous waste at an offsite permitted landfill. The outer concrete shell was disposed of at an offsite concrete recycling facility. As structures were demolished, the concrete slabs were also removed. Concrete foundations that extended into the subsurface soils were removed to 1 ft below the top of the existing slab. All concrete was tested to characterize the material as non-hazardous, and the disposed of at an offsite concrete recycling facility (ENTACT 2001).

Contaminated soils that exceeded the Site action levels or contained visible battery chips or slag were removed through excavation. The excavations occurred to depths of 1 ft bgs in areas of the Site covered with pavement and to 2 ft bgs in the unpaved northeast corner of the Site. Excavation occurred by sampling 50 ft by 50 ft grids placed over the entire site to determine areas where excavation was required. After excavation, the removed soils were tested to characterize the materials for stabilization or disposal purposes. Soils that did not meet the Class 2 non-hazardous waste criteria were stabilized,

and all excavated soils were then disposed of at an offsite permitted landfill as Class 2 non-hazardous waste.

Existing OU 4 monitor wells were abandoned during the RA construction. Seven monitor wells were abandoned by filling the well casing with bentonite chips up to 2 ft bgs. The upper 2 feet were then filled with cement up to ground surface to complete the abandonment (ENTACT 2001).

After excavation was completed, the excavated areas were backfilled with clay fill. Each excavation was filled in eight inch lifts and compacted. Once the excavations were brought up to grade, the entire site was covered with six inches of top soil. The topsoil was then graded to promote drainage and seeded to establish vegetation for erosion control (ENTACT 2001). Figure 5 of Appendix B shows the layout of OU 4 prior to RA construction. As a result of the RA, all site features were removed and/or covered.

OU 5

The RA for OU 5 Subarea 1 was completed by the EPA. The EPA contracted CH2M HILL to perform the RA construction activities for OU 5 Subarea 1. Mobilization for the RA occurred in January 2004, and major construction activities were completed in July 2004. The EPA and TCEQ conducted the final inspection for OU 5 Subarea 1 on August 3, 2004. Based on the final inspection, all RA construction activities were determined to be completed (CH2M HILL 2004a). Figure 6 of Appendix B shows the location of OU 5 Subarea 1.

RA construction activities for OU 5 Subarea 1 began with mobilization of contractor personnel and equipment to the site. The mobilization activities included the following:

- Establishing support facilities and air monitoring system;
- Temporary placement of orange safety fencing over openings in the existing site fence;
- Setting up site-security (including fencing);
- Clearing, grubbing, stripping, and grading the former surface impoundment and buried slag areas; and,
- Testing potential backfill materials for use at the site (CH2M HILL 2004a).

The battery wrecking facility was decontaminated prior to demolition. Initially, a dry decontamination procedure was employed, but this proved to be time-consuming. A wet decontamination procedure was implemented using hot pressure washers. Decontamination fluids were collected and transferred to storage tanks staged at the Site. During decontamination, external pieces of metal siding from the east and north sides of the building were removed and decontaminated at the same time (CH2M HILL 2004a).

After decontamination of the building, demolition of the battery wrecking facility began. Large debris from the building was placed into dumpsters. Equipment associated with a former wastewater treatment plant was demolished, steel sumps were removed and backfilled, a concrete tank was demolished, and non-support metal was cut-off the building. The concrete slab was then patched, drains plugged, and protruding rebar and bolts cut-off flush with the floor. The concrete building slab was then decontaminated. Sumps in the floor and the basin/former loading dock were cleaned, drainage holes

were punched in the bottoms, and then the areas were backfilled with clay. Concrete pads and walls inside the battery wrecking facility were broken up and removed from the building. Finally, the building structure was demolished. Approximately 245 tons of steel and metal sheeting and 923 tons of concrete, and lights were shipped offsite and recycled from the battery wrecking facility. Excess debris, such as general refuse, light poles, metal, concrete, and piping were removed from the site as a housekeeping effort at the request of EPA (CH2M HILL 2004a).

Construction activities for the vehicle maintenance facility included decontamination of the building and excavation of the soils surrounding the building. Wet decontamination procedures were used to decontaminate the building. The building was then inspected and found to meet the requirements for a clean debris surface. Soils contaminated with lead and/or arsenic above the OU 5 action levels or containing visible slag were removed from the area around the vehicle maintenance building. Due to the presence of large pieces of slag in the soils around the vehicle maintenance building, planned excavation depths were increased from 6 inches to 2 ft. In a few areas, the excavations were completed to only 1.5 ft. Slag materials were also removed from the fence line north of the vehicle maintenance building, but no excavation was conducted in this area. The excavated materials were moved to the buried slag area for disposal. The excavations were backfilled with clay fill and a six inch topsoil cover (CH2M HILL 2004a).

Prior to work on the former surface impoundment, and investigation was conducted to evaluate the thickness of the existing cap. Based on the investigation, it was determined that a sufficient 2 ft thick cap existed over most of the former surface impoundment. One location in the southern area of the cap required additional clay. Construction work for the former surface impoundment included re-grading the cap around its perimeter to achieve a three-to-one (horizontal-to-vertical) slope, increasing the cap thickness in one area, and re-vegetating the cap. Geotextile and bedding rock were placed along the west toe of the former surface impoundment. A 6 inch topsoil cover was placed on top of the clay cap, and the cap was then re-vegetated (CH2M HILL 2004a).

Soil sampling was performed in areas of concern identified during the RD to delineate the areas where lead and/or arsenic concentrations exceeded the OU 5 action levels. Each area was divided into 50 ft by 50 ft grids for sampling. Based on the sample results, it was determined that 21 grid areas required excavation. Sampling was also conducted along the drainage swale at the site, and 1 grid location was identified that required excavation. Each gird was excavated to depths of 6 or 12 inches (based on the sampling results) and backfilled with clay material the same day. Each excavated area was then fertilized and seeded to establish vegetation. Some excavations were not completed as planned. Several areas were determined to include portions of the former surface impoundment, and excavation was adjusted so as not to disturb the clay cap. Concrete walls and slabs were encountered in 4 areas, and the excavations proceeded to the tops of footings and up to the faces of the walls. The concrete was left in place and soil backfill placed around it. Only sediments were removed from a drainage swale and along a railroad track embankment due to unstable slopes. The excavated soils were taken to the buried slag area for disposal (CH2M HILL 2004a).

Two USTs were located at OU 5 Subarea 1. Liquids in the tanks were removed and transported offsite for disposal. Prior to removing the USTs, the tanks were uncovered with shovels in order to remove the associated piping. Stained soils, hydrocarbon odors, and intact and broken batteries were discovered during this initial excavation, and hand digging by shovel was stopped. The tanks were uncovered, cleaned and decontaminated, and removed from the excavations. The tanks were transported offsite for disposal. The excavations and stockpiled soils were then sampled. The stockpiled soils did not meet TCEQ criteria for placement back into the excavations. The soil was therefore spread out in a six inch

thick layer on high-density polyethylene sheeting and fertilizer added to promote bioremediation. Testing conducted after 5 days indicated that the soils met TCEQ criteria, and the soils were placed back into the excavation (CH2M HILL 2004a).

The truck tipping scale was also addressed during the OU 5 Subarea 1 RA. During demolition of the truck tipping scale, a hydraulic oil tank and two hydraulic rams were discovered. Approximately 6,000 gallons of mixed water and oil were found in a 10-foot deep sump. The water and oil were removed and sent offsite for disposal. The waste oil tank was decontaminated and demolished. Solids and sludge were removed from the tipping scale sump, and the walls were cleaned. Solids and water left in the bottom of the sump were solidified with dry mix concrete and Portland cement. The hydraulic rams were left in the sump. The tipping scale and the sump were then backfilled with common clay. The sediments and sludges were tested, and based on lead results, were determined to be hazardous waste. These materials, along with waste personal protective equipment and absorbents, were disposed of as hazardous waste (CH2M HILL 2004a).

Approximately 185,000 gallons of decontamination water and accumulated rainwater were stored onsite in nine tanks. The water was tested in order to receive a discharge permit from the City of Dallas to discharge the water to the sanitary sewer. A permit was issued, and the water was discharge to the City of Dallas sanitary sewer through a manhole located onsite. The tanks were decontaminated, and the accumulated sediments were placed in the buried slag area for disposal (CH2M HILL 2004a).

The buried slag area construction activities included capping the buried slag area and scraping the area to the west up to the road and/or creek bank. The area west of the buried slag area was scraped to depths between 2 and 4 inches to remove large accumulations of battery chips. The scraped material was placed in the buried slag area. The area was then re-graded to promote drainage, and topsoil was placed on top. The materials placed in the buried slag area included soils excavated from other portions of the site, sediments from the former loading dock, site sumps, the scrape area west of the buried slag area and near the USTs, sediments from the water tanks, and materials removed from near the vehicle maintenance facility. An 18-inch thick clay cap was placed on top of the buried slag area and covered with 6 inches of topsoil. The buried slag area was then re-vegetated. Riprap protection was placed on the northern bank of the drainage swale adjacent to the buried slag area, and on select portions of the southern bank. This work was done to repair areas of erosion and reduce the potential for future erosion into the buried waste in the buried slag area (CH2M HILL 2004a). Figure 7 of Appendix B shows OU 5 Subarea 1 after completion of the RA construction activities.

RSR Corporation contracted ENTACT to perform the RA construction activities for OU 5 Subareas 2, 3, and 4. Mobilization for the RA construction occurred in June 2003, and major construction activities were completed in October 2003. The EPA and TCEQ conducted the final inspection for OU 5 Subareas 2, 3, and 4 on October 20, 2003. Based on the final inspection, all RA construction activities were determined to be completed (ENTACT 2004a). Figure 8 of Appendix B shows the locations of Subareas 2, 3, and 4 at OU 5.

RA construction activities for OU 5, Subareas 2, 3, and 4 began with mobilization of contractor personnel and equipment to the site. The mobilization activities included the following:

- Establishing support facilities
- Establishing work zones at each site;

- Setting up site-security (including fencing);
- Installation or implementation of temporary erosion, sedimentation, storm water, and dust suppression controls;
- Installation of air monitoring and meteorological monitoring stations;
- Construction of temporary access roads;
- Surface preparation (including removal of excess vegetation and debris removal); Surveying and establishing a coordinate grid system; and,
- Locating utilities (ENTACT 2004a).

RA construction activities at OU 5, Subareas 2, 3, and 4 began in June 2003. The first activity completed was verification of the limits of the former landfill located at Subarea 2. The limits of the former landfill, as depicted in the ROD, were first identified by a surveyor. A total of 21 investigative trenches were then completed along the surveyed limits of the landfill. The trenches were installed to depths of 5 ft bgs.

Trenching started at approximately 5 to 10 ft from the surveyed landfill boundary and extended outward until no more landfilled material was observed visually in the trenches. The field verified limits of the former landfill were then resurveyed (ENTACT 2004a). The location of the former landfill at OU 5 Subarea 2 is shown in Figure 9 of Appendix B.

At OU 5, Subarea 2, a grid system was established to perform sampling and identify the extent of the area outside the identified limits of the former landfill where soil contaminant concentrations exceeded the action levels. Field screening of each grid was conducted, and the grids at OU 5 Subarea 2 requiring remediation were identified. Remediation of contaminated soils was addressed through excavation and consolidation within the former landfill area, by expanding the landfill cover for grids located near the landfill, or by installing a cover (similar to the one constructed over the landfill) over the areas of contaminated soils (ENTACT 2004a).

The former landfill and nearby impacted grids were covered with 24 inches of clean clay. The clay was placed in 9-inch lifts and compacted to meet density requirements. The landfill cover was graded and tied into the existing site grades to promote drainage and prevent the ponding of water. A 3-inch layer of topsoil was then placed on top of the former landfill cover and seeded to establish vegetation consisting of native grasses. Storm water and erosion controls were left in place until the vegetation was established over a minimum of 70 percent of the area. A similar cover was constructed over contaminated soil areas in the northern portion of OU 5, Subarea 2. Additional material was added to un-impacted areas of OU 5 Subarea 2 to bring the Site to final grade, promote drainage, and prevent ponding of water. Field screening identified 4 remote grids that required remediation. These grids were excavated to a depth of 1 foot bgs. The excavated soils were consolidated in the former landfill area and placed under the final cover. Confirmation sampling was performed at each excavated area to ensure that the actions had been achieved. Each excavation was backfilled with clay, graded, and topsoil added. Each area was then seeded to establish vegetation (ENTACT 2004a). Figure 10 of Appendix B shows the areas of OU 5 Subarea 2 that were either excavated or placed under the final soil cover.

At OU 5 Subarea 3, a surveyor was used to locate the sample point, identified in the ROD, where lead and arsenic concentrations exceeded the action levels. A test pit to six (6) ft bgs was installed to investigate and verify the presence of contamination exceeding the action levels. The test pit was sampled at the surface and at two ft intervals to the bottom of the pit. The samples field screened to evaluate if lead or arsenic concentrations exceeded the field screening values. Arsenic exceeded the field screening value in the surface sample only. Nine 50 ft by 50 ft grids were established around the test pit and sampled to identify the extent of the potentially contaminated soils. Field screening results indicated that 3 grids exceeded the XRF field screening values of 1,381 ppm for lead, 23 ppm for arsenic, and 596 ppm for antimony. These grids were therefore sampled again, and the samples were sent to an offsite laboratory for confirmation analysis. These sample results indicated that lead and arsenic concentrations did not exceed the action levels. Based on these results, and with EPA confirmation, it was determined that remediation was not required for OU 5 Subarea 3 (ENTACT 2004a).

An investigation was conducted at OU 5 Subarea 4 to identify areas where soil lead and arsenic concentrations exceeded the Site action levels. In addition to the originally defined Subarea 4 (identified in the RA Completion Report as Subarea 4a), RSR Corporation voluntarily addressed two adjacent properties as part of the OU 5 remediation (identified as Subareas 4b and 4c). A 50 ft by 50 ft grid area was established at Subarea 4a, and 100 ft by 100 ft grids were established at Subareas 4b and 4c. Exploratory test pits were then dug at each grid for the collection and field screening of samples. In addition, samples were collected for confirmation analysis at an offsite laboratory where the field screening results were above the field screening values but below the Site action levels. Samples were not collected from test pits were the field screening results indicated lead and/or arsenic concentrations above the action levels. Based on the analytical and field screening results, grids that exceeded the Site action levels were excavated. Excavation depths ranged from 0.25 to 0.66 ft bgs. Confirmation sampling was conducted to ensure that the action levels were achieved at each excavated area. The excavated soils were transported to the former landfill at OU 5 Subarea 2 and placed under the final cover. Each excavated area was backfilled with topsoil and seeded to establish vegetation consisting of native grasses. Storm water and erosion controls were left in place until the vegetation was established over a minimum of 70 percent of the area (ENTACT 2004a). The remediated areas at OU 5 Subarea 4 are shown on Figure 10 of Appendix B.

System Operation/Operation and Maintenance

RSR Corporation was responsible for O&M activities conducted for the OU 3 and OU 5 Subareas 2, 3, and 4 remedies. Murmur and EPA agreed that Murmur is no longer responsible for O&M at Subarea 1 of OU 5, but no other arrangements have been made. The ROD did not require any O&M activities for the remedy completed at OU 4.

O&M Plans were developed by ENTACT that specifies the general O&M activities to be conducted at OU 3 and OU 5 Subareas 2, 3, and 4 of the RSR Site (ENTACT 2003 and ENTACT, 2004b).

CH2M HILL prepared the O&M Plan that specifies the O&M activities for the remedy completed at OU 5 Subarea 1 (CH2M HILL 2004b).

The completed remedy for OU 3 does not include any active components that require on-going operation. O&M activities for OU 3 include inspection and maintenance of the soil covers at the three sites. The O&M Manual states that inspections of the soil covers at each site will be conducted

annually. The soil covers are to be inspected for signs of erosion, subsidence, areas lacking vegetation, animal burrows, and other conditions that might affect the integrity of the soil covers. The O&M Plan stipulates that corrective actions would be implemented to repair/correct noted deficiencies that present significant risk to the integrity of the covers. The only required maintenance activities include mowing, watering, and reseeding on an as-needed basis. The O&M Plan states that deed restrictions, in the form of a deed notice, were required for all three sites. The deed notice are to include the locations of the soil covers present at each site, include a restriction requiring that the soil cover must be maintained during future uses, and a restriction requiring review and approval of the EPA for any future development. The O&M Plan states that the deed notices would have to be placed on the property for each site by the property owner under the direction of the EPA (ENTACT 2004b).

The completed remedy for OU 5 Subareas 2, 3, and 4 does not include any active components that require on-going operation. The O&M Plan indicates that O&M activities are not required for Subareas 3 and 4. O&M activities for Subarea 2 include inspection and maintenance of the former landfill and north area soil covers. The O&M Manual states that inspections of the soil covers would be conducted quarterly for the first year and annually thereafter. The soil covers are to be inspected for signs of erosion, subsidence, areas lacking vegetation, animal burrows, and other conditions that might affect the integrity of the soil covers. The O&M Plan stipulates that corrective actions would be implemented to repair/correct noted deficiencies that present significant risk to the integrity of the covers. The only required maintenance activities include mowing, watering, and reseeding on an as-needed basis. The fence around Subarea 2 would also be inspected and maintained to restrict access to the site. (ENTACT 2004b).

The completed remedy for OU 5 Subarea 1 does not include any active components that require on-going operation. O&M activities for Subarea 1 include inspection and maintenance of the covers over the buried slag area and former surface impoundment, the excavated/scraped areas, the drainage swale along the southern property boundary, the vehicle maintenance facility parking lot, and the site monitor wells. Groundwater sampling at the former surface impoundment is also required for a period of 5 years.

APPENDIX B
SITE FIGURES

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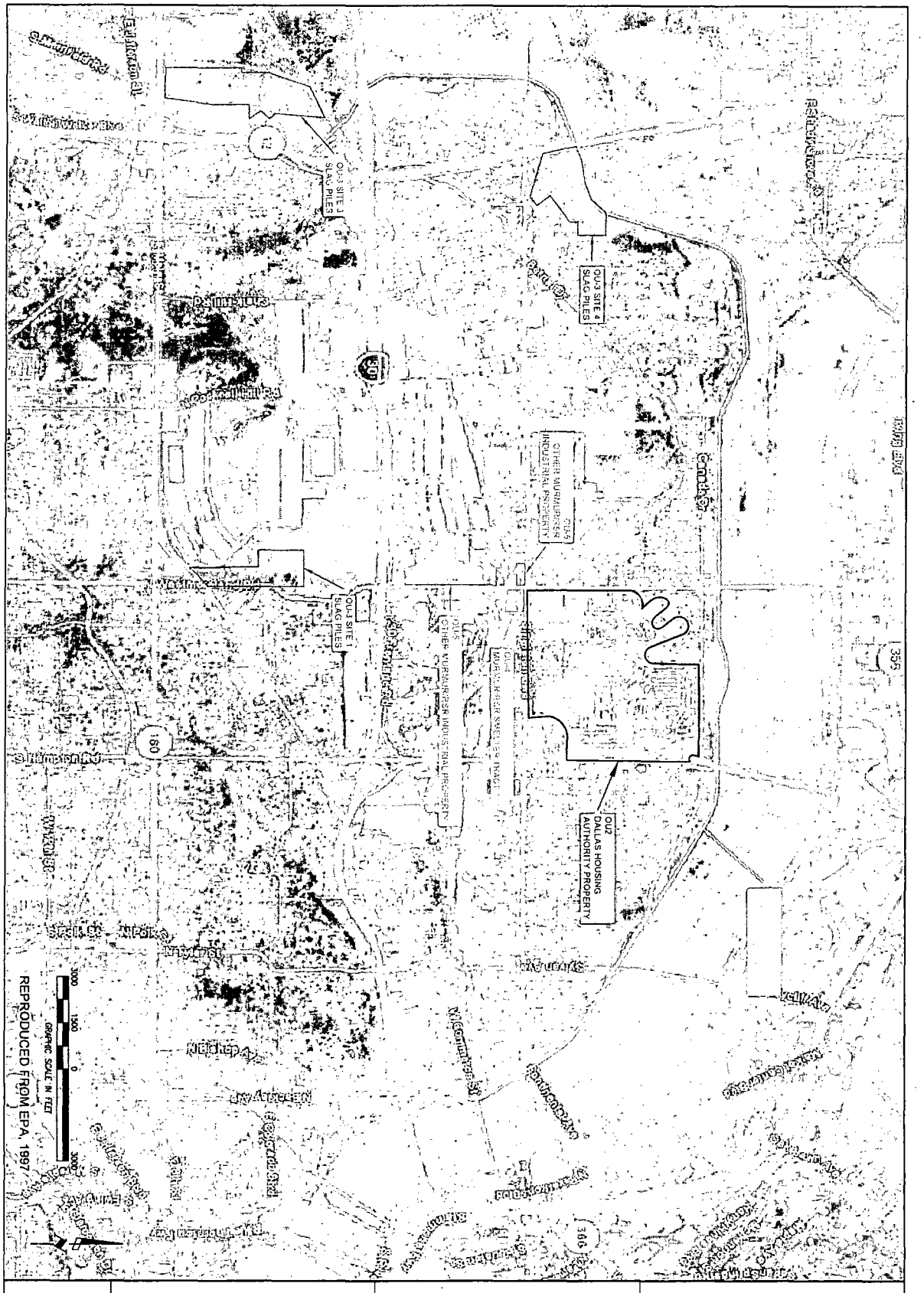
APPENDIX B
SITE FIGURES



EA ENGINEERING, SCIENCE, AND TECHNOLOGY

RSR CORPORATION SUPERFUND SITE

DALLAS, DALLAS COUNTY, TEXAS

FIGURE 1
OPERATING UNIT LOCATION MAP

PROJECT MGR.	DESIGNED BY	DRAWN BY	CHECKED BY	DATE	PROJECT NO.	REVISION	DRAWING NO.	FIGURE
TT	VM	VM	TT	AS SHOWN		–	–	1

Figure reproduced from ENTACT, 2004c

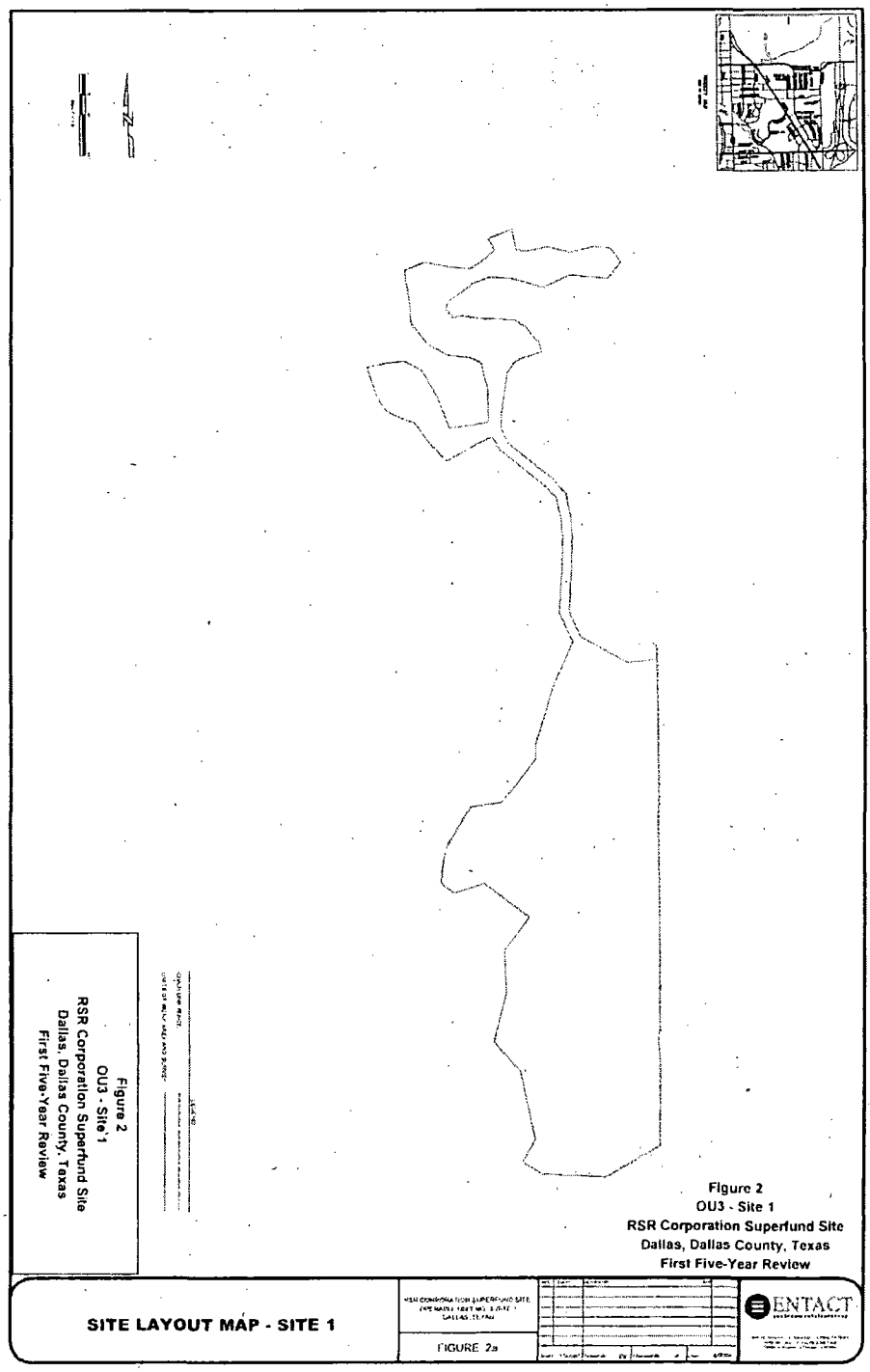


Figure 2
OU3 - Site 1
RSR Corporation Superfund Site
Dallas, Dallas County, Texas
First Five-Year Review

Figure 2
OU3 - Site 1
RSR Corporation Superfund Site
Dallas, Dallas County, Texas
First Five-Year Review

SITE LAYOUT MAP - SITE 1

FIGURE 2a

ENTACT

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

RSR CORPORATION SUPERFUND SITE

DALLAS, DALLAS COUNTY, TEXAS

FIGURE 2
OU3-SITE 1

PROJECT MGR.	DESIGNED BY	DRAWN BY	CHECKED BY	DATE	PROJECT NO.	REVISION	DRAWING NO.	FIGURE
TT	VM	AAS	TT	AS SHOWN		-	-	2

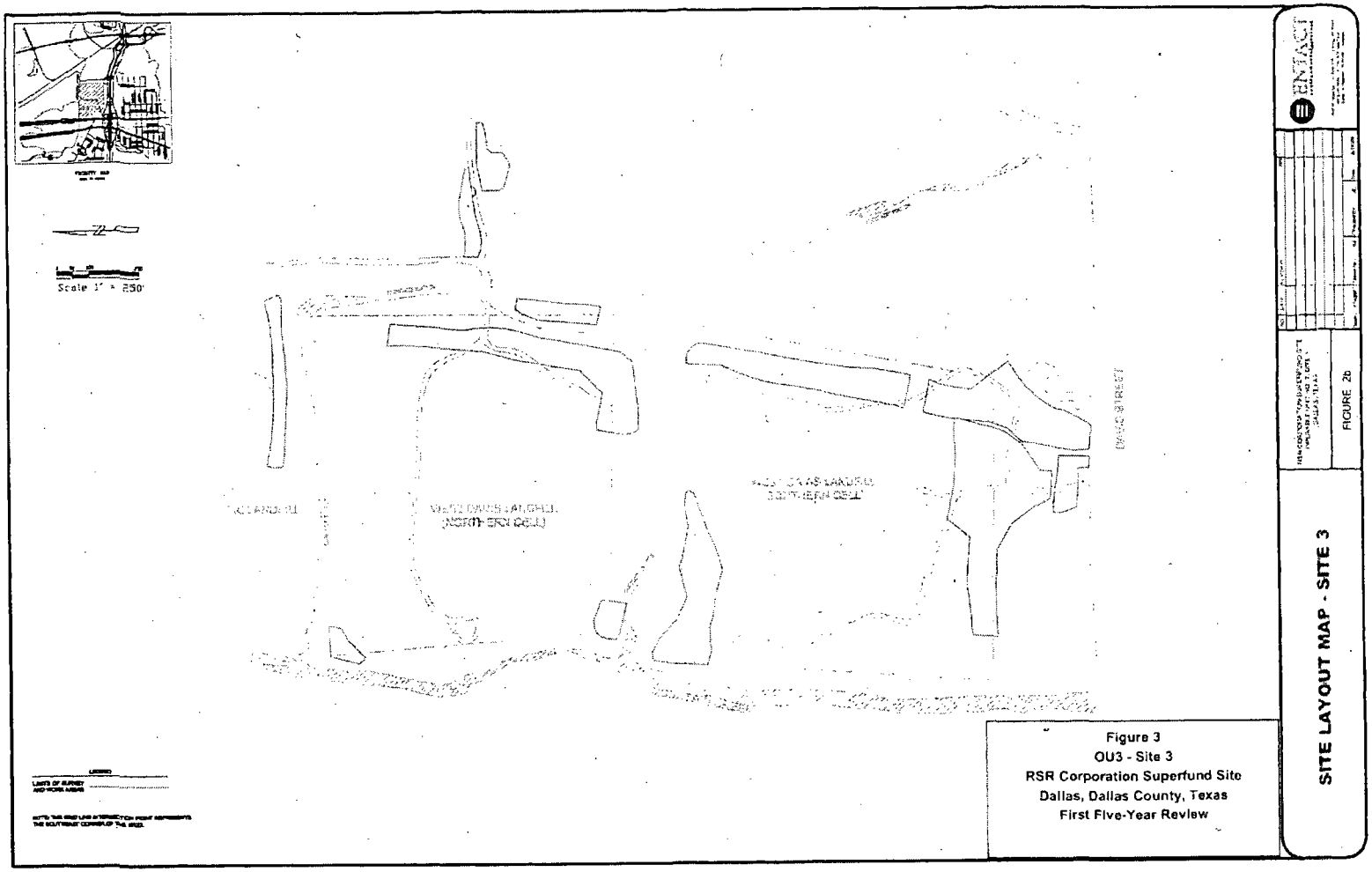


Figure 3
OU3 - Site 3
RSR Corporation Superfund Site
Dallas, Dallas County, Texas
First Five-Year Review

Figure reproduced from ENTACT, 2004c

Figure reproduced from ENTACT, 2004c

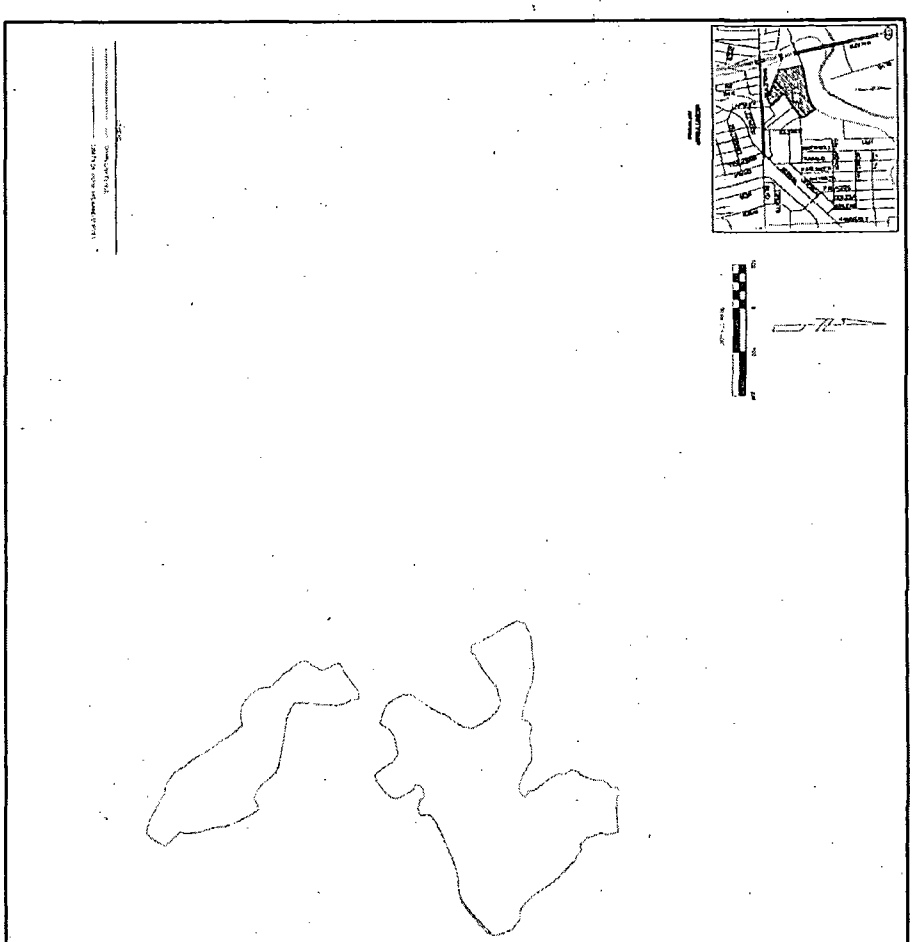


Figure 4
OU3 - Site 4
RSR Corporation Superfund Site
Dallas, Dallas County, Texas
First Five-Year Review

SITE LAYOUT MAP - SITE 4

FIGURE 2c

ENTACT

EA ENGINEERING, SCIENCE, AND TECHNOLOGY	RSR CORPORATION SUPERFUND SITE DALLAS, DALLAS COUNTY, TEXAS					FIGURE 4 OU3-SITE 4		
PROJECT MGR. TT	DESIGNED BY VM	DRAWN BY AAS	CHECKED BY TT	DATE AS SHOWN	PROJECT NO	REVISION -	DRAWING NO. -	FIGURE 4

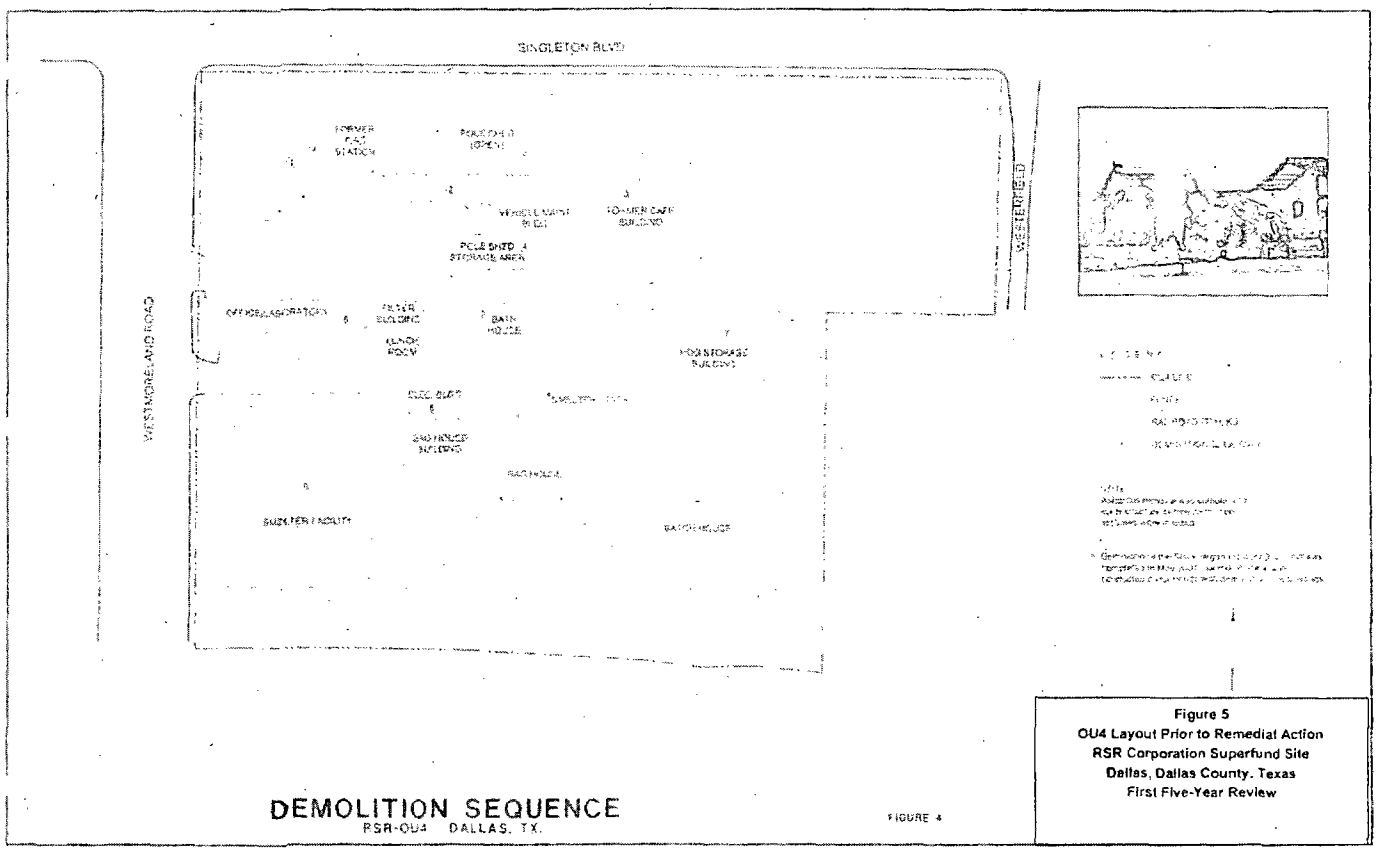


Figure 5
OU4 Layout Prior to Remedial Action
RSR Corporation Superfund Site
Dallas, Dallas County, Texas
First Five-Year Review

Figure reproduced from ENTACT, 2001

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

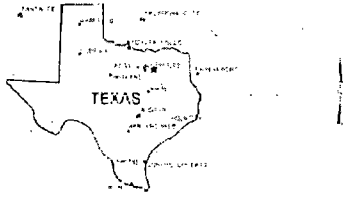
RSR CORPORATION SUPERFUND SITE
DALLAS, DALLAS COUNTY, TEXAS

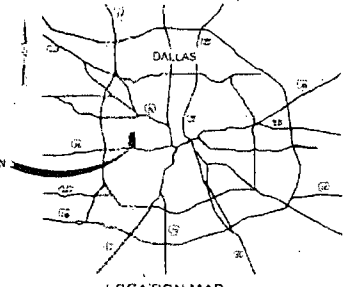
FIGURE 5
OU4 LAYOUT PRIOR TO REMEDIAL ACTION

PROJECT MGR.	DESIGNED BY	DRAWN BY	CHECKED BY	DATE	PROJECT NO.	REVISION	DRAWING NO.	FIGURE
TT	VM	AAS	TT	AS SHOWN		-	-	5

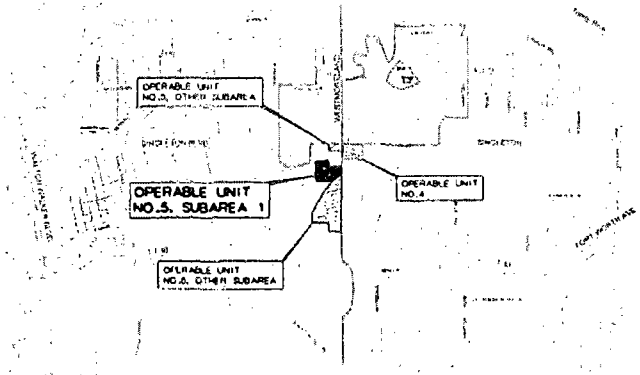
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

RECORD DRAWINGS
FOR
RSR OU NO.5, SUBAREA 1 REMEDIAL DESIGN





LOCATION MAP



VICINITY MAP

INDEX OF SHEETS

SHEET NO	SHEET TITLE
1	LOCATION MAP, VICINITY MAP AND DRAWING INDEX
2	LEGEND, ABBREVIATIONS, AND MATERIALS SYMBOLS
3	SITE PLAN - EXISTING CONDITIONS
4	SECTIONS OF EXISTING FORMER SURFACE IMPOUNDMENT
5	EXISTING CONDITIONS UTILITY PLAN
6	HISTORICAL ANALYTICAL DATA, ARSENIC AND LEAD CONCENTRATIONS [illegible]
7	SITE PLAN - PROPOSED REMEDIAL ACTION
7A	SITE PLAN - EXCAVATION CONFIRMATION LOCATIONS
7B	SITE AS BUILT OF REMEDIAL ACTION
8	DEMOLITION PLAN
9	FORMER SURFACE IMPOUNDMENT SUBGRADE PLAN AND SECTIONS
10	FORMER SURFACE IMPOUNDMENT FINAL GRADE PLAN AND SECTIONS
10A	FORMER SURFACE IMPOUNDMENT FINAL GRADE PLAN AND SECTION
11	BURIED SLAG AREA COVER AND EXCAVATION DESIGN CRITERIA
11A	BURIED SLAG AREA FINAL GRADE PLAN AND SECTION
12	DETAILS
13	REMEDIAL DESIGN PHOTO DETAILS
14	REMEDIAL DESIGN PHOTO DETAILS
15	REMEDIAL DESIGN PHOTO DETAILS

Figure 6
Location Map - OU5 Subarea 1
RSR Corporation Superfund Site
Dallas, Dallas County, Texas.
First Five-Year Review

CH2MHILL

Figure reproduced from CH2M HILL, 2004a

FIGURE 6
OU5 SUBAREA 1 LOCATION

RSR CORPORATION SUPERFUND SITE
DALLAS, DALLAS COUNTY, TEXAS

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	DATE	PROJECT NO.	REVISION	DRAWING NO.	FIGURE
TT	VM	AAS	TT	AS SHOWN		-	-	6

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

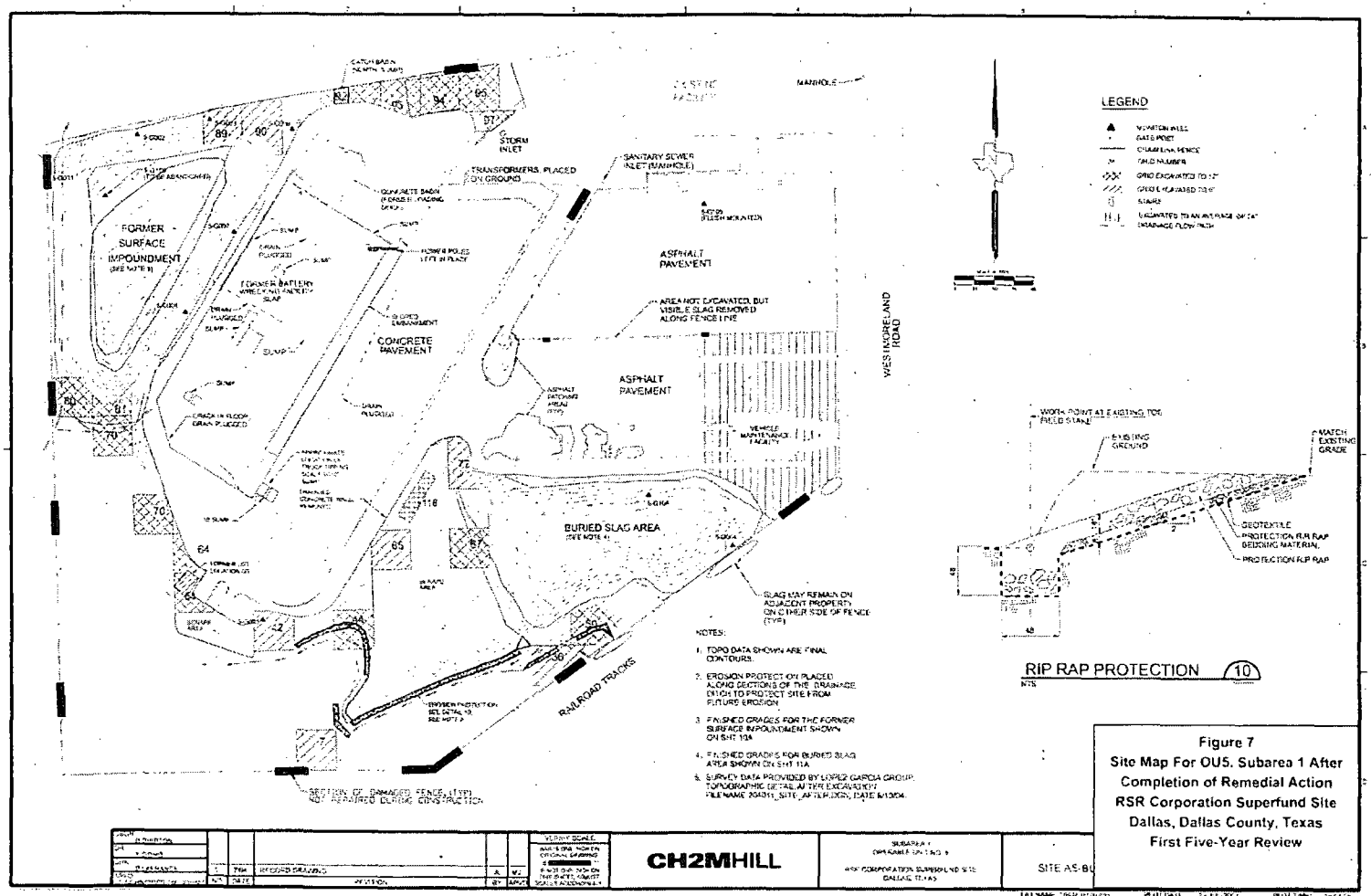


Figure 7
Site Map For OU5, Subarea 1 After Completion of Remedial Action
RSR Corporation Superfund Site
Dallas, Dallas County, Texas
First Five-Year Review

Figure reproduced from CH2M HILL, 2004a

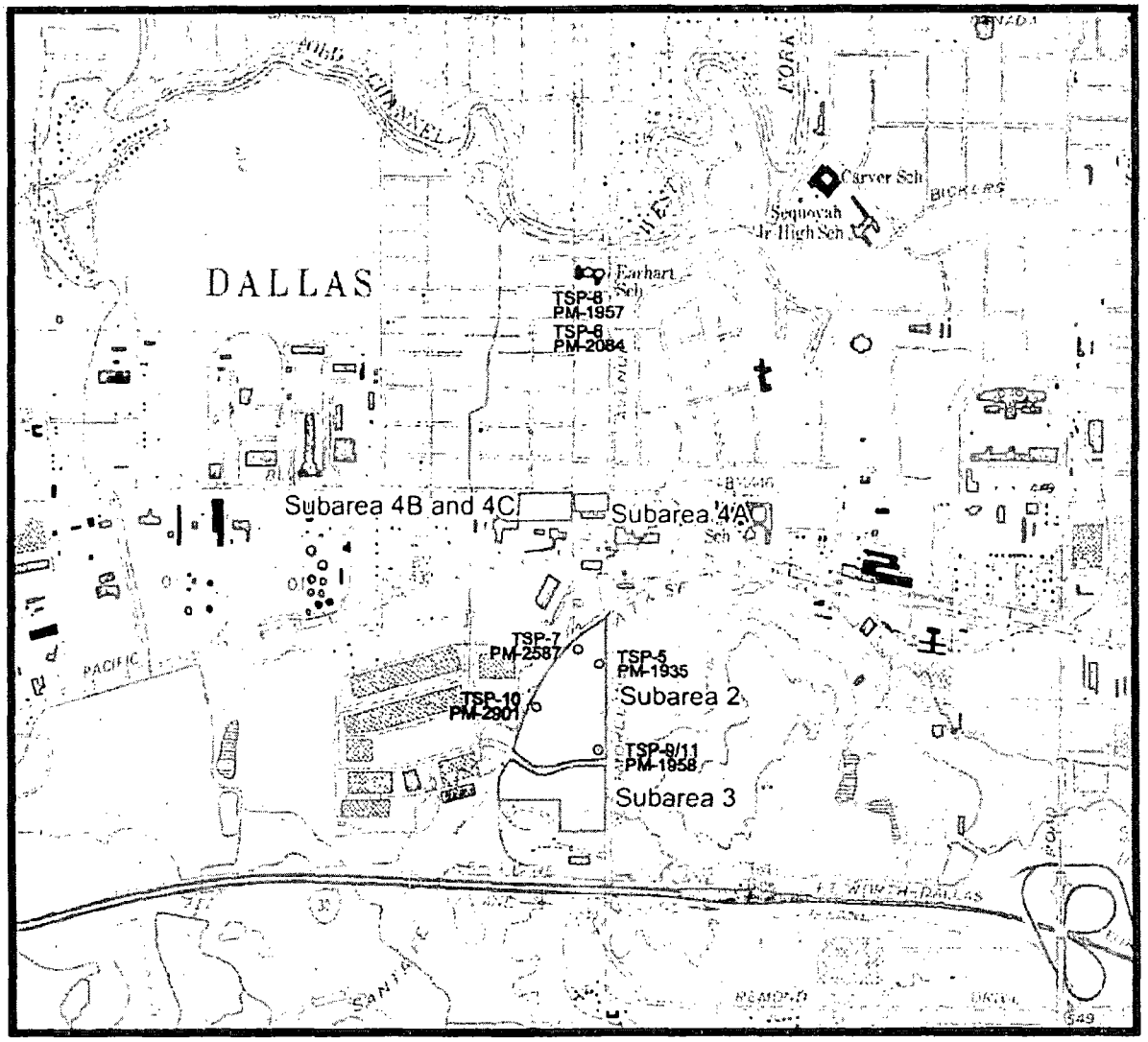
FIGURE 7
OU5 SUBAREA 1

RSR CORPORATION SUPERFUND SITE
DALLAS, DALLAS COUNTY, TEXAS

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

PROJECT MGR.	DESIGNED BY	DRAWN BY	CHECKED BY	DATE	PROJECT NO.	REVISION	DRAWING NO.	FIGURE
TT	VM	AAS	TT	AS SHOWN		-	-	7

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY



After U.S.G.S 7.5 Minute Topographic Quadrangle, Oak Cliff, Texas, 1958, Photo Revised 1981, Contour Interval 10 Feet

o Approximate Location of Perimeter Air Monitoring Stations

FIGURE TITLE:	Perimeter Air Monitoring Station Location Map	SITE NAME:	RSR Superfund Site OU5 Subareas 2, 3 and 4
DOCUMENT TITLE:	Remedial Action Report		**Figure 8** **Location Map - OU5, Subareas 2, 3, and 4** **RSR Corporation Superfund Site** **Dallas, Dallas County, Texas** **First Five-Year Review**
	ENTACT 4710 West Royal Lane, Suite 150 Irving, Texas 75063 (972)580-1222	DATE:	12/03
		SCALE:	As Sho
		PROJECT NO:	D959

Figure reproduced from ENTACT, 2004a

PREPARED FOR:	DESIGNED BY: VM	RSR CORPORATION SUPERFUND SITE DALLAS, DALLAS COUNTY, TEXAS				FIGURE 8 LOCATION MAP–OU5, SUBAREAS 2, 3, AND 4	
	PROJECT MGR: TT						
	BY: [redacted]	DRAWN BY: AAS	CHECKED BY: TT	SCALE: N/A	DATE: AS SHOWN	PROJECT NO	FIGURE: 8

Figure reproduced from ENTACT, 2004a

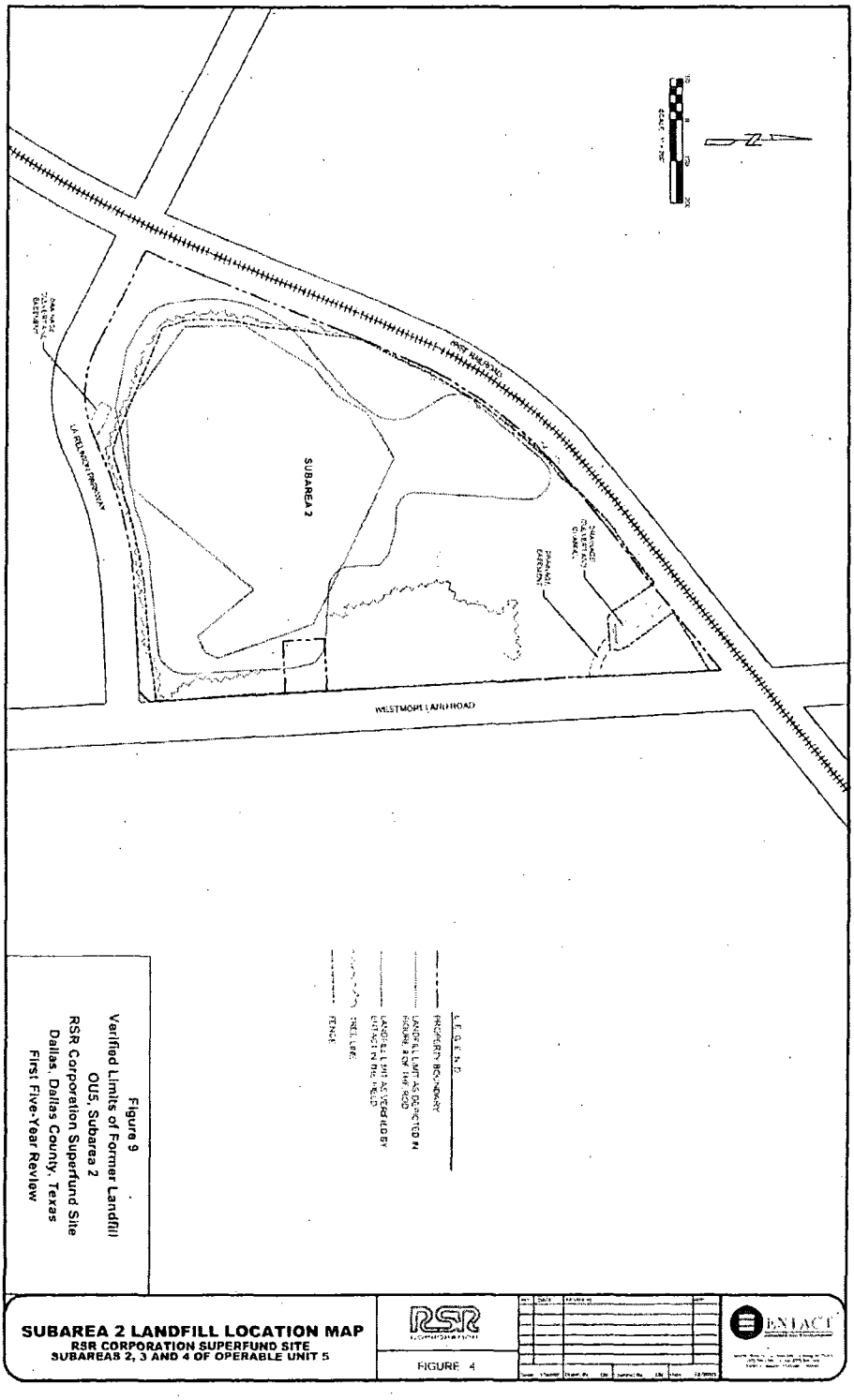


Figure 9
Verified Limits of Former Landfill
OU5, Subarea 2
RSR Corporation Superfund Site
Dallas, Dallas County, Texas
First Five-Year Review

SUBAREA 2 LANDFILL LOCATION MAP
RSR CORPORATION SUPERFUND SITE
SUBAREAS 2, 3 AND 4 OF OPERABLE UNIT 5

PROJECT MGR.	DESIGNED BY	DRAWN BY	CHECKED BY	DATE	PROJECT NO.	REVISION	DRAWING NO.	FIGURE
TT	VM	AAS	TT	AS SHOWN		-	-	9

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

RSR CORPORATION SUPERFUND SITE
DALLAS, DALLAS COUNTY, TEXAS

FIGURE 9
OU5 SUBAREA 2

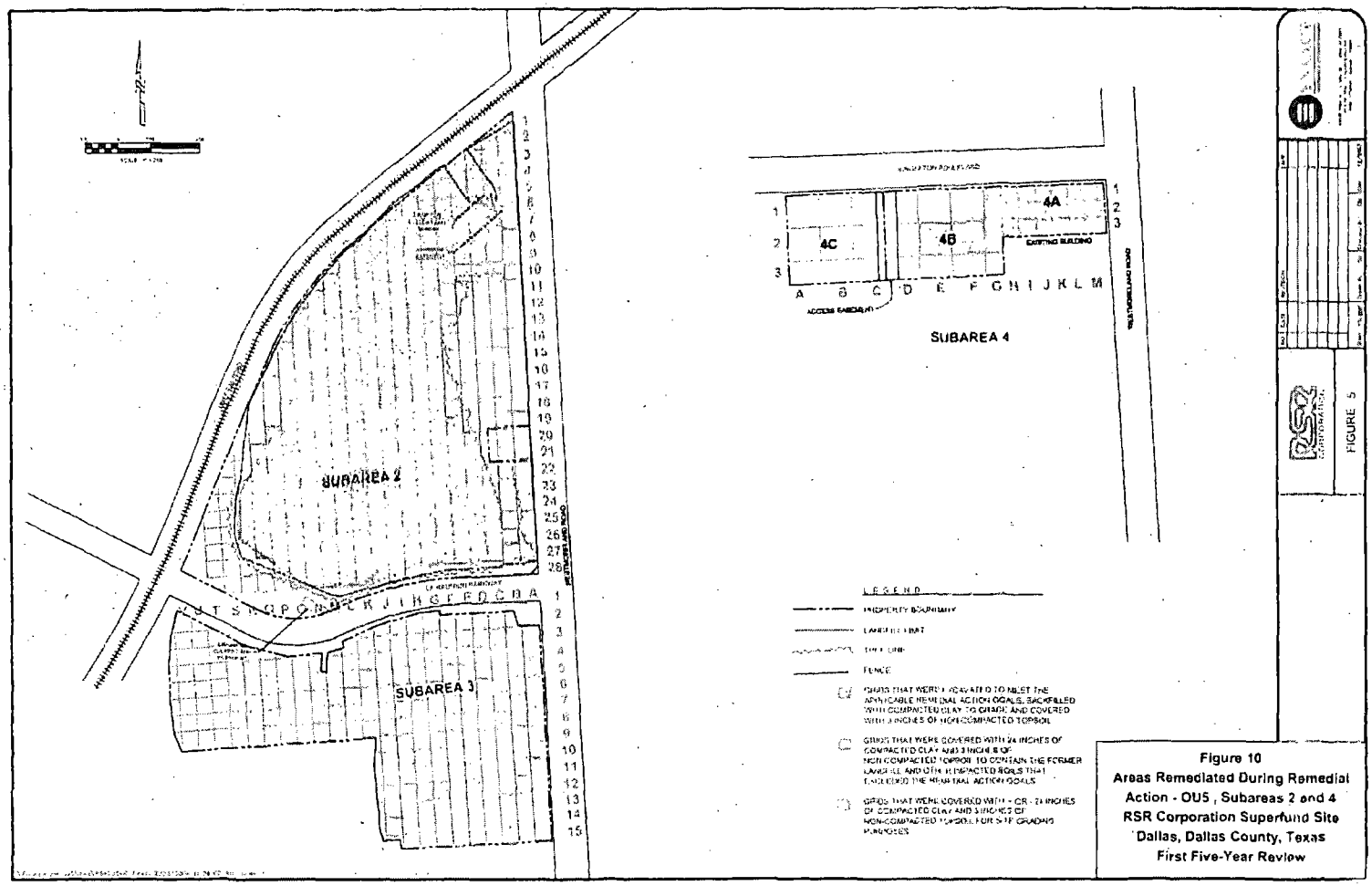


Figure reproduced from ENTACT, 2004a

Figure 10
Areas Remediated During Remedial Action - OU5 , Subareas 2 and 4
RSR Corporation Superfund Site
Dallas, Dallas County, Texas
First Five-Year Review

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

RSR CORPORATION SUPERFUND SITE
DALLAS, DALLAS COUNTY, TEXAS

FIGURE 10
OU5 SUBAREAS 2 AND 4

PROJECT MGR.	DESIGNED BY	DRAWN BY	CHECKED BY	DATE	PROJECT NO.	REVISION	DRAWING NO.	FIGURE
TT	VM	AAS	TT	AS SHOWN		-	-	10

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

APPENDIX C
INSTITUTIONAL CONTROLS DOCUMENTATION

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APPENDIX C
INSTITUTIONAL CONTROLS DOCUMENTATION

09/24/2010 01:19:04 PM

201000245880
NOTICE 1/7

Deed Notice – OU3, Site 3
When recorded, mail certified copy to:
United States Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733
Attn: Carlos Sanchez

DEED NOTICE

STATE OF TEXAS §
§ KNOW ALL PERSONS BY THESE PRESENTS:
COUNTY OF DALLAS §

PLEASE TAKE NOTICE THAT: This Deed Notice ("Deed Notice") is made by TXI Operations LP ("Owner") dated as of this the 17th day of September, 2010, with respect to real property containing 0.468 of an acre of land located in Dallas County, Texas, more particularly described in Exhibits A and B, attached hereto and incorporated herein for all purposes (the "Property").

Pursuant to the Consent Decree for the RSR Superfund Site, in the *United States of America and State of Texas v. Quemetco Metals Limited, Inc., Quemetco, Inc., and RSR Corporation*, in the United States District Court for Northern District of Texas, Dallas Division, Civil Action No. 3-01CV0924-D, entered by the court on July 21, 2003 ("Consent Decree"), remedial activities were initiated in February 2004 at OU3, Site 3, which includes the Property (see Exhibit A), in accordance with the selected remedy specified in the Record of Decision, RSR Corporation Superfund Site, Operable Unit 3, Landfills and Slag Piles, dated September 30, 1997 ("OU-3 ROD"). As reported in the Final Remedial Action Report, RSR Corporation Superfund Site, Operable Unit 3, Sites 1, 3 and 4, dated November 9, 2004 ("OU-3 Final Remedial Action Report"), those remedial activities were completed in September 2004. Copies of the OU-3 ROD, Consent Decree and OU-3 Final Remedial Action Report are available at the Environmental Protection Agency ("EPA") Region 6, 1445 Ross Avenue, Suite 1200, Dallas, TX 75202-2733.

The selected remedy specified in the OU-3 ROD was designed to eliminate or minimize the threat of exposure to metal contaminants, including lead, present in slag piles and/or landfill areas of OU-3 through direct contact, inhalation and/or ingestion by on-site and/or off-site receptors to reduce the potential migration of those contaminants.

The selected remedy is to be maintained on the Property. The metes and bounds of the Property are described in Exhibit B. This deed notice applies only to the 40 foot x

510 foot area designated as the Property in Exhibit B. No provision of this deed notice is applicable to any area of land that lies outside the Property.

In accordance with the selected remedy, lead slag and/or lead acid battery chips may remain within the Property as of the date of the execution of this deed notice. The selected remedy requires the maintenance of a barrier over the contaminated areas in order to prevent direct contact with any residual soil contamination above health-based levels that remain within the Property. Because hazardous substances may remain on-site above health-based levels, the OU-3 ROD requires five-year reviews of the Property to ensure that the selected remedy continues to provide adequate protection of human health and the environment. Accordingly, this deed notice shall remain in place until the Property identified in Exhibit B supports unlimited use as specified in the OU-3 ROD, and prior written approval is provided by the EPA or its successor agencies.

A Five-Year Review completed on September 29, 2005, determined that the remedy for the RSR Corporation Superfund Site is protective of human health and the environment and will remain so provided certain institutional controls are implemented, including the recording of deed notices specifying the requirement to maintain the integrity of the protective soil covers and caps. Disturbance of, destruction of, interference with, removal of soil and/or groundwater, or damaging or altering elements of the selected remedy in anyway without authorization from EPA or its successor agencies may subject the Property owner and/or the party causing disturbance to legal liability under the Comprehensive Environmental Response Compensation and Liability Act ("CERCLA"), or other laws.

In addition, pursuant to the OU-3 ROD, any unsafe site development, invasive digging or drilling of the selected remedy or other barrier located within the Property that would disturb the capped or covered areas in place within the Property, or damage of any element of the selected remedy is prohibited unless approved in advance by EPA in writing. Further, under Title 30, Texas Administrative Code, Chapter 350, Subchapter F, future use of the Property may be restricted to commercial or industrial use.

Pursuant to the Consent Decree, the Property may be subject to additional future environmental requirements under CERCLA 42 U.S.C. § 9601 *et seq.*, or as may be determined necessary by EPA or its successor agencies. Any owner of the Property may become liable jointly and severally under Federal or Texas law, for any environmental response action required on the Property.

By: Barry M. Bone Date: 9-17-10

Barry M. Bone
TXI Operations LP
1341 W. Mockingbird Ln.
Dallas, Texas 75247-6913

By Barry M. BONE

Signed in my presence on the 17th day of September, 2010, in the presence of the undersigned competent witnesses and me, Notary, after reading of the whole.
Witnesses:

Kristina A. Thomas
Print Name: Kristina A. Thomas

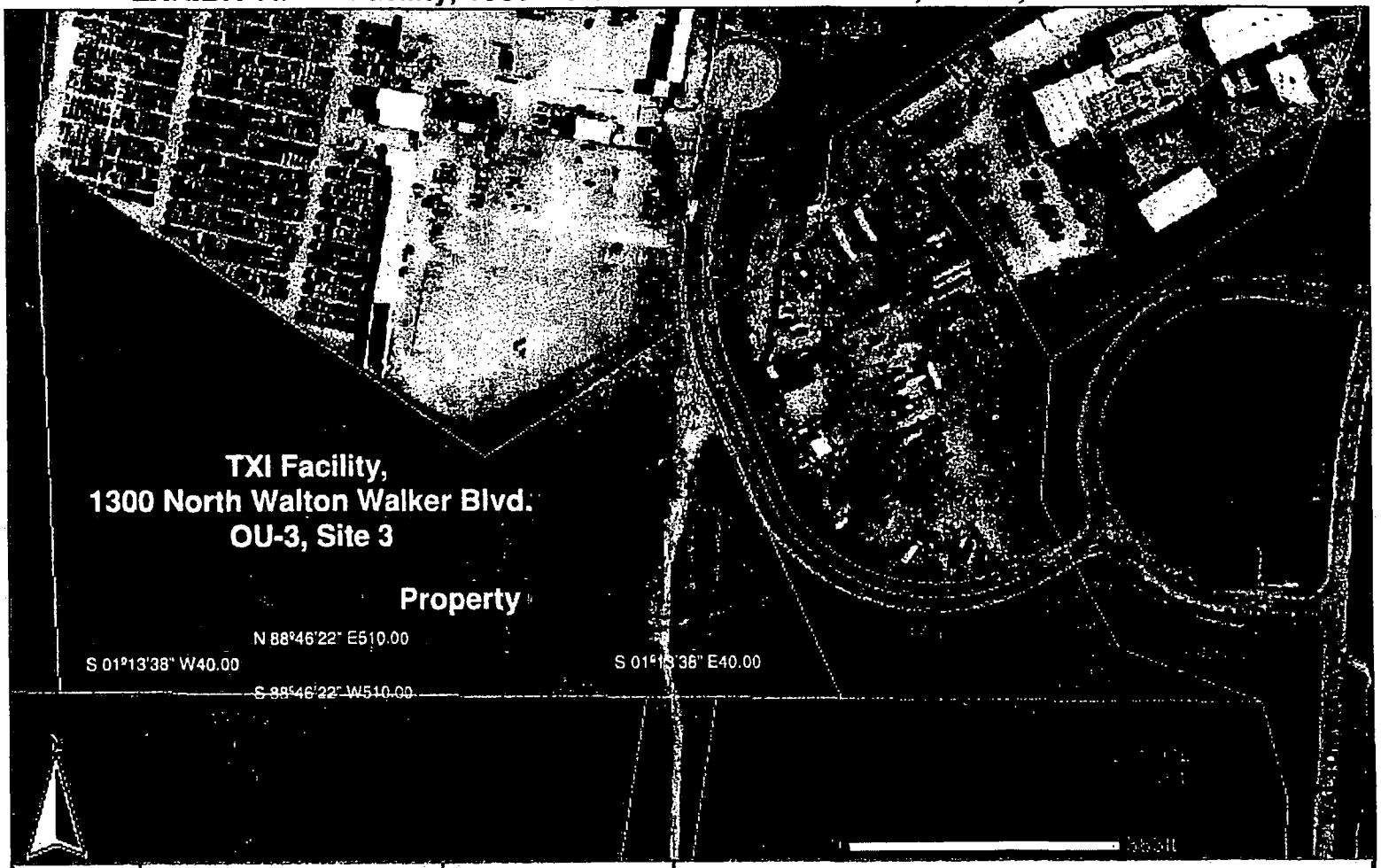
Sandra K. Armstrong
Print Name: SANDRA K. ARMSTRONG

Heather O'Mara
Notary Public, State of: Texas
My commission expires:

5222445.2
1505-02

HEATHER O'MARA
Notary Public State of Texas
Commission Expires
SEPTEMBER 21, 2012

EXHIBIT A: TXI Facility, 1300 North Walton Walker Blvd., Dallas, TX 75211-1041



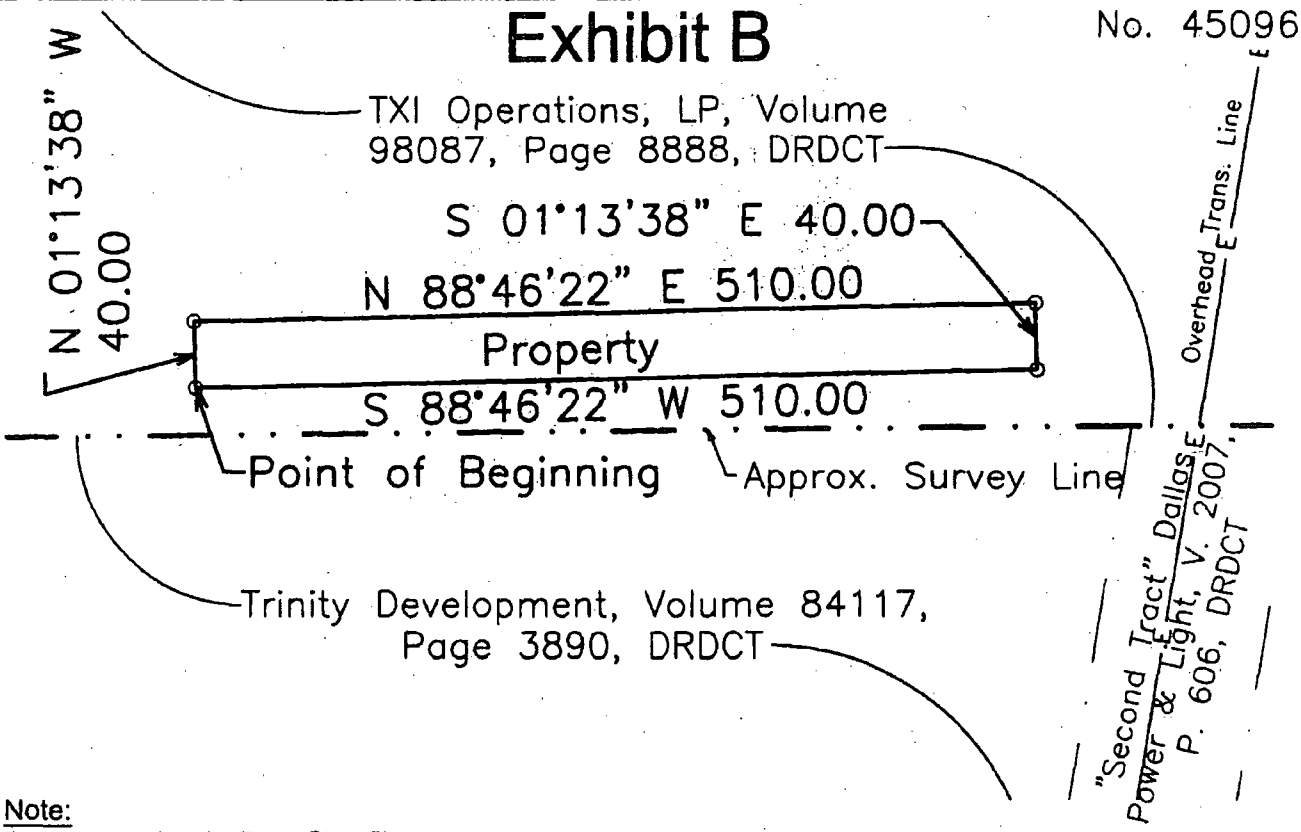
☐	Property area	.....	Location of 24-inch soil cover to contain impacted soils exceeding remedial action goals and surficial deposits of slag and/or battery chips.

Source: (i) Property detail: Dallas Central Appraisal District; (ii) Location of soil cap: OU-3 Final Remedial Action Report, Figure 5b.

5204387

Exhibit B

No. 45096



Note:
Bearings based on the Texas State Plane Coordinate System, North Central Zone.

STATE OF TEXAS
REGISTERED
ROGER W. HART
4484
PROFESSIONAL
LAND SURVEYOR

Map Showing
Consolidated Area
Being a tract of land in the
James Horton Survey,
Abstract Number 610,
City of Dallas, Dallas County, Texas.

See Attached Field Notes
Prepared 07/27/10

NORTH

100 0 100 200

Scale: 1" = 100'

AREA SURVEYING, INC.
Surveying / Mapping
135 Sheffield Drive / Fort Worth, TX 76134
Voice: 817.293.5684 / Fax: 817.764.2328
www.areasurveying.com

No. 45096

Exhibit B

Description for a tract of land in the James Horton Survey, Abstract Number 610, City of Dallas, Dallas County, Texas, and being a portion of a tract of land described in a deed to TXI Operations, LP, recorded in Volume 98087, Page 8888, Deed Records, Dallas County, Texas, and more particularly described as "TRACT 2" in a deed to Texas Industries, Inc., recorded in Volume 69087, Page 1641, Deed Records, Dallas County, Texas, and being described by metes and bounds as follows:

BEGINNING at a 1/2" iron pin set with yellow cap stamped "AREA SURVEYING", said pin lying 584.67 feet, North 86 degrees 40 minutes 50 seconds East from the northwest corner of a 48.9156 acre tract of land described in a deed to Trinity Development, recorded in Volume 84117, Page 3890, Deed Records, Dallas County, Texas, said pin having a Northing of 6,961,823.34 and an Easting of 2,453,071.80, according to the Texas State Plane Coordinate System, North Central Zone;

THENCE North 01 degree 13 minutes 38 seconds West a distance of 40.00 feet to a 1/2" iron pin set with yellow cap stamped "AREA SURVEYING";

THENCE North 88 degrees 46 minutes 22 seconds East a distance of 510.00 feet to a 1/2" iron pin set with yellow cap stamped "AREA SURVEYING", from which the northwest corner of "Second Tract" as described in a deed to Dallas Power & Light, recorded in Volume 2007, Page 606, Deed Records, Dallas County, Texas, bears 93.50 feet, bears South 38 degrees 23 minutes 59 seconds East;

THENCE South 01 degree 13 minutes 38 seconds East a distance of 40.00 feet to a 1/2" iron pin set with yellow cap stamped "AREA SURVEYING" from which a 2" iron pipe found for an angle point in the west line of said Dallas Power & Light tract bears 2,100.54 feet South 07 degrees 41 minutes 38 seconds West;

THENCE South 88 degrees 46 minutes 22 seconds West a distance of 510.00 feet to the POINT OF BEGINNING, said described tract containing 0.468 of an acre of land.

Bearings based on the Texas State Plane Coordinate System, North Central Zone.
A drawing should accompany this description.

c:\docume~1\jatNocals~1\temp\xpgrpwise\45096 field notes only.doc

AREA SURVEYING, INC.
Surveying / Mapping
135 Sheffield Drive / Fort Worth, TX 76134
Voice: 817.293.5684 / Fax: 817.764.2328
www.areasurveying.com

Filed and Recorded
Official Public Records
John F. Warren, County Clerk
Dallas County, TEXAS
09/24/2010 01:19:04 PM
$36.00

201000245880

01/07/2013 01:34:24 PM
201300005002
NOTICE 1/5

Deed Notice – OU3, Site 3
When recorded, mail certified copy to:
United States Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733
Attn: Carlos Sanchez

DEED NOTICE

STATE OF TEXAS §
§ KNOW ALL PERSONS BY THESE PRESENTS:
COUNTY OF DALLAS §

PLEASE TAKE NOTICE THAT: This Deed Notice ("Deed Notice") is made by Es Su Casa Nueva Inv & Mg ('Owner") dated as of this the 07 day of JAN 2013 with respect to real property located in Dallas County, Texas, more particularly described in Exhibit A, attached hereto and incorporated herein for all purposes (the "Property").

Pursuant to the Consent Decree for the RSR Superfund Site, in the United States of America And State of Texas v. Quemetco Metals Limited, Inc., Quemetco, Inc., and RSR Corporation, in the United States District Court for Northern District of Texas, Dallas Division, Civil Action No. 3-01CV0924-D, entered by the court on July 21, 2003 ("Consent Decree"), remedial activities in accordance with the selected remedy specified in the Record of Decision, RSR Corporation Superfund Site, Operable Unit 3, Landfills and Slag Piles, dated September 30, 1997 ("ROD"), were initiated at OU3 in February 2004. As reported in the Final Remedial Action Report, RSR Corporation Superfund Site, Operable Unit 3, Sites 1, 3 and 4, dated November 9, 2004 ("Final Remedial Action Report"), those remedial activities were completed in September 2004. Copies of the ROD, Consent Decree and Final Remedial Action Report are available at the Environmental Protection Agency ("EPA") Region 6, 1445 Ross Avenue, Suite 1200, Dallas, TX 75202-2733.

The selected remedy specified in the ROD was designed to eliminate or minimize the threat of exposure to metal contaminants, including lead, present in slag piles and/or landfill areas of OU3 through direct contact, inhalation and/or ingestion by on-site and/or off-site receptors to reduce the potential migration of those contaminants.

The selected remedy is to be maintained on the Property in the locations shown in Exhibit A. In accordance with the selected remedy, lead slag and/or lead acid battery chips may remain in certain areas of the Property as of the date of the execution of this deed notice. The selected remedy requires the maintenance of a barrier over the contaminated areas in order to prevent direct contact with any residual soil contamination

above health-based levels that remain on the Property. Because hazardous substances may remain on-site above health-based levels, the ROD requires five-year reviews of the Property to ensure that the selected remedy continues to provide adequate protection of human health and the environment. Accordingly, this deed notice shall remain in place until the property identified in Exhibit A supports unlimited use as specified in the ROD, and prior written approval is provided by the EPA or its successor agencies.

Disturbance of, destruction of, interference with, removal of soil and/or groundwater, or damaging or altering elements of the selected remedy in anyway without authorization from EPA or its successor agencies may subject the property owner and/or the party causing disturbance to legal liability under the Comprehensive Environmental Response compensation and Liability Act ("CERCLA"), or other laws.

In addition, pursuant to the ROD, any unsafe site development, invasive digging or drilling of the selected remedy or other barrier described in Exhibit A that would disturb the capped or covered areas in place on the Property, or damage of any element of the selected remedy is prohibited unless approved in advance by EPA in writing. Further, under Title 30, Texas Administrative Code, Chapter 350, Subchapter F, future use of the Property may be restricted to commercial or industrial use.

Pursuant to the Consent Decree, the Property may be subject to additional future environmental requirements under CERCLA 42 U.S.C. § 9601 *et seq.* or as may be determined necessary by EPA or its successor agencies. Any owner of the property may become liable jointly and severally under Federal or Texas law, for any environmental response action required on the Property.

Property:	5900 West Davis Street Dallas, Texas, 75211-7040
Owner:	Es Su Casa Nueva Inv & Mg
Address:	4237 Maryland Ave. Dallas, Texas 75216-6123
Account No:	00000802960000000
Account type:	Commercial

Legal Description: (1) BLK 8334 TR 7; (2) 3.855 AC; (3) INSIDE 243FR DAVIS; (4) INT200700938880 DD03142007 CO-DC; (5) 8334 000 00700 2008334 000; Deed transfer date: March 14, 2007.

(Commercial Account No.: ; Legal Description:

Property Description: See attached Exhibit A

By: _____ Date: 07 - JANUARY 2013

Es Su ~~Casa~~ Nueva Inv & Mg
4237 Maryland Ave
Dallas, Texas 75216-6123

Signed in my presence on the 7 day of JANUARY ~~2009,~~ 2013 in the presence of the undersigned competent witnesses and me, Notary, after reading of the whole.

Witnesses:

THIS instrument WAS ACKNOWLEDGED BEFORE ME ON 7 day of JANUARY 2013 BY IRMA GONZALEZ MONZON.

_____
Print Name: _____

_____
Print Name: _____

GABRIEL ALANIZ
Notary Public
STATE OF TEXAS
My Comm. Exp. Oct. 20, 2016

_____
Notary Public, State of: TEXAS
My commission expires: _____

5191908.1
1505-02

EXHIBIT A: Es Su Casa Property, 5900 West Davis Street, Dallas, TX 75211-7307

Account No:	00000802960000000	Property Owner Name / Address:	Es Su Casa Nueva Inv & Mg 4237 Maryland Ave, Dallas, Texas 75216-6123
Account Type:	Commercial	Legal Description:	(1) BLK 8334 TR 7; (2) 3.855 AC; (3) INSIDE 243FR DAVIS; (4) INT200700938880 DD03142007 CO-DC; (5) 8334 000 00700 2008334 000 (Deed transfer date: 3/14/2007)
Source:	Dallas Central Appraisal District		

5191906

Filed and Recorded
Official Public Records
John F. Warren, County Clerk
Dallas County, TEXAS
01/07/2013 01:34:24 PM
$28.00

201300005002

APPENDIX D
NOTICE TO PUBLIC REGARDING THE FIVE YEAR REVIEW

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APPENDIX D
NOTICE TO PUBLIC REGARDING THE FIVE YEAR REVIEW

United States
Environmental
Protection Agency

www.epa.gov/region6

News Release

Region 6
External Affairs (6XA)
1445 Ross Avenue
Dallas, Texas 75202-2733
Public Information: (800) 887-6063

For more information contact Joe Hubbard or Jennah Durant at 214-665-2200 or r6press@epa.gov
Subscribe to receive e-mail copies of Region 6 news releases at: www.epa.gov/region6/6xa/r6news_mailing_list.htm

EPA to Evaluate 22 Previously Cleaned Superfund Sites

DALLAS – (Dec. 2, 2014) The U.S. Environmental Protection Agency (EPA) will conduct five-year reviews at 22 sites to ensure that cleanup of each site continues to protect public health and the environment. The reviews also identify any deficiencies and present recommendations to address them. In conducting the five-year review, EPA will interview local citizens, and review site operations, maintenance and monitoring information.

Five-year reviews are required by law under Superfund and provides the public with an opportunity to evaluate preliminary findings and provide input on any potential follow up activities that may be required after the review process.

Arkansas
Jacksonville Municipal Landfill
http://www.epa.gov/earth1r6/6sf/pdffiles/jacksonville-ar.pdf

Mountain Pine Pressure Treating
http://www.epa.gov/earth1r6/6sf/pdffiles/mountain-ar.pdf

Rogers Road Municipal Landfill
http://www.epa.gov/earth1r6/6sf/pdffiles/rogers-ar.pdf

Louisiana
American Creosote Works Inc. (Winnfield Place)
http://www.epa.gov/earth1r6/6sf/pdffiles/american creosote-la.pdf

Gulf State Utilities – North Ryan Street
http://www.epa.gov/earth1r6/6sf/pdffiles/gsu-north-ryan-la.pdf

Southern Shipbuilding
http://www.epa.gov/earth1r6/6sf/pdffiles/southern-ship-la.pdf

New Mexico
Cal West Metal (USSBA)
http://www.epa.gov/earth1r6/6sf/pdffiles/cal-west-metals-nm.pdf

Lee Acres Landfill (USDOI)
http://www.epa.gov/earth1r6/6sf/pdffiles/lee-acres-nm.pdf

Prewitt Abandoned Refinery
http://www.epa.gov/earth1r6/6sf/pdffiles/prewitt-nm.pdf

South Valley
http://www.epa.gov/earth1r6/6sf/pdffiles/south-valley-nm.pdf

North Railroad Avenue Plume
http://www.epa.gov/earth1r6/6sf/pdffiles/north-railroad-ave-nm.pdf

Oklahoma
Hudson Refinery
http://www.epa.gov/earth1r6/6sf/pdffiles/hudson-ok.pdf

Sand Springs Petrochemical Complex
http://www.epa.gov/earth1r6/6sf/pdffiles/sand-springs-ok.pdf

Tar Creek
http://www.epa.gov/earth1r6/6sf/pdffiles/tar-creek-ok.pdf

Texas
Bailey Waste Disposal
http://www.epa.gov/earth1r6/6sf/pdffiles/bailey-tx.pdf

Bio Ecology System Inc.
http://www.epa.gov/earth1r6/6sf/pdffiles/bio-ecology-tx.pdf

Crystal Chemical Company
http://www.epa.gov/earth1r6/6sf/pdffiles/crystal-chem-tx.pdf

RSR Corporation
http://www.epa.gov/earth1r6/6sf/pdffiles/rsr-tx.pdf

Sheridan Disposal Services
http://www.epa.gov/earth1r6/6sf/pdffiles/sheridan-tx.pdf

Sol Lynn Industrial Transformers
http://www.epa.gov/earth1r6/6sf/pdffiles/sol-lynn-tx.pdf

Tex-Tin Corp
http://www.epa.gov/earth1r6/6sf/pdffiles/tex-tin-tx.pdf

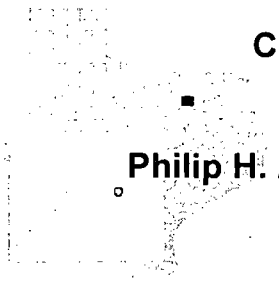
United Creosoting Company
http://www.epa.gov/earth1r6/6sf/pdffiles/united-creosote-tx.pdf

Connect with EPA Region 6:
On Facebook: https://www.facebook.com/eparegion6
On Twitter: https://twitter.com/EPAregion6
Activities in EPA Region 6: http://www.epa.gov/aboutepa/region6.htm

###

RSR CORPORATION
SUPERFUND SITE
Dallas, Dallas County, Texas

EPA ID: TXD079348397
Site ID: 0602297



EPA Region 6
Congressional District: 30

Contact:
Philip H. Allen, P.E. 214-665-8516

Updated: October 2014

Background

The RSR Corporation Superfund Site was an abandoned secondary lead smelter facility; and is located in west Dallas, Dallas County, Texas. The site encompasses an area approximately 13.6 square miles in size. The former smelter facility was located at the intersection of Singleton Blvd and Westmoreland Road. The RSR Study Area is bounded on the north and east by the Trinity River, on the south by Fort Worth Avenue, and on the west by Highway Loop 12. The RSR Site is very diverse and includes large single and multi-family residential neighborhoods, multi-family public housing areas and some industrial, commercial and retail establishments.

For approximately 50 years, the secondary lead smelting facility processed used batteries and other lead-bearing materials into pure lead, lead alloys, and other lead products. Other industrial property related to the smelter, the former battery wrecking facility, is located on the southwest corner of the Westmoreland Road and Singleton Boulevard intersection. The smelter operations ceased in 1984.

There are five Operable Units (OUs) of the RSR site, which are distinct geographical areas that are described below:

- OU No. 1 - Private residential areas potentially impacted by historical operations of the smelter;
- OU No. 2 - The Dallas Housing Authority=s public housing development located northeast of the smelter facility;
- OU No. 3 - Former landfills and slag piles located at three different sites within west Dallas;
- OU No. 4 - The former smelter facility;
- OU No. 5 - Former battery wrecking facility and other industrial tracts of land associated with the smelter and located across Westmoreland Road from the smelter facility.

Current Status

- The EPA published the Federal Register Notice on August 17, 2007, to start the 30-day public comment for the partial deletion of the RSR Corporation Superfund Site. The partial deletion includes Operable Unit (OU) No. 4 and Subarea 1 of OU No. 5. The public comment period ended on September 17, 2007, and no comments were received. The partial deletion was effective on October 16, 2007.

- A Five-Year Review was completed on September 29, 2005. The Five-Year Review determined that the remedy for the RSR Site is protective of human health and the environment and will remain provided certain actions are taken, including creation of Institutional Controls to maintain the integrity of the protective soil covers and caps. The second Five Year Review is currently underway.

- The second Five-Year Review Report was completed in September 2010; and concluded that the remedy remains protective of human health and the environment.

- On September 28, 2004, EPA signed the Preliminary Close Out Report (PCOR) or Construction Completion for the RSR Corporation Superfund site. The PCOR documents that all construction has been completed for the five (5) operable units that comprise the RSR Superfund Site.

- In May 2005, the Environmental Protection Agency (EPA), the Texas Commission on Environmental Quality (TCEQ), and the City of Dallas, signed five (5) Ready for Reuse (RfR) Determinations for properties within RSR operable units number 3, 4 and 5. The RfR Determinations is a technical determination that states that construction cleanup activities have been completed for the designated property and the property is now ready for reuse or redevelopment. The EPA has prepared a Task Order to request EA est to conduct the third Five Year Review for the site. The review will be completed by September 2015.

Benefits

- Cleanup of the residential properties (operable units 1 and 2) and commercial properties (operable units 3, 4 and 5) of the RSR Superfund have resulted in the lowering of blood lead levels of the children that reside in the west Dallas community. The cleanup of over 400 residential properties and over 300 acres of commercial properties west Dallas has resulted in elimination of the source of contamination related to the RSR Superfund site.

- The completed cleanup activities will provide for the safe redevelopment of residential and commercial properties in west Dallas

National Priorities Listing (NPL) History

Proposal Date: May 10, 1993

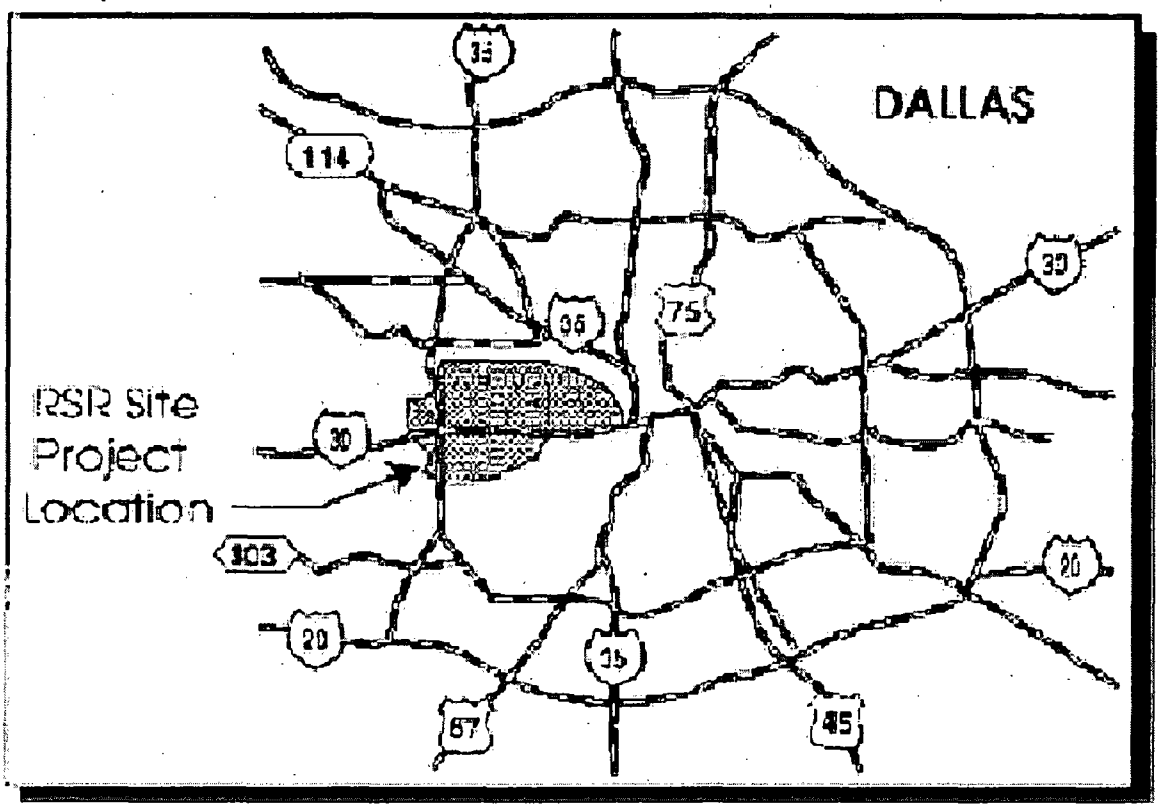
Final Listing Date: September 29, 1995

Population: Approximately 17,000 people live in the west Dallas community.

Setting: The RSR Study Area includes a mixture of residential, commercial, and light industrial properties. The area also included multi-family public housing. The community is considered an environmental justice minority community that is predominately Hispanic.

Hydrology: Drinking water wells within the RSR Study Area have not been impacted by contamination related to the RSR Superfund Site. Drinking water in the west Dallas community is provided by the City of Dallas from surface water reservoirs.

Site Map



Health Considerations

Elevated blood lead levels were found in children living near the former RSR smelter, in 1983. As a result of the smelter closing in 1984 and the cleanup of residential properties in the early 1990s, blood lead analyses conducted in 1993, indicate that blood lead levels in children have been significantly reduced.

Records of Decision

Operable Unit no. 1: May 9, 1995
Operable Unit no. 2: May 9, 1995
Operable Unit no. 4: February 28, 1996
Operable Unit no. 5: April 3, 1997
Operable Unit no. 3: September 30, 1997

Site Contacts

EPA Remediation Project Manager:	Philip H. Allen, P.E.	(214) 665-8516
State Project Manager, TCEQ:	Nancy Johnson	(817) 588-5862
EPA Community Involvement:	Janetta Coats	(214) 665-7308
EPA Regional Public Liaison:	Donn R. Walters	(214) 665-6483
EPA Site Attorney:	George Malone	(214) 665-8030
EPA Toll-Free Telephone Number:		(800) 533-3508

APPENDIX E
SITE INSPECTION PHOTOGRAPHS

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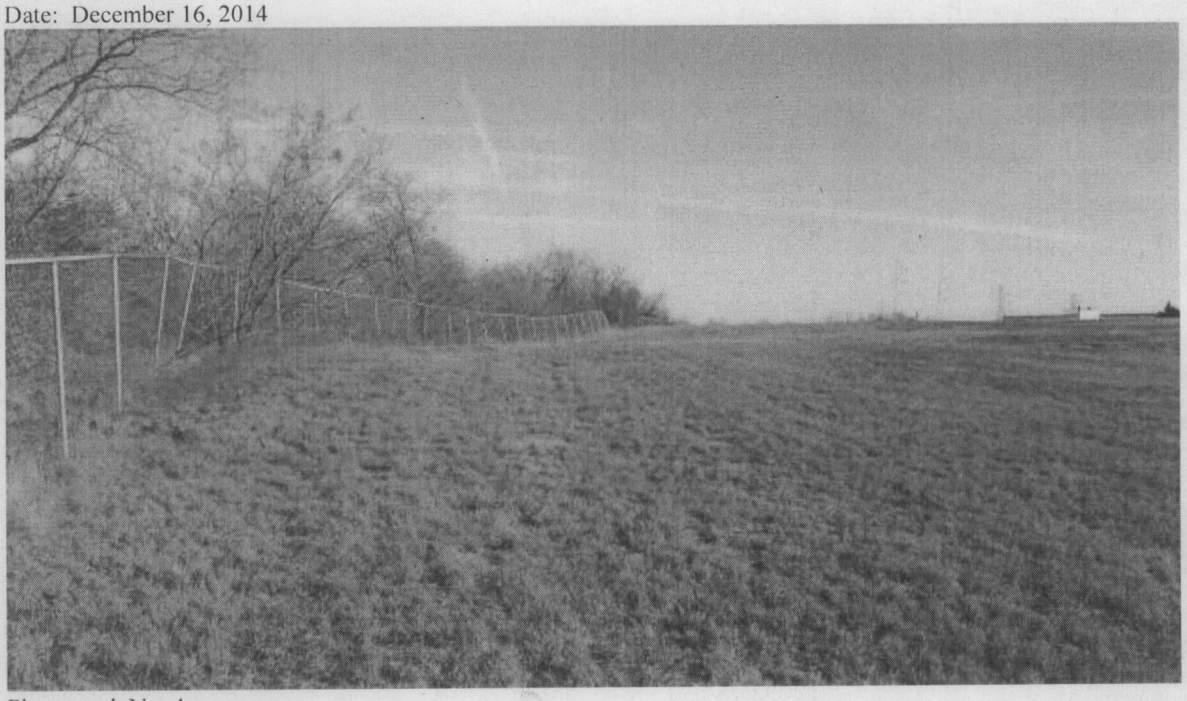
APPENDIX E
SITE INSPECTION PHOTOGRAPHS

Photograph No. 1
Location: OU 5 Subarea 2
Description: Repaired erosion and damaged fence, southwest edge
Direction: Southwest
Date: December 16, 2014

Photograph No. 2
Location: OU 5 Subarea 2
Description: Area of erosion, downhill toe of cover, southwest edge
Direction: North
Date: December 16, 2014

Photograph No. 3
Location: OU 5 Subarea 2
Description: Area of erosion, downhill toe of cover, southwest edge
Direction: South
Date: December 16, 2014

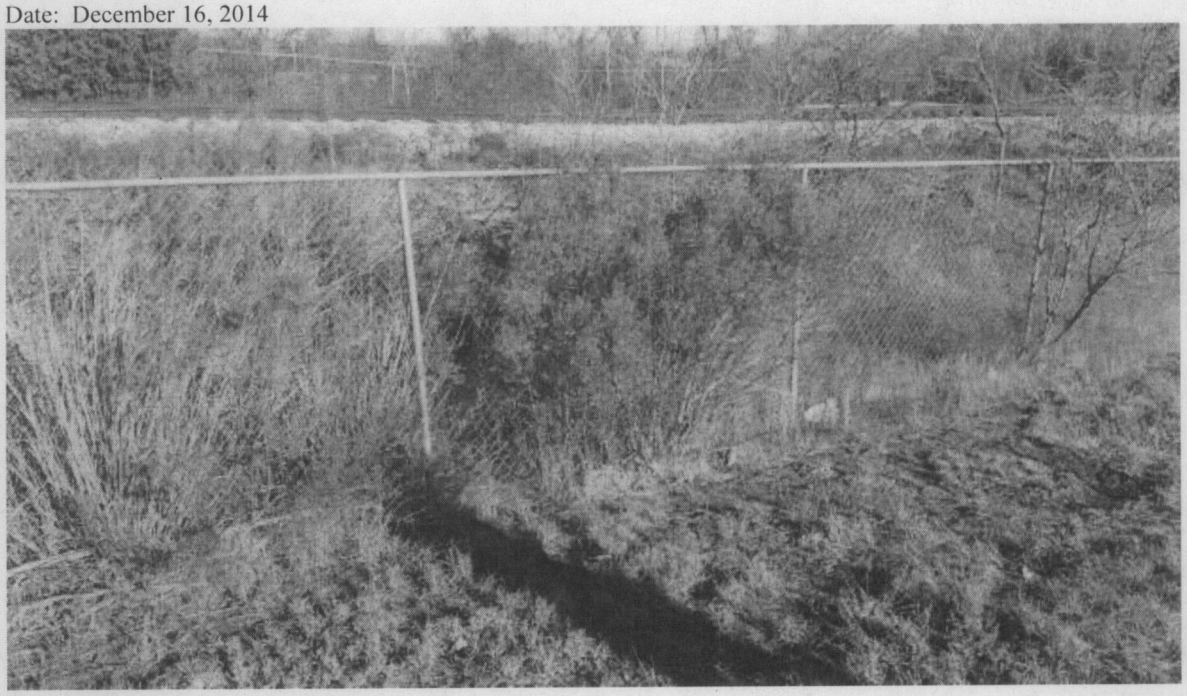


Photograph No. 4
Location: OU 5 Subarea 2
Description: West edge of OU5 Subarea 2
Direction: North
Date: December 16, 2014

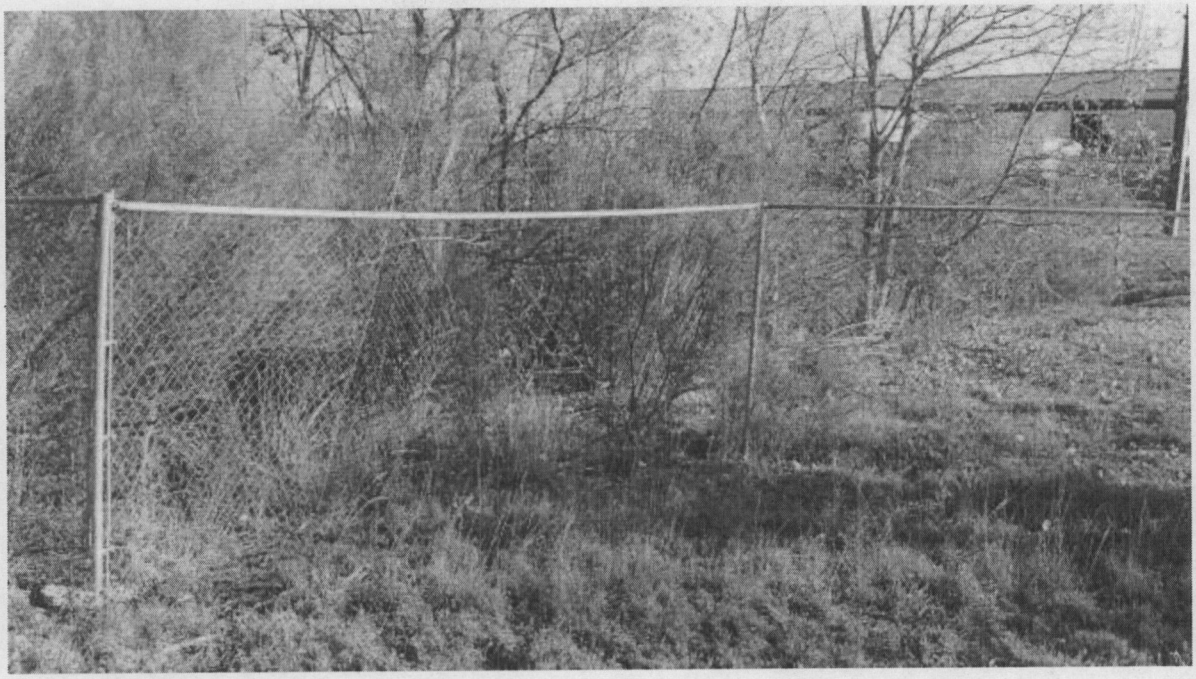
Photograph No. 5
Location: OU 5 Subarea 2
Description: West edge of site looking towards northeast portion of site
Direction: Northeast
Date: December 16, 2014

Photograph No. 6
Location: OU 5 Subarea 2
Description: West edge of site looking towards southern portion of site
Direction: Southeast
Date: December 16, 2014

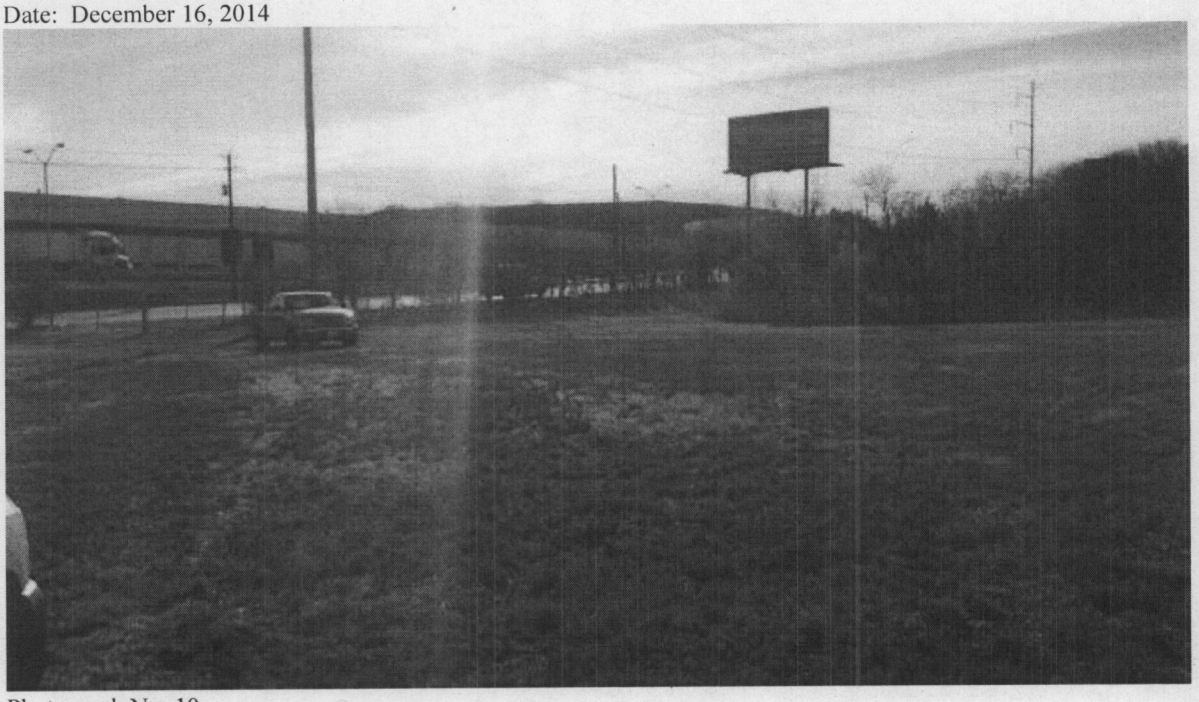
Photograph No. 7
Location: OU 5 Subarea 2
Description: Vegetation encroaching at southwest edge of site
Direction: South
Date: December 16, 2014



Photograph No. 8
Location: OU 5 Subarea 2
Description: Hole in fence at northwest edge of site
Direction: Northwest
Date: December 16, 2014

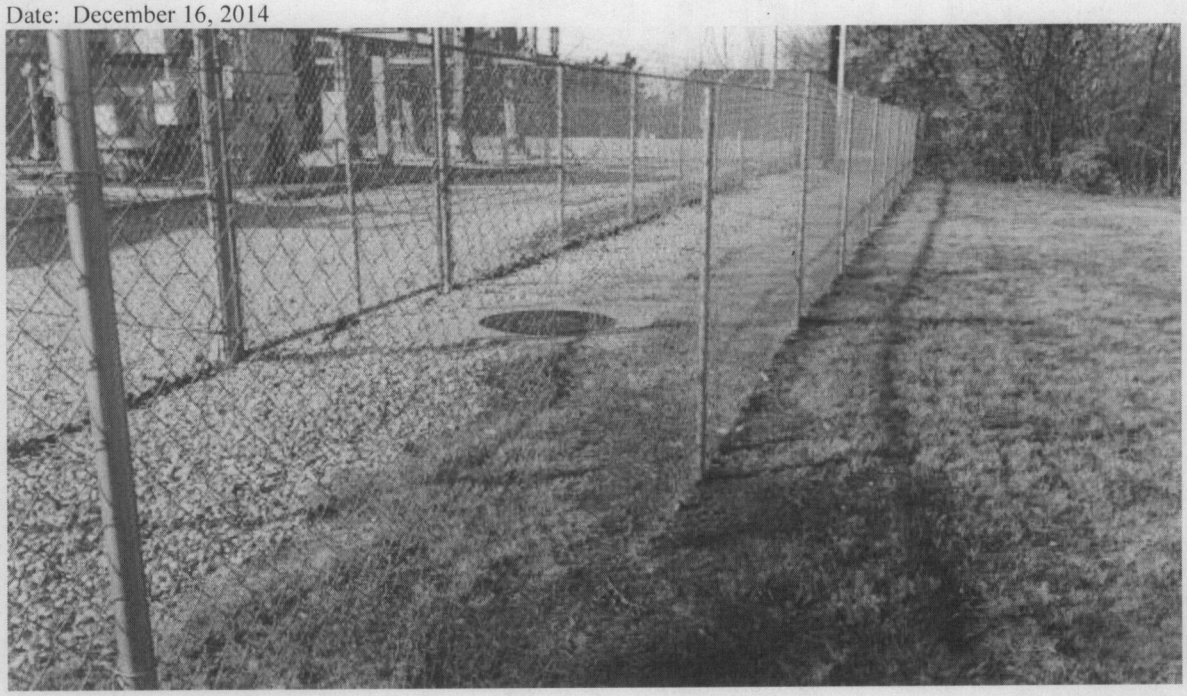


Photograph No. 9
Location: OU 5 Subarea 2
Description: Hole in fence at north edge of site
Direction: Northeast
Date: December 16, 2014



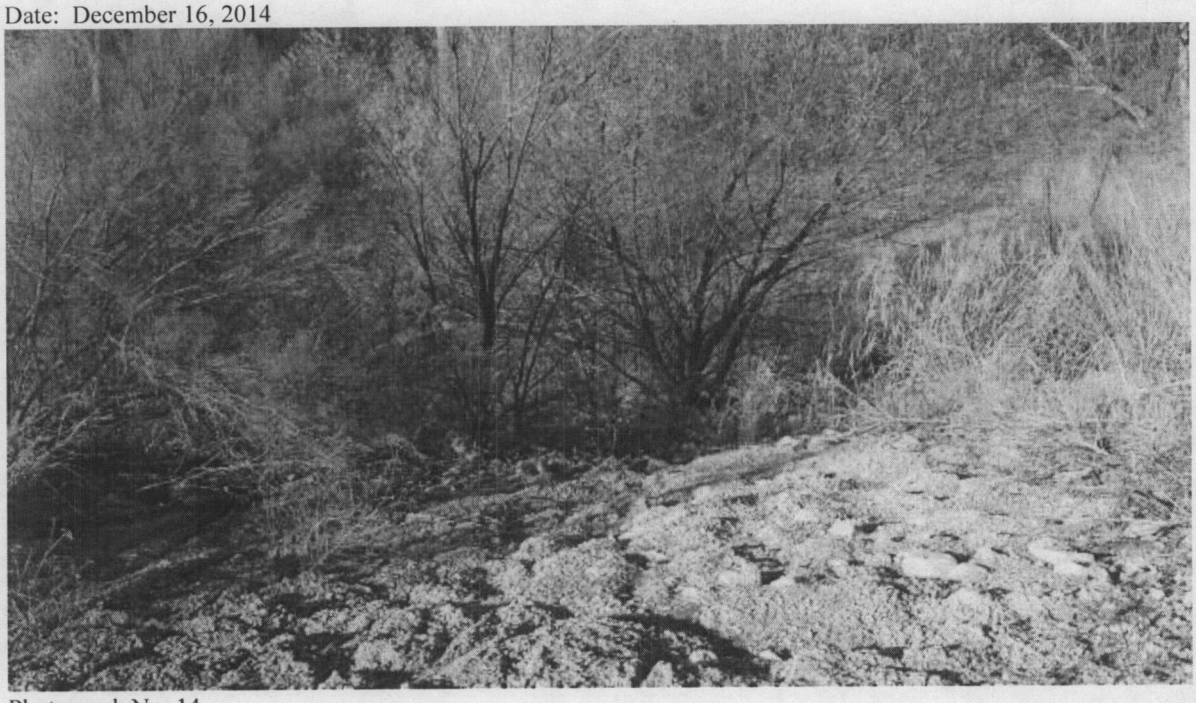
Photograph No. 10
Location: OU 5 Subarea 2
Description: East central portion of site near the gate on Westmoreland Road
Direction: Southeast
Date: December 16, 2014

Photograph No. 11
Location: OU 3 Site 1
Description: View from southeast corner of site
Direction: North
Date: December 16, 2014



Photograph No. 12
Location: OU 3 Site 1
Description: Hole in fence at south edge of site
Direction: West
Date: December 16, 2014

Photograph No. 13
Location: OU 3 Site 1
Description: Drainage at ravine along west edge of site
Direction: West
Date: December 16, 2014

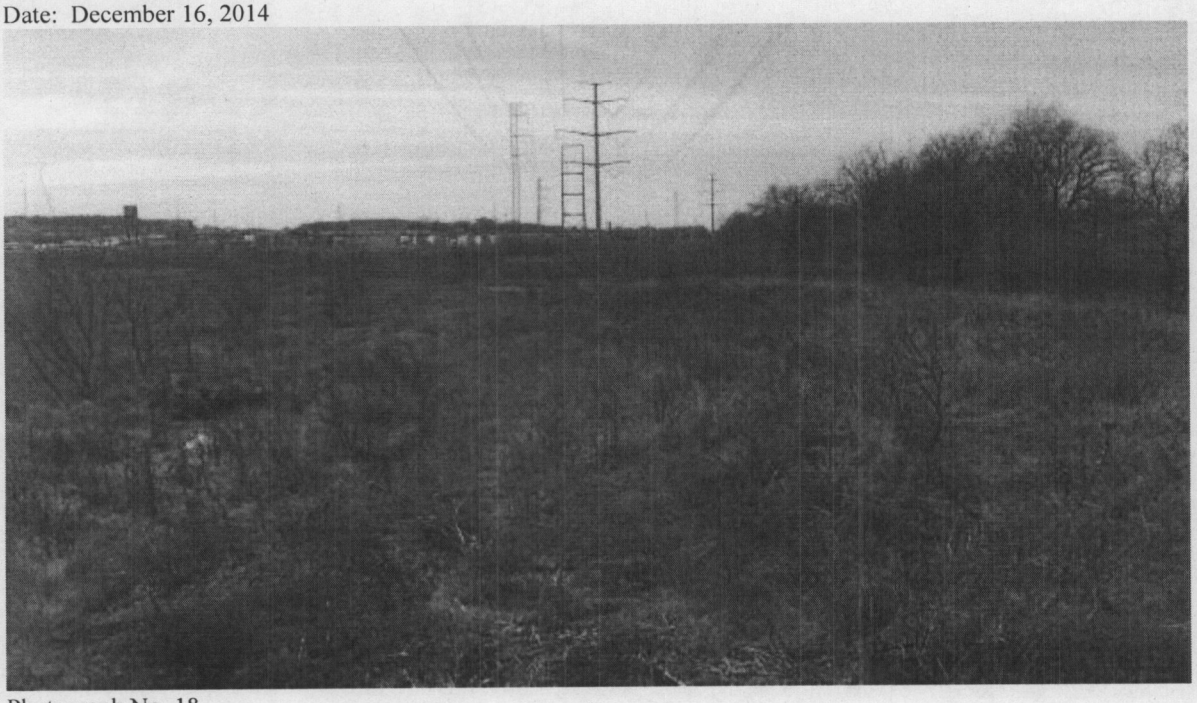


Photograph No..14
Location: OU 3 Site 1
Description: Previously repaired erosion at ravine along west edge of site
Direction: West
Date: December 16, 2014

Photograph No. 15
Location: OU 3 Site 1
Description: View of south end of site
Direction: Southeast
Date: December 16, 2014

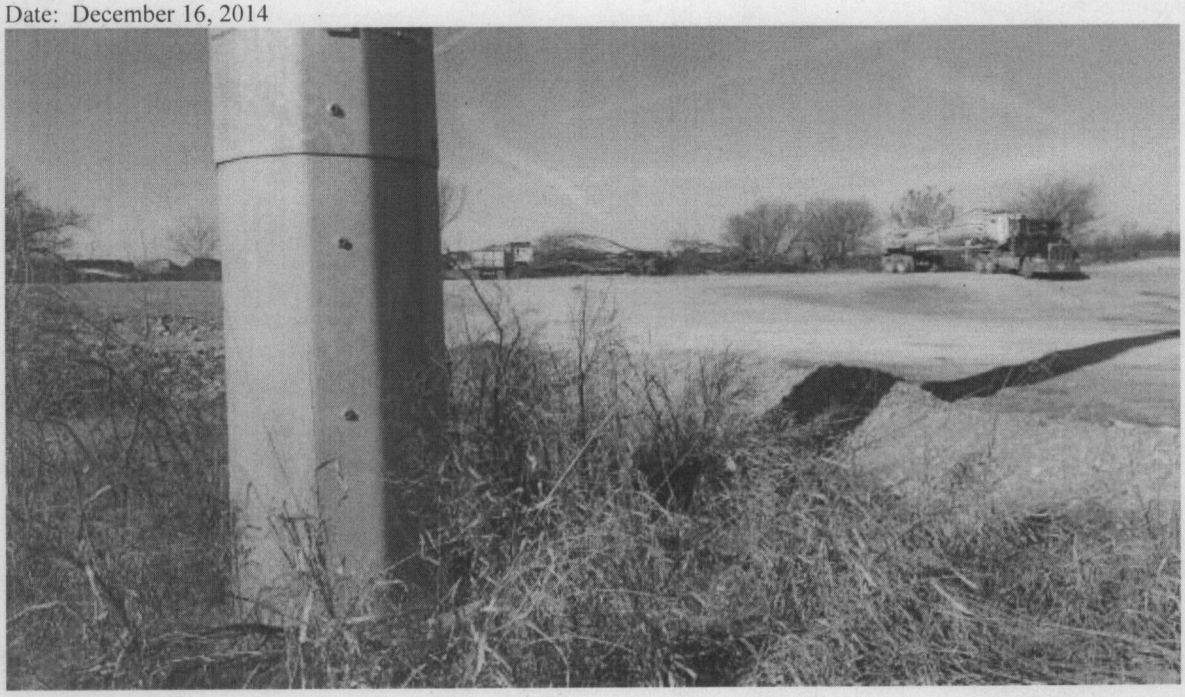
Photograph No. 16
Location: OU 3 Site 1
Description: View of east edge of site, hole in fence
Direction: Northeast
Date: December 16, 2014

Photograph No. 17
Location: OU 3 Site 3
Description: View from south end of site. Orange survey stakes marked "access easement"
Direction: North
Date: December 16, 2014



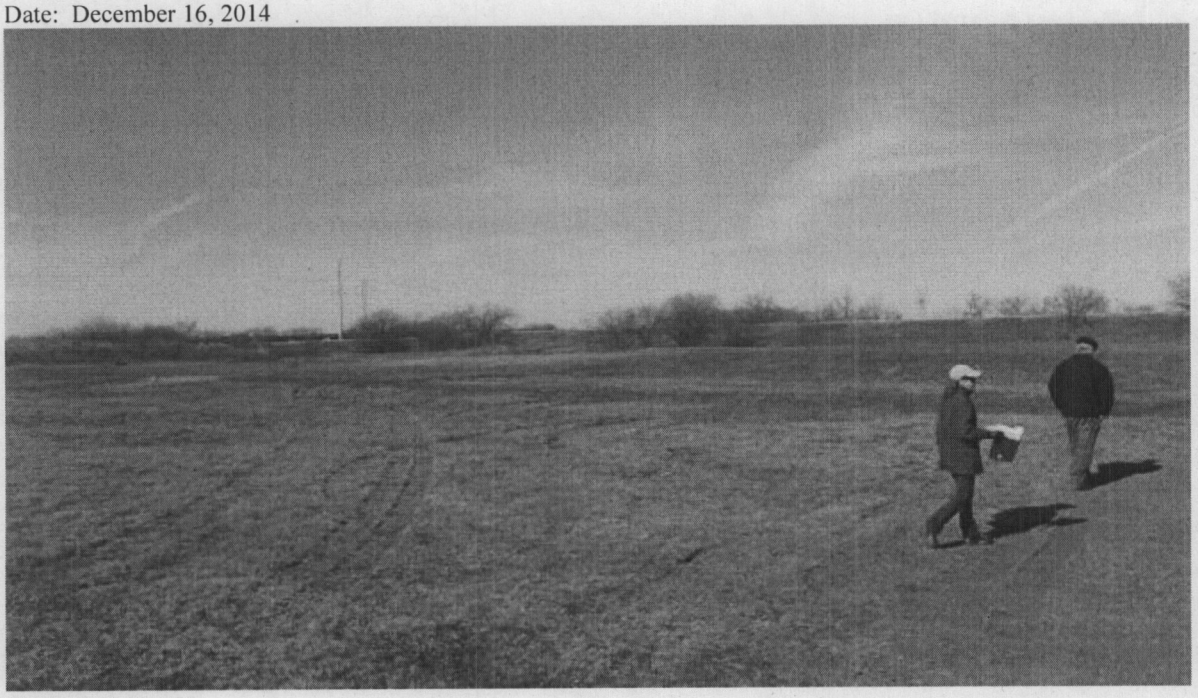
Photograph No. 18
Location: OU 3 Site 3
Description: View towards south edge of site. Trees mark edge of creek
Direction: South
Date: December 16, 2014

Photograph No. 19
Location: OU 3 Site 3
Description: Repaired erosion at beaver run north of beaver dam
Direction: Northwest
Date: December 16, 2014



Photograph No. 20
Location: OU 3 Site 3
Description: Construction area just north of creek
Direction: Northwest
Date: December 16, 2014

Photograph No. 21
Location: OU 3 Site 3
Description: Construction area north of creek, southwest of beaver pond
Direction: Southwest
Date: December 16, 2014



Photograph No. 22
Location: OU 3 Site 4
Description: South side of former landfill area
Direction: Northwest
Date: December 16, 2014

Photograph No. 23
Location: OU 3 Site 4
Description: Covered slag piles under light brown vegetation in background
Direction: Southeast
Date: December 16, 2014

Photograph No. 24
Location: OU 3 Site 4
Description: Covered slag piles under light brown vegetation in background
Direction: North
Date: December 16, 2014

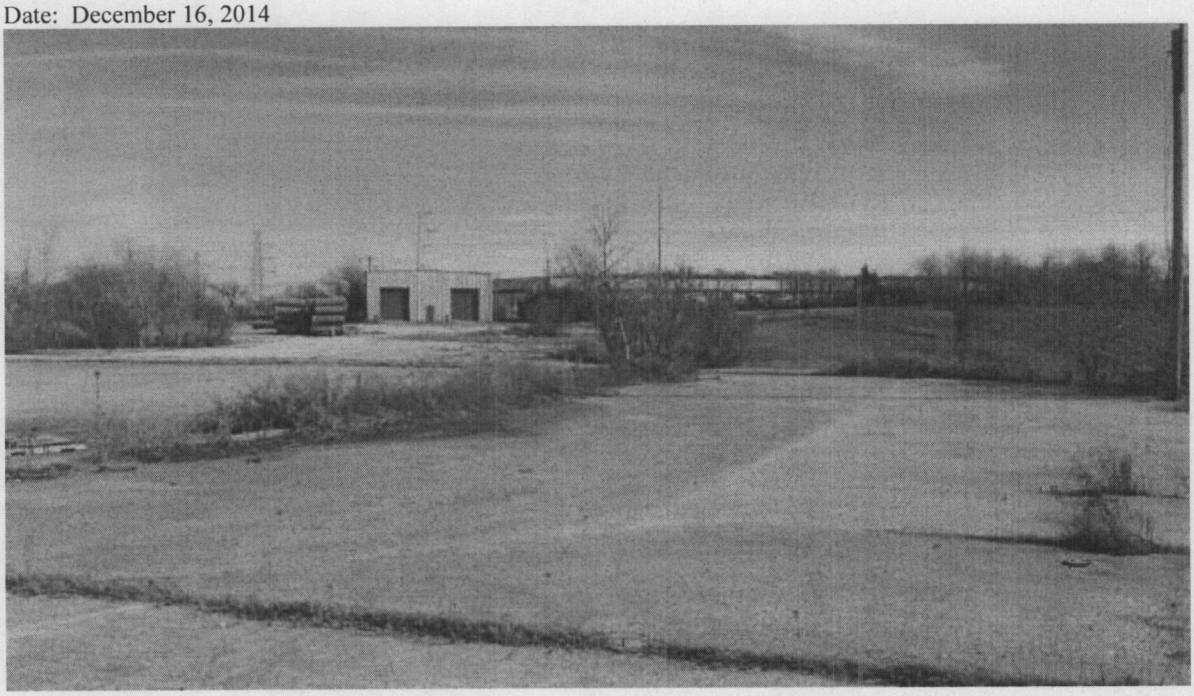
Photograph No. 25
Location: OU 3 Site 4
Description: Covered slag piles under light brown vegetation in background
Direction: South
Date: December 16, 2014

Photograph No. 26
Location: OU 5 Subarea 4A & 4B
Description: View from road at west edge of fenced area
Direction: South
Date: December 16, 2014

Photograph No. 27
Location: OU 5 Subarea 4C
Description: View from road at east edge of fenced area
Direction: West
Date: December 16, 2014

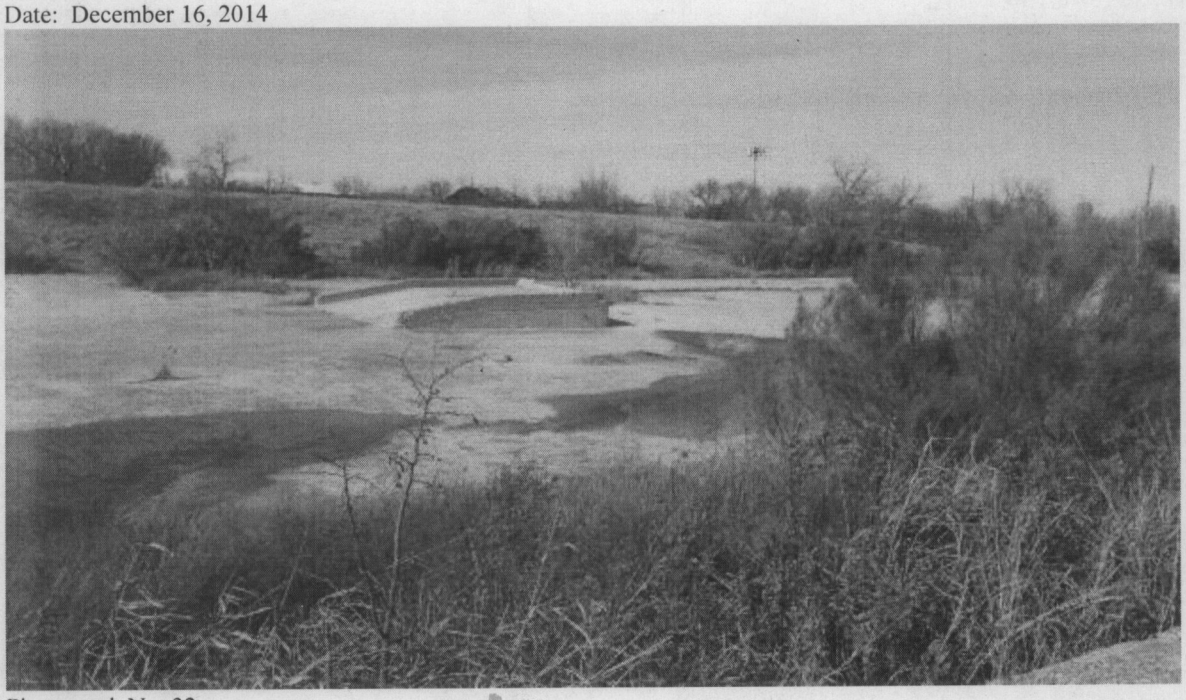
Photograph No. 28
Location: OU 5 Subarea 4A & 4B
Description: View from road at west edge of fenced area
Direction: Northeast
Date: December 16, 2014

Photograph No. 29
Location: OU 5 Subarea 2
Description: View from Westmoreland Road near gate on east edge of fenced area
Direction: Southwest
Date: December 16, 2014



Photograph No. 30
Location: OU 5 Subarea 1
Description: Metal building and consolidation area
Direction: East
Date: December 16, 2014

Photograph No. 31
Location: OU 5 Subarea 1
Description: West end of consolidation area at left, south edge of site in background
Direction: South
Date: December 16, 2014



Photograph No. 32
Location: OU 5 Subarea 1
Description: Former acid waste area in background, behind building foundation
Direction: Northwest
Date: December 16, 2014

Photograph No. 33
Location: OU 5 Subarea 1
Description: South edge of consolidation area
Direction: West
Date: December 16, 2014

Photograph No. 34
Location: OU 5 Subarea 1
Description: West half of consolidation area, former acid waste area in background
Direction: West
Date: December 16, 2014

Photograph No. 35
Location: OU 5 Subarea 1
Description: Riprap at south edge of consolidation area
Direction: Southeast
Date: December 16, 2014

Photograph No. 36
Location: OU 5 Subarea 1
Description: South edge of consolidation area
Direction: Northeast
Date: December 16, 2014

Photograph No. 37
Location: OU 5 Subarea 1
Description: East-central portion of site
Direction: North
Date: December 16, 2014

Photograph No. 38
Location: OU 5 Subarea 1
Description: North edge of consolidation unit with large bush growing out of cover
Direction: West
Date: December 16, 2014

Photograph No. 39
Location: OU 5 Subarea 1
Description: East-central part of site, metal building right, Westmoreland in background
Direction: East
Date: December 16, 2014

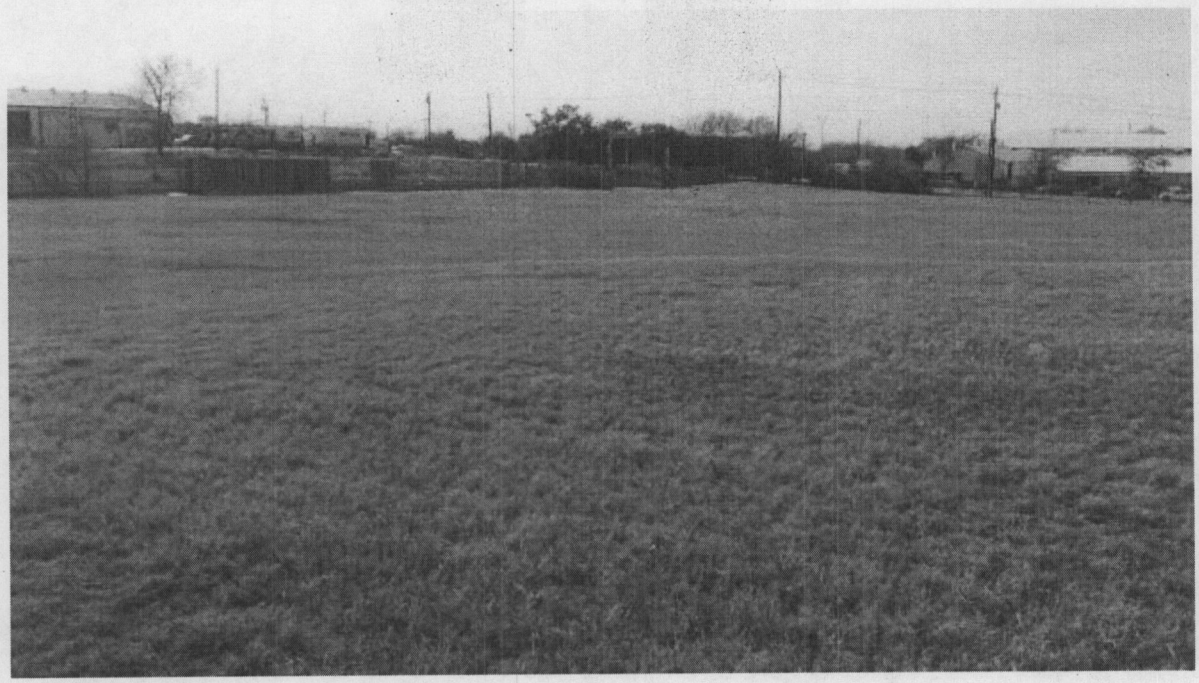
Photograph No. 40
Location: OU 4
Description: Central portion of site viewed from west edge
Direction: East
Date: December 16, 2014

Photograph No. 41
Location: OU 4
Description: Fallen wall on east edge of site, homeless camped in background
Direction: North
Date: December 16, 2014

Photograph No. 42
Location: OU 4
Description: Central portion of site viewed from east edge
Direction: West
Date: December 16, 2014

Photograph No. 43
Location: OU 4
Description: Wall along west edge of site at electrical substation
Direction: Southeast
Date: December 16, 2014

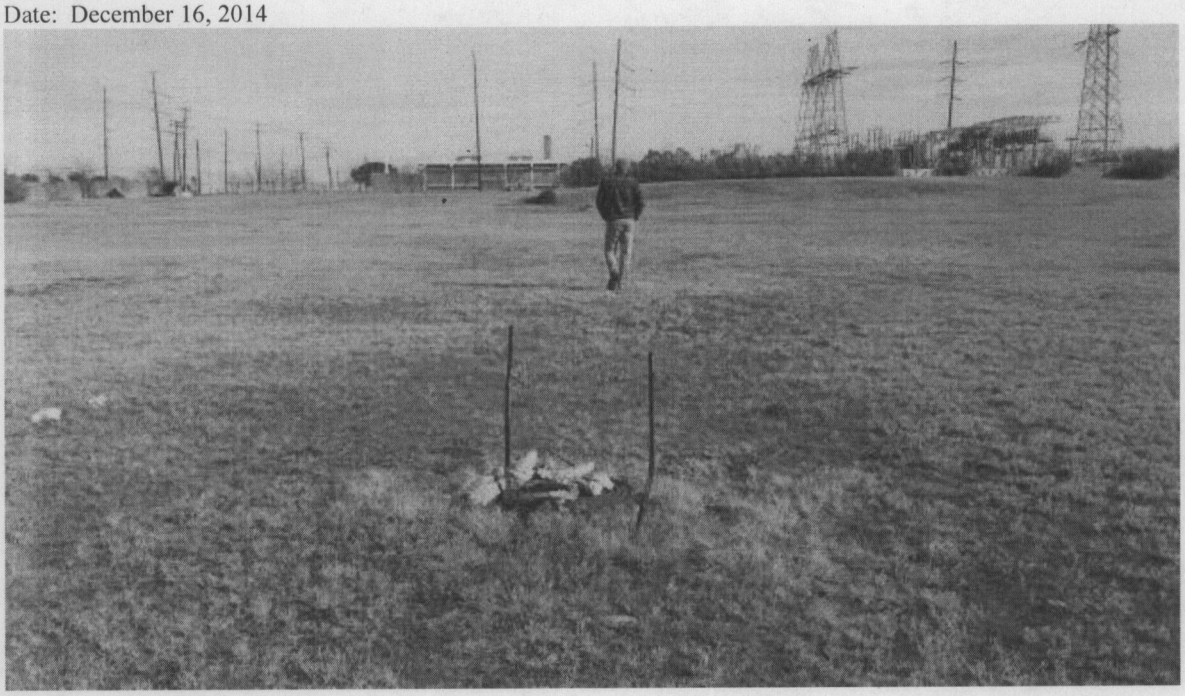
Photograph No. 44
Location: OU 4
Description: Southeastern portion of site
Direction: South
Date: December 16, 2014



Photograph No. 45
Location: OU 4
Description: Southern portion of site
Direction: Southwest
Date: December 16, 2014

Photograph No. 46
Location: OU 4
Description: Central portion of site viewed from southeast corner
Direction: Northwest
Date: December 16, 2014

Photograph No. 47
Location: OU 4
Description: Southern edge of site showing gaps in fence
Direction: West
Date: December 16, 2014



Photograph No. 48
Location: OU 4
Description: Central portion of site viewed from near sewer manhole
Direction: East
Date: December 16, 2014

Photograph No. 49
Location: OU 4
Description: Northwest portion of site viewed from center of site
Direction: Northwest
Date: December 16, 2014

APPENDIX F
SITE INSPECTION CHECKLIST

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APPENDIX F
SITE INSPECTION CHECKLIST

FIVE-YEAR REVIEW SITE VISIT CHECKLIST

I. SITE INFORMATION

Site Name: RSR Corporation Superfund Site	**Date of Inspection:** 16 December 2014
Location and Region: Dallas, Dallas County, TX Region 6	**EPA ID:** TXD079348397
Agency, office, or company leading the five-year review: U.S. Environmental Protection Agency, Region 6	**Weather/temperature:**

Remedy Includes: (Check all that apply)

- ☒ Landfill cover/containment
- ☒ Access controls
- ☒ Institutional controls
- ☐ Ground water pump and treatment
- ☐ Surface water collection and treatment
- ☐ Other (Monitored natural attenuation)

Attachments: ☒ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M Site Manager** Gerry Manley (Name) Vice President (Title) 16 December 2014 (Date)
   Interviewed: In Person ☒ by email ☐ at office ☐ by phone Phone no. 214-583-0232
   Problems, suggestions: ☐ Report attached

2. **O&M Staff** Jenny Self (Name) Project Manager (Title) 16 December 2014 (Date)
   Interviewed: In Person ☒ by email ☐ at office ☐ by phone Phone no. 972-580-1323
   Problems, suggestions: ☐ Report attached

3. **Local regulatory authorities and response agencies** (i.e.; State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.). Fill in all that apply.

   Agency TCEQ
   Contact Nancy Johnson (Name) Project Manager (Title) 16 December 2014 (Date) 817-588-5862 (Phone no.)
   Problems, suggestions: ☒ Report attached _____

   Agency _____
   Contact _____ (Name) _____ (Title) _____ (Date) (_____) (Phone no.)
   Problems, suggestions: ☐ Report attached _____

4. **Other interviews** (optional): ☐ Report attached to Five-Year Review Report

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. O&M Documents

☒ O&M manual (long term monitoring plan)	☒ Readily available	☒ Up to date	☐ N/A
☐ As-built drawings	☐ Readily available	☐ Up to date	☐ N/A
☐ Maintenance logs	☐ Readily available	☐ Up to date	☐ N/A

Remarks: _____

2. Site-Specific Health and Safety Plan	☒ Readily available	☒ Up to date	☐ N/A
☐ Contingency plan/emergency response plan	☐ Readily available	☐ Up to date	☒ N/A

Remarks: _____

3. O&M and OSHA Training Records	☒ Readily available	☒ Up to date	☐ N/A

Remarks: _____

4. Permits and Service Agreements

☐ Air discharge permit	☐ Readily available	☐ Up to date	☒ N/A
☐ Effluent discharge	☐ Readily available	☐ Up to date	☒ N/A
☐ Waste disposal, POTW	☐ Readily available	☐ Up to date	☒ N/A
☐ Other permits _____	☐ Readily available	☐ Up to date	☒ N/A

Remarks: _____

5. Gas Generation Records	☐ Readily available	☐ Up to date	☒ N/A
6. Settlement Monument Records	☐ Readily available	☐ Up to date	☒ N/A
7. Ground Water Monitoring Records	☐ Readily available	☐ Up to date	☒ N/A
8. Leachate Extraction Records	☐ Readily available	☐ Up to date	☒ N/A

9. Discharge Compliance Records

☐ Air	☐ Readily available	☐ Up to date	☒ N/A
☐ Water (effluent)	☐ Readily available	☐ Up to date	☒ N/A

Remarks: _____

10. Daily Access/Security Logs	☐ Readily available	☐ Up to date	☒ N/A

Remarks: _____

IV. O&M COSTS

1. O&M Organization

☐ State in-house ☐ Contractor for State ☐ PRP in-house

☒ Contractor for PRP ☐ Other _____

2. O&M Cost Records

☐ Readily available ☐ Up to date ☐ Funding mechanism/agreement in place

☐ Original O&M cost estimate ☐ Breakdown attached

Total annual cost by year for review period, if available

Date	Date	Total Cost		
From _____	to _____	_____	- ☐	Breakdown attached
From _____	to _____	_____	- ☐	Breakdown attached
From _____	to _____	_____	- ☐	Breakdown attached
From _____	to _____	_____	- ☐	Breakdown attached
From _____	to _____	_____	- ☐	Breakdown attached
From _____	to _____	_____	- ☐	Breakdown attached
From _____	to _____	_____	- ☐	Breakdown attached
From _____	to _____	_____	- ☐	Breakdown attached

3. Unanticipated or Unusually High O&M Costs During Review Period

None

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

A. Fencing

1. Fencing damaged ☒ Location shown on site map ☐ Gates secured ☐ N/A

Remarks: East Wall of OU-4 has fallen down, holes/damage to site fencing throughout

B. Other Access Restrictions

1. Signs and other security measures ☐ Location shown on site map ☐ N/A

Remarks: Numerous Locations

C. Institutional Controls

1. Implementation and enforcement

Site conditions imply ICs not properly implemented ☒ Yes ☐ No ☐ N/A

Site conditions imply ICs not being fully enforced ☒ Yes ☐ No ☐ N/A

Type of monitoring (e.g., self-reporting, drive by) PRP self-supporting in cooperation with EPA

Frequency Annual inspections, additional visits when needed.

Responsible party/agency RSR Corporation

Contact Gerry Manley (Name) Vice President (Title) 16 December 2014 (Date) 214-631-6070 (Phone no.)

Reporting is up-to-date ☒ Yes ☐ No ☐ N/A

Reports are verified by the lead agency ☒ Yes ☐ No ☐ N/A

Specific requirements in deed or decision documents have been met ☒ Yes ☐ No ☐ N/A

Violations have been reported ☐ Yes ☐ No ☒ N/A

Other problems or suggestions: ☐ Report attached

Deed notices not filed for 7 properties in OU3, including one property within Site 3 of OU3 that is currently being redeveloped for use. Deed notices should be filed and development should be coordinated with EPA to ensure protectiveness of remedy is not threatened.

2. Adequacy ☒ ICs are adequate ☐ ICs are inadequate ☐ N/A

Remarks: ICs are adequate, however, as mentioned above, deed notices have not been filed for 7 impacted properties. Deed notices should be filed and enforced.

D. General

1. Vandalism/trespassing ☐ Location shown on site map ☐ No vandalism evident

Remarks: RSR routinely repairs vandalism and reports information to EPA.

2. Land use changes onsite ☐ N/A

Remarks: Industrial redevelopment of OU3 Site 3 is underway and deed restrictions have not been filed for this property. Intended use appears consistent with anticipated land use at the site.

3. Land use changes offsite ☐ N/A

Remarks: Increased development in the surrounding area may eventually extend to the site. If interest in redeveloping site properties is realized additional effort to ensure compliance with deed restrictions will be needed.

VI. GENERAL SITE CONDITIONS

A. Roads ☐ Applicable ☒ N/A

1. Roads damaged ☐ Location shown on site map ☐ Roads adequate ☐ N/A

Remarks:

B. Other Site Conditions

Remarks:

VII. LANDFILL COVERS ☒ Applicable ☐ N/A

A. Landfill Surface

1. **Settlement** (Low spots) ☐ Location shown on site map ☒ Settlement not evident
   Areal extent _____ Depth _____
   Remarks: _____

2. **Cracks** ☐ Location shown on site map ☐ Cracking not evident
   Lengths Variable Widths _____ Depths _____
   Remarks: Desiccation cracks were noticed at many locations and are common in dry periods.

3. **Erosion OU-5 Subarea 2** ☐ Location shown on site map ☐ Erosion not evident
   Areal extent Approximately 50 square feet Depth Up to 2.5 feet
   Remarks: Erosion remains confined to the downhill toe of the cover on the southwest edge of the site. There is no indication that erosion has exposed contaminated materials. The area should be repaired to maintain protectiveness of the soil cover.

4. **Holes** ☐ Location shown on site map ☒ Holes not evident
   Areal extent _____ Depth _____
   Remarks: _____

5. **Vegetative Cover** ☒ Grass ☒ Cover properly established ☐ No signs of stress
   ☒ Trees/Shrubs (indicate size and locations on a diagram)
   Remarks: Trees/shrubs are located along the southwest corner of OU5 Subarea 2 and on the north edge of the consolidation area at OU5 Subarea 1. Trees/shrubs should be removed to maintain integrity of the soil cover.

6. **Alternative Cover** (armored rock, concrete, etc.) ☒ N/A
   Remarks: _____

7. **Bulges** ☐ Location shown on site map ☒ Bulges not evident
   Areal extent _____ Depth _____
   Remarks: _____

8. **Wet Areas/Water Damage** ☒ Wet areas/water damage not evident

☐ Wet areas	☐ Location shown on site map	☐ Areal extent _____
☐ Ponding	☐ Location shown on site map	☐ Areal extent _____
☐ Seeps	☐ Location shown on site map	☐ Areal extent _____
☐ Soft subgrade	☐ Location shown on site map	☐ Areal extent _____

   Remarks: _____

9. **Slope Instability** ☐ Slides ☐ Location shown on site map
   ☒ No evidence of slope instability Areal extent _____
   Remarks: _____

B. Benches ☐ Applicable ☒ N/A

(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

1. Flows Bypass Bench ☐ Location shown on site map ☐ N/A or okay

Remarks: _____

2. Bench Breached ☐ Location shown on site map ☐ N/A or okay

Remarks: _____

3. Bench Overtopped ☐ Location shown on site map ☐ N/A or okay

Remarks: _____

C. Letdown Channels ☐ Applicable ☒ N/A

(Channel lined with erosion control mats, rip rap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)

1. Settlement ☐ Location shown on site map ☐ No evidence of settlement

Areal extent _____ Depth _____

Remarks: _____

2. Material Degradation ☐ Location shown on site map ☐ No evidence of degradation

Material type _____ Areal extent _____

Remarks: _____

3. Erosion ☐ Location shown on site map ☐ No evidence of erosion

Areal extent _____ Depth _____

Remarks: _____

4. Undercutting ☐ Location shown on site map ☐ No evidence of undercutting

Areal extent _____ Depth _____

Remarks: _____

5. Obstructions Type _____

☐ No obstructions ☐ Location shown on site map

Areal extent _____ Size _____

Remarks: _____

6. Excessive Vegetative Growth Type _____

☐ No evidence of excessive growth ☐ Vegetation in channels does not obstruct flow

☐ Location shown on site map Areal extent _____

Remarks: _____

D. Cover Penetrations ☐ Applicable ☒ N/A

1. Gas Vents ☐ Active ☐ Passive
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs O&M ☐ N/A
Remarks: _____

2. Gas Monitoring Probes
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs O&M ☐ N/A
Remarks: _____

3. Monitoring Wells (within surface area of landfill)
☐ Evidence of leakage at penetration ☐ Needs O&M ☐ N/A
Remarks: _____

4. Leachate Extraction Wells
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs O&M ☐ N/A
Remarks: _____

5. Settlement Monuments ☐ Located ☐ Routinely surveyed ☐ N/A
Remarks: _____

E. Gas Collection and Treatment ☐ Applicable ☒ N/A

1. Gas Treatment Facilities
☐ Flaring ☐ Thermal destruction ☐ Collection for reuse
☐ Good condition ☐ Needs O&M
Remarks: _____

2. Gas Collection Wells, Manifolds, and Piping ☐ Good condition ☐ Needs O&M
Remarks: _____

3. Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings)
☐ Good condition ☐ Needs O&M ☐ N/A
Remarks: _____

F. Cover Drainage Layer ☐ Applicable ☒ N/A

1. Outlet Pipes Inspected ☐ Functioning ☐ N/A
Remarks: _____

2. Outlet Rock Inspected ☐ Functioning ☐ N/A
Remarks: _____

G. Detention/Sedimentation Ponds ☐ Applicable ☒ N/A

1. **Siltation** Areal extent _____ Size _____
☐ N/A ☐ Siltation not evident
Remarks: _____

2. **Erosion** Areal extent _____ Depth _____
☐ Erosion not evident
Remarks: _____

3. **Outlet Works** ☐ Functioning ☐ N/A
Remarks: _____

4. **Dam** ☐ Functioning ☐ N/A
Remarks: _____

H. Retaining Walls ☐ Applicable ☒ N/A

1. **Deformations** ☐ Location shown on site map ☐ Deformation not evident
Horizontal displacement _____ Vertical displacement _____
Rotational displacement _____
Remarks: _____

2. **Degradation** ☐ Location shown on site map ☐ Degradation not evident
Remarks: _____

I. Perimeter Ditches/Off-Site Discharge ☐ Applicable ☒ N/A

1. **Siltation** ☐ Location shown on site map ☐ Siltation not evident
Areal extent _____ Depth _____
Remarks: _____

2. **Vegetative Growth** ☐ Location shown on site map ☐ N/A
☐ Vegetation does not impede flow
Areal extent _____ Type _____
Remarks: _____

3. **Erosion** ☐ Location shown on site map ☐ Erosion not evident
Areal extent _____ Depth _____
Remarks: _____

4. **Discharge Structure** ☐ Functioning ☐ N/A
Remarks: _____

VIII. VERTICAL BARRIER WALLS ☐ Applicable ☒ N/A

1. **Settlement** ☐ Location shown on site map ☐ Settlement not evident
   Areal extent _____ Depth _____
   Remarks: _____

2. **Performance Monitoring** Type of monitoring _____
   ☐ Performance not monitored Frequency _____ ☐ Evidence of breaching
   Head differential _____
   Remarks: _____

IX. GROUND WATER/SURFACE WATER REMEDIES ☐ Applicable ☒ N/A

A. Ground Water Extraction Wells, Pumps, and Pipelines ☐ Applicable ☒ N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
   ☐ Good condition ☐ All required wells located ☐ Needs O&M ☐ N/A
   Remarks: _____

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   ☐ Good condition ☐ Needs O&M
   Remarks: _____

3. **Spare Parts and Equipment**
   ☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
   Remarks: _____

B. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable ☒ N/A

1. **Collection Structures, Pumps, and Electrical**
   ☐ Good condition ☐ Needs O&M
   Remarks: _____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   ☐ Good condition ☐ Needs O&M
   Remarks: _____

3. **Spare Parts and Equipment**
   ☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
   Remarks: _____

C. Treatment System ☐ Applicable ☒ N/A

1. **Treatment Train** (Check components that apply)
   - ☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
   - ☐ Air stripping ☐ Carbon absorbers
   - ☐ Filters _____
   - ☐ Additive (e.g., chelation agent, flocculent) _____
   - ☐ Others _____
   - ☐ Good condition ☐ Needs O&M
   - ☐ Sampling ports properly marked and functional
   - ☐ Sampling/maintenance log displayed and up to date
   - ☐ Equipment properly identified
   - ☐ Quantity of ground water treated annually _____
   - ☐ Quantity of surface water treated annually _____

   Remarks: _____

2. **Electrical Enclosures and Panels** (Properly rated and functional)
   - ☐ N/A ☐ Good condition ☐ Needs O&M

   Remarks: _____

3. **Tanks, Vaults, Storage Vessels**
   - ☐ N/A ☐ Good condition ☐ Proper secondary containment ☐ Needs O&M

   Remarks: _____

4. **Discharge Structure and Appurtenances**
   - ☐ N/A ☐ Good condition ☐ Needs O&M

   Remarks: _____

5. **Treatment Building(s)**
   - ☐ N/A ☐ Good condition (esp. roof and doorways) ☐ Needs repair
   - ☐ Chemicals and equipment properly stored

   Remarks: _____

6. **Monitoring Wells** (Pump and treatment remedy)
   - ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
   - ☐ All required wells located ☐ Needs O&M ☐ N/A

   Remarks: _____

D. Monitored Natural Attenuation ☐ Applicable ☒ N/A

1. **Monitoring Wells** (Natural attenuation remedy)
   - ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled (quarterly) ☐ Good condition
   - ☐ All required wells located ☐ Needs O&M ☐ N/A

   Remarks: _____

X. OTHER REMEDIES

If there are remedies applied at the site that are not covered above, attach an inspection sheet describing the

physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

Soil covers placed over contaminants to interrupt exposure pathways are functioning as intended.

B. Adequacy of O&M

Maintenance efforts are adequate in most locations. Portions of fencing in OU4 are down and damaged fencing at other locations throughout the site should be repaired. Erosion monitoring and repair is being conducted on an as-needed basis. Repairs to areas of erosion should be completed before erosion has opportunity to expose contaminants.

C. Early Indicators of Potential Remedy Failure

None.

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

None.

APPENDIX G
INTERVIEW FORMS

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APPENDIX G
INTERVIEW FORMS

SUPERFUND FIVE-YEAR REVIEW SITE SURVEY			
Site Name: RSR Corporation Superfund Site		**EPA ID No.:** TXD079348397	
Location: Dallas, Dallas County, TX		**Date:** 16 December 2014	
Contact Made By:			
Name: Philip Allen	**Title:** Remediation Project Manager	**Organization:** U.S. EPA	
Telephone No.: 214-665-8516 **E-Mail:** Allen.Philip@epamail.epa.gov	**Street Address:** 1455 Ross Avenue, Suite 1200 **City, State, Zip:** Dallas, Texas 75202		
Name: Ted Telisak	**Title:** Senior Engineer	**Organization:** EA Engineering	
Telephone No.: 972-315-3922 **E-Mail:** ttelisak@eaest.com	**Street Address:** 405 S. Highway 121, Bldg C, Suite 100 **City, State, Zip:** Lewisville, TX 75067		
Individual Contacted:			
Name: Nancy Johnson	**Title:** Project Manager	**Organization:** Texas Commission on Environmental Quality	
Telephone No.: 817-588-5862 **E-Mail:** najohnso@tceq.state.tx.us	**Street Address:** 2309 Gravel Drive **City, State, Zip:** Fort Worth, TX 76118-6951		

Survey Questions

The purpose of the five-year review is to evaluate the implementation and performance of the remedy, and to confirm that human health and the environment continue to be protected by the remedial actions that have been performed at the site. This interview is being conducted as a part of the third five-year review for the RSR Corporation Superfund Site. The period covered by this five-year review is from the completion of the second five-year review in September 2010 to the current completion of this review.

1. What is your overall impression of the remedial action work conducted at the site?

   Response: My overall impression is favorable.

2. From your perspective, what effect have remedial operations at the site had on the surrounding community?

   Response: From an aesthetics perspective, remedial operations appear to have had a positive effect on the surrounding community. In addition, the TCEQ was recently contacted by a commercial real estate firm regarding the site, indicating possible increased interest in redevelopment in the area.

SUPERFUND FIVE-YEAR REVIEW SITE SURVEY			
Site Name:	RSR Corporation Superfund Site	**EPA ID No.:**	TXD079348397
Location:	Dallas, Dallas County, TX	**Date:**	16 December 2014

Survey Questions (Continued)

3. Are you aware of any community concerns regarding the cleanup at the site or the operation and administration of the remediation?

   Response: Lingering doubts in the community regarding the extent and effectiveness of the remedial operations were documented in a 2012 *Dallas Morning News* three-part series. The TCEQ was recently contacted by the City of Dallas Office of Environmental Quality regarding citizens who voiced health concerns to the City.

4. Are you aware of any events, incidents, or activities that have occurred at the site, such as dumping, vandalism, trespassing, or emergency response from local authorities? If so please provide details.

   Response: Evidence of dumping and trespassing was noted in several areas during the December 16, 2014 site visit. Such evidence included miscellaneous debris, damaged fences and personal belongings that appeared to be currently or recently in use.

5. Have there been any problems or difficulties encountered which impacted implementability, or required a change in O&M procedures?

   Response: None of which I am aware.

6. Please describe the current O&M staff activities, and the date of the current O&M plan. Are any updates to the O&M plan needed or anticipated?

   Response: A review of property deeds may be necessary at the present time and at regular intervals in the future to ensure that restrictions are documented on the property deeds. Actions should be taken to ensure compliance with the deed restrictions.

7. Where are operations-related documents maintained (including Health and Safety Plans, Operations and Maintenance Plans, and other waste management/contingency plans)? What procedures are in place to ensure compliance with these plans?

   Response: All operations-related documents are maintained by the EPA and/or RSR Corporation and its contractor(s). The EPA and/or RSR Corporation and its contractor(s) ensure compliance with the plans.

8. Do you have any comments, suggestions, or recommendations regarding the site, its management or operation?

   Response: Vandalism should continue to be repaired as soon as possible after becoming aware of it. As noted in the Second Five-Year Review Report dated September 2010, the east wall of OU-4 has fallen down, allowing easy access by trespassers. Deed restrictions should be reviewed, and actions should be taken to ensure the deed restrictions are being followed.

The TCEQ requests that it continue to be included in annual site visits and informed of any significant changes in site use or activities.

SUPERFUND FIVE-YEAR REVIEW SITE SURVEY			
Site Name: RSR Corporation Superfund Site		**EPA ID No.:** TXD079348397	
Location: Dallas, Dallas County, TX		**Date:** 16 December 2014	
Contact Made By:			
Name: Philip Allen	**Title:** Remediation Project Manager	**Organization:** U.S. EPA	
Telephone No.: 214-665-8516 **E-Mail:** Allen.Philip@epamail.epa.gov	**Street Address:** 1455 Ross Avenue, Suite 1200 **City, State, Zip:** Dallas, Texas 75202		
Name: Ted Telisak	**Title:** Senior Engineer	**Organization:** EA Engineering	
Telephone No.: 972-315-3922 **E-Mail:** ttelisak@eaest.com	**Street Address:** 405 S. Highway 121, Bldg C, Suite 100 **City, State, Zip:** Lewisville, TX 75067		
Individual Contacted:			
Name: Gerry Manley	**Title:** VP Environmental, Health & Safety Compliance	**Organization:** RSR Corporation	
Telephone No.: 214-583-0232 **E-Mail:** gmanley@rsrcorp.com	**Street Address: City, State, Zip:**	2777 Stemmons Fwy., Ste. 1800 Dallas, TX 75207	

Survey Questions

The purpose of the five-year review is to evaluate the implementation and performance of the remedy, and to confirm that human health and the environment continue to be protected by the remedial actions that have been performed at the site. This interview is being conducted as a part of the third five-year review for the RSR Corporation Superfund Site. The period covered by this five-year review is from the completion of the second five-year review in September 2010 to the current completion of this review.

1. What is your overall impression of the remedial action work conducted at the site?

   It serves the purpose for which it was designed, which is to protect human health and the environment.

2. From your perspective, what effect have remedial operations at the site had on the surrounding community?

   We keep our properties maintained. We haven't had any complaints, and we've had inquiries about buying property for development.

SUPERFUND FIVE-YEAR REVIEW SITE SURVEY			
Site Name:	RSR Corporation Superfund Site	**EPA ID No.:**	TXD079348397
Location:	Dallas, Dallas County, TX	**Date:**	16 December 2014

Survey Questions (Continued)

3. Are you aware of any community concerns regarding the cleanup at the site or the operation and administration of the remediation?

   No.

4. Are you aware of any events, incidents, or activities that have occurred at the site, such as dumping, vandalism, trespassing, or emergency response from local authorities? If so please provide details.

   No.

5. Have there been any problems or difficulties encountered which impacted implementability, or required a change in O&M procedures?

   No.

6. Please describe the current O&M staff activities, and the date of the current O&M plan. Are any updates to the O&M plan needed or anticipated?

   Activities include annual inspections and erosion control maintenance on an as needed basis. No updates needed.

7. Do you have any comments, suggestions, or recommendations regarding the site, its management or operation?

   No.

SUPERFUND FIVE-YEAR REVIEW SITE SURVEY			
Site Name: RSR Corporation Superfund Site		**EPA ID No.:** TXD079348397	
Location: Dallas, Dallas County, TX		**Date:** 16 December 2014	
Contact Made By:			
Name: Philip Allen	**Title:** Remediation Project.Manager	**Organization:** U.S. EPA	
Telephone No.: 214-665-8516 **E-Mail:** Allen.Philip@epamail.epa.gov	**Street Address:** 1455 Ross Avenue, Suite 1200 **City, State, Zip:** Dallas, Texas 75202		
Name: Ted Telisak	**Title:** Senior Engineer	**Organization:** EA Engineering	
Telephone No.: 972-315-3922 **E-Mail:** ttelisak@eaest.com	**Street Address:** 405 S. Highway 121, Bldg C, Suite 100 **City, State, Zip:** Lewisville, TX 75067		
Individual Contacted:			
Name: Jennifer Self	**Title:** Project Manager	**Organization:** Entact	
Telephone No.: 972-580-1323 **E-Mail Address:**jself@entact.com	**Street Address:** 3129 Bass Pro Drive **City, State, Zip:** Grapevine, TX 76051		

Survey Questions

The purpose of the five-year review is to evaluate the implementation and performance of the remedy, and to confirm that human health and the environment continue to be protected by the remedial actions that have been performed at the site. This interview is being conducted as a part of the third five-year review for the RSR Corporation Superfund Site. The period covered by this five-year review is from the completion of the second five-year review in September 2010 to the current completion of this review.

1. What is your overall impression of the remedial action work conducted at the site?

   Good. The implemented remedy protects human health and the environment as designed.

2. From your perspective, what effect have remedial operations at the site had on the surrounding community?

   It appears to have had a positive effect. Development in the surrounding areas has increased.

SUPERFUND FIVE-YEAR REVIEW SITE SURVEY			
Site Name:	RSR Corporation Superfund Site	**EPA ID No.:**	TXD079348397
Location:	Dallas, Dallas County, TX	**Date:**	16 December 2014

Survey Questions (Continued)

3. Are you aware of any community concerns regarding the cleanup at the site or the operation and administration of the remediation?

   No

4. Are you aware of any events, incidents, or activities that have occurred at the site, such as dumping, vandalism, trespassing, or emergency response from local authorities? If so please provide details.

   No

5. Have there been any problems or difficulties encountered which impacted implementability, or required a change in O&M procedures ?

   No

6. Please describe the current O&M staff activities, and the date of the current O&M plan. Are any updates to the O&M plan needed or anticipated?

   ENTACT conducts the annual inspections at RSR's request. No updates to the O&M Plan are needed at this time.

7. Where are operations-related documents maintained (including Health and Safety Plans, Operations and Maintenance Plans, and other waste management/contingency plans)? What procedures are in place to ensure compliance with these plans?

   Documents are maintained at the RSR and ENTACT offices, as applicable. ENTACT conducts the annual inspections at RSR's request.

8. Do you have any comments, suggestions, or recommendations regarding the site, its management or operation?

   No

APPENDIX H
REVIEWED DOCUMENTS

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APPENDIX H
DOCUMENTS REVIEWED

Reviewed Documents

CH2M HILL, 1995. *After Action Report, Expedited Response Action, RSR Corporation Superfund Site, Operable Units Nos. 4 and 5.* October 24, 1995.

CH2M HILL, 2004a. *Final Remedial Action Completion Report, RSR OU5, Subarea 1 Superfund Site, Dallas, Texas.* September 2004.

CH2M HILL, 2004b. *Operations and Maintenance Plan, RSR Superfund Site, Operable Unit No. 5, Subarea 1, Dallas County, Dallas, Texas.* September 2004.

CH2M HILL, 2004c. *Annual O&M Inspection Report, RSR Corporation Superfund Site, Operable Unit No. 5, Subarea 1, Dallas County, Dallas, Texas.* December 2004.

Dallas County Clerk, 2010. *OU3 Site 3 – Deed Notice for TXI Operations LP Property at 1300 North Walton Walker Blvd., Dallas, TX 75211-1041.* September 17, 2010.

Dallas County Clerk, 2013. *OU3 Site 3 – Es Su Casa Nueva Inv & Mg Property at 5900 West Davis St., Dallas, TX 75211-7040.* January 7, 2013.

ENTACT, 2001. *RSR OU4 Superfund Site, Final Close-Out Report.* December 7, 2001.

ENTACT, 2003. *Final Operations and Maintenance Plan, RSR Corporation Superfund Site, Operable Unit No. 5, Subareas 2, 3, and 4, Dallas, Texas.* December 16, 2003.

ENTACT, 2004a. *Final Remedial Action Report, RSR Corporation Superfund Site, Subareas 2, 3, and 4, Operable Unit No. 5, Dallas, Texas.* February 6, 2004.

ENTACT, 2004b. *Draft Operation and Maintenance Plan, RSR Corporation Superfund Site, Sites 1, 3, and 4 of Operable Unit 3, Revision 1.* October 15, 2004.

ENTACT, 2004c. *Final Remedial Action Report, RSR Corporation Superfund Site, Operable Unit 3, Sites 1, 3, and 4, Dallas, Texas.* November 9, 2004.

ENTACT, 2005a. *Final Operation and Maintenance Plan for RST Corporation Superfund Site Operable Unit No. 3 Sites 1, 3, and 4, Dallas, Texas.* February 2, 2005.

ENTACT, 2005b. *Post-Remediation Action Inspection Report.* July 7, 2005.

ENTACT, 2005c. *Post-Remediation Action Inspection Report.* December 14, 2005.

ENTACT, 2006. *Post-Remediation Action Inspection Report.* July 31, 2006.

ENTACT, 2007. *Post-Remediation Action Inspection Report.* October 16, 2007.

ENTACT, 2008. *Post-Remediation Action Inspection Report.* November 18, 2008.

ENTACT, 2009. *Post-Remediation Action Inspection Report.* November 19, 2009.

ENTACT, 2010. *Email Transmittal to U.S. EPA regarding well plugging at RSR Corporation Superfund Site.* June 10, 2010.

ENTACT, 2011. *Post-Remediation Action Inspection Report.* December 8, 2011.

ENTACT, 2013. *Post-Remediation Action Inspection Report.* February 6, 2013.

ENTACT, 2014. *Post-Remediation Action Inspection Report.* January 9, 2014.

U. S. Environmental Protection Agency, 1991. *Action Memorandum, Request for Removal Action at the West Dallas (RSR) Lead Site, Dallas, Dallas County, Texas.* October 24, 1991.

U. S. Environmental Protection Agency, 1992. *Action Memorandum, Request for $2 Million Exemption and Ceiling Increase for the Removal Action at the West Dallas (RSR) Lead Site, Dallas, Dallas County, Texas.* Mary 18, 1992.

U. S. Environmental Protection Agency, 1994. *Action Memorandum, Request for a non-Time Critical Removal Action at the RSR Corporation Superfund Site, Dallas, Dallas County, Texas.* December 22, 1994.

U. S. Environmental Protection Agency, 1995a. *Record of Decision, RSR Corporation Superfund Site, Operable Unit No. 1— Residential Property, Dallas, Texas.* May 9, 1995.

U. S. Environmental Protection Agency, 1995b. *Record of Decision, RSR Corporation Superfund Site, Operable Unit No. 2 — DHA Property, Dallas, Texas.* May 9, 1995.

U. S. Environmental Protection Agency, 1996. *Record of Decision, RSR Corporation Superfund Site, Operable Unit No. 4 — Smelter Facility, Dallas, Texas.* February 28, 1996.

U. S. Environmental Protection Agency, 1997a. *Record of Decision, RSR Corporation Superfund Site, Operable Unit No. 5, Battery Wrecking Facility and Ground Water Portion of Operable Unit No. 4, Smelter Facility, Dallas, Texas.* April 3, 1997.

U. S. Environmental Protection Agency, 1997b. *Record of Decision, RSR Corporation Superfund Site, Operable Unit No. 3, Landfills and Slag Piles, Dallas, Texas.* September 30, 1997.

U. S. Environmental Protection Agency, 2001. *Comprehensive Five-Year Review Guidance.* EPA 540-R-01-007. June 2001.

U. S. Environmental Protection Agency, 2004. *Preliminary Close Out Report, RSR Corporation Superfund Site, Dallas, Texas.* September 2004.

U. S. Environmental Protection Agency, 2005a. *Superfund Site Status Summary, RSR Corp. (Murph Metals).* April 13, 2005.

U. S. Environmental Protection Agency, 2005b. *Certification of Reuse Determination for RSR Corporation Superfund Site.* August 1, 2005.

U. S. Environmental Protection Agency, 2005c. *First Five-Year Review Report for the RSR Corporation Superfund Site, Dallas, Dallas County, Texas.* September 2005.

U. S. Environmental Protection Agency, 2006. *Letter to RSR Corporation regarding deed restrictions not being in place for OU 3.* April 25, 2006

U. S. Environmental Protection Agency, 2010. *E-mail from FarooqTayab to George Malone updating status of deed notices at RSR OU 3.* June 14, 2010.

Michael S. Gardner, Bickel and Brewer Attorney and Counselors (MGBBAC), 2005. *Letter of behalf of RSR Corporation and Quemetco to the U.S. EPA Region 6 transmitting the Notice of Obligations to Successors-In-Title.* February 2, 2005.

MGBBAC, 2007. *Facsimile Letter of behalf of RSR Corporation to U.S. EPA Region 6 regarding the inability to secure cooperation with TXI, Irma Monzon, and Mark Calabria to file a deed notice restriction for their properties.* April 13, 2007.

MGBBAC, 2009a. *Certified Letter to Es Su Casa Nueva Inv & Mg informing the property owner of the requirement to record a deed notice for the property and providing a draft deed notice for the property located at 5900 West Davis Street, Dallas, TX, 75211-7040.* July 31, 2009.

MGBBAC, 2009b. *Certified Letter to Khosrow Sadeghian informing the property owner of the requirement to record a deed notice for the property and providing a draft deed notice for the properties located at (i) 6035 West Davis Street and (ii) 5900 West Davis Street, Dallas, Texas, 75211-7040.* July 31, 2009.

MGBBAC, 2009c. *A Follow up Certified Letter to Es Su Casa Nueva Inv & Mg informing the property owner of the requirement to record a deed notice for the property and providing a draft deed notice for the property located at 5900 West Davis Street, Dallas, TX, 75211-7040.* December 10, 2009.

MGBBAC, 2009d. *A Certified Letter to ExTex LaPorte, LP informing the property owner of the requirement to record a deed notice for the property and providing a draft deed notice for the property located at 1000 North Walton Walker Boulevard, Dallas, TX, 75211-7040.* December 10, 2009.

MGBBAC, 2009e. *A follow up Certified Letter to Khosrow Sadeghian informing the property owner of the requirement to record a deed notice for the property and providing a draft deed notice for the properties located at (i) 6035 West Davis Street and (ii) 5900 West Davis Street, Dallas, Texas, 75211-7040.* December 10, 2009.

MGBBAC, 2009f. *Certified Letter to Texas Utilities Elec. Co., State and Local Tax Department informing the property owner of the requirement to record a deed notice for the property and providing a draft deed notice for the property located 1000 North Walton Walker Boulevard, Dallas, Texas, 75211-7040.* December 10, 2009.

MGBBAC, 2009g. *Certified Letter to Trinity Development JV informing the property owner of the requirement to record a deed notice for the property and providing a draft deed notice for the property located 1000 North Walton Walker Boulevard, Dallas, Texas, 75211-7040.* December 10, 2009.

MGBBAC, 2009h. *Certified Letter to TXI Operations LP informing the property owner of the requirement to record a deed notice for the property and providing a draft deed notice for the property located 1300 North Walton Boulevard, Dallas, Texas, 75211-7040.* December 10, 2009.

MGBBAC, 2009i. *Certified Letter to Amir Ali Rupani informing the property owner of the requirement to record a deed notice for the 17 properties located within Operable Unit No. 3, Site 4.* December 14, 2009.

MGBBAC, 2009j. *Certified Letter to Irwin Real Estate Company informing the property owner of the requirement to record a deed notice for the properties located within Operable Unit No. 3, Site 4.* December 14, 2009.