Five-Year Review Report

First Five-Year Review Report
for the
RSR Corporation Superfund Site
Dallas, Dallas County, Texas

September 2005

PREPARED BY:

CH2M HILL
Contract Number 68-W6-0036
Work Assignment Number 133-FRFE-06ZZ

PREPARED FOR:

Region 6
United States Environmental Protection Agency
Dallas, Texas

FIRST FIVE-YEAR REVIEW

RSR Corporation Superfund Site

EPA ID# TXD079348397

Dallas, Dallas County, Texas

This memorandum documents the United States Environmental Protection Agency's (EPA's) performance, determinations, and approval of the RSR Corporation Superfund Site (Site) First Five-Year Review under Section 121(c) of the Comprehensive Environmental Response, Compensation & Liability Act (CERCLA), 42 United States Code (USC) '9621(c), as provided in the attached First Five-Year Review Report prepared by CH2M HILL, Inc., on behalf of EPA.

Summary of Five-Year Review Findings

The first five-year review for this Site indicates that the Remedial Actions (RAs) set forth in the decision documents for this Site continue to be implemented as planned. For Operable Unit (OU) 3, all contamination was either disposed offsite or placed under clean soil covers. At OU4, all site buildings and equipment were decontaminated and demolished, and the resultant debris was removed from the site and disposed or recycled. Contaminated soils to depths of one or two feet (ft) were removed from the site and disposed, and the site was placed under a clean soil cover. At OU5, Subarea 1, the cover over the former surface impoundment was upgraded. The battery wrecking facility was decontaminated and demolished, and the resultant debris was removed from the site and disposed or recycled. The vehicle maintenance facility was decontaminated. Contaminated soils, battery chips, and slag were consolidated in the buried slag area and placed under a clean soil cover. Site drainage was also improved to promote storm water runoff and to protect the soil covers. For OU5, Subarea 2, contaminated soils and the former landfill were placed under a clean soil cover. Contaminated soils at Subarea 4 were excavated and placed under the clean soil cover at Subarea 2. Operations and Maintenance (O&M) for OU3 and OU5, Subarea 2, is conducted by RSR Corporation. The property owner, Murmur Corporation (Murmur), is currently responsible for O&M at OU5, Subarea 1. Murmur is currently negotiating with EPA to provide funding for EPA to conduct the O&M at OU5, Subarea 1. O&M is not required for OU4. Based on the data review, site inspection, interviews, and technical assessment, it appears the remedy is generally functioning as intended by the decision documents.

To ensure continued protectiveness, however, four issues are identified in the first five-year review for this Site. These issues do not currently affect the protectiveness of the remedy, but need to be addressed to ensure continued protectiveness and performance. These issues include:

1) Institutional controls, in the form of deed notices, have not been placed on the OU3, OU4, and OU5 properties. Deed notices are required by the Record Of Decision (ROD) for OU3, Sites 1, 3, and 4. Deed notices are required under Texas state regulations for OUs 4 and 5. The deed notices provide notice to future owners of the site contamination, require maintenance to ensure the protectiveness of the implemented remedies, and provide appropriate restrictions on future use.

2) Erosion gullies are present on the soil covers at OU3, Sites 1 and 3, and near the landfill cover at OU5, Subarea 2. Several large erosion cuts are present on the slope at OU3, Site 1. Rock armor was placed at the top of each gully to reduce erosion. Should these gullies continue to grow, they could result in slope instability problems and expose underlying contamination. Small erosion gullies are present in the clay cover at OU3, Site 3. These gullies could potentially grow and expose the underlying contamination. Also, a neighboring property owner has run several discharge pipes over the soil cover at Site 3. Discharges from this piping have resulted in one of the erosion gullies in the clay cover. Large erosion gullies are present near the clay cover at OU5, Subarea 2. These gullies could potentially grow and expose the landfilled materials and contamination. Although the erosion does not currently affect the protectiveness of the remedies, if left unaddressed, the erosion gullies will continue to grow.

3) Unused monitor wells are present at OU3, Sites 3 and 4. The original intent was to temporarily monitor ground water at these sites after completion of the RA, but this monitoring was not found to be necessary. Although the monitor wells are currently locked and secured, they do provide an open conduit to the subsurface. If the integrity of the monitor wells was compromised in the future, they would provide a potential pathway for the migration of contamination to the subsurface in the future.

4) The vegetation is sparse at OU3, Sites 3 and 4, and OU5, Subarea 2. A good vegetative growth is necessary to prevent or reduce the potential for erosion of the clay soil covers in these areas. Sparse vegetation increases the potential for erosion to occur, which could eventually expose the underlying contamination.

Actions Needed

To address the issues identified during the first five-year review, the following recommendations and follow-up actions have been identified for the RSR Site:

1) Deed notices should be placed on the properties for OU3, Sites 1, 3, and 4, OU4, and OU5 Subareas 1, 2, and 5. The EPA and Texas Commission on Environmental Quality (TCEQ) will need to work with the property owners to place the deed notices on each property. The deed notices should, at a minimum, identify the areas where contaminants remain, require future site owners to maintain the integrity of the remedies, require that no future site activities result in failure of the remedy components, restrict land use as appropriate, and require EPA review and concurrence for any future site development.

2) Repair the erosion gullies present at OU3, Sites 1 and 3, and at OU5, Subarea 2. The erosion features should be filled in; rock armor placed where appropriate; and new vegetation established to prevent further erosion. This action is necessary to provide the necessary to protect the soil covers over the contamination left in place at each site.

3) Abandon monitor wells that are no longer required to monitor the site. The EPA has determined that ground water monitoring at OU3, Sites 3 and 4 is not required. The monitor wells at these two sites should be properly abandoned to remove the wells as a potential conduit for contaminants to migrate to the subsurface.

4) The soil covers at OU3, Sites 3 and 4 and OU5, Subarea 2 should be revegetated. Sparse vegetation was noted during the site inspection at these sites. New vegetation should be established to reduce the potential for erosion of the soil covers at these sites, thus reducing the potential for the underlying contamination to become exposed.

Determinations

I have determined that the 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.

Samuel E. Coleman, P.E.

Director, Superfund Division

U.S. Environmental Protection Agency, Region 6 Date

John B. Hepola, for 9/29/05

CONCURRENCES

FIVE-YEAR REVIEW

RSR Corporation Superfund Site

EPA ID# TXD079348397

By: Carlos A. Sanchez Date: 9/26/05

Carlos Sanchez, U.S. EPA

Remedial Project Manager

By: Date: 9/26/05

Gustavo Chavarria, U.S. EPA

Chief, Arkansas/Texas Program Management Section

By: John R. Hepola Date: 9/27/05

John Hepola, U.S. EPA

Chief, Arkansas/Texas Branch

By: Date: 9/27/05

George Malone, U.S. EPA

Attorney, Office of Regional Counsel

By: Date: 09/28/05

Mark Peycke, U.S. EPA

Chief, Superfund Branch, Office of Regional Counsel

By: John R. Hepola, for Date: 9/29/05

Pam Phillips, U.S. EPA

Deputy Director, Superfund Division

By: Date:

June Buzzell, U.S. EPA

Writer Editor, Superfund Division

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List of Acronyms

µg/dl	micrograms per deciliter
ACM	Asbestos Containing Material
AOC	Administrative Order on Consent
ARARs	Applicable or Relevant and Appropriate Requirements
bgs	below ground surface
BHHRA	Baseline Human Health Risk Assessment
CDC	Centers for Disease Control
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DHA	Dallas Housing Authority
ERA	Ecological Risk Assessment
EPA	United States Environmental Protection Agency
FS	Feasibility Study
ft	feet
HI	Hazard Index
IUBEK	Exposure Uptake Biokinetic
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
O&M	Operation and Maintenance
OSHA	Occupational Safety and Health Act
OSWER	Office of Solid Waste and Emergency Response
OU	Operable Unit
PCB	polychlorinated-biphenyls
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
ROW	Right-of-Way
RPM	Remedial Project Manager
SARA	Superfund Amendments and Reauthorization Act
TAC	Texas Administrative Code
TBCs	To Be Considered
TCEQ	Texas Commission on Environmental Quality
TNRCC	Texas Natural Resources Conservation Commission
TRRP	Texas Risk Reduction Program
USC	United States Code
UST	Underground Storage Tank

Executive Summary

Pursuant to Section 121(c) of the Comprehensive Environmental Response, Compensation & Liability Act ('CERCLA' or 'Superfund'), 42 United States Code (USC) §9621(c), the first five-year review of the remedy in place at the RSR Corporation Superfund Site ('Site' or 'RSR Site') located in Dallas, Dallas County, Texas, was completed in September 2005. The results of the five-year review indicate that the remedy completed to-date is currently protective of human health and the environment in the short term. Overall, the Remedial Actions (RAs) performed appear to be functioning as designed, and the Site has been maintained appropriately. No deficiencies were noted that currently impact the protectiveness of the remedy, although several issues were identified that require further action to ensure the continued protectiveness of the remedy.

Remediation of the RSR Site has been handled through an emergency removal action, a removal action completed by the Dallas Housing Authority (DHA), a non-time critical removal action, and three RAs. The emergency removal action and DHA removal action was conducted to address imminent threats of releases of hazardous substances to the environment. These actions resulted in the remediation of lead contaminated soils in residential areas of the Site and on DHA property used for residential purposes. The non-time critical removal action resulted in the removal of waste drums, waste piles, and laboratory chemicals stored at OUs 4 and 5.

Through the RAs defined by the Records of Decision (RODs), contaminated buildings, structures, and equipment at the Site were addressed through decontamination, demolition, and offsite disposal or recycling. Contaminated soils were either excavated and disposed of offsite or excavated and consolidated in other contaminated areas of the Site and placed under clay covers. A former landfill and buried slag area at the Site were placed under a clay covers. The cover over a closed surface impoundment was also upgraded. Ground water monitoring is conducted at the former surface impoundment to ensure that contamination of the underlying ground water does not occur.

Under the statutory requirements of Section 121(c) of CERCLA, as amended by the Superfund Amendments and Reauthorization Act (SARA), P. L. 99-499, and the subordinate provisions of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 Code of Federal Regulations (CFR) 300.430(f) (4) (ii), performance of five-year reviews are required for sites where hazardous substances remain onsite above levels that allow for unrestricted use and unrestricted exposure. Such are the factual circumstances at the RSR Corporation Site.

During the first five-year review period, RA activities for OUs 3, 4, and 5 were completed. Operations and Maintenance (O&M) activities for OUs 3 and 5 at the Site have continued. O&M activities include inspection and maintenance of the clay soil covers, inspection and maintenance of the former landfill, inspection and maintenance of the buried slag area, and inspection and maintenance of the former surface impoundment. Ground water monitoring is also conducted at the former surface impoundment. O&M activities for OUs 3 and 5, Subarea 2 are conducted RSR Corporation. The property owner, Murmur Corporation (Murmur), is currently responsible for conducting O&M activities at OU5, Subarea 1. The Site appears to be appropriately and well maintained.

During the first five-year review, four issues were identified that do not currently affect the protectiveness of the remedies for the Site. The following recommendations and follow-up actions have been identified for the Site to address these issues:

1. **Deed notices should be placed on the properties for OU3, Sites 1, 3, and 4, OU4, and OU5 Subareas 1, 2, and 5**. The EPA and Texas Commission on Environmental Quality (TCEQ) will need to work with the property owners to place the deed notices on each property. The deed notices should, at a minimum, identify the areas where contaminants remain, require future site owners to maintain the integrity of the remedies, require that no future site activities result in failure of the remedy components, restrict land use as appropriate, and require EPA review and concurrence for any future site development.

2. **Repair the erosion gullies present at OU3, Sites 1 and 3, and at OU5, Subarea 2.** The erosion features should be filled in; rock armor placed where appropriate; and new vegetation established to prevent further erosion. This action is necessary to provide the necessary to protect the soil covers over the contamination left in place at each site.

3. **Abandon monitor wells that are no longer required to monitor the site.** The EPA has determined that ground water monitoring at OU3, Sites 3 and 4 is not required. The monitor wells at these two sites should be properly abandoned to remove the wells as a potential conduit for contaminants to migrate to the subsurface.

4. **The soil covers at OU3, Sites 3 and 4 and OU5, Subarea 2 should be revegetated.** Sparse vegetation was noted during the site inspection at these sites. New vegetation should be established to reduce the

potential for erosion of the soil covers at these sites, thus reducing the potential for the underlying contamination to become exposed.

Five-Year Review Summary Form

SITE IDENTIFICATION

Site name (from WasteLAN): RSR Corporation Superfund Site

EPA ID (from WasteLAN): TXD079348397

Region: EPA Region 6	**State:** Texas	**City/County:** Dallas, Dallas County

SITE STATUS

NPL Status: 0 Final ☐ Deleted ☐ Other (specify):

Remediation status (choose all that apply): ☐ Under Construction ☐ Operating 0 Complete

Multiple OUs? 0 Yes ☐ No	**Construction completion date:** Sept. 14, 2004

Has site been put into reuse? ☐ Yes (partially) 0 No

REVIEW STATUS

Reviewing agency: 0 EPA ☐ State ☐ Tribe ☐ Other Federal Agency:

Author: EPA Region 6, with support from RAC6 contractor CH2M HILL, Inc.

Review period: September 2000 through September 2005

Date(s) of site inspection: July 6, 2005

Type of review:

0 Statutory	☐ Pre-SARA
☐ Policy	☐ NPL-Removal only
☐ Post-SARA	☐ NPL State/Tribe-lead
☐ Non-NPL Remedial Action Site	
☐ Regional Discretion	

Review number: 0 1 (first) ☐ 2 (second) ☐ 3 (third) ☐ Other (specify):

Triggering action:

☐ Actual RA Onsite Construction	0 Actual RA Start
☐ Construction Completion	☐ Recommendation of Previous Five-Year Review Report
☐ Other (specify):	

Triggering action date (from WasteLAN): September 2000

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Due date (five years after triggering action date): September 2005

Issues: Operations and Maintenance (O&M) is ongoing at the Site, and based on the data review, site inspection, interviews, and technical assessment, it appears the remedy is functioning as intended by the decision documents. To ensure continued protectiveness, four issues were identified in the first five-year review for this site, as described in the following paragraphs. These issues do not currently affect the protectiveness of the remedy, although they need to be addressed to ensure continued protectiveness.

1. **Institutional controls, in the form of deed notices, have not been placed on the Operable Unit (OU) 3, OU4, and OU5 properties.** Deed notices are required by the Record Of Decision (ROD) for OU 3, Sites 1, 3, and 4. Deed notices are required under Texas state regulations for OUs 4 and 5. The deed notices provide notice to future owners of the site contamination, require maintenance to ensure the protectiveness of the implemented remedies, and provide appropriate restrictions on future use.
2. **Erosion gullies are present on the soil covers at OU3, Sites 1 and 3, and near the landfill cover at OU5, Subarea 2.** Several large erosion cuts are present on the slope at OU3, Site 1. Rock armor was placed at the top of each gully to reduce erosion. Should these gullies continue to grow, they could result in slope instability problems and expose underlying contamination. Small erosion gullies are present in the clay cover at OU3, Site 3. These gullies could potentially grow and expose the underlying contamination. Also, a neighboring property owner has run several discharge pipes over the soil cover at Site 3. Discharges from this piping have resulted in one of the erosion gullies in the clay cover. Large erosion gullies are present near the clay cover at OU5, Subarea 2. These gullies could potentially grow and expose the landfilled materials and contamination. Although the erosion does not currently affect the protectiveness of the remedies, if left unaddressed, the erosion gullies will continue to grow.
3. **Unused monitor wells are present at OU3, Sites 3 and 4.** The original intent was to temporarily monitor ground water at these sites after completion of the RA, but this monitoring was not found to be necessary. Although the monitor wells are currently locked and secured, they do provide an open conduit to the subsurface. If the integrity of the monitor wells was compromised in the future, they would provide a potential pathway for the migration of contamination to the subsurface in the future.
4. **The vegetation is sparse at OU3, Sites 3 and 4, and OU5, Subarea 2**. A good vegetative growth is necessary to prevent or reduce the potential for erosion of the clay soil covers in these areas. Sparse vegetation increases the potential for erosion to occur, which could eventually expose the underlying contamination.

Recommendations and Follow-up Actions: The following recommendations and follow-up actions have been defined for the Site:

1. **Deed notices should be placed on the properties for OU3, Sites 1, 3, and 4, OU4, and OU5 Subareas 1, 2, and 5**. The EPA and Texas Commission on Environmental Quality (TCEQ) will need to work with the property owners to place the deed notices on each property. The deed notices should, at a minimum, identify the areas where contaminants remain, require future site owners to maintain the integrity of the remedies, require that no future site activities result in failure of the remedy components, restrict land use as appropriate, and require EPA review and concurrence for any future site development.
2. **Repair the erosion gullies present at OU3, Sites 1 and 3, and at OU5, Subarea 2.** The erosion features should be filled in; rock armor placed where appropriate; and new vegetation established to prevent further erosion. This action is necessary to provide the necessary to protect the soil covers over the contamination left in place at each site.
3. **Abandon monitor wells that are no longer required to monitor the site.** The EPA has determined that ground water monitoring at OU3, Sites 3 and 4 is not required. The monitor wells at these two sites should be properly abandoned to remove the wells as a potential conduit for contaminants to migrate to the subsurface.
4. **The soil covers at OU3, Sites 3 and 4 and OU5, Subarea 2 should be revegetated.** Sparse vegetation was noted during the site inspection at these sites. New vegetation should be established to reduce the potential for erosion of the soil covers at these sites, thus reducing the potential for the underlying contamination to become exposed.

Five-Year Review Summary Form

Protectiveness Statement(s): The remedy implemented for the RSR Site is considered protective of human health and the environment. At OU4, all site buildings and equipment were decontaminated and demolished, and the resultant debris was removed from the site and disposed or recycled. Contaminated soils to depths of one or two feet (ft) were removed from the site and disposed, and the site was placed under a clean soil cover. At OU5, Subarea 1, the cover over the former surface impoundment was upgraded. The battery wrecking facility was decontaminated and demolished, and the resultant debris was removed from the site and disposed or recycled. The vehicle maintenance facility was decontaminated. Contaminated soils, battery chips, and slag were consolidated in the buried slag area and placed under a clean soil cover. Site drainage was also improved to promote storm water runoff and to protect the soil covers. For OU5, Subarea 2, contaminated soils and the former landfill were placed under a clean soil cover. Contaminated soils at Subarea 4 were excavated and placed under the clean soil cover at Subarea 2. Continued O&M as part of the RA will ensure that the selected remedy continues to be protective.

Because the completed remedial actions (RAs) and O&M program for the RSR Corporation Site are considered protective for the short-term, the overall remedy for the Site is considered protective of human health and the environment for the short-term. The selected remedy will continue to be protective if the recommendations and follow-up items identified in this five-year review are addressed.

Other Comments: The Site is generally well maintained and operated.

First Five-Year Review Report
RSR Corporation Superfund Site

The United States Environmental Protection Agency (EPA) Region 6 has conducted the first five-year review of the Remedial Actions (RAs) implemented at the RSR Corporation Superfund Site ('site' or 'RSR Site'), Operable Units (OUs) 3, 4, and 5, for the period between September 2000 (when RA construction for OU4 began) to September 2005. The RSR Site is located in the City of Dallas, Dallas County, Texas. The purpose of a five-year review is to determine whether the remedy at a site remains protective of human health and the environment, and to document the methods, findings, and conclusions of the five-year review in a Five-Year Review Report. Five-Year Review Reports identify issues found during the review, if any, and recommendations to address them. This First Five-Year Review Report documents the results of the review for the RSR Corporation Superfund Site, conducted in accordance with EPA guidance on five-year reviews. EPA RAC6 contractor CH2M HILL, Inc. provided support for conducting this review and the preparation of this report.

EPA guidance on conducting five-year reviews is provided by Office of Solid Waste and Emergency Response (OSWER) Directive 9355.7-03B-P, *Comprehensive Five-Year Review Guidance* (**EPA, 2001a**) (replaces and supercedes all previous guidance on conducting five-year reviews). EPA and contractor personnel followed the guidance provided in this OSWER directive in conducting the five-year review performed for the RSR Site.

1.0 Introduction

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 United States Code (USC) '9601 *et seq*. and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 Code of Federal Regulations (CFR) 300 *et seq*., call for five-year reviews of certain CERCLA RAs. EPA policy also calls for a five-year review of RAs in some other cases. The statutory requirement to conduct a five-year review was added to CERCLA as part of the Superfund Amendments and Reauthorization Act of 1986 (SARA), P.L. 99-499. The EPA classifies each five-year review as either 'statutory' or 'policy' depending on whether it is being required by statute or is being conducted as a matter of policy. The first five-year review for the RSR Site is a statutory review.

As specified by CERCLA and the NCP, statutory reviews are required for sites where, after RAs are complete, hazardous substances, pollutants, or contaminants will remain onsite at levels that will not allow for

unrestricted use or unrestricted exposure. Statutory reviews are required at such sites if the Record of Decision (ROD) was signed on or after the effective date of SARA. CERCLA '121(c), as amended, 42 USC '9621(c), states:

> If the President selects a RA that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such RA no less often than each five years after the initiation of such RA to assure that human health and the environment are being protected by the RA being implemented.

The implementing provisions of the NCP, as set forth in the CFR, state at 40 CFR 300.430(f) (4) (ii):

> If a RA 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 action no less often than every five years after the initiation of the selected RA.

The five-year review for the RSR Site is required by statute because the RODs for the Site (OU3, 4, and 5) were signed on September 30, 1997, February 28, 1996, and April 3, 1997 respectively. Each ROD was signed after the effective date of SARA. A five-year review is required for the RAs implemented at OUs 3, 4, and 5 because materials remain onsite at each OU above levels that allow for unlimited use and unrestricted exposure. A five-year review is not required for the RAs implemented at OUs 1 and 2. This is the first five-year review for the RSR Site. The triggering action for the five-year review at the RSR Site is the date of the start of the RA for OU4 at the Site (September 2000).

2.0 Site Chronology

A chronology of significant site events and dates is included in **Table 1**, provided at the end of the report text. Sources of this information are listed in **Attachment 1, Documents Reviewed**.

3.0 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 taken at the Site, and the basis for each of the initial response actions. RAs performed subsequent to the initial response actions at the Site are described in **Section 4**.

3.1 Physical Characteristics

The RSR Corporation Superfund Site is located in the City of Dallas, Dallas County, Texas, in the north central portion of the state (see **Figure 1** for a site location map). The RSR Site encompasses and area of approximately 13.6 square miles in west Dallas, and approximately 17,000 residents live within the Site. The RSR Site was divided by EPA into five OUs for purposes of conducting the various response actions at the Site. OU1 is the private residential properties located at the Site. Property owned by the Dallas Housing Authority (DHA), including single and multi-family housing units, is designated as OU2. OU3 consists of three separate sites (Sites 1, 3, and 4) where waste slag and battery chips from smelting and battery breaking operations were disposed. OU4 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 OU5. 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 **EPA, 2004**).

OU3 is three separate sites (Sites 1, 3, and 4) where waste slag and battery chips were disposed (see **Figure 1** for the location of each site). Site 2 of OU3 was consolidated into OU5. 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 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 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 **EPA, 2004**).

OU4 is the former smelter facility and contained the former smelter building, 300-foot (ft) concrete stack, and other associated site buildings (see **Figure 1** for the location of OU4). OU4 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 OU4, and the property is currently 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.

OU5 is four Subareas (identified as 1, 2, 3, and 4) located on the west side of Westmoreland Road, across from the former smelter facility (OU4). OU5 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 RSR Site is located on the margin between the Blackland Prairie and the Eastern Cross-Timbers physiographic provinces. The overall Site topography is characterized by low, flat to gently undulating surfaces. Most of the RSR 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 at the site. 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**, **EPA, 1997a**, and **EPA, 1997b**).

In the area of the RSR Site, the predominant geologic units 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. OU3, Site 1 is underlain by approximately 20 to 25 ft of weathered Austin Chalk. OU3, Site 3 is underlain by 26 to 66 ft of alluvium lying unconformably over the Eagle Ford Shale. OU3, 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 feet up to 37 ft, and the Eagle Ford Shale was encountered at both OUs below the Quaternary Alluvium (**EPA, 1996**, **EPA, 1997a**, and **EPA, 1997b**).

In the Dallas area, the two major aquifers are the Woodbine Group, a minor aquifer, and the Trinity Group, a major aquifer. Both aquifers supply water for municipal, domestic, industrial, and irrigation uses in the north-central portion of Texas. Residents at the Site get their water supply from the City of Dallas water system, which is supplied by surface reservoirs located many miles from the site. In the area of 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 RSR 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 ground water. These deposits are not classified as a minor or major aquifer, and the shallow ground water 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, ground water is generally encountered at depths between 5 and 10 ft of ground surface (**EPA, 1996**, **EPA, 1997a**, and **EPA, 1997b**).

3.2 Land and Resource Use

Land use in the RSR Site area includes a mixture of industrial, commercial, and residential uses. Zoning at each OU unit varies. OU3, 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. OU3, Site 3 is zoned for agricultural and light industrial use. The southern end of Site 3 is currently vacant property. The northern end of Site 3 contains several closed landfills. OU3, Site 4 is currently zoned for residential use. EPA and the Texas Commission on Environmental Quality (TCEQ) are working with the City of Dallas to change the zoning to non-residential uses. Site 4 is currently vacant property (**EPA, 1997b**). OU4 is currently zoned for industrial/manufacturing uses. The ROD states that the reasonable expected future use of the site is commercial/industrial (**EPA, 1996**). The property is currently leased to a construction company and is being used to support road construction activities on Westmoreland Road. OU5 is currently zone for industrial/manufacturing uses. The ROD states that the reasonable expected future use of the site is commercial/industrial (**EPA, 1997a**). OU5 is currently not being used.

3.3 History of Contamination

Secondary lead smelting operations (OU4) and the associated battery wrecking operation (OU5) 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 (Inc.) 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 (OU4 and OU5 Subarea 1) were acquired by Murmur in 1984 (**EPA, 2004**).

The smelting operation at the RSR 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 OU3 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 OU3 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 OU3 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**).

OU4 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**).

OU5 was the location of the battery wrecking facility (Subarea 1) and a former landfill (Subarea 2). Located within Subarea 1 was 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**).

3.4 Initial Response

On May 10, 1993, the EPA proposed the RSR 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 at the RSR Site. These initial actions occurred prior to the EPA signing RODs for the various OUs at the Site. The following paragraphs describe the initial actions undertaken to address the RSR Site.

OU1

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) to 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 (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 I 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 I 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 battery 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 (IUBEK) 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 OU1. Also, the ROD stated that, because hazardous substances would not remain at OU1 above health-based levels, a five-year review was not required (**EPA, 1995a**).

OU2

OU2 is an area encompassing approximately 460 acres within the RSR Site. OU2 is comprised of public multi-family housing units, schools, parks, recreation facilities, and a day care center. The OU2 property is owned and operated by the DHA. On August 9, 1993, the EPA entered into an Administrative Order on Consent (AOC) with DHA. Under the AOC requirements, DHA agreed to conduct a RI/Feasibility Study (FS), demolition, and removal activities on its property (**EPA, 1995b**).

The results of the RI, BHHRA, and ERA conducted for OU2 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 IUBEK 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 OU2 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 OU2 in the same manner as the removal

action conducted at OU1. 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 hydroseeded to promote grass growth and reduce erosion potential. In addition, the DHA demolished 167 buildings at OU2. The demolition debris was also disposed of at offsite permitted hazardous and non-hazardous waste landfills. All DHA conducted removal activities at OU2 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 clean-up OU2 had addressed risks associated with OU2 and provided overall protection of human health and the environment. On May 9, 1995, the EPA signed a ROD for OU2 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 OU2 above health-based levels, a five-year review was not required (**EPA, 1995b**).

OU3

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 OU3. No PRPs agreed to perform or finance the RI/FS, and as a result, the EPA conducted the RI/FS for OU3. The EPA initiated the RI for OU3 in 1993. Through the RI, BHHRA, and ERA conducted for OU3, 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 ground water, although contaminated, was not a source or potential source of drinking water due to its low yield and slightly saline quality (**EPA, 1997b**).

OU4 and OU5

EPA served notices to several PRPs for the RSR 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. 22 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 OU4, 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 OU4 contamination. Arsenic was attributed with the majority of the cancer and noncancer risk. However, cadmium and antimony were also determined to contribute to the noncancer risk. The ERA determined that OU4 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 OU5, 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 OU5 contamination. Arsenic was attributed with the majority of the cancer risk. Cadmium was attributed with the majority of the noncancer risk. The ERA determined that OU5 did pose risks to onsite ecological receptors through soil. No principal threat wastes were found to be present at OU5. 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 ground water, although contaminated, was not a source or potential source of drinking water due to its low yield and slightly saline quality (**EPA, 1997a**).

3.5 Basis for Taking Action

The purpose of the response actions conducted at the RSR Site was to protect public health and welfare and the environment from releases or threatened releases of hazardous substances from the Site. RAs taken at the Site were deemed necessary based on the results of the various site investigations, the BHHRAs, and ERAs conducted for the RSR Site. For OU3, Site 1, exposure of children and adults due to soil ingestion, inhalation of dusts, and dermal contact site resulted in exposures to excess cancer risks between 1×10^{-3} and 1.0×10^{-4}. The noncancer HI exceeded one for children, adults, trespassers, and site workers. For OU3, Site 4, Jaycee Park, the noncancer HI for children exposed to soil exceeded one. At all sites at OU3, lead concentrations in soil resulted in acceptable risks (more than five percent of each population exhibiting elevated blood-lead levels) to either children or adults. of between 1.1 and 193.5 (well above the EPA recommended index of 1). For OU4, exposures to site contamination resulted in excess cancer risks of between 4×10^{-2} and 5×10^{-5} and noncancer HI values between 1.7 and 340 for each population evaluated (adult and child trespassers, onsite process workers, and onsite non-process workers). At OU5, exposures to site contamination resulted in excess cancer risks of between 4×10^{-4} and 8×10^{-9} and noncancer HI values between 0.001 and 10 for the various exposure scenarios evaluated. At OU4, the IUBEK model predicted that both onsite process and non-process workers would have blood-lead levels above the Occupation Safety and Health Administration (OSHA) permissible level of 40 µg/dl (**EPA 1996**, **EPA, 1997a**, and **EPA 1997b**).

4.0 Remedial Actions

This first five-year review specifically addresses actions taken at the RSR Site since initiation of the RA for OU4 in September 2004 (**EPA, 2004**). This section provides a description of the remedy objectives, selection, and implementation for OUs 3 (waste slag and battery chip disposal areas), 4 (smelter facility), and 5 (battery wrecking facility and other industrial properties) at the RSR Site. It also describes the ongoing Operations and Maintenance (O&M) activities performed and overall progress made at the Site in the period since the RA for OU4 began. Two additional OUs have been designated at the Site: (a) OU1 (residential areas); and OU2 (DHA property). 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 **EPA, 1995b**).

4.1 Remedy Objectives

The EPA signed the ROD and for OU3 of the RSR Site on September 20, 1997. The specific Remedial

Action Objectives (RAOs) for OU3 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 OU3 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 OU3 soils and sediments are provided in **Table 2** (**EPA, 1997b**).

The EPA signed the ROD and for OU4 of the RSR Site on February 28, 1996. The specific RAOs for OU4 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 OU4 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 OU4 buildings, structures, the smelter stack, equipment, and soils are provided in **Table 2** (**EPA, 1996**).

The EPA signed the ROD and for OU5 of the RSR Site on April 3, 1997. The specific RAOs for OU5 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 OU5 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 OU5 former surface impoundment, former landfill, buildings and

structures, and slag burial area/other soils are provided in **Table 2**. In addition, the ROD for OU5 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 OU5 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**).

4.2 Remedy Selection

EPA has signed five RODs for the RSR Site. The OU1 ROD pertained to contaminated soils present in residential areas of the Site, and the OU2 ROD pertained to contaminated soils and buildings present at the DHA property. The OU3 ROD addressed the soil and sediment contamination present at three separate waste disposal areas located within the Site. The OU4 ROD addressed the principal and low-level threats posed by contamination present at the smelter facility. Finally, the OU5 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 RSR Site was also addressed through other response actions (an Emergency Removal Action conducted for OU1, the removal action conducted by the DHA under the AOC for OU2, and the non-time critical Removal Action conducted at OUs 4 and 5) as described in **Section 3.4**. The RODs for OUs 1 and 2 determined that response actions were completed at each OU and that no further response or RA was necessary (**EPA, 1995a**, and **EPA, 1995b**).

The ROD for OU3 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 OU3 included three separate sites where waste slag and battery chips had been disposed of on the surface (**EPA, 1997b**).

The remedy described in the 1997 ROD for OU3 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 regrading 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 RCRA, 40 CFR 261);
- No action was recommended for shallow ground water; 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 ground water at four monitor wells for a period of five years;
- Annual inspection of the capped areas;
- No action was recommended for shallow ground water; 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 ground water at three monitor wells for a period of five years;
- No action was recommended for shallow ground water; and,
- An institutional control in the form of deed notices or restrictions (**EPA, 1997b**).

The ROD for OU4 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 OU4 included the facility buildings and structures, the smelter stack, equipment, and soils (**EPA, 1996**).

The remedy described in the 1996 ROD for OU4 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 one ft beneath pavements and up to two ft in the unpaved northeast area);
- Cap and/or backfill the areal extent of the Site with two 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 OU5 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 OU5 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 OU5 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);
- 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, regrade 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 two ft of clean backfill and revegetated with native grasses;
- No action was recommended for the shallow ground water 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 ground water monitoring would be conducted, long-term ground water monitoring would be conducted for the former landfill, and storm water and air monitoring would be conducted during the RA (**EPA, 1997a**).

4.3 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 Remedial Design (RD) and RA for each OU. The selected remedy for OU4 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 OU4. EPA completed the RD/RA for OU5 Subarea 1. Implementation of the ROD selected remedies for each OU is further described in the following paragraphs.

OU3

RSR Corporation contracted ENTACT to perform the RA construction activities for OU3. 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 OU3 on September 14, 2004. Based on the final inspection, all RA construction activities were determined to be completed (**ENTACT, 2004c**).

RA construction activities for OU3 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 OU3 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** shows the work area addressed by the RA at OU3, Site 4 (**ENTACT, 2004c**).

RA construction for OU3 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 a 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 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

and/or arsenic were below the field screening concentration numbers or a depth of two ft bgs was reached. Post-excavation confirmation samples were collected from areas where excavation depths were less than two 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 four 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 six inches and three and one-half 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 two 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** shows the work area addressed by the RA at OU3, 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 except Class 2 non-hazardous industrial waste (approximately 7,416 cubic yards) (**ENTACT, 2004c**).

RA construction for OU3 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 (ROW), 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 one and two 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, four 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** shows the work area addressed by the RA at OU3, Site 1 (**ENTACT, 2004c**).

OU4

RSR Corporation contracted ENTACT to perform the RA construction activities for OU4. 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 OU4 on November 6, 2001. Based on the final inspection, all RA construction activities were determined to be completed (**ENTACT, 2001**).

RA construction activities for OU4 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 OU4 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, monitor 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 light 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 one 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 one ft bgs in areas of the Site covered with pavement and to two 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 OU4 monitor wells were abandoned during the RA construction. Seven monitor wells were abandoned by filling the well casing with bentonite chips up to two ft bgs. The upper two ft 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** shows the layout of OU4 prior to RA construction. As a result of the RA, all site features were removed and/or covered.

OU5

The RA for OU5, Subarea 1 was completed by the EPA. The EPA contracted with CH2M HILL to perform the RA construction activities for OU5, 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 OU5, 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** shows the location of OU5, Subarea 1.

RA construction activities for OU5, 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 OU5 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 six inches to two ft. In a few areas, the excavations were completed to only one and one-half 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 two 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 regrading the cap around its perimeter to achieve a three-to-one (horizontal-to-vertical) slope, increasing the cap thickness in one area, and revegetating the cap. Geotextile and bedding rock were placed along the west toe of the former surface impoundment. A six inch topsoil cover was placed on top of the clay cap, and the cap was then revegetated (**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 OU5 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 one grid location was identified that required excavation. Each grid was excavated to depths of six or twelve 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 four 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 OU5, 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 five 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 OU5, 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 ft 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 two and four inches to remove large accumulations of battery chips. The scraped material was placed in the buried slag area. The area was then regraded 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 six inches of topsoil. The buried slag area was then revegetated. 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** shows OU5, Subarea 1 after completion of the RA construction activities.

RSR Corporation contracted ENTACT to perform the RA construction activities for OU5, 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 the TCEQ conducted the final inspection for OU5, 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** shows the locations of Subareas 2, 3, and 4 at OU5.

RA construction activities for OU5, 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 OU5, 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 five ft bgs. Trenching started at approximately five to ten 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 OU5, Subarea 2 is shown on **Figure 9**.

At OU5, 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 OU5, 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 nine 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 three 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 OU5, Subarea 2. Additional material was added to un-impacted areas of OU5, Subarea 2 to bring the Site to final grade, promote drainage, and prevent ponding of water. Field screening identified four remote grids that required remediation. These grids were excavated to a depth of one ft 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** shows the areas of OU5, Subarea 2 that were either excavated or placed under the final soil cover.

At OU5, 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 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 three grids exceeded the field screening values. 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 OU5, Subarea 3 (**ENTACT, 2004a**).

An investigation was conducted at OU5, 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 address two adjacent properties as part of the OU5 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 OU5, 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 OU5, Subarea 4 are shown on **Figure 10**.

4.4 Operations and Maintenance

RSR Corporation is responsible for O&M activities conducted for the OU3 and OU5, Subareas 2, 3, and 4 remedies. Murmur (the property owner) is currently responsible for O&M activities at OU5, Subarea 1. Murmur and EPA are currently working on an agreement whereby Murmur would provide funding to the EPA, and the EPA would take over responsibility for O&M at OU5 Subarea 1. The ROD did not require any O&M activities for the remedy completed at OU4. O&M Plans were developed by ENTACT that specifies the general O&M activities to be conducted at OU3 and OU5, 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 OU5, Subarea 1 (**CH2M HILL, 2004b**).

The completed remedy for OU3 does not include any active components that require on-going operation. O&M activities for OU3 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 is 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 OU5, 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. The O&M Plan states that deed restrictions, in the form of a deed notice, were required for Subareas 2 and 4. The deed notice for Subarea 2 is 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 property would also be restricted to commercial/industrial use. The deed notice for Subarea 4 would only restrict the property to commercial/industrial use. RSR Corporation is responsible for filing the deed notices for Subareas 2 and 4 of OU5 (**ENTACT, 2004b)**.

The completed remedy for OU5, 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. Ground water sampling at the former surface impoundment is also required for a period of five years. The O&M Manual states that inspections 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 site would also be inspected for indications of erosion or excessive sedimentation in site drainage ditches, and the vehicle maintenance facility

parking lot would be inspected to verify the integrity of the surface. The fence around Subarea 1 would also be inspected and maintained to restrict access to the site. The O&M Plan stipulates that corrective actions would be implemented to repair/correct noted deficiencies. The only required maintenance activity included mowing of the site on a monthly basis during the growing season to maintain the vegetation at less than six inches in height (**CH2M HILL, 2004b**).

The ground water sampling plan is contained as a part of the O&M Manual for Subarea 1. It specifies the locations to be sampled, numbers and types of samples to be collected, and the quality assurance/quality control requirements. The plan specifies the ground water monitoring will be performed on an annual basis to monitor lead and arsenic concentrations in the ground water at the former surface impoundment. The monitoring is being conducted as a closure requirement for the former surface impoundment (**CH2M HILL, 2004b**). The ground water monitoring results from the first sampling event are further discussed in **Section 6.4**.

4.5 Progress Since Completion of Remedial Action

There are no active operating components for the RAs conducted at OUs 3, 4, and 5. For OU3, all contamination was either disposed of offsite or placed under clean soil covers. At OU4, all site buildings and equipment were decontaminated and demolished, and the resultant debris was removed from the site and disposed or recycled. Contaminated soils to depths of one or two ft were removed from the site and disposed, and the site was placed under a clean soil cover. At OU5, Subarea 1, the cover over the former surface impoundment was upgraded. The battery wrecking facility was decontaminated and demolished, and the resultant debris was removed from the site and disposed or recycled. The vehicle maintenance facility was decontaminated. Contaminated soils, battery chips, and slag were consolidated in the buried slag area and placed under a clean soil cover. Site drainage was also improved to promote storm water runoff and to protect the soil covers. For OU5, Subarea 2, contaminated soils and the former landfill were placed under a clean soil cover. Contaminated soils at Subarea 4 were excavated and placed under the clean soil cover at Subarea 2 (**ENTACT, 2001**, **ENTACT, 2004a**, **ENTACT, 2004c**, and **CH2M HILL, 2004a**).

OUs 3 and 5 are currently in the O&M phase. O&M was not required by the ROD for OU4. O&M activities include maintenance and inspections. Also, ground water sampling at the former surface impoundment is required at OU5, Subarea 1. No additional monitoring is required as a part of O&M. One annual ground water sampling event (the results are discussed in **Section 6.4**) has been conducted since completion of the RA (**CH2M HILL, 2004c**).

5.0 Five-Year Review Process

This first five-year review for the RSR Site has been conducted in accordance with the EPA's Comprehensive Five-Year Review guidance dated June 2001 (**EPA, 2001**). Interviews were conducted with relevant parties; a site inspection was conducted; and applicable data and documentation covering the period of the review were evaluated. The activities conducted as part of this review and specific findings are described in the following paragraphs.

5.1 Administrative Components

The five-year review for this site was initiated by the EPA when EPA contractor CH2M HILL, Inc., was tasked to perform the technical components of the review. A public notice announcing initiation of the five-year review was published in the ***Dallas Morning News***. The review team was led by the EPA Remedial Project Manager (RPM) for this site, Mr. Carlos Sanchez/ EPA Region 6. The components of the review included community involvement, document review, data review, a site inspection, interviews, and development of this Five-Year Review Report, as described in the following paragraphs.

5.2 Community Involvement

A public notice announcing initiation of the five-year review was published in the ***Dallas Morning News*** in August 2005. Upon signature, the First Five-Year Review Report will be placed in the information repositories for the Site, including the Dallas Public Library – West Branch, the TCEQ office in Austin, Texas, and the EPA Region 6 office in Dallas, Texas. A notice will then be published in the ***Dallas Morning News*** to summarize the findings of the review and announce the availability of the report at the information repositories. Copies of the two public notices are provided as **Attachment 5** to this report.

5.3 Document Review

This first five-year review for the Site included a review of relevant site documents, including decision documents, the preliminary closeout report, RA Completion Reports, O&M plans, and O&M reports. Documents reviewed are listed in **Attachment 1a**.

5.4 Data Review

Data collected at the RSR Site since completion of the RA includes ground water monitoring data from one

annual sampling event at OU5, Subarea 1. Ground water monitoring results are provided in **Table 3**. The location of each monitor well is shown on **Figure 7**. The ROD did not establish action levels in ground water for OU5 to compare the analytical results against. The monitoring is conducted to determine if releases to ground water are occurring at the former surface impoundment. The data are insufficient, based on only one sampling event, to establish concentration trends. Continued monitoring is necessary to demonstrate that a release to ground water is not occurring from the former surface impoundment.

The ROD specified as a common element for the remedy alternative selected for OU3, that ground water would be sampled at seven monitor wells (four at Site 3 and three at Site 4). Also, surface water was to be sampled at six locations (four at Site 3 and two at Site 4) (**EPA, 1997b**). The ROD for OU5 specified that short-term surface water sampling (for a period of five years) would be conducted at OU5. The ROD did not specify at which Subarea the surface water sampling would be conducted. The ROD also stipulated that ground water sampling would be conducted at three monitor wells at the former landfill to comply with RCRA closure requirements (**EPA, 1997a**).

During the site inspection, Mr. Carlos Sanchez/EPA RPM stated that it was decided after completion of the RA not to implement the surface water sampling activities as part of O&M for the Site. Most of the drainage channels, creeks, and runoff conveyances at the Site receive surface water runoff from the streets and parking lots in the area. These areas in particular have the potential to contribute contamination to the surface water at the site. Due to the urban environment present around the Site, it would be difficult or impossible to determine the potential impacts, if any, that the remediated areas of the Site were having on surface water. For this reason, surface water sampling was not implemented as part of O&M. The ground water monitoring requirements were not implemented because, as stated in the ROD, the ground water at the Site is not considered a potential drinking water source, and after completion of the RAs, the remediated portions of the Site were not likely to contribute further contamination to the ground water.

5.5 Interviews

During the course of the five-year review, interviews were conducted with several parties involved with the Site: (1) Mr. Ben Shields of the TCEQ; (2) Mr. John Cappello, West Dallas Chamber of Commerce; (3) Mr. Homer Hine, RSR Corporation; (4) Ms. Jenny Elste, ENTACT; (5) Ms. Ann Grimes, City of Dallas Economic Development; (6) Mr. Homer Kirby, Murmur; and (7) Ms. Mattie Mash, former member of the City of Dallas City Council and local citizen. Interview Record Forms which document the issues discussed during these interviews are provided in **Attachment 2**.

In general, the interviews noted that work done at the Site was good for the community and that a good job was done in completing the work. It was noted that the community has not expressed any concerns regarding the Site remediation or its ongoing operations. Each person indicated that the main remaining concern from the community surrounding the Site was related to reuse of the remediated properties. Each person interviewed indicated that there had been no complaints regarding the Site.

Both Mr. Homer Hine and Mr. Homer Kirby indicated that deed notices had not been filed on the properties owned by RSR Corporation and Murmur. Mr. Kirby further indicated that Murmur and EPA were still in the process of resolving Murmur's liability under CERCLA related to the RSR Site. He indicated that he thought, as part of the settlement, that the deed notices would be placed on Murmur's property and EPA would assume O&M responsibility for OU5, Subarea 1.

Ms. Grimes noted one issue regarding the site. She had been made aware that a potential purchaser for a property located next to OU5, Subarea 1 had discovered high lead concentrations in a drainage coarse running from OU5, Subarea 1 onto the adjacent property. She brought this issue up because she wanted to point out that potential purchasers and developers of properties near the Site still have some concerns regarding contamination from the Site. Ms. Grimes further indicated that it would be helpful at the Site if there were some sort of technical assistance the EPA could provide to purchasers and developers of commercial and industrial property at the Site. Mr. John Capello had similar comments and suggestions regarding EPA assistance in redeveloping the Site.

Mr. Ben Shields indicated expressed two concerns regarding the Site. He indicated that consideration should be given to the implementation of deed notices at the Site. Also, he indicated that monitor wells at the Site that are not being used should be abandoned.

5.6 Site Inspection

An inspection was conducted at the Site on July 6, 2005. The completed Site inspection checklist is provided in **Attachment 3**. Photographs taken during the RSR Site inspection are provided in **Attachment 4**.

OU3, Site 1

A fence separates OU3, Site 1 from Westmoreland Road; however the fence does not prevent access to property (**Photograph 11**). The fence is not a required component of the remedy. An electric substation had

been recently built on the property south of Site 1 (**Photograph 12**). The vegetation at Site 1 was sparse in some areas, and desiccation cracks, due to the dry conditions at the time, were present over much of the soil cover. Several large erosion cuts were present on the slope in the middle of Site 1 (**Photographs 13**, **14**, and **16**). Rock armor had been placed at the tops of the cuts to reduce the potential for erosion, but the erosion channels had not been filled in (**Photographs 13**, **14**, and **16**). Based on the conditions at Site 1, it appeared that homeless people had started using the area again (**Photographs 15** and **16**).

OU3, Site3

Access is not restricted by fencing at OU3, Site 3. Fencing is not a required component of the remedy. The vegetation at Site 3 was sparse in most areas. Desiccation cracks, due to the dry conditions at the time, were present over much of the soil covers (**Photographs 17**, **18**, **21**, and **22**). At the southern end of Site 3, along Davis Street, an adjacent landowner had placed several storage tanks on top of the soil cover. In addition, several discharge pipes were run along the top of the cap from this property (**Photograph 17**). One of these discharge pipes has caused a minor erosion cut to develop on the north side of the clay cover. Several monitor wells were present at Site 3 (**Photographs 19**, **20**, and **22**). The monitor wells appeared to be in good condition. All monitor wells were locked. However, identification markings were not present on the wells. Settlement was observed around the concrete pad of one of the wells (**Photograph 19**), and one monitor well lacked a concrete pad (**Photograph 22**).

OU3, Site 4

Access is not restricted by fencing at OU3, Site 4. Fencing is not a required component of the remedy. The vegetation at Site 4 was sparse in most areas. Desiccation cracks, due to the dry conditions at the time, were present over much of the soil covers (**Photograph 25**). Several monitor wells were present at Site 4 (**Photographs 24** and **26**). The monitor wells appeared to be in good condition. All monitor wells were locked. However, identification markings were not present on the wells. The concrete pad of one of the wells was cracked (**Photograph 24**), and one monitor well was overgrown with vegetation (**Photograph 26**).

OU4

Access is restricted by fencing at OU4, but fencing is not required as part of the remedy. Murmur has leased the OU4 property to a construction company involved in the widening of Westmoreland Road in the area of the Site. The construction company is using the property as a storage yard for equipment and materials (**Photographs 34 – 36**). The soil cover at OU4 was in generally good condition. Minor desiccation cracks,

due to the dry conditions at the time, were present. The vegetation at OU4 was in good condition and well established (**Photographs 34 – 36**).

OU5, Subarea 1

Access is restricted at OU5, Subarea 1 by a fence, but fencing is not a required component of the remedy. There was a hole present in the fence near the vehicle maintenance facility at the time of the Site inspection. The vegetative cover on the slag burial area was well established and in need of mowing (**Photographs 27** and **28**). A few minor erosion gullies (less than one inch in depth) and a few bare spots (less than one square ft in area) were observed on the cover. The vegetative cover on the former surface impoundment was well established and in need of mowing (**Photographs 30 - 33**). One bare spot was observed on the cover (**Photograph 32**). Minor erosion was occurring along the toe on the north side of the former surface impoundment. All the monitor wells were inspected. Each monitor well was locked and appeared to be in good condition. One monitor well lacked protective bollards (**Photograph 29**).

OU5, Subarea 2

A fence surrounds OU5, Subarea 2 (**Photographs 3** and **6**). The fence is not a required component of the remedy. The vegetation was sparse in most areas (**Photographs 1 – 3**, and **7 – 8**), and desiccation cracks (some large – **Photograph 4**), due to the dry conditions at the time, were present over much of the soil cover. Several large erosion cuts were present on the west slope of the Site (**Photographs 8 - 10**). These erosion cuts were not present within the limits of the cover placed over the former landfill.

6.0 Technical Assessment

The five-year review must determine whether the remedy at a Site is protective of human health and the environment. The EPA guidance describes three questions used to provide a framework for organizing and evaluating data and information and to ensure all relevant issues are considered when determining the protectiveness of a remedy. These questions are assessed for the Site in the following paragraphs. At the end of the section is a summary of the technical assessment.

6.1 Question A: Is the Remedy Functioning as Intended by the Decision Documents?

The documents that detail the remedial decisions for the Site are the September 1997 ROD for OU3, the February 1996 ROD for OU4, and the April 1997 ROD for OU5. All portions of the RA are complete. Each OU is now undergoing O&M. Based on the data review, site inspection, and interviews, it appears that the

RSR Site remedies are functioning as intended by the RODs.

Opportunities for Optimization. O&M for Site, in the form of inspections, maintenance, and ground water monitoring, have been ongoing at the Site since completion of the RAs for each OU. The O&M procedures provide for annual inspections conducted at the OUs 3 and 5, and ground water sampling at OU5, Subarea 1. No decrease in the inspection, maintenance, or ground water sampling frequency is recommended at this time.

Early Indicators of Potential Remedy Problems. Several large erosion cuts are present on the slope at OU3, Site 1. Rock armor was placed at the top of each gully to reduce erosion. Should these gullies continue to grow, they could result in slope instability problems and expose underlying contamination. Small erosion gullies are present in the clay cover at OU3, Site 3. These gullies could potentially grow and expose the underlying contamination. Large erosion gullies are present near the clay cover at OU5, Subarea 2. These gullies could potentially grow and expose the landfilled materials and contamination.

Institutional Controls. Institutional controls, in the form of deed records, are required by the ROD for OU3, Sites 1, 3, and 4. The deed records are to provide notice of the locations of contaminants at the site, notes that the soils covers must be maintained, and provide for EPA review and concurrence on any future site development. Institutional controls, in the form of deed records, were not required by the ROD for OUs 4 or 5. However, RSR Corporation has indicated that Deed records will be placed on their properties (OU5 Subareas 2 and 4). The deed record for Subarea 2 will provide the location of the former landfill and northern area clay cover, note that the covers must be maintained, provide for EPA review and concurrence on any future site development, and restrict future site uses to industrial/commercial uses. The deed record for Subarea 4 will only restrict future site uses to industrial/commercial uses. Mr. Homer Kirby indicated in his interview (**Section 5.5**) that deed records would be placed on Murmur's properties (OU4 and OU5, Subarea 1). The restrictions and notices included in the deed records were not identified. Although deed records are not required by the RODs for OUs 4 and 5, both RODs state that the Texas' Risk Reduction Rules, Standard No. 3 for remediation of contaminated sites are Applicable or Relevant and Appropriate Requirements (ARARs) for each OU. Texas Risk Reduction Rules require the filing of deed records on properties that are cleaned up to Standard No. 3 (30 Texas Administrative Code [TAC] 335.566). Although not required by the RODs, deed records are required under Texas' Regulations for OUs 4 and 5. Based on the interviews (**Section 5.5** and **Attachments 2a** and **2b**) with Mr. Kirby and Mr. Homer Hine (RSR Corporation), the deed records have not yet been filed for OUs 3, 4, or 5.

6.2 Question B: Are the Exposure Assumptions, Toxicity Data, Cleanup Levels, and Remedial Action Objectives Used at the Time of the Remedy Selection Still Valid?

The purpose of this question is to evaluate the effects of any significant changes in standards or assumptions used at the time of remedy selection. Changes in promulgated standards or "to be considereds" (TBCs) and assumptions used in the original definition of the RA may indicate an adjustment in the remedy is necessary to ensure the protectiveness of the remedy.

Changes in Exposure Pathways, Toxicity, and Other Contaminant Characteristics. There have been no changes in the exposure pathways for the RSR Site used in the BHHRA since completion of the RA. All exposure pathways were addressed through demolition and disposal of principal and low-level threat wastes, and excavation and disposal of low-level threat wastes, and excavation and/or covering of areas exceeding the action levels. No new contaminants or routes of exposure have been identified for the Site as part of this five-year review.

Changes in cancer slope factors and reference dose values used to calculate risk and hazard indices have been made since completion of the BHHRA. No changes to exposure assumptions could be identified. Changes in the cancer slope factors are provided in **Table 4**. Changes in reference dose values and non-cancer slope factors are provided in **Table 5**. No changes were noted for the contaminants identified as being a concern at the Site (antimony, arsenic, cadmium, and lead). These changes would have resulted in changes to the estimated potential risks at the Site. Also, the estimated risks posed by the site were based on conditions as they existed at the Site prior to remediation, and the actions conducted during the RA removed the risks.

Changes in ARARs. ARARs for this Site were identified in the RODs for OUs 3, 4, and 5. The five-year review for this Site included identification of and evaluation of changes in the ROD-specified ARARs and TBCs to determine whether such changes may affect the protectiveness of the selected remedy. These ARARs and TBCs are listed in **Table 6**.

ARARs Involving Activities that are No Longer Occurring. Many of the ARARs identified in **Table 6** are no longer applicable based on current site conditions and/or O&M activities. Most of the ARARs listed in **Table 6** applied to specific components of the RA (such as building demolition, ACM abatement, storm water management, emissions control, etc.) that are no longer occurring at the Site. Therefore, as a practical

matter, they are no longer applicable to site remediation. However, should additional construction activities occur, these ARARs may be applicable. These ARARs are identified in **Table 6.**

Interpretation, Changes, and Revisions to Guidance and Regulations. The TCEQ and the Federal regulations have not been revised to the extent that the effectiveness of the remedy at the Site would be called into question. No new regulations have been issued by the State of Texas or the Federal government that would call into question the effectiveness of the remedy**.** The ARARs identified in the RODs that are still applicable to the Site and its O&M are also listed in **Table 6**. None of these ARARs have been significantly revised since the RODs were issued.

The Texas regulations governing the cleanup of hazardous waste and contaminated sites that were in force at the time of the ROD were signed were the Texas Risk Reduction Standards (30 TAC 335 Subchapters A and S). In 1999, the TNRCC promulgated new regulations for cleanup of hazardous waste and contaminated sites. The new regulations are known as the Texas Risk Reduction Program (TRRP), 30 TAC 350. The TRRP rules went into effect on May 1, 2000. The TRRP regulations include a grandfathering clause that allowed Sites regulated under the Risk Reduction Standards to remain under those Rules. In addition, the CERCLA process meets the intent of the TRRP rules. Although the TRRP rules are newly promulgated standards, they would not be considered applicable to the RSR Site.

6.3 Question C: Has any Other Information Come to Light that Could Call into Question the Protectiveness of the Remedy?

Examples of other information that might call into question the protectiveness of the remedy include potential future land use changes in the vicinity of the Site or other expected changes in site conditions or exposure pathways; no such information has come to light as part of this first five-year review for the Site.

6.4 Summary of the Technical Assessment

The technical assessment, based on the data review, site inspection, technical evaluation, and interviews indicates that the RAs selected for the RSR Site generally appear to have been implemented as intended by the decision documents. O&M activities conducted at OUs 3, 4, and 5 appear to be adequately implemented, and the Site is well maintained. The institutional controls, in the form of deed records, have not yet been placed on the property. This issue should be addressed as discussed in **Section 9.0**.

The site inspection did reveal a few minor issues. Several large erosion cuts are present on the slope at OU3, Site 1. Rock armor was placed at the top of each gully to reduce erosion. Should these gullies continue to grow, they could result in slope instability problems and expose underlying contamination. Small erosion gullies are present in the clay cover at OU3, Site 3. These gullies could potentially grow and expose the underlying contamination. Large erosion gullies are present near the clay cover at OU5, Subarea 2. These gullies could potentially grow and expose the landfilled materials and contamination. The vegetation was sparse on the soil covers at OU3, Sites 3 and 4, as well as at OU5, Subarea 2. Abundant vegetation is necessary to reduce the potential for erosion of the soil covers at these locations. These items should be addressed as discussed in **Section 9.0**.

The EPA has determined that ground water monitoring is only required at OU5, Subarea 1. Monitor wells are present at OU3, Sites 3 and 4. If there are no plans to use these monitor wells in the future, then the wells should be properly abandoned. This item should be addressed as discussed in **Section 9.0**.

7.0 Issues

O&M activities are ongoing at the Site. Based on the data review, site inspection, interviews and technology assessment, it appears the remedy is functioning as intended by the decision documents. To ensure continued protectiveness, four issues are identified in the First Five-Year Review Report for this Site, as described in the following paragraphs. These issues do not currently affect the protectiveness of the remedy, although they need to be addressed to ensure continued protectiveness.

1. **Institutional controls, in the form of deed notices, have not been placed on the OU3, OU4, and OU5 properties.** Deed notices are required by the ROD for OU3, Sites 1, 3, and 4. Deed notices are required under Texas state regulations for OUs 4 and 5. The deed notices provide notice to future owners of the site contamination, require maintenance to ensure the protectiveness of the implemented remedies, and provide appropriate restrictions on future use.

2. **Erosion gullies are present on the soil covers at OU3, Sites 1 and 3, and near the landfill cover at OU5, Subarea 2.** Several large erosion cuts are present on the slope at OU3, Site 1. Rock armor was placed at the top of each gully to reduce erosion. Should these gullies continue to grow, they could result in slope instability problems and expose underlying contamination. Small erosion gullies are present in the clay cover at OU3, Site 3. These gullies could potentially grow and expose the underlying contamination.

Also, a neighboring property owner has run several discharge pipes over the soil cover at Site 3. Discharges from this piping have resulted in one of the erosion gullies in the clay cover. Large erosion gullies are present near the clay cover at OU5, Subarea 2. These gullies could potentially grow and expose the landfilled materials and contamination. Although the erosion does not currently affect the protectiveness of the remedies, if left unaddressed, the erosion gullies will continue to grow.

3. **Unused monitor wells are present at OU3, Sites 3 and 4.** The original intent was to temporarily monitor ground water at these sites after completion of the RA, but this monitoring was not found to be necessary. Although the monitor wells are currently locked and secured, they do provide an open conduit to the subsurface. If the integrity of the monitor wells was compromised in the future, they would provide a potential pathway for the migration of contamination to the subsurface in the future.

4. **The vegetation is sparse at OU3, Sites 3 and 4, and OU5, Subarea 2.** A good vegetative growth is necessary to prevent or reduce the potential for erosion of the clay soil covers in these areas. Sparse vegetation increases the potential for erosion to occur, which could eventually expose the underlying contamination.

8.0 Recommendations and Follow-up Actions

As described in the previous section, four issues were identified during the first five-year review for this Site. To address these issues, the following recommendations and follow-up actions have been defined.

1. **Deed notices should be placed on the properties for OU3, Sites 1, 3, and 4, OU4, and OU5 Subareas 1, 2, and 5.** The EPA and TCEQ will need to work with the property owners to place the deed notices on each property. The deed notices should, at a minimum, identify the areas where contaminants remain, require future site owners to maintain the integrity of the remedies, require that no future site activities result in failure of the remedy components, restrict land use as appropriate, and require EPA review and concurrence for any future site development.

2. **Repair the erosion gullies present at OU3, Sites 1 and 3, and at OU5, Subarea 2.** The erosion features should be filled in; rock armor placed where appropriate; and new vegetation established to prevent further erosion. This action is necessary to provide the necessary to protect the soil covers over the contamination left in place at each site.

3. **Abandon monitor wells that are no longer required to monitor the site.** The EPA has determined that ground water monitoring at OU3, Sites 3 and 4 is not required. The monitor wells at these two sites should be properly abandoned to remove the wells as a potential conduit for contaminants to migrate to the subsurface.

4. **The soil covers at OU3, Sites 3 and 4 and OU5, Subarea 2 should be revegetated.** Sparse vegetation was noted during the site inspection at these sites. New vegetation should be established to reduce the potential for erosion of the soil covers at these sites, thus reducing the potential for the underlying contamination to become exposed.

9.0 Protectiveness Statement

The remedy implemented for the RSR Site is considered protective of human health and the environment. For OU3, all contamination was either disposed of offsite or placed under clean soil covers. At OU4, all site buildings and equipment were decontaminated and demolished, and the resultant debris was removed from the site and disposed or recycled. Contaminated soils to depths of one or two ft were removed from the site and disposed, and the site was placed under a clean soil cover. At OU5, Subarea 1, the cover over the former surface impoundment was upgraded. The battery wrecking facility was decontaminated and demolished, and the resultant debris was removed from the site and disposed or recycled. The vehicle maintenance facility was decontaminated. Contaminated soils, battery chips, and slag were consolidated in the buried slag area and placed under a clean soil cover. Site drainage was also improved to promote storm water runoff and to protect the soil covers. For OU5, Subarea 2, contaminated soils and the former landfill were placed under a clean soil cover. Contaminated soils at Subarea 4 were excavated and placed under the clean soil cover at Subarea 2. Continued O&M as part of the RA will ensure that the selected remedy continues to be protective.

Because the completed RAs and O&M program for the RSR Corporation Site are considered protective for the short-term, the overall remedy for the Site is considered protective of human health and the environment for the short-term. The selected remedy will continue to be protective if the recommendations and follow-up items identified in this five-year review are addressed.

10.0 Next Review

The next five-year review, the second for the Site, should be completed during or before August 2010.

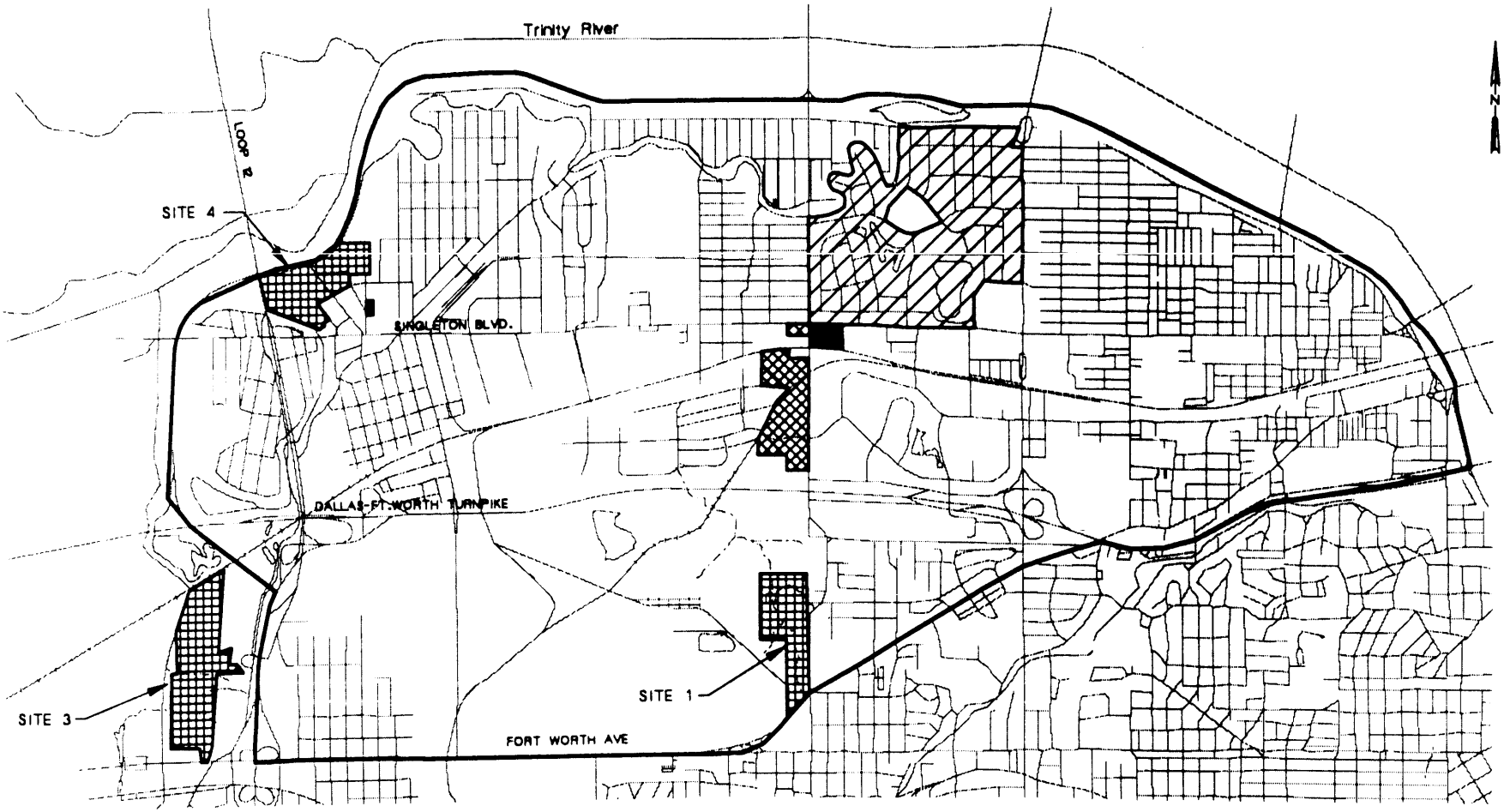
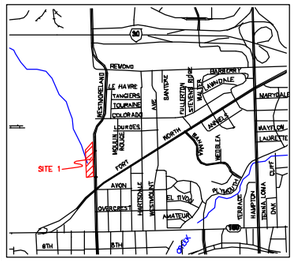


Figure 1
Vicinity Map
RSR Corporation Superfund Site
Dallas, Dallas County, Texas
First Five-Year Review

Figure reproduced from EPA, 1997a



VICINITY MAP
(NOT TO SCALE)

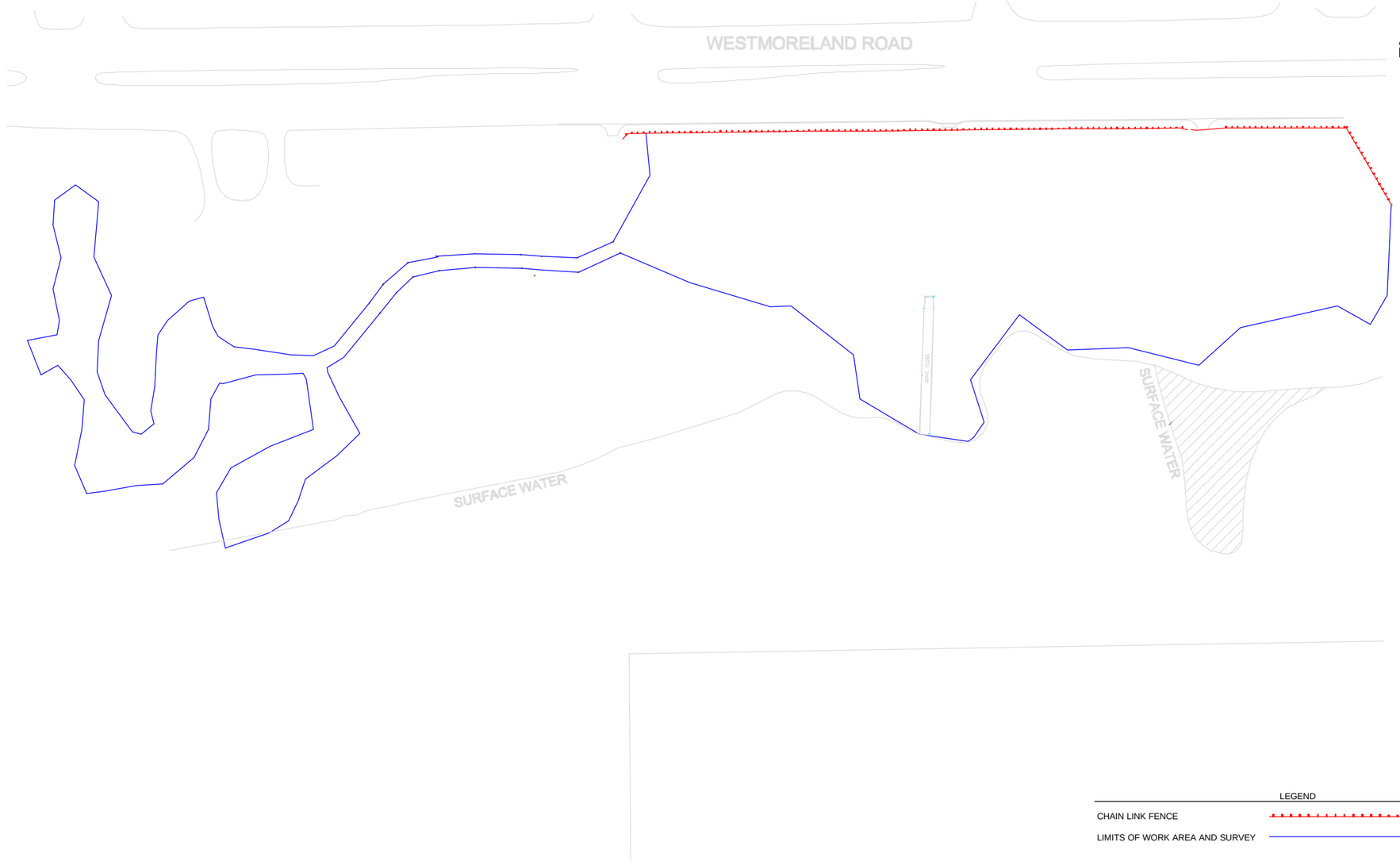


Figure 2
OU3 - Site 1
RSR Corporation Superfund Site
Dallas, Dallas County, Texas
First Five-Year Review

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Scale: 1"=100' | Drawn By: DW | Checked By: JE | Date: 9/2004

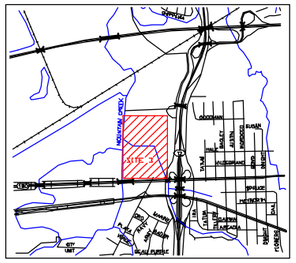
RSR CORPORATION SUPERFUND SITE
OPERABLE UNIT NO. 3, SITE 1
DALLAS, TEXAS

FIGURE 2a

SITE LAYOUT MAP - SITE 1

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

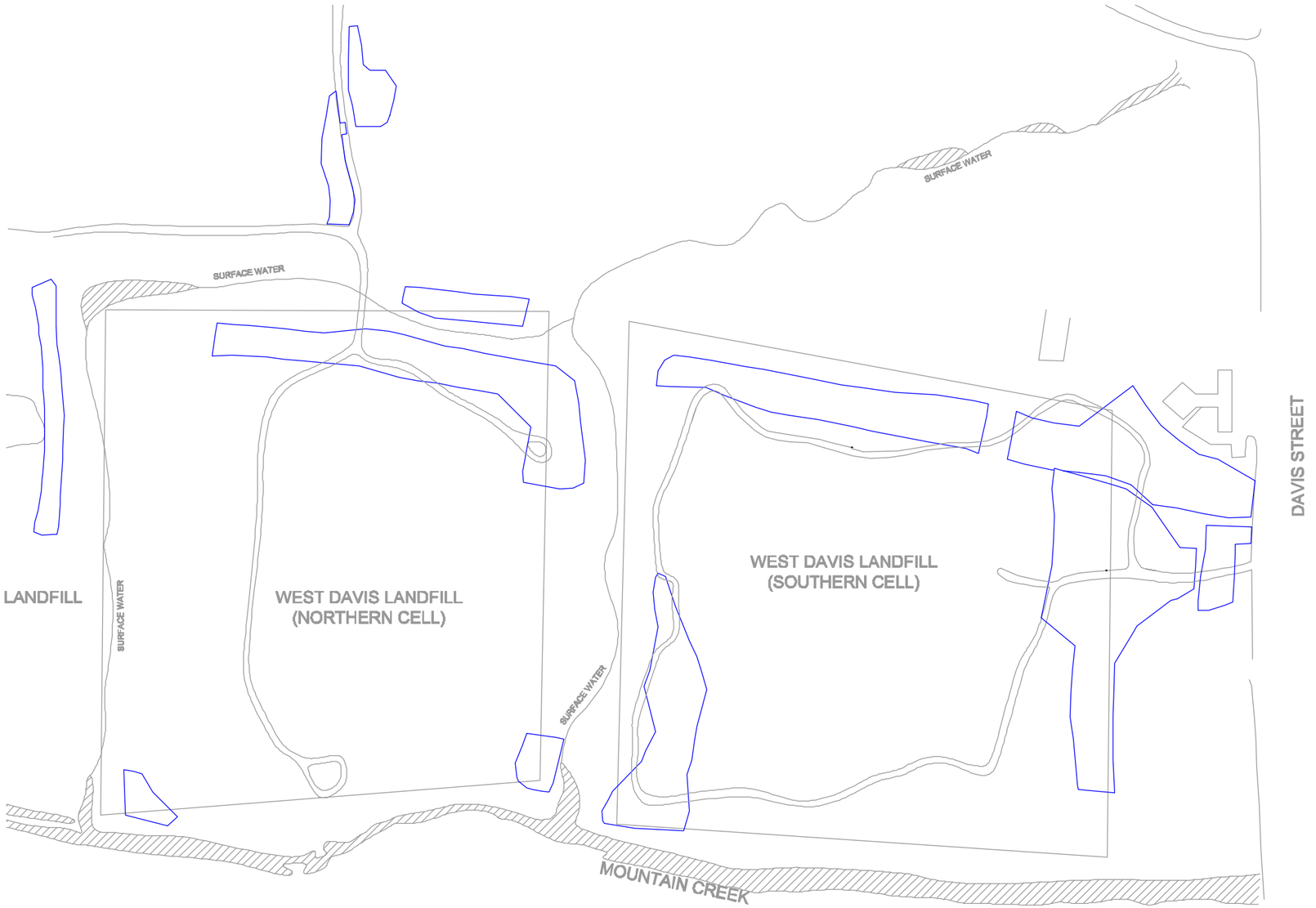
Figure reproduced from ENTACT, 2004c



VICINITY MAP
(NOT TO SCALE)

0 50 100 250

Scale 1" = 250'



LEGEND

LIMITS OF SURVEY AND WORK AREAS

NOTE: THE GRID LINE INTERSECTION POINT REPRESENTS THE SOUTHEAST CORNER OF THE GRID.

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

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RSR CORPORATION SUPERFUND SITE
OPERABLE UNIT NO. 3, SITE 3
DALLAS, TEXAS

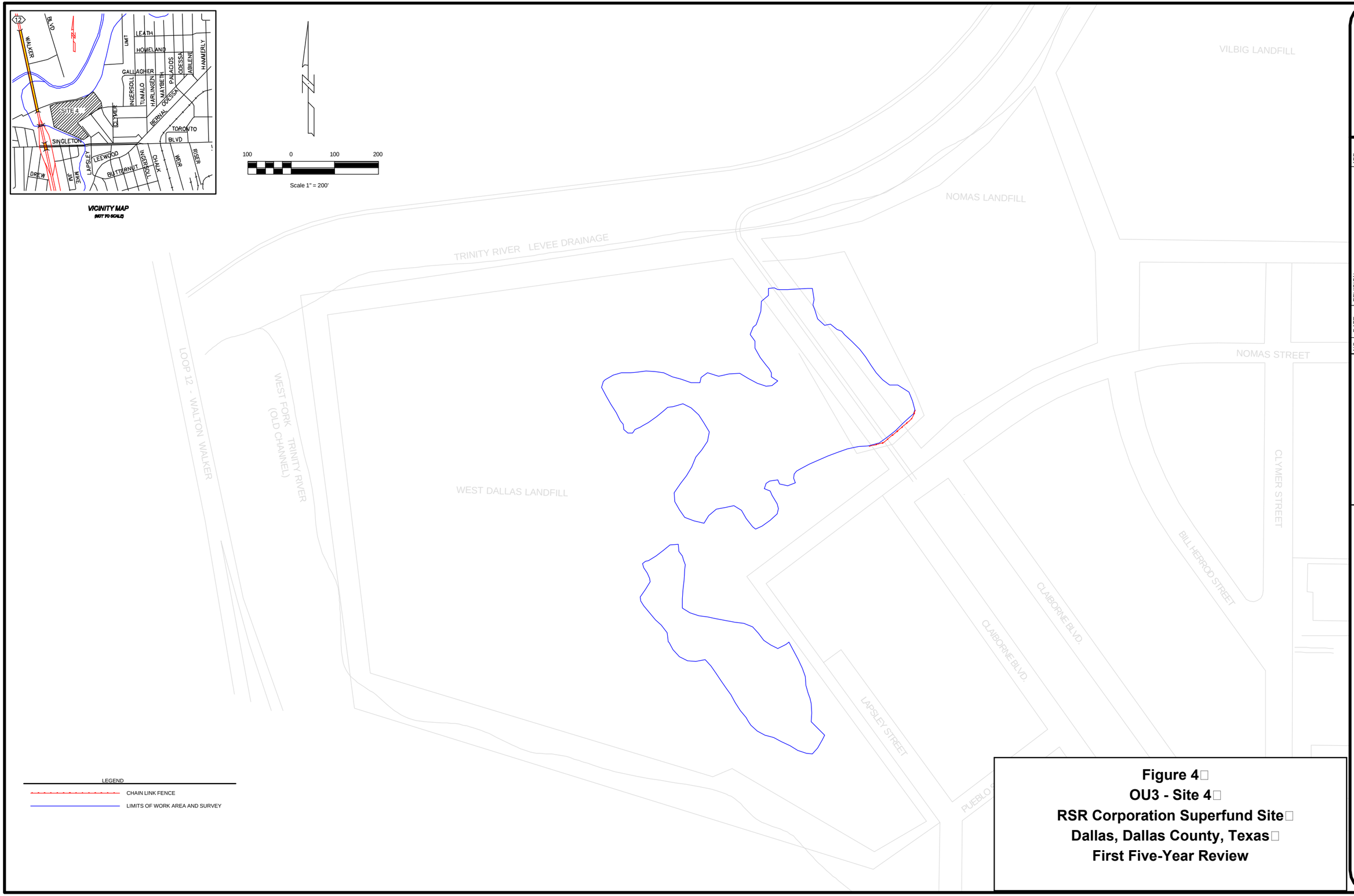
FIGURE 2b

SITE LAYOUT MAP - SITE 3

Figure reproduced from ENTACT, 2004c

VICINITY MAP
(NOT TO SCALE)

Scale 1" = 200'



LEGEND

CHAIN LINK FENCE

LIMITS OF WORK AREA AND SURVEY

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

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Scale: 1"=200'		Drawn By: DM	Checked By: JE	Date: 9/2004		

RSR CORPORATION
SUPERFUND SITE
OPERABLE UNIT NO. 3, SITE 4
DALLAS, TEXAS

FIGURE 2c

SITE LAYOUT MAP - SITE 4

Figure reproduced from ENTACT, 2004c

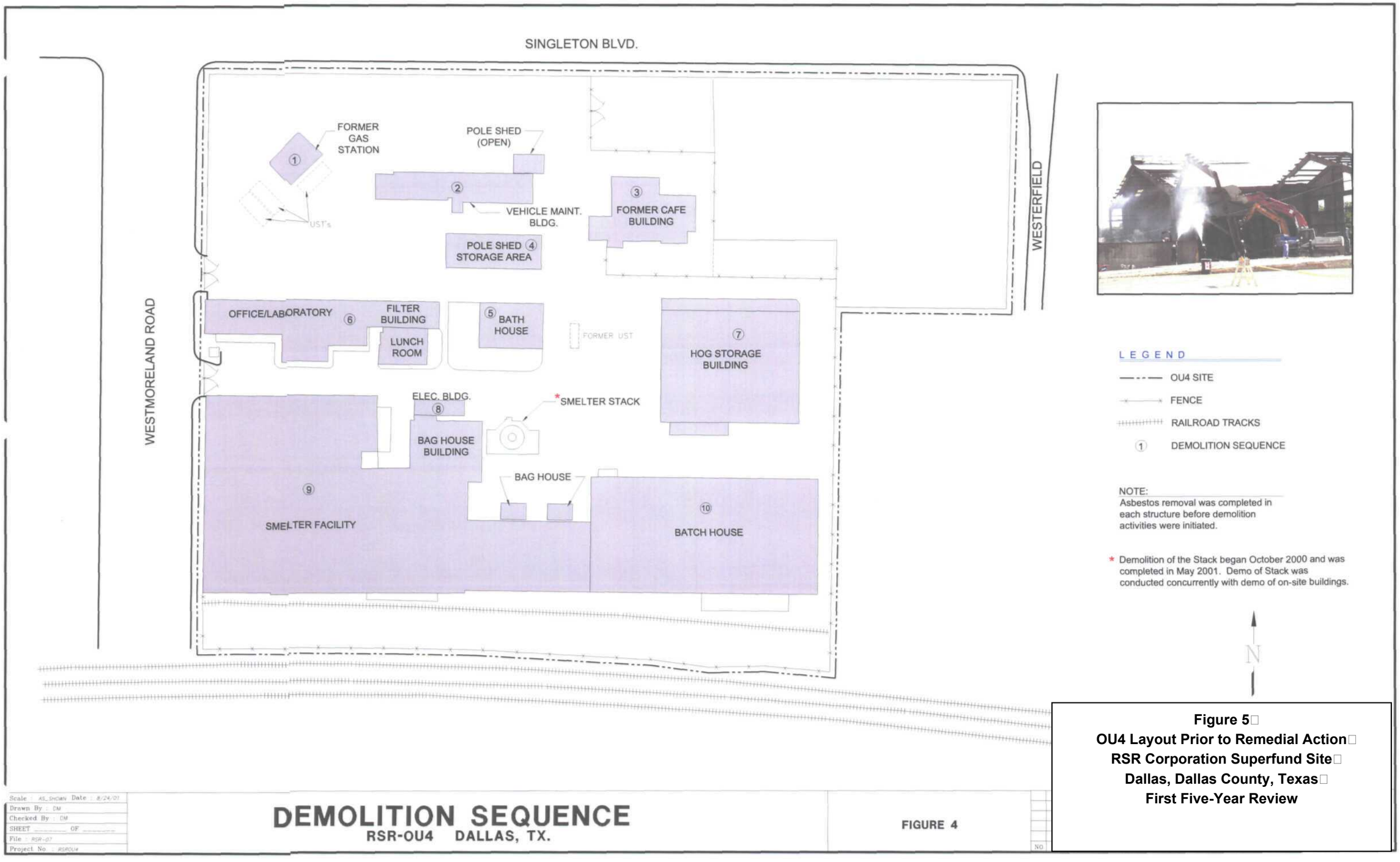
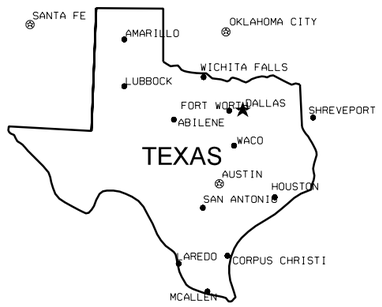
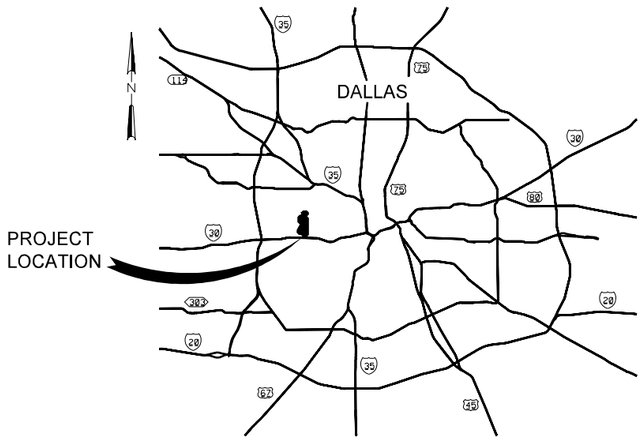


Figure 5
OU4 Layout Prior to Remedial Action
RSR Corporation Superfund Site
Dallas, Dallas County, Texas
First Five-Year Review

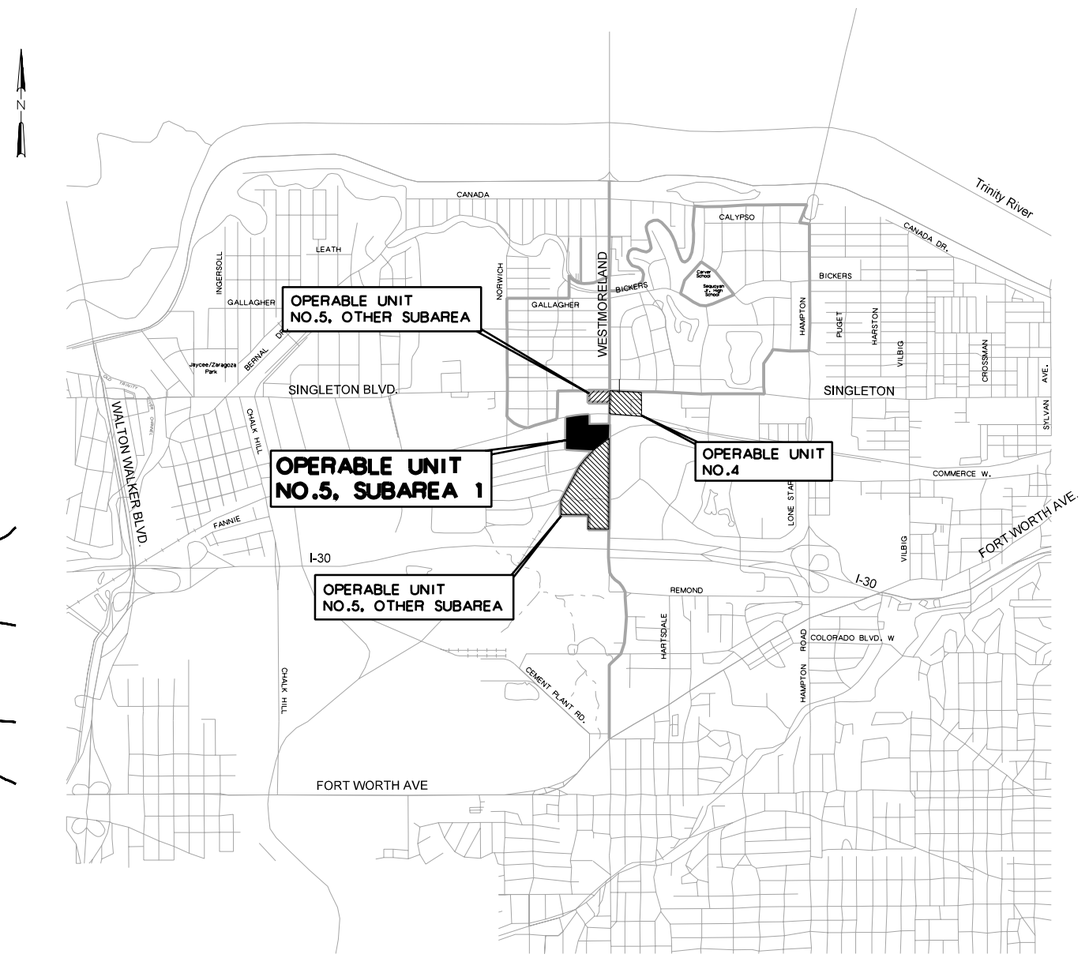
Figure reproduced from ENTACT, 2001

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





LOCATION MAP
NTS



VICINITY MAP
1"=2000'

0 2000 4000 6000
Scale In Feet

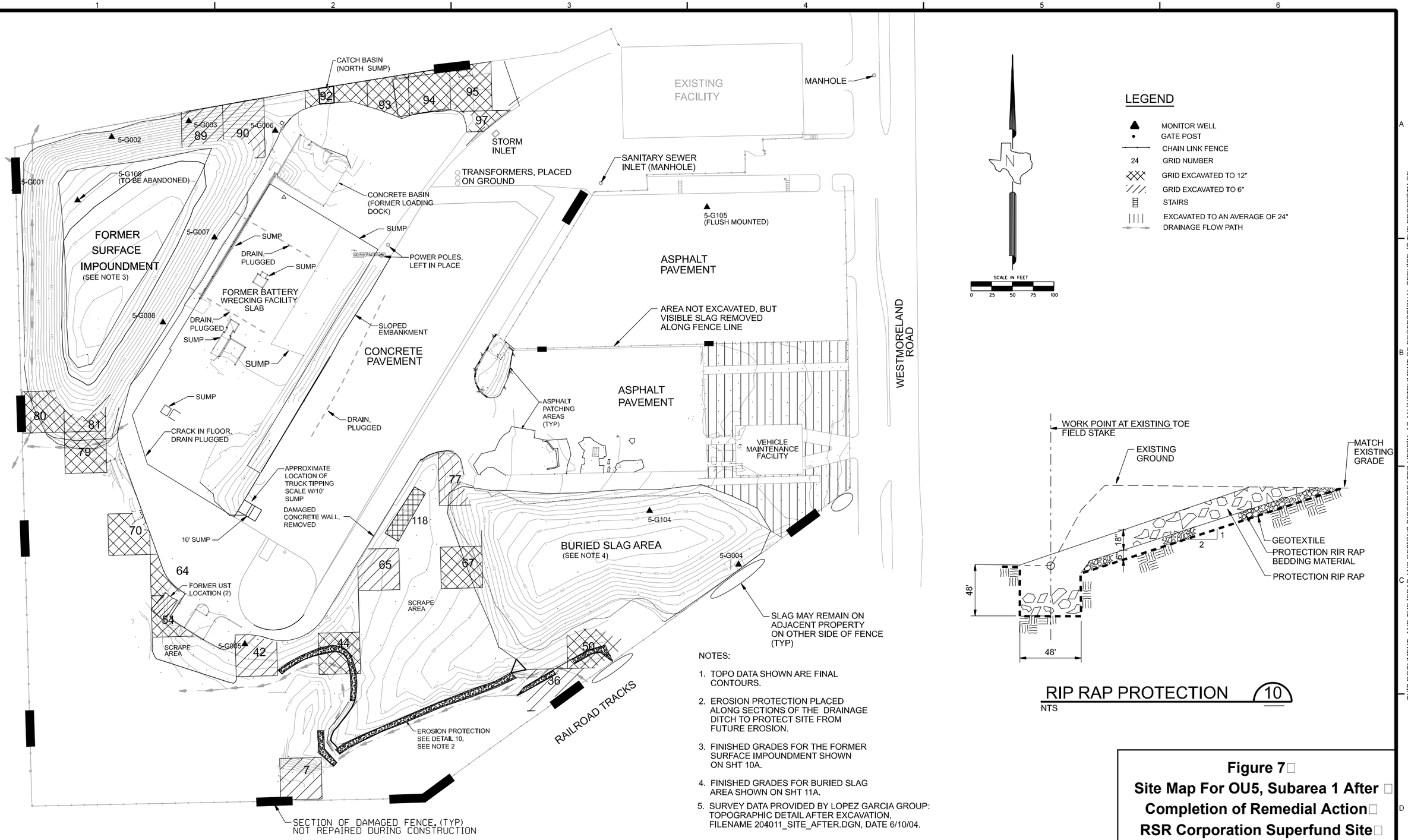
INDEX OF SHEETS

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

DSGN H SHIPTON						VERIFY SCALE	CH2MHILL
DR Y GONG						BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"	SUBAREA 1 OPERABLE UNIT NO. 5
CHK P LAFRANCE	1	7/04	RECORD DRAWING	JL	MJ	IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	RSR CORPORATION SUPERFUND SITE DALLAS, TEXAS
APVD J. SCHNEIDER / M. JOHNS	NO.	DATE	REVISION	BY	APVD		

FILENAME: 164463fd01.dlv PLOT DATE: 29-JUL-2004 PLOT TIME: 14:47:05

Figure reproduced from CH2M HILL, 2004a



LEGEND

- MONITOR WELL
- GATE POST
- CHAIN LINK FENCE
- 24 GRID NUMBER
- GRID EXCAVATED TO 12"
- GRID EXCAVATED TO 6"
- STAIRS
- EXCAVATED TO AN AVERAGE OF 24"
- DRAINAGE FLOW PATH

NOTES:

1. TOPO DATA SHOWN ARE FINAL CONTOURS.
2. EROSION PROTECTION PLACED ALONG SECTIONS OF THE DRAINAGE DITCH TO PROTECT SITE FROM FUTURE EROSION.
3. FINISHED GRADES FOR THE FORMER SURFACE IMPOUNDMENT SHOWN ON SHT 10A.
4. FINISHED GRADES FOR BURIED SLAG AREA SHOWN ON SHT 11A.
5. SURVEY DATA PROVIDED BY LOPEZ GARCIA GROUP: TOPOGRAPHIC DETAIL AFTER EXCAVATION, FILENAME 204011_SITE_AFTER.DGN, DATE 6/10/04.

RIP RAP PROTECTION 10
NTS

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

DSGN H SHIPTON						VERIFY SCALE
DR Y GONG						BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
CHK P LAFRANCE	1	7/04	RECORD DRAWING	JL	MJ	
APVD J SCHNEIDER / M JOHNS	NO.	DATE	REVISION	BY	APVD	

CH2MHILL

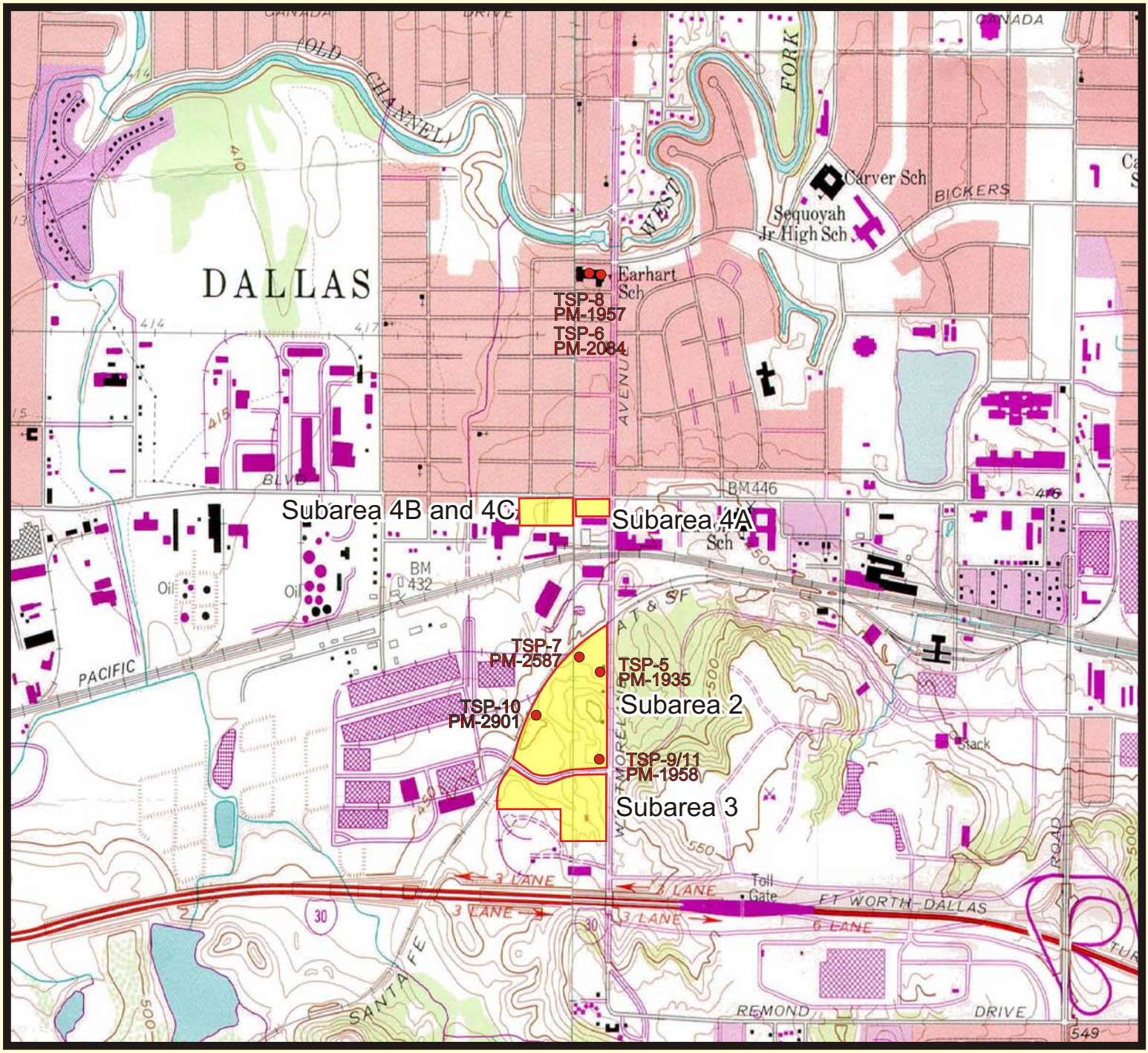
SUBAREA 1
OPERABLE UNIT NO. 5

RSR CORPORATION SUPERFUND SITE
DALLAS, TEXAS

SITE AS-BU

FILENAME: 164463fd7b.dgn PLOT DATE: 29-JUL-2004 PLOT TIME: 15:04:05

Figure reproduced from CH2M HILL, 2004a



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

● *Approximate Location of Perimeter Air Monitoring Stations*

Scale

0 ½ 1 mile

N

Quadrangle Location

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
4040 West Royal Lane, Suite 136
Irving, Texas 75063
(972)580-1323

DATE:	*12/03*
SCALE:	*As Shov*
PROJECT NO:	*D959*

Figure reproduced from ENTACT, 2004a

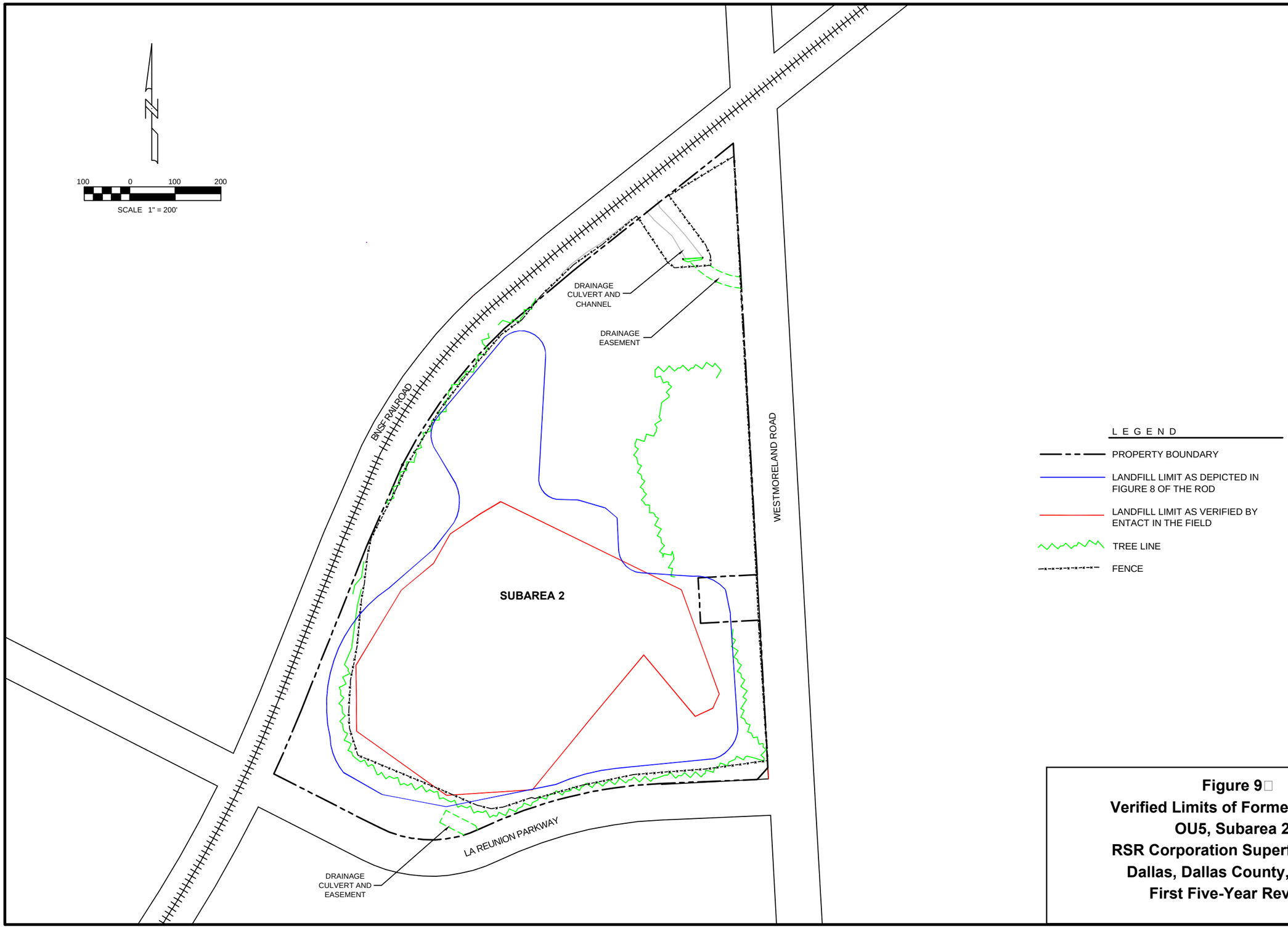


Figure 9
Verified Limits of Former Landfill
OU5, Subarea 2
RSR Corporation Superfund Site
Dallas, Dallas County, Texas
First Five-Year Review

ENTACT
environmental tactics in waste management
4040 W. Royal Ln. - Suite 136 - Irving, TX 75063
(972) 580-1323 - Fax (972) 550-7464
Dallas - Houston - Chicago - Atlanta

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			DM	DM	12/2003

Scale: 1"=200'

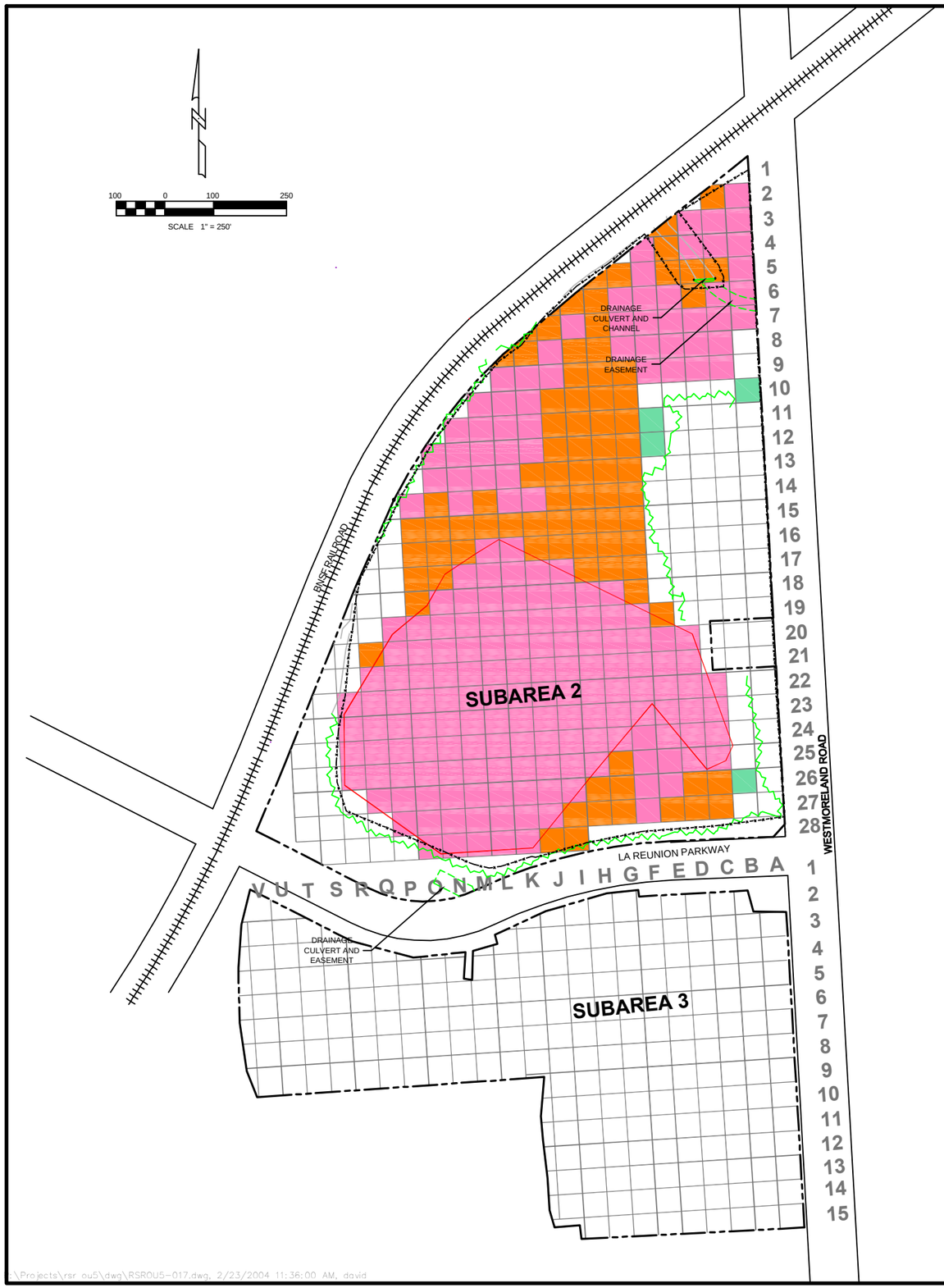
APP:

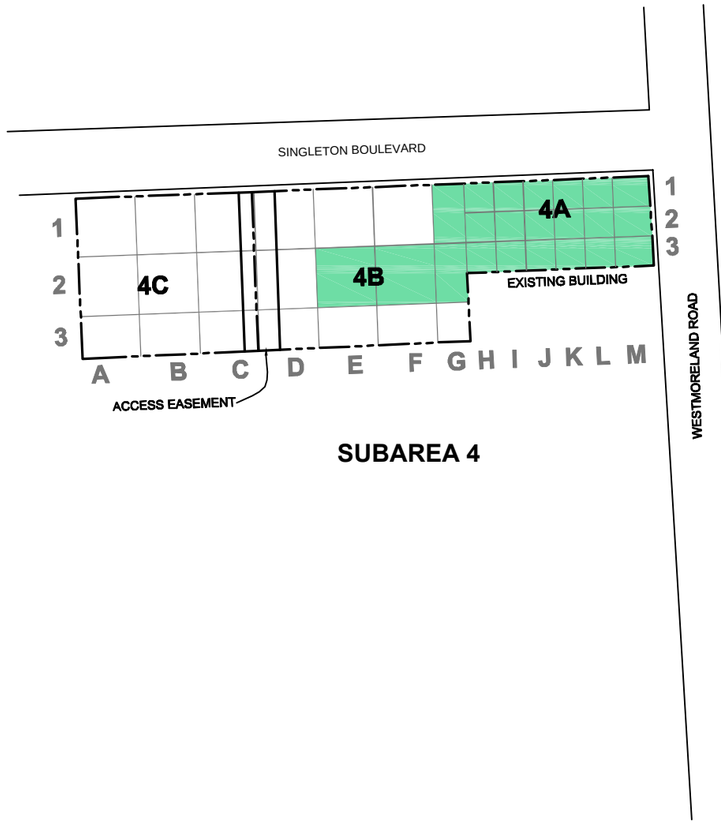
RSR CORPORATION

FIGURE 4

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

Figure reproduced from ENTACT, 2004a





SUBAREA 4

LEGEND

- PROPERTY BOUNDARY
- LANDFILL LIMIT
- TREE LINE
- FENCE
- GRIDS THAT WERE EXCAVATED TO MEET THE APPLICABLE REMEDIAL ACTION GOALS, BACKFILLED WITH COMPACTED CLAY TO GRADE AND COVERED WITH 3 INCHES OF NON-COMPACTED TOPSOIL.
- GRIDS THAT WERE COVERED WITH 24 INCHES OF COMPACTED CLAY AND 3 INCHES OF NON-COMPACTED TOPSOIL TO CONTAIN THE FORMER LANDFILL AND OTHER IMPACTED SOILS THAT EXCEEDED THE REMEDIAL ACTION GOALS.
- GRIDS THAT WERE COVERED WITH + OR - 24 INCHES OF COMPACTED CLAY AND 3 INCHES OF NON-COMPACTED TOPSOIL FOR SITE GRADING PURPOSES.

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

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environmental tactics in waste management
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(972) 580-1323 • Fax (972) 580-7464
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Scale: 1"=250'			DM	DM	12/2003

APP.

RSR CORPORATION

FIGURE 5

Figure reproduced from ENTACT, 2004a

Table 1
Chronology of Site Events
First Five-Year Review
RSR Corporation Superfund Site
Dallas, Texas

Date	Event
1934	Battery wrecking and smelting operations began at the Site by Murph Metals, Inc.
1971	RSR Corporation acquired the Site and continued operations under the name Murph Metals.
1983	The City of Dallas and Texas Air Control Board file a lawsuit to get RSR Corporation 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 RSR Site ceased when the City of Dallas declined to renew the facility's operating permit.
1984 - 1985	An RSR Corporation funded cleanup is conducted at residential yards, public play areas, day care centers, and gardens within a one-half mile radius of the smelter facility.
August 1991	EPA began investigating investigating the RSR Site at the request of the Texas Natural Resources Conservation Commission (TNRCC).
October 1991 - June 1994	Emergency Removal Action 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 OU1 to determine which properties might contain waste slag or battery chips.
1993	EPA initiated the RI/FS for OU 3.
May 10, 1993	EPA proposed the RSR site for inclusion on the National Priorities List (NPL).
August 9, 1993	EPA signed an Administrative Order on Consent (AOC) with the Dallas Housing Authority (DHA) to conduct the RI and removal action for OU2.
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 OU2.
March 1995	DHA completes cleanup activities for OU2.
May 9, 1995	EPA signs the 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 OU4.
September 29, 1995	The RSR Corporation Site is finalized on the NPL.
February 28, 1996	EPA signs the ROD for OU4.
April 1996	The RI/FS for OU5 was completed.
early 1997	The RI/FS for OU3 was completed.
spring 1997	Remedial Design (RD) for the OU4 Remedial Action (RA) is completed.
April 3, 1997	EPA signs the ROD for OU5.
September 20, 1997	EPA signs the ROD for OU3.
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 OU4.
June 22, 2000	The U. S. District Court approves the Consent Decree for OU4.
September 2000	Construction activities for the OU4 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 OU4 RA were completed.

Table 1
Chronology of Site Events
First Five-Year Review
RSR Corporation Superfund Site
Dallas, Texas

Date	Event
November 6, 2001	EPA conducted the final inspection of the RA for OU4.
November 2001 - January 2002	The EPA sampled an additional 126 residential properties and 6 public schools at the site.
December 2001	RA for OU4 is completed.
December 2001	EPA completed the RD for OU5, Subarea 1.
June 2002	The EPA completed additional remediation activities at 10 residential properties (OU1) 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 Corporation, whereby RSR Corporation and its subsidiaries agreed to conduct the remaining response actions at the RSR Site (OU3 and OU5 subareas 2, 3, and 4). The Consent Decree also provided for reimbursement of past response costs to the EPA and State of Texas.
June 2003	RSR Corporation began construction activities for the OU5, Subareas 2, 3, and 4 RA.
July 21, 2003	The Consent Decree for OU3 and OU5 subareas 2, 3, and 4 is entered by the court.
October 2003	RSR Corporation completed the RA for OU5, Subareas 2, 3, and 4. The EPA and TCEQ conducted the Final Inspection of the OU5, Subareas 2, 3, and 4 RA.
January 2004	RSR Corporation began construction activities for the OU3 RA.
January 2004	EPA began RA construction activities for the OU5, Subarea 1 RA.
July 2004	RA construction activities for OU5, Subarea 1 were completed.
August 2004	RSR Corporation completed the RA for OU3.
August 3, 2004	EPA and TCEQ conducted the Final Inspection of the OU5, Subarea 1 RA.
September 2004	EPA completed the RA for OU5, Subarea 1.
September 14, 2004	EPA conducted the Final Inspection of the OU3 RA.
September 28, 2004	EPA issued the Preliminary Close Out Report for the RSR Site.

Table 2
Remedial Action Goals (Action Levels)
First Five-Year Review
RSR Corporation Superfund Site
Dallas, Texas

Media	Remedial Action Goals (Action Levels) (ppm)			
	Arsenic	Lead	Antimony	Cadmium
OU3				
Site 1, Soils and Sediments	20	500	NA	NA
Site 3, Soils and Sediments	32.7	2,000	NA	NA
Site 4 (excluding Jaycee Park) Soils and Sediments	32.7	2,000	NA	NA
Jaycee Park	20	500	108	NA
OU4				
Buildings, Structures, Smelter Stack, and Equipment	32.7	2,000	818	2,044
Soils	32.7	2,000	NA	NA
OU5				
Surface Impoundment	32.7	2,000	NA	NA
Former Landfill	32.7	2,000	818	NA
Buildings and Structures	32.7	2,000	NA	NA
Slag Burial Area/Other Soils	32.7	2,000	NA	NA

Notes:
ppm - parts per million
NA - Not applicable

Table 3
Ground Water Monitoring Data, Operable Unit 5, Subarea 1
First Five-Year Review
RSR Corporation Superfund Site
Dallas, Texas

Monitor Well ID	Date	Arsenic	Lead
		ppb	ppb
5-G001	10/27/2004	6.8	0.54
5-G002	10/27/2004	7.2	0.08
5-G003	10/27/2004	2.2	0.05
5-G006	10/27/2004	34.4	0.20
5-G007	10/27/2004	6	0.36
5-G008	10/27/2004	3	10.80

Notes:
ppb - parts per billion
The ROD did not establish any action levels for ground water

Table 4
Changes in Cancer Slope Factors Used
In the Baseline Human Health Risk Assessment
First Five-Year Review
RSR Corporation Superfund Site
Dallas, Texas

Chemical	Type of Slope Factor	Slope Factors Used in the Site BHHRAs	Revised Slope Factors	Date and Source of Revision
Units		**(mg/kg-day)-1**	**(mg/kg-day)-1**	
Beryllium	Oral	4.30E+00	NA	IRIS
Acetone	NA	NA	NA	IRIS
Benzene	Oral	2.90E-02	0.015-0.055	IRIS
2-Butanone	NA	NA	NA	IRIS
Chlordane	Oral	1.3	0.35	IRIS
Polychlorinated Biphenyls	Oral	7.7	0.04-2	IRIS
Xylene (mixture)	NA	NA	NA	IRIS

Notes:
BHHRA - Baseline Human Health Risk Assessment
IRIS - Integrated Risk Information System
mg/kg - milligrams per kilogram
NA - not applicable

Table 5
Changes in Chronic Reference Dose Values and non-Cancer Slope Factors Used in the Baseline Human Health Risk Assessment
First Five-Year Review
RSR Corporation Superfund Site
Dallas, Texas

Chemical	Type of Chronic Reference Dose	Chronic Reference Dose (RfD) used in Site BHHRAs	Revised Chronic Reference Dose (RfD)	Slope Factors Used in the Site BHHRAs	Revised Slope Factors	Reference
Units				**(mg/kg-day)**	**(mg/kg-day)**	
Barium	Oral	0.07	0.2	7.0E-02	2.0E-01	IRIS
Beryllium	Oral	0.005	0.002	5.0E-03	2.0E-03	IRIS
Chromium III	Oral	1	1.5	1.0E+00	1.5E+00	IRIS
Chromium VI	Oral	0.005	0.003	5.0E-03	3.0E-03	IRIS
Acetone	Oral	0.1	0.9			IRIS
Chlordane	Oral	0.00006	0.0005			IRIS
1,3-Dichlorobenzene	Oral	0.089	0.09			DWHA
Endosulfan	Oral	0.006	0.006			IRIS
Phenol	Oral	0.6	0.3			IRIS
Xylene (mixture)	Oral	2	0.2			IRIS

Notes:
BHHRA - Baseline Human Health Risk Assessment
IRIS - Integrated Risk Information System
mg/kg - milligrams per kilogram
DWHA - Drinking Water Health Advisory; Revised RfD based on 2004 Edition from DWHA.

Table 5
Changes in Applicable or Relevant and Appropriate Requirements (ARARs)
First Five-Year Review
RSR Corporation Superfund Site
Dallas, Texas

ARAR	Justification	ARAR Currently Applies At Site (Yes/No)	Changes in ARARs Currently Applicable to the Site Activities
OU No. 3			
Closure Requirements for Municipal Solid Waste Landfill Units That Stop Receiving Waste Prior to October 9, 1991, and Municipal Solid Waste Sites Subchapter J 30 TAC § 330.251	This section establishes specific procedures and requirements for proper closure. Specific requirements are included for: final cover system; final six inches of cover; side slopes of the final cover; and the schedule for submitting design and specifications for the closure. These requirements are applicable to the landfills at OU No. 3 which stopped receiving wastes prior to the stated deadline. Remedial actions which address cover requirements will need to comply the provisions of this section.	No	
Attainment of Risk Reduction Standard Number 1: Closure/Remediation to Background Subchapter S 30 TAC § 335.554	These provisions specify that, to meet Risk Reduction Standard Number 1, closure and/or remediation must meet background levels or practical quantitation limits if the practical quantitation limit exceeds background. These provisions would be relevant and appropriate if Risk Reduction Standard Number 1 were the preferred standard; however it is unlikely that cleanup goals will be set at background levels.	No	
Attainment of Risk Reduction Standard Number 2: Closure/Remediation to Health/Based Standards and Criteria Subchapter S 30 TAC § 335.555	Subsection (a) specifies that the concentration of a contaminant in contaminated media of concern such as groundwater, surface water, air or soil shall not exceed the cleanup levels as defined in § 335.556 (relating to Determination of Cleanup Levels for Risk Reduction Standard Number 3). If the practical quantitation limit and/or background concentration is greater than the cleanup level, the greater of the practical quantitation limit or background shall be used for determining compliance with the requirements of this section. These provisions are relevant and appropriate to development of contaminant-specific cleanup goals for OU No. 3.	No	
40 CFR 268 Land Disposal Restrictions	40 C.F.R. Part 268 establishes restrictions on land disposal of specific wastes unless treatment standards are met. Applicable to OU No. 3, if the wastes are removed from the site for subsequent disposal. Metals wastes in soil that are hazardous by toxicity characteristic are exempt from this rule. The Universal Treatment Standards establish concentration limit for 300 regulated constituents in solid regardless of waste type.	No	

Table 5
Changes in Applicable or Relevant and Appropriate Requirements (ARARs)
First Five-Year Review
RSR Corporation Superfund Site
Dallas, Texas

ARAR	Justification	ARAR Currently Applies At Site (Yes/No)	Changes in ARARs Currently Applicable to the Site Activities
40 C.F.R. Part 264 Subparts B, C, D, and G Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities	Subparts B, C, and D establish minimum standards which define the acceptable management of hazardous waste for owners and operators of facilities that treat, store, or dispose of hazardous waste. Subpart G establishes standards for closure and post-closure care for site design and operation. These requirements are applicable for wastes identified as RCRA hazardous wastes and relevant and appropriate if sufficiently similar.	Yes	No changes
OSHA Worker Protection 29 C.F.R. 1910.120	Applicable to OU No. 3 regarding protection of workers at site. (29 C.F.R. 1910.120)	Yes	No changes
Closure and Remediation Subchapter A 30 TAC § 335.8	These provisions apply to closure and remediation of facilities associated with contamination resulting from unauthorized discharges, either as part of closure or at any time before or after closure. The regulations also apply to remediation areas that are not otherwise designated as a facility but that contain unauthorized discharges of industrial waste or municipal hazardous waste. Section (a)(2) of this citation specifies that, for remediations performed under the State Superfund program, media cleanup levels should be based on future residential land use unless it is demonstrated that an alternative land use is more appropriate. These requirements are relevant and appropriate for RCRA hazardous wastes on OU NO. 3.	No	
Post Closure Care and Deed Certification for Risk Reduction Standard Number 2 Subchapter S 30 TAC § 335.560	These provisions specify that, upon attainment of Risk Reduction Standard Number 2, a deed recordation be placed in the county using information contained in subsections (1) through (4). This requirement is relevant and appropriated to OU No. 3 in so much that provisions similar to Risk Reduction Standard Number 2 are applied.	Yes	No changes
Attainment of Risk Reduction Standard Number 3: Closure/Remediation with Controls Subchapter S 30 TAC § 335.561	Under Risk Reduction standard Number 3, a remedy must be permanent, or if that is not practicable, achieve the highest degree of long-term effectiveness possible; cost-effective; and achieve media cleanup requirement specified in 30 TAC § 335.563. These provisions are relevant and appropriate to OU No. 3.	Yes	No changes
Remedy Evaluation Factors for Risk Reduction Standard Number 3 Subchapter S 30 TAC § 335.562	These provisions outline the evaluation criteria when evaluation the relative abilities and effectiveness of potential remedies to achieve the requirements for remedies described in 30 TAC § 335.562. The evaluation criteria are relevant and appropriate for screening technologies and alternatives is part of the Feasibility Study for OU No. 3.	No	

Table 5
Changes in Applicable or Relevant and Appropriate Requirements (ARARs)
First Five-Year Review
RSR Corporation Superfund Site
Dallas, Texas

ARAR	Justification	ARAR Currently Applies At Site (Yes/No)	Changes in ARARs Currently Applicable to the Site Activities
Media Cleanup Requirements for Risk Reduction Standard Number 3 Subchapter S 30 TAC § 335.563	This section specifies the requirements for reestablishing cleanup levels for air, surface water, groundwater, and soil, including use of media-specific adjustments. The requirements of this section relevant and appropriate to OU No. 3.	No	
Post closure care not required for Risk Reduction Standard Number 3 Subchapter S 30 TAC § 335.564	Where it is determined that neither engineering nor institutional control measures are require, no post closure care responsibilities are necessary however deed recordation is required in accordance with 30 TAC § 335.566. This requirement is relevant and appropriate if conditions are met at OU No. 3.	No	
Shipping Requirements for Transporters of Hazardous Waste of Class I Waste Subchapter A 30 TA §335.111	Requirements specific to transporters of hazardous or class I wastes regarding manifesting waste shipments. These requirements are applicable to any transporter who transports hazardous of class I wastes offsite from OU No. 3.	No	
Standards Applicable to Transporters of Hazardous Waste Subchapter D 30 TAC § 335.91	This subchapter establishes standards for transporters transporting hazardous waste to offsite storage processing, or disposal facilities. This subchapter does not apply to onsite transportation of hazardous waste by generators or by owners or operators of storage, processing, or disposal facilities. Requirements of this subchapter are applicable for RCRA hazardous wastes left in place or disposed on OU No. 3	No	
Interim Standards for Owners and Operators of Hazardous Waste Storage, Processing, or Disposal Facilities Subchapter E 30 TAC § 335.111	This subchapter establishes minimum requirements that define the acceptable management of hazardous waste prior to the issuance or denial of a hazardous waste permit and until certification of final closure or, if the facility is subject to post-closure requirements, until post-closure responsibilities are fulfilled. These requirements are relevant and appropriate for RCRA hazardous wastes on OU No. 3 if wastes are left onsite.	No	

Table 5
Changes in Applicable or Relevant and Appropriate Requirements (ARARs)
First Five-Year Review
RSR Corporation Superfund Site
Dallas, Texas

ARAR	Justification	ARAR Currently Applies At Site (Yes/No)	Changes in ARARs Currently Applicable to the Site Activities
Interim Standards for Owners and Operators of Hazardous Waste Storage, Processing, or Disposal Facilities Subchapter E 30 TAC § 335.111	Adopts 40 C.F.R. Part 265, except as noted, by reference. This includes Subparts B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, W, AA, and BB. These requirements are relevant and appropriate for RCRA hazardous wastes on OU NO. 3 if wastes are left onsite.	No	
Stormwater Regulations 40 C.F.R. Parts 122, 125	NPDES permits are addressed relative to stormwater discharges associated with industrial activity. These regulations require the development and implementation of a stormwater pollution prevention plan or a stormwater best management plan. Monitoring and reporting requirements for a variety of facilities are outlined. Runoff from construction activities is an ARAR depending on the nature of the remedial action selected. Relevant and appropriate if stormwater discharge occurs as a result of the remedial action.	No	
National (Primary and Secondary) Ambient Air Quality Standards 40 C.F.R. Part 50	The NAAQS specify the maximum concentration of a federally regulated air pollutant (i.e., SO_2 particulate matter (PM_{10}), NO_2, CO, ozone, and lead) in an are resulting from all sources of that pollutant. No new construction or modification of a facility, structure, or installation may emit an amount of any criteria pollutant that will interfere with the attainment of maintenance of a NAAQS (see 40 C.F.R. § 51.160) for the federal NAAQS standards, all measurements of air quality are corrected to a reference temperature of 25° C and to a reference pressure of 760mm Hg (1,013.2 millibars) 40 C.F.R. § 50.3	No	

Table 5
Changes in Applicable or Relevant and Appropriate Requirements (ARARs)
First Five-Year Review
RSR Corporation Superfund Site
Dallas, Texas

ARAR	Justification	ARAR Currently Applies At Site (Yes/No)	Changes in ARARs Currently Applicable to the Site Activities
OU No. 4			
40 C.F.R Part 264 Subparts B, C, D, and G	Subparts B, C, and D establish minimum standards which define the acceptable management of hazardous waste for owners and operators of facilities that treat, store, or dispose of hazardous waste. Subpart G establishes standards for closure and post-closure care for site design and operation. These requirements are relevant and appropriate for wastes identified as RCRA hazardous wastes.	Yes	No changes
OSHA Worker Protection 40 C.F.R. § 300.38	Applicable to OU No. 4 and OU No. 5 regarding protection of workers at site. (29 C.F.R. 1910.120)	Yes	No changes
Disposal of Special Wastes 30 TAC § 330.136	Specifies that regulated asbestos-containing material (RACM) may be accepted at a Type 1 or Type I-AE municipal solid waste landfill (MSWLF) provided that the MSWLF facility has been authorized to accept RACM and complies with the provisions of § 330.136. This requirement is applicable for OU No. 4 and OU No. 5.	No	
Closure and Remediation Subchapter A 30 TAC § 335.8	These provisions apply to closure and remediation of facilities associated with contamination resulting from unauthorized discharges, either as part of closure or at any time before or after closure. The regulations also apply to remediation areas that are not otherwise designated as a facility but that contain unauthorized discharges of industrial waste or municipal hazardous waste. Section (a)(2) of this citation specifies that, for remediations performed under the State Superfund program, media cleanup levels should be based on future residential land use unless it is demonstrated that an alternative land use is more appropriate. These requirements are relevant and appropriate for RCRA hazardous wastes on OU No. 4.	Yes	No changes
Subpart S, Risk Reduction Standards 30 TAC 335.551	Establishes procedures to demonstrate compliance with the risk reduction standards for different types of contaminated media such as air, surface water, groundwater, and soil, and for cross-media contamination pathways such as soil-to-groundwater and soil-to-air. Requirements apply to closure and remediation undertaken according to 30 TAC § 335.8. Numeric cleanup values are based on which of the three risk reduction rules are appropriate. These requirements are relevant and appropriate for surface soil on OU No. 4 and OU No. 5.	Yes	No changes

Table 5
Changes in Applicable or Relevant and Appropriate Requirements (ARARs)
First Five-Year Review
RSR Corporation Superfund Site
Dallas, Texas

ARAR	Justification	ARAR Currently Applies At Site (Yes/No)	Changes in ARARs Currently Applicable to the Site Activities
Subpart S, Risk Reduction Standard No. 3 30 TAC 335.562	Risk Reduction Standard No. 3 specifies that persons shall propose media cleanup levels in accordance with the conditions stated. These requirements are relevant and appropriate for OU No. 4 and OU No. 5 to perform closure or remediation activities. Cleanup levels will be based on the CERCLA risk assessments developed for OU No. 4 and OU No. 5.	Yes	No changes
Shipping Requirements for Transporters of Hazardous Waste of Class I Waste Subchapter A 30 TA §335.111	Requirements specific to transporters of hazardous or class I wastes regarding manifesting waste shipments. These requirements are relevant and appropriate to any transporter who transports hazardous or Class I wastes offsite from OU No. 4 or OU No. 5.	No	
Standards Applicable to Transporters of Hazardous Waste Subchapter D 30 TAC § 335.91	This subchapter establishes standards for transporters transporting hazardous waste to offsite storage, processing, or disposal facilities. This subchapter does not apply to onsite transportation of hazardous waste by generators or by owners or operators of storage, processing, or disposal facilities. Requirements of this subchapter are relevant and appropriate for RCRA hazardous wastes on OU No. 4 or OU No. 5 that are sent offsite for disposal.	No	
Classification of Specific Industrial Solid Wastes Subchapter R 30 TAC § 335.508(1)	Requires that industrial solid waste containing asbestos material identified as Regulated Asbestos Contain Material (RACM), as defined in 40 C.F.R. Part 61, shall be classified as Class 1 Waste. Applicable to both OU No. 4 and OU No. 5 due to the presence of asbestos contain material.	No	
Stormwater Regulations 40 C.F.R. Parts 122, 125	NPDES permits are addressed relative to stormwater discharges associated with industrial activity. These regulations require the development and implementation of a stormwater pollution prevention plan or a stormwater best management plan. Monitoring and reporting requirements for a variety of facilities are outlined. Runoff from construction activities is an ARAR depending on the nature of the remedial action selected. Relevant and appropriate if stormwater discharge occurs as a result of the remedial action.	No	

Table 5
Changes in Applicable or Relevant and Appropriate Requirements (ARARs)
First Five-Year Review
RSR Corporation Superfund Site
Dallas, Texas

ARAR	Justification	ARAR Currently Applies At Site (Yes/No)	Changes in ARARs Currently Applicable to the Site Activities
National (Primary and Secondary) Ambient Air Quality Standards 40 C.F.R. Part 50	The NAAQS specify the maximum concentration of a federally regulated air pollutant (i.e., SO_2 particulate matter (PM_{10}), NO_2, CO, ozone, and lead) in an are resulting from all sources of that pollutant. No new construction or modification of a facility, structure or installation may emit an amount of any criteria pollutant that will interfere with the attainment or maintenance of a NAAQS (see 40 C.F.R. § 51.160) for the federal NAAQS standards, all measure of air quality are corrected to a reference temperature of 25° C and to a reference pressure of 760 mm (Hg (1,013.2 millibars). 40 C.F.R. § 50.3.	No	
Particulates - Net Ground Level 30 TAC § 111.155	Establishes the net ground level concentration (downwind at the property boundary minus upwind measurements) of particulate emissions from any source that must not be exceeded.	No	

Table 5
Changes in Applicable or Relevant and Appropriate Requirements (ARARs)
First Five-Year Review
RSR Corporation Superfund Site
Dallas, Texas

ARAR	Justification	ARAR Currently Applies At Site (Yes/No)	Changes in ARARs Currently Applicable to the Site Activities
OU5			
Particulates - Net Ground Level 30 TAC § 111.155	Establishes the net ground level concentration (downwind at the property boundary minus upwind measurements) of particulate emissions from any source that must not be exceeded.	No	
National (Primary and Secondary) Ambient Air Quality Standards 40 C.F.R. Part 50	The NAAQS specify the maximum concentration of a federally regulated air pollutant (i.e., SO_2 particulate matter (PM_{10}), NO_2, CO, ozone, and lead) in an are resulting from all sources of that pollutant. No new construction or modification of a facility, structure or installation may emit an amount of any criteria pollutant that will interfere with the attainment or maintenance of a NAAQS (see 40 C.F.R. § 51.160) for the federal NAAQS standards, all measure of air quality are corrected to a reference temperature of 25° C and to a reference pressure of 760 mm (Hg (1,013.2 millibars). 40 C.F.R. § 50.3.	No	
Stormwater Regulations 40 C.F.R. Parts 122, 125	NPDES permits are addressed relative to stormwater discharges associated with industrial activity. These regulations require the development and implementation of a stormwater pollution prevention plan or a stormwater best management plan. Monitoring and reporting requirements for a variety of facilities are outlined. Runoff from construction activities is an ARAR depending on the nature of the remedial action selected. Relevant and appropriate if stormwater discharge occurs as a result of the remedial action.	No	
Subparts I and J	Subpart I sets operating and performance standards for container storage of hazardous waste. Subpart J outlines similar standards, but applies to tanks rather than containers. These requirements are relevant and appropriate for RCRA hazardous wastes on OU No. 4 and OU No. 5 if containers are used for onsite storage of liquids, soil, or other wastes as part of the remedial action.	No	

Table 5
Changes in Applicable or Relevant and Appropriate Requirements (ARARs)
First Five-Year Review
RSR Corporation Superfund Site
Dallas, Texas

ARAR	Justification	ARAR Currently Applies At Site (Yes/No)	Changes in ARARs Currently Applicable to the Site Activities
Subparts L and N	Subpart L sets design and operating requirements for the storage or treatment of wastes in piles. If the waste piles are closed with wastes left in place, Subpart L requirements are applicable and must be met. Subpart N establishes construction, design, performance, closure, and operation requirements pertaining in Subtitle C landfills. Subpart L and/or N are relevant and appropriate for RCRA hazardous wastes on OU No. 4 and OU No. 5 if onsite treatment, storage, or disposal in piles or Subtitle C landfills is included as part of the remedial action.	No	
40 C.F.R. Part 264 Subparts B, C, D, and G	Subparts B, C, and D establish minimum standards which define the acceptable management of hazardous waste for owners and operators of facilities that treat, store, or dispose of hazardous waste. Subpart G establishes standards for closure and post-closure care for site design and operation. These requirements are relevant and appropriate for wastes identified as RCRA hazardous wastes.	Yes	No changes
OSHA Worker Protection 40 C.F.R. § 300.38	Applicable to OU No. 4 and OU No. 5 regarding protection of workers at site. (29 C.F.R. 1910.120)	Yes	No changes
Closure and Remediation 30 TAC Subchapter A § 335.8	These provisions apply to closure and remediation of facilities associated with contamination resulting from unauthorized discharges, either as part of closure or at any time before or after closure. The regulations also apply to remediation areas that are not otherwise designated as a facility but that contain unauthorized discharges of industrial waste or municipal hazardous waste. These requirements are relevant and appropriate for RCRA hazardous wastes on OU No. 4 and OU No. 5.	Yes	No changes
Subpart S, Risk Reduction Standard No. 3 30 TAC 335.562	Risk Reduction Standard No. 3 specifies that persons shall propose media cleanup levels in accordance with the conditions stated. These requirements are relevant and appropriate for OU No. 4 and OU No. 5 to perform closure or remediation activities. Cleanup levels will be based on the CERCLA risk assessments developed for OU No. 4 and OU No. 5.	Yes	No changes
Subpart S, Risk Reduction Standard No. 3 30 TAC 335.562	Risk Reduction Standard No. 3 specifies that persons shall propose media cleanup levels in accordance with the conditions stated. These requirements are relevant and appropriate for OU No. 4 and OU No. 5 to perform closure or remediation activities. Cleanup levels will be based on the CERCLA risk assessments developed for OU No. 4 and OU No. 5.	Yes	No changes

Table 5
Changes in Applicable or Relevant and Appropriate Requirements (ARARs)
First Five-Year Review
RSR Corporation Superfund Site
Dallas, Texas

ARAR	Justification	ARAR Currently Applies At Site (Yes/No)	Changes in ARARs Currently Applicable to the Site Activities
Shipping Requirements for Transporters of Hazardous Waste of Class I Waste Subchapter A 30 TA § 335.11	Requirements specific to transporters of hazardous or class I wastes regarding manifesting waste shipments. These requirements are relevant and appropriate to any transporter who transports hazardous or class I wastes offsite from OU No. 4 or OU No. 5.	No	
Standards Applicable to Transporters of Hazardous Waste Subchapter D 30 TAC § 335.91	This subchapter establishes standards for transporters transporting hazardous waste to offsite storage, processing, or disposal facilities. This subchapter does not apply to onsite transportation of hazardous waste by generators or by owners or operators of storage, processing, or disposal facilities. Requirements of this subchapter are relevant and appropriate for RCRA hazardous wastes on OU No. 4 or OU No. 5 that are sent offsite for disposal.	No	
Standards 30 TAC Subchapter F § 335.152	Adopts by reference the regulations contained in 40 C.F.R. Part 264, except as noted in this section. These standards are relevant and appropriate for RCRA hazardous wastes on OU No. 4 and OU No. 5.	No	
Classification of Specific Industrial Solid Wastes Subchapter R 30 TAC § 335.508(1)	Requires that industrial solid waste containing asbestos material identified as Regulated Asbestos Containing Material (RACM), as defined in 40 C.F.R. Part 61, shall be classified as Class 1 Waste. Applicable to both OU No. 4 and OU No. 5 due to the presence of asbestos containing material.	No	

Notes:
ARAR - Applicable or Relevant and Appropriate Requirements
CERCLA - Comprehensive Response, Compensation, and Liability Act
CFR - Code of Federal Regulations
NAAQS - National Ambient Air Quality Standards
NPDES - National Pollutant Discharge Elimination System
OSHA - Occupation Safety and Health Administration
OU - Operable Unit
RCRA - Resource Conservation and Recovery Act
TAC - Texas Administrative Code
No changes indicates that changes have not been made to an ARAR that are significant enough to call into question the remedy or affect O&M requirements.

Attachment 1

Documents Reviewed

Attachment 1
List of Documents Reviewed

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.

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.

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

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

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

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

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

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

Attachment 2

Interview Record Forms

Five-Year Review Interview Record RSR Corporation Superfund Site Dallas, Texas			**Interviewee:** Homer Hine/RSR Corporation Phone: 214-631-6070 email:		
Site Name		**EPA ID No.**		**Date of Interview**	**Interview Method**
RSR Corporation Superfund Site		TXD079348397		8/15/2005	Phone
Interview Contacts	**Organization**	**Phone**	**Email**	**Address**	
Carlos Sanchez	EPA Region 6	214-665-8507	sanchez.carlos@epa.gov	1445 Ross Ave Dallas, Texas 75204	
Margaret O'Hare	CH2M HILL, as rep of EPA	972-980-2170	mohare@ch2m.com	12377 Merit Drive Dallas, Texas 75251	
Darren Davis	CH2M HILL, as rep of EPA	972-980-2170	ddavis9@ch2m.com	12377 Merit Drive Dallas, Texas 75251	

Interview Questions

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

Response: The site looks nice now. The work has gotten done.

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

Response: Question is hard to answer. Could not answer the question.

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

Response: Not personally aware of any concerns.

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: RSR's sites are fenced and monitored. Dumping and trespassing do occur. RSR keeps its sites cleaned up.

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

Response: Deed notices have not been filed yet. They have gone through RSR's attorneys, and are currently at EPA awaiting their approval. RSR is not responsible for the deed notices on properties it does not own.

If the property belongs to someone else, they should be responsible for maintaining and addressing problems.

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: Inspections occur yearly. Currently working on repairing some erosion. It will be addressed so that it does not occur again. Also, working to set up yearly mowing. Since ground water monitoring is not conducted, we are currently working on closing the remaining monitor wells.

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

Response: The site should be redeveloped. That is the goal of all parties involved.

Five-Year Review Interview Record RSR Corporation Superfund Site Dallas, Texas	**Interviewee:** Homer Kirby/Murmur Corporation Phone: 214-630-5400 email:

Site Name	**EPA ID No.**	**Date of Interview**	**Interview Method**
RSR Corporation Superfund Site	TXD079348397	8/12/2005	Phone

Interview Contacts	**Organization**	**Phone**	**Email**	**Address**
Carlos Sanchez	EPA Region 6	214-665-8507	sanchez.carlos@epa.gov	1445 Ross Ave Dallas, Texas 75204
Margaret O'Hare	CH2M HILL, as rep of EPA	972-980-2170	mohare@ch2m.com	12377 Merit Drive Dallas, Texas 75251
Darren Davis	CH2M HILL, as rep of EPA	972-980-2170	ddavis9@ch2m.com	12377 Merit Drive Dallas, Texas 75251

Interview Questions

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

Response: Not really sure. Does not know exactly what was done, or what the extent of remediation was at OUs 4 and 5.

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

Response: Generally positive. OUs 4 and 5 look a lot better now than they did 5 years ago.

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

Response: 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.

Response: There are lots of burglaries in the area. Not aware of anything specific to the site.

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

Response: Does not perform the O&M for Murmur's property. Told by EPA that they would retain that responsibility under the settlement for Murmur's liability at the site. Deed notices have not been filed on Murmur's property yet. Assumes that will be part of the settlement agreement. OU4 is currently leased to a contractor working on the widening of Westmoreland Road.

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

Response: EPA and DOJ could have settled Murmur's liability for the site 10 years ago, but have not done so yet. This makes Murmur's operations more difficult from an investment standpoint, because the company is still labeled as a PRP. The site should be reused.

Five-Year Review Interview Record RSR Corporation Superfund Site Dallas, Texas	**Interviewee:** Mattie Mash/former member of the Dallas City Council Phone: 214-630-0309 email:

Site Name	**EPA ID No.**	**Date of Interview**	**Interview Method**
RSR Corporation Superfund Site	TXD079348397	8/15/2005	Phone

Interview Contacts	**Organization**	**Phone**	**Email**	**Address**
Carlos Sanchez	EPA Region 6	214-665-8507	Sanchez.carlos@epa.gov	1445 Ross Ave Dallas, Texas 75204
Margaret O'Hare	CH2M HILL, as rep of EPA	972-980-2170	mohare@ch2m.com	12377 Merit Drive Dallas, Texas 75251
Darren Davis	CH2M HILL, as rep of EPA	972-980-2170	ddavis9@ch2m.com	12377 Merit Drive Dallas, Texas 75251

Interview Questions

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

Response: A good job was done at the site. A lot of credit goes to the EPA for getting the job done.

2. From your perspective, what effect has the remediation at the site had on the surrounding community?

Response: The project as a whole helped the community to grow. The smelter had done so much damage to the community. The completion of the work helped the community move on to other things.

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

Response: The only remaining concern is that people want to see the site reused. Some people want to see a nursing home built, or a volleyball center.

4. Do you feel well-informed about the site's activities and progress?

Response: Have not heard of any recent updates regarding redevelopment of the site. The local concerned citizens would like input on site redevelopment.

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

Response: The site did so much damage. Would like to see the site monitored with regards to redevelopment to make sure no more pollution plants are built. Grateful to everyone involved at the site for staying with things to the end and getting the job done. Specifically stated that it wasn't easy, and that the concerned citizens were often difficult, but that the EPA got the job done.

Five-Year Review Interview Record RSR Corporation Superfund Site Dallas, Texas	**Interviewee:** Ben Shields/TCEQ Phone: 512-239-5054 email:

Site Name	**EPA ID No.**	**Date of Interview**	**Interview Method**
RSR Corporation Superfund Site	TXD079348397	8/15/2005	Telephone

Interview Contacts	**Organization**	**Phone**	**Email**	**Address**
Carlos Sanchez	EPA Region 6	214-665-8507	sanchez.carlos2epa.gov	1445 Ross Ave Dallas, Texas 75204
Margaret O'Hare	CH2M HILL, as rep of EPA	972-980-2170	mohare@ch2m.com	12377 Merit Drive Dallas, Texas 75251
Darren Davis	CH2M HILL, as rep of EPA	972-980-2170	ddavis9@ch2m.com	12377 Merit Drive Dallas, Texas 75251

Interview Questions

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

Response: Mr. Shields indicated that he was a new project manager for TCEQ at the site. His overall impression was that the job had been done well.

2. From your perspective, what effect has the remediation at the site had on the surrounding community?

Response: He felt that the work had been positive. He specifically mentioned that the cleanups in the neighborhoods had been good.

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

Response: The TCEQ still occasionally receives phone calls from people regarding health concerns.

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: No

5. Have there been routine communications or activities (site visits, inspections, reporting activities, etc.) conducted by your office regarding the site? If so, please the describe purpose and results.

Response: The Five-Year Review site inspection was the first time he had been to the site.

6. Have there been any complaints, violations, or other incidents related to the site that required a response by your office? If so, please give details of the events and results of the responses.

Response: Not that he was aware of.

7. Do you feel well-informed about the site's activities and progress?

Response: Yes, considering he is new as a manager for the site.

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

Response: Mr. Shields indicated that he felt the monitor wells not being used should be abandoned. Also, he wanted institutional controls to be considered since access is not restricted over most portions of the site.

Five-Year Review Interview Record RSR Corporation Superfund Site Dallas, Texas			**Interviewee:** John Capello/West Dallas Chamber of Commerce Phone: 214-325-7059 email:		
Site Name		**EPA ID No.**		**Date of Interview**	**Interview Method**
RSR Corporation Superfund Site		TXD079348397		8/15/2005	Phone
Interview Contacts	**Organization**	**Phone**	**Email**	**Address**	
Carlos Sanchez	EPA Region 6	214-665-8507	Sanchez.carlos@epa.gov	1445 Ross Ave Dallas, Texas 75204	
Margaret O'Hare	CH2M HILL, as rep of EPA	972-980-2170	mohare@ch2m.com	12377 Merit Drive Dallas, Texas 75251	
Darren Davis	CH2M HILL, as rep of EPA	972-980-2170	ddavis9@ch2m.com	12377 Merit Drive Dallas, Texas 75251	

Interview Questions

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

Response: His immediate impression is that the work was very good and very thorough.

2. From your perspective, what effect has the remediation at the site had on the surrounding community?

Response: The overall effect has been positive.

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

Response: There will always be people who doubt the site was cleaned up. From that perspective, there will always be some concern.

4. Have there been routine communications or activities (site visits, inspections, reporting activities, etc.) conducted by your office regarding the site?

Response: He is constantly over in the area of the site. He does not have regular communication with EPA anymore, but he is constantly in contact with Ann Grimes/City of Dallas regarding redevelopment issues.

5. Do you feel well-informed about the site's activities and progress?

Response: Reasonably well informed.

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

Response: Mr. Capello stated that the EPA some times has difficulty communicating their position to the public and channeling the public's concerns to the appropriate people to address those concerns. He stated that the EPA's people were very professional, but where they sometimes lacked the tools or technical capability to address something (he specifically mentioned health concerns) outside of what EPA does, they had difficulty directing people to the proper place to get their questions answered.

Mr. Capello also expressed that the EPA's rules appear to be cumbersome, and that the EPA could do a better job of communicating to the public the ease of putting the site back into reuse. He also stated that he wanted to see more follow-through from the EPA on issuing comfort letters to property owners regarding reuse of properties.

Five-Year Review Interview Record RSR Corporation Superfund Site Dallas, Texas	**Interviewee:** Jenny Elste/Entact Phone: 972-580-1323 email:

Site Name	**EPA ID No.**	**Date of Interview**	**Interview Method**
RSR Corporation Superfund Site	TXD079348397	8/15/2005	Phone

Interview Contacts	**Organization**	**Phone**	**Email**	**Address**
Carlos Sanchez	EPA Region 6	214-665-8507	sanchez.carlos@epa.gov	1445 Ross Ave Dallas, Texas 75204
Margaret O'Hare	CH2M HILL, as rep of EPA	972-980-2170	mohare@ch2m.com	12377 Merit Drive Dallas, Texas 75251
Darren Davis	CH2M HILL, as rep of EPA	972-980-2170	ddavis9@ch2m.com	12377 Merit Drive Dallas, Texas 75251

Interview Questions

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

Response: The work went very smoothly. This is mostly due to all parties involved cooperating to get the work done. The only issues that occurred during the work were related to erosion problems at OU3, Site 1.

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

Response: The project was huge for the local community, and it was beneficial in that the properties were made available for reuse.

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

Response: 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.

Response: No

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

Response: No

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

Response: O&M procedures include inspections. No changes are currently planned.

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

Response: Copies are retained at RSR Corporation offices, and copies are kept at ENTACT's office.

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

Response: None

Five-Year Review Interview Record RSR Corporation Superfund Site Dallas, Texas			**Interviewee:** Ann Grimes/City of Dallas Economic Development Phone: 214-670-3056 email:		
Site Name		**EPA ID No.**		**Date of Interview**	**Interview Method**
RSR Corporation Superfund Site		TXD079348397		8/12/2005	Phone
Interview Contacts	**Organization**	**Phone**	**Email**	**Address**	
Carlos Sanchez	EPA Region 6	214-665-8507	Sanchez.carlos@epa.gov	1445 Ross Ave Dallas, Texas 75204	
Margaret O'Hare	CH2M HILL, as rep of EPA	972-980-2170	mohare@ch2m.com	12377 Merit Drive Dallas, Texas 75251	
Darren Davis	CH2M HILL, as rep of EPA	972-980-2170	ddavis9@ch2m.com	12377 Merit Drive Dallas, Texas 75251	

Interview Questions

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

Response: A great job was done.

2. From your perspective, what effect has the remediation at the site had on the surrounding community?

Response: Currently, the work has not had any impact on the local community, and it will not until the site is put back to some use. The degree to which the site owners will cooperate and put the sites back to use will ultimately determine the effectiveness of the work done. The business community has been interested and is glad that the work was done. However, no one seems to be overly excited with the next step in the process – putting the site back to use.

The stigma of the site is gone, and that impact has or will diminish over time.

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

Response: The main concern is reusing the site. We have been trying to promote that the sites are cleaned up at West Dallas Chamber of Commerce meetings.

4. Have there been routine communications or activities (site visits, inspections, reporting activities, etc.) conducted by your office regarding the site?

Response: Participated in weekly meetings during the construction work done for OUs 3 and 5, and was present during the Final Inspections. No current communications related to cleanup occur anymore. However, her office is working on redevelopment, and does still deal with the site from that aspect. Ms. Grimes specified that she always points out during any meetings that she does not speak for EPA.

5. Do you feel well-informed about the site's activities and progress?

Response: Yes.

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

Response: Ms. Grimes stated that she would like to go back over the sites cleaned up one year later, just to look at them and see how things have changed. She also stated that she wanted to talk with EPA to see if they are aware of anyone who has expressed an interest in redeveloping the sites.

Ms. Grimes stated that she wanted to talk to EPA about issues regarding redevelopment of commercial/industrial properties within OU1 of the site. She wanted to discuss whether the EPA could provide some technical assistance to those trying to redevelop such properties within the OU1 boundary regarding contamination issues associated with the site. Ms. Grimes specifically mentioned that she had been made aware of a potential purchaser who was concerned about lead contamination they discovered in a drainage course on property adjacent to and west of OU 5, Subarea 1. The concern was that the lead had migrated onto the property from OU5, Subarea 1.

Attachment 3

Site Inspection Checklist

RSR Corporation Superfund Site – OU3, Site 1
Dallas, Dallas County, Texas
Five-Year Review Site Inspection Checklist

Please note that "O&M" is referred to throughout this checklist. At sites where Long-Term Response Actions are in progress, O&M activities may be referred to as "system operations" since these sites are not considered to be in the O&M phase while being remediated under the Superfund program. N/A means "not applicable".

I. SITE INFORMATION	
Site Name: RSR Corp. Superfund Site	**EPA ID:** TXD079348397
City/State: Dallas, Texas	**Date of Inspection:** July 6, 2005
Agency Completing 5 Year Review: EPA	**Weather/temperature:** Sunny, 95 degrees

Remedy Includes: (Check all that apply)

- ☒ Landfill cover/containment
- ☐ Access controls
- ☒ Institutional controls
- ☐ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Other:

Attachments: ☒ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

1. O&M site manager:
   Name: Homer Hine – RSR Corporation
   Title:
   Date: 8-15-05
   Interviewed: ☐ at site ☐ at office ☒ by phone Phone Number: 214-631-6070
   Problems, suggestions: ☒ Additional report attached (if additional space required).

2. O&M staff:
   Name: Jenny Elste - ENTACT
   Title:
   Date: 8-15-05
   Interviewed: ☐ at site ☐ at office ☒ by phone Phone Number: 972-580-1323
   Problems, suggestions: ☒ Additional report attached (if additional space required).

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:
Name: Ben Shields
Title: Assistant Project Manager
Date: 8-15-2005
Phone Number: 512-239-5054
Problems, suggestions: ☒ Additional report attached (if additional space required).

Agency:
Contact:
Name:
Title:
Date:
Phone Number:
Problems, suggestions: ☐ Additional report attached (if additional space required).

Agency:
Contact:
Name:
Title:
Date:
Phone Number:
Problems, suggestions: ☐ Additional report attached (if additional space required).

Agency:
Contact:
Name:
Title:
Date:
Phone Number:
Problems, suggestions: ☐ Additional report attached (if additional space required).

4. Other interviews (optional) ☐ N/A ☒ Additional report attached (if additional space required).

Ann Grimes – City of Dallas Redevelopment
Mattie Mash – Former Member, Dallas City Council
John Capello – West Dallas Chamber of Commerce

III. ONSITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. O&M Documents

☒ O&M Manuals	☒ 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. Health and Safety Plan Documents

☐ 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: Health and Safety Plan Documents not examined. Contingency and emergency response plan included as part of O&M plan.

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
Remarks:

6. Settlement Monument Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

7. Groundwater Monitoring Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

8. Leachate Extraction Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

9. Discharge Compliance Records ☐ 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 ☐ Applicable ☒ N/A

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

From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached

3. Unanticipated or Unusually High O&M Costs During Review Period ☐ N/A
Describe costs and reasons:
O&M costs not reviewed as part of this Five-Year Review

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

1. Fencing

1. Fencing damaged ☐ Location shown on site map ☐ Gates secured ☐ N/A
   Remarks:
   Fencing is not required as part of the remedy. Fencing is located along roadway, but it does not prevent access to the site.

2. Other Access Restrictions

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

3. 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):
   Frequency:
   Responsible party/agency:
   Contact:
   Name:
   Title:
   Date:
   Phone Number:
   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: ☐ Additional report attached (if additional space required).

2. Adequacy ☒ ICs are adequate ☐ ICs are inadequate ☐ N/A
   Remarks: ICs in the form of deed notices are to be filed on the property. The notices have not yet been filed. No other ICs are required.

4. General

1. Vandalism/trespassing ☐ Location shown on site map ☐ No vandalism evident
   Remarks: There are indications that homeless people are using the site.

2. Land use changes onsite ☒ N/A
Remarks: None.

3. Land use changes offsite ☐ N/A
Remarks: TXU has built a substation on the property to the south.

VI. GENERAL SITE CONDITIONS

1. Roads ☐ Applicable ☒ N/A

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

2. Other Site Conditions

Remarks:

VII. LANDFILL COVERS ☒ Applicable ☐ N/A

1. 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: 1 – 20 ft. Widths: 1 mm – 2 inches Depths: Not measured
Remarks: Minor desiccation cracking evident on capped surfaces.

3. Erosion ☐ Location shown on site map ☐ Erosion not evident
Areal extent: Depth: 1 – 6ft.
Remarks: Erosion channels are present along the sloped area in the center of the site. Rock has been placed at the top of the channels to minimize continued erosion.

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

5. Vegetative Cover
☐ Cover properly established ☐ No signs of stress ☒ Grass ☐ Trees/Shrubs
Remarks: Vegetation is a little sparse.

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

7. Bulges ☐ Location shown on site map ☒ Bulges not evident
Areal extent: Height:
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:

2. 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:

3.	Letdown Channels	☐ Applicable ☒ N/A	
1.	Settlement Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ No evidence of settlement
2.	Material Degradation Material type: Remarks:	☐ Location shown on site map Areal extent:	☐ No evidence of degradation
3.	Erosion Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ No evidence of erosion
4.	Undercutting Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ No evidence of undercutting
5.	Obstructions Type: Areal extent: Remarks:	☐ Location shown on site map Height:	☐ N/A
6.	Excessive Vegetative Growth ☐ Evidence of excessive growth ☐ Location shown on site map Remarks:	☐ No evidence of excessive growth ☐ Vegetation in channels but does not obstruct flow Areal extent:	
4.	Cover Penetrations	☐ Applicable ☒ N/A	
1.	Gas Vents ☐ Active ☐ Passive ☐ Properly secured/locked ?Evidence of leakage at penetration Remarks:	☐ Routinely sampled ☐ Functioning ☐ Needs O& M	☐ N/A ☐ Good condition
2.	Gas Monitoring Probes ☐ Routinely sampled ☐ Properly secured/locked	☐ Functioning	☐ N/A ☐ Good condition

☐ Evidence of leakage at penetration ☐ Needs O&M
Remarks:

3. Monitoring Wells (within surface area of landfill) ☐ N/A
☐ Routinely sampled
☐ Properly secured/locked ☐ Functioning ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs O&M
Remarks:

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

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

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

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

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

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

6. Cover Drainage Layer ☐ Applicable ☒ N/A

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

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

7.	Detention/Sedimentation Ponds	☐ Applicable ☐ N/A	
1.	Siltation Areal extent: Remarks:	☐ Siltation evident Depth:	☐ N/A
2.	Erosion Areal extent: Remarks:	☐ Erosion evident Depth:	☐ N/A
3.	Outlet Works Remarks:	☐ Functioning	☐ N/A
4.	Dam Remarks:	☐ Functioning	☐ N/A
8.	Retaining Walls	☐ Applicable ☒ N/A	
1.	Deformations Horizontal displacement: Remarks:	☐ Location shown on site map Vertical displacement:	☐ Deformation not evident Rotational displacement:
2.	Degradation Remarks:	☐ Location shown on site map	☐ Degradation not evident
1.	Perimeter Ditches/Off-site discharge	☐ Applicable ☒ N/A	
1.	Siltation Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ Siltation not evident
2.	Vegetative Growth Areal extent: Remarks:	☐ Location shown on site map Type:	☐ Vegetation does not impede flow
3.	Erosion	☐ Location shown on site map	☐ Erosion not evident

Areal extent: Depth:
Remarks:

4. Discharge Structure ☐ Location shown on site map ☐ N/A
☐ Functioning ☐ Good Condition
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 ☐ N/A
☐ Performance not monitored
☐ Performance monitored Frequency:
☐ Evidence of breaching Head differential:
Remarks:

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

1. Groundwater Extraction Wells, Pumps, and Pipelines ☐ Applicable ☐ N/A

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

2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances ☐ N/A
☐ System located ☐ Good condition ☐ Needs O& M
Remarks:.

3. Spare Parts and Equipment ☐ N/A
☐ Readily available ☐ Good condition
☐ Requires Upgrade ☐ Needs to be provided
Remarks:

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

1. Collection Structures, Pumps, and Electrical ☐ N/A

☐ Good condition ☐ Needs O& M
Remarks:

2. Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances ☐ N/A
☐ Good condition ☐ Needs O& M
Remarks: Not observed.

3. Spare Parts and Equipment ☐ N/A
☐ Readily available ☐ Good condition
☐ Requires Upgrade ☐ Needs to be provided
Remarks:

3. Treatment System ☐ Applicable ☐ N/A

1. Treatment Train (Check components that apply)
☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
☐ Air stripping ☐ Carbon adsorbers ☐ Filters (list type): Sand
☐ Additive (list type, e.g., chelation agent, flocculent)
☐ Others (list):
☐ Good condition ☐ Needs O&M
☐ Sampling ports properly marked and functional
☐ Sampling/maintenance log displayed and up to date
☐ Equipment properly identified
☐ Quantity of groundwater treated annually (list volume): Approximately 6,000,000 gallons
☐ Quantity of surface water treated annually (list volume): 0
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) ☐ N/A
☐ All required wells located ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled
☐ Good condition ☐ Needs O&M
Remarks:

4. Monitored Natural Attenuation ☐ Applicable ☐ N/A

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

5. Long Term Monitoring ☐ Applicable ☒ N/A

2. Monitoring Wells ☐ N/A
☐ All required wells located ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled
☐ Good condition ☐ Needs O&M
Remarks:

X. OTHER REMEDIES ☐ Applicable ☒ N/A

XI. OVERALL OBSERVATIONS

1. Implementation of the Remedy

The Remedial Action Objectives are to:

1) Minimize exposure to lead, arsenic, and antimony present at the site through direct contact, inhalation, and ingestion; and,
2) Reduce the potential for these contaminants to migrate.

These objectives were met by the following:

1) Excavation and removal of slag, battery chips, and contaminated soils exceeding site action levels;
2) Backfilling and regrading the excavated areas with clean soil; and,
3) Offsite disposal of the excavated materials.

A deed notice is to be filed on the property providing notice of the location of the soil cover, require maintenance of the soil cover, and provide for EPA review and concurrence on future site development.

2. Adequacy of O&M
O&M of the site includes inspection of the soil cover and vegetation, and maintenance of both. Proper maintenance and inspection procedures are in place to ensure the integrity of the soil cover.
3. Early Indicators of Potential Remedy Failure
Large erosion channels are present on the slope in the middle of the site. Rocks have been placed at the tops of these channels to minimize erosion. If the channels continue to grow, they could eventually result in slope instability and erode into the clay cover at the site.
4. Opportunities for Optimization
No optimization opportunities are identified for this site.

RSR Corp – Inspection Team Roster

Date of Site Inspection – July 6, 2005

Name	Organization	Title
Carlos Sanchez	USEPA	Remedial Project Manager
Margaret O'Hare	CH2M HILL	Project Manager
Darren Davis	CH2M HILL	Associate Consultant
Ben Shields	TCEQ	Assistant Project Manager
Homer Hine	RSR Corporation	
Jenny Elste	ENTACT	Project Manager

RSR Corporation Superfund Site – OU3, Site 3
Dallas, Dallas County, Texas
Five-Year Review Site Inspection Checklist

Please note that "O&M" is referred to throughout this checklist. At sites where Long-Term Response Actions are in progress, O&M activities may be referred to as "system operations" since these sites are not considered to be in the O&M phase while being remediated under the Superfund program. N/A means "not applicable".

I. SITE INFORMATION	
Site Name: RSR Corp. Superfund Site	**EPA ID:** TXD079348397
City/State: Dallas, Texas	**Date of Inspection:** July 6, 2005
Agency Completing 5 Year Review: EPA	**Weather/temperature:** Sunny, 95 degrees

Remedy Includes: (Check all that apply)

- ☒ Landfill cover/containment
- ☐ Access controls
- ☒ Institutional controls
- ☐ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Other:

Attachments: ☒ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

1. O&M site manager:
   Name: Homer Hine – RSR Corporation
   Title:
   Date: 8-15-05
   Interviewed: ☐ at site ☐ at office ☒ by phone Phone Number: 214-631-6070
   Problems, suggestions: ☒ Additional report attached (if additional space required).

2. O&M staff:
   Name: Jenny Elste - ENTACT
   Title: Project Manager
   Date: 8-15-05
   Interviewed: ☐ at site ☐ at office ☒ by phone Phone Number: 972-580-1323
   Problems, suggestions: ☒ Additional report attached (if additional space required).

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:
Name: Ben Shields
Title: Assistant Project Manager
Date: 8-15-2005
Phone Number: 512-239-5054
Problems, suggestions: ☒ Additional report attached (if additional space required).

Agency:
Contact:
Name:
Title:
Date:
Phone Number:
Problems, suggestions: ☐ Additional report attached (if additional space required).

Agency:
Contact:
Name:
Title:
Date:
Phone Number:
Problems, suggestions: ☐ Additional report attached (if additional space required).

Agency:
Contact:
Name:
Title:
Date:
Phone Number:
Problems, suggestions: ☐ Additional report attached (if additional space required).

4. Other interviews (optional) ☐ N/A ☒ Additional report attached (if additional space required).

Ann Grimes – City of Dallas Redevelopment
Mattie Mash – Former Member, Dallas City Council
John Capello – West Dallas Chamber of Commerce

III. ONSITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. O&M Documents

☒ O&M Manuals	☒ 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. Health and Safety Plan Documents

☐ 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: Health and Safety Plan Documents not examined. Contingency and emergency response plan included as part of O&M plan.

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
Remarks:

6. Settlement Monument Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

7. Groundwater Monitoring Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

8. Leachate Extraction Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

9. Discharge Compliance Records ☐ 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 ☐ Applicable ☒ N/A

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

From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached

3. Unanticipated or Unusually High O&M Costs During Review Period ☐ N/A
Describe costs and reasons:
O&M costs not reviewed as part of this Five-Year Review

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

1. Fencing

1. Fencing damaged ☐ Location shown on site map ☐ Gates secured ☐ N/A
   Remarks:
   Fencing is not required as part of the remedy. Access to the site is not restricted.

2. Other Access Restrictions

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

3. 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):
   Frequency:
   Responsible party/agency:
   Contact:
   Name:
   Title:
   Date:
   Phone Number:
   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: ☐ Additional report attached (if additional space required).

2. Adequacy ☒ ICs are adequate ☐ ICs are inadequate ☐ N/A
   Remarks: ICs in the form of deed notices are to be filed on the property. The notices have not yet been filed. No other ICs are required.

4. General

1. Vandalism/trespassing ☐ Location shown on site map ☒ No vandalism evident
   Remarks: Property owner next to southern portion of the site (along Davis Street) has erected several discharge pipes

across the top of the soil cover. One of the pipes is causing erosion on the northern edge of the cover. Also has placed several storage tanks on top of and next to the cover.

2. Land use changes onsite ☒ N/A
Remarks: None.

3. Land use changes offsite ☒ N/A
Remarks:

VI. GENERAL SITE CONDITIONS

1. Roads ☐ Applicable ☒ N/A

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

2. Other Site Conditions

Remarks:

VII. LANDFILL COVERS ☒ Applicable ☐ N/A

1. 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: 1 – 20 ft Widths: 1 mm – 2.5 inches Depths: not measured
Remarks: Large and numerous desiccation cracks are evident on the soil covers inspected.

3. Erosion ☐ Location shown on site map ☐ Erosion not evident
Areal extent: limited Depth: 1 to 6 inches
Remarks: Minor erosion on edges of clay cover. One erosion feature is the result of the discharge pipe mentioned above.

4. Holes ☐ Location shown on site map ☒ Holes not evident

	Areal extent: Depth: Remarks:			
5.	Vegetative Cover ☐ Cover properly established	☐ No signs of stress	☒ Grass	☐ Trees/Shrubs Remarks: Vegetation is very sparse.
6.	Alternative Cover (armored rock, concrete, etc.) Remarks:			☒ N/A
7.	Bulges Areal extent: Remarks:	☐ Location shown on site map Height:		☒ Bulges not evident
8.	Wet Areas/Water Damage ☐ Wet areas ☐ Ponding ☐ Seeps ☐ Soft subgrade Remarks:	☒ Wet areas/water damage not evident ☐ Location shown on site map Areal extent: ☐ Location shown on site map Areal extent: ☐ Location shown on site map Areal extent: ☐ Location shown on site map Areal extent:		
9.	Slope Instability Areal extent: Remarks:	☐ Slides	☐ Location shown on site map	☒ No evidence of slope instability
2.	Benches (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.)	☐ Applicable	☒ N/A	
1.	Flows Bypass Bench Remarks:	☐ Location shown on site map		☐ N/A or okay
2.	Bench Breached Remarks:	☐ Location shown on site map		☐ N/A or okay
3.	Bench Overtopped Remarks:	☐ Location shown on site map		☐ N/A or okay

3.	Letdown Channels	☐ Applicable ☒ N/A	
1.	Settlement Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ No evidence of settlement
2.	Material Degradation Material type: Remarks:	☐ Location shown on site map Areal extent:	☐ No evidence of degradation
3.	Erosion Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ No evidence of erosion
4.	Undercutting Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ No evidence of undercutting
5.	Obstructions Type: Areal extent: Remarks:	☐ Location shown on site map Height:	☐ N/A
6.	Excessive Vegetative Growth ☐ Evidence of excessive growth ☐ Location shown on site map Remarks:	☐ No evidence of excessive growth ☐ Vegetation in channels but does not obstruct flow Areal extent:	
4.	Cover Penetrations	☐ Applicable ☒ N/A	
1.	Gas Vents ☐ Active ☐ Passive ☐ Properly secured/locked ?Evidence of leakage at penetration Remarks:	☐ Routinely sampled ☐ Functioning ☐ Needs O& M	☐ N/A ☐ Good condition
2.	Gas Monitoring Probes ☐ Routinely sampled		☐ N/A

	☐ Properly secured/locked ☐ Evidence of leakage at penetration Remarks:	☐ Functioning ☐ Needs O&M	☐ Good condition
3.	Monitoring Wells (within surface area of landfill) ☐ Routinely sampled ☐ Properly secured/locked ☐ Evidence of leakage at penetration Remarks:	 ☐ Functioning ☐ Needs O&M	☐ N/A ☐ Good condition
4.	Leachate Extraction Wells ☐ Routinely sampled ☐ Properly secured/locked ☐ Evidence of leakage at penetration Remarks:	 ☐ Functioning ☐ Needs O&M	☐ N/A ☐ Good condition
5.	Settlement Monuments Remarks:	☐ Located	☐ Routinely surveyed ☐ N/A
5.	Gas Collection and Treatment	☐ Applicable	☒ N/A
1.	Gas Treatment Facilities ☐ Flaring ☐ Good condition Remarks:	☐ Thermal destruction ☐ Needs O& M	☐ Collection for reuse ☐ N/A
2.	Gas Collection Wells, Manifolds and Piping ☐ Good condition Remarks:	☐ Needs O& M	☐ N/A
3.	Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings) ☐ Good condition Remarks:	☐ Needs O& M	☐ N/A
6.	Cover Drainage Layer	☐ Applicable	☒ N/A
1.	Outlet Pipes Inspected Remarks:	☐ Functioning	☐ N/A
2.	Outlet Rock Inspected Remarks:	☐ Functioning	☐ N/A

7.	Detention/Sedimentation Ponds	☐ Applicable ☒ N/A	
1.	Siltation Areal extent: Remarks:	☐ Siltation evident Depth:	☐ N/A
2.	Erosion Areal extent: Remarks:	☐ Erosion evident Depth:	☐ N/A
3.	Outlet Works Remarks:	☐ Functioning	☐ N/A
4.	Dam Remarks:	☐ Functioning	☐ N/A
8.	Retaining Walls	☐ Applicable ☒ N/A	
1.	Deformations Horizontal displacement: Remarks:	☐ Location shown on site map Vertical displacement:	☐ Deformation not evident Rotational displacement:
2.	Degradation Remarks:	☐ Location shown on site map	☐ Degradation not evident
1.	Perimeter Ditches/Off-site discharge	☐ Applicable ☒ N/A	
1.	Siltation Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ Siltation not evident
2.	Vegetative Growth Areal extent: Remarks:	☐ Location shown on site map Type:	☐ Vegetation does not impede flow

3.	Erosion Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ Erosion not evident
4.	Discharge Structure ☐ Functioning Remarks:	☐ Location shown on site map ☐ Good Condition	☐ N/A

VIII. VERTICAL BARRIER WALLS ☐ Applicable ☒ N/A

1.	Settlement Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ Settlement not evident
2.	Performance Monitoring ☐ Performance not monitored ☐ Performance monitored ☐ Evidence of breaching Remarks:	Frequency: Head differential:	☐ N/A

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

1.	Groundwater Extraction Wells, Pumps, and Pipelines	☐ Applicable	☐ N/A
1.	Pumps, Wellhead Plumbing, and Electrical ☐ All required wells located Remarks:	☐ Good condition ☐ Needs O& M	☐ N/A
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances ☐ System located Remarks:.	☐ N/A ☐ Good condition ☐ Needs O& M	
3.	Spare Parts and Equipment ☐ Readily available ☐ Requires Upgrade Remarks:	☐ N/A ☐ Good condition ☐ Needs to be provided	
2.	Surface Water Collection Structures, Pumps, and Pipelines	☐ Applicable	☐ N/A

1. Collection Structures, Pumps, and Electrical ☐ N/A
   ☐ Good condition ☐ Needs O& M
   Remarks:

2. Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances ☐ N/A
   ☐ Good condition ☐ Needs O& M
   Remarks: Not observed.

3. Spare Parts and Equipment ☐ N/A
   ☐ Readily available ☐ Good condition
   ☐ Requires Upgrade ☐ Needs to be provided
   Remarks:

3. Treatment System ☐ Applicable ☐ N/A

1. Treatment Train (Check components that apply)
   ☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
   ☐ Air stripping ☐ Carbon adsorbers ☐ Filters (list type): Sand
   ☐ Additive (list type, e.g., chelation agent, flocculent)
   ☐ Others (list):
   ☐ Good condition ☐ Needs O&M
   ☐ Sampling ports properly marked and functional
   ☐ Sampling/maintenance log displayed and up to date
   ☐ Equipment properly identified
   ☐ Quantity of groundwater treated annually (list volume): Approximately 6,000,000 gallons
   ☐ Quantity of surface water treated annually (list volume): 0
   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) ☐ N/A
☐ All required wells located ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled
☐ Good condition ☐ Needs O&M
Remarks:

4. Monitored Natural Attenuation ☐ Applicable ☐ N/A

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

5. Long Term Monitoring ☐ Applicable ☒ N/A

2. Monitoring Wells ☐ N/A
☐ All required wells located ☒ Properly secured/locked ☐ Functioning ☐ Routinely sampled
☒ Good condition ☐ Needs O&M
Remarks: Several monitor wells were identified on this site. Settlement of 1-2 inches has occurred under the well pad of one well, and another well lacks a well pad. All wells were locked and in otherwise good condition.

X. OTHER REMEDIES ☐ Applicable ☒ N/A

XI. OVERALL OBSERVATIONS

1. Implementation of the Remedy

The Remedial Action Objectives are to:

1) Minimize exposure to lead, arsenic, and antimony present at the site through direct contact, inhalation, and ingestion; and,
2) Reduce the potential for these contaminants to migrate.

These objectives were met by the following:

1) Excavation and/or containment of slag, battery chips, and contaminated soils exceeding site action levels under an onsite soil cover.

A deed notice is to be filed on the property providing notice of the location of the soil cover, require maintenance of the soil cover, and provide for EPA review and concurrence on future site development.

2. Adequacy of O&M

O&M of the site includes inspection of the soil cover and vegetation, and maintenance of both. Proper maintenance and inspection procedures are in place to ensure the integrity of the soil cover.
3. Early Indicators of Potential Remedy Failure
There is erosion along the northern portion of the southern clay cover area. If not addressed, the erosion will grow and potentially expose contaminants. The vegetation at this site is sparse and should be re-established. This is necessary to prevent erosion of the soil covers. Several monitor wells are present on the site. There are no plans to sample these wells. The wells should be abandoned to remove a potential conduit for contaminants to enter the subsurface.
4. Opportunities for Optimization
No optimization opportunities are identified for this site.

RSR Corp – Inspection Team Roster

Date of Site Inspection – July 6, 2005

Name	Organization	Title
Carlos Sanchez	USEPA	Remedial Project Manager
Margaret O'Hare	CH2M HILL	Project Manager
Darren Davis	CH2M HILL	Associate Consultant
Ben Shields	TCEQ	Assistant Project Manager
Homer Hine	RSR Corporation	
Jenny Elste	ENTACT	Project Manager

RSR Corporation Superfund Site – OU3, Site 4
Dallas, Dallas County, Texas
Five-Year Review Site Inspection Checklist

Please note that "O&M" is referred to throughout this checklist. At sites where Long-Term Response Actions are in progress, O&M activities may be referred to as "system operations" since these sites are not considered to be in the O&M phase while being remediated under the Superfund program. N/A means "not applicable".

I. SITE INFORMATION	
Site Name: RSR Corp. Superfund Site	**EPA ID:** TXD079348397
City/State: Dallas, Texas	**Date of Inspection:** July 6, 2005
Agency Completing 5 Year Review: EPA	**Weather/temperature:** Sunny, 95 degrees

Remedy Includes: (Check all that apply)

- ☒ Landfill cover/containment
- ☐ Access controls
- ☒ Institutional controls
- ☐ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Other:

Attachments: ☒ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

1. O&M site manager:
   Name: Homer Hine – RSR Corporation
   Title:
   Date: 8-15-05
   Interviewed: ☐ at site ☐ at office ☒ by phone Phone Number: 214-631-6070
   Problems, suggestions: ☒ Additional report attached (if additional space required).

2. O&M staff:
   Name: Jenny Elste - ENTACT
   Title: Project Manager
   Date: 8-15-05
   Interviewed: ☐ at site ☐ at office ☒ by phone Phone Number: 972-580-1323
   Problems, suggestions: ☒ Additional report attached (if additional space required).

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:
Name: Ben Shields
Title: Assistant Project Manager
Date: 8-15-2005
Phone Number: 512-239-5054
Problems, suggestions: ☒ Additional report attached (if additional space required).

Agency:
Contact:
Name:
Title:
Date:
Phone Number:
Problems, suggestions: ☐ Additional report attached (if additional space required).

Agency:
Contact:
Name:
Title:
Date:
Phone Number:
Problems, suggestions: ☐ Additional report attached (if additional space required).

Agency:
Contact:
Name:
Title:
Date:
Phone Number:
Problems, suggestions: ☐ Additional report attached (if additional space required).

4. Other interviews (optional) ☐ N/A ☒ Additional report attached (if additional space required).

Ann Grimes – City of Dallas Redevelopment
Mattie Mash – Former Member, Dallas City Council
John Capello – West Dallas Chamber of Commerce

III. ONSITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. O&M Documents

☒ O&M Manuals	☒ 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. Health and Safety Plan Documents

☐ 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: Health and Safety Plan Documents not examined. Contingency and emergency response plan included as part of O&M plan.

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
Remarks:

6. Settlement Monument Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

7. Groundwater Monitoring Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

8. Leachate Extraction Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

9. Discharge Compliance Records ☐ 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 ☐ Applicable ☒ N/A

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

From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached

3. Unanticipated or Unusually High O&M Costs During Review Period ☐ N/A
Describe costs and reasons:
O&M costs not reviewed as part of this Five-Year Review

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

1. Fencing

1. Fencing damaged ☐ Location shown on site map ☐ Gates secured ☐ N/A
Remarks:
Fencing is not required as part of the remedy. Access to the site is not restricted.

2. Other Access Restrictions

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

3. 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):
Frequency:
Responsible party/agency:
Contact:
Name:
Title:
Date:
Phone Number:
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: ☐ Additional report attached (if additional space required).

2. Adequacy ☒ ICs are adequate ☐ ICs are inadequate ☐ N/A
Remarks: ICs in the form of deed notices are to be filed on the property. The notices have not yet been filed. No other ICs are required.

4. General

1. Vandalism/trespassing ☐ Location shown on site map ☒ No vandalism evident
Remarks: There are indications that people traverse the site. Minor amount of dumping onsite. There is a for sale sign on

the property.

2. Land use changes onsite ☒ N/A
Remarks: None.

3. Land use changes offsite ☒ N/A
Remarks:

VI. GENERAL SITE CONDITIONS

1. Roads ☐ Applicable ☒ N/A

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

2. Other Site Conditions

Remarks:

VII. LANDFILL COVERS ☒ Applicable ☐ N/A

1. 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: 1 – 20 ft Widths: 1 mm – 2.5 inches Depths: not measured
Remarks: Large and numerous desiccation cracks are evident on the soil covers inspected.

3. Erosion ☐ Location shown on site map ☐ Erosion not evident
Areal extent: limited Depth: 1 to 6 inches
Remarks: Minor erosion on edges of clay cover.

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

Remarks:

5. Vegetative Cover
☐ Cover properly established ☐ No signs of stress ☒ Grass ☐ Trees/Shrubs
Remarks: Vegetation is very sparse.

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

7. Bulges ☐ Location shown on site map ☒ Bulges not evident
Areal extent: Height:
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:

2. 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:

3.	Letdown Channels	☐ Applicable ☒ N/A	
1.	Settlement Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ No evidence of settlement
2.	Material Degradation Material type: Remarks:	☐ Location shown on site map Areal extent:	☐ No evidence of degradation
3.	Erosion Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ No evidence of erosion
4.	Undercutting Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ No evidence of undercutting
5.	Obstructions Type: Areal extent: Remarks:	☐ Location shown on site map Height:	☐ N/A
6.	Excessive Vegetative Growth ☐ Evidence of excessive growth ☐ Location shown on site map Remarks:	☐ No evidence of excessive growth ☐ Vegetation in channels but does not obstruct flow Areal extent:	
4.	Cover Penetrations	☐ Applicable ☒ N/A	
1.	Gas Vents ☐ Active ☐ Passive ☐ Properly secured/locked ?Evidence of leakage at penetration Remarks:	☐ Routinely sampled ☐ Functioning ☐ Needs O& M	☐ N/A ☐ Good condition
2.	Gas Monitoring Probes ☐ Routinely sampled ☐ Properly secured/locked	☐ Functioning	☐ N/A ☐ Good condition

☐ Evidence of leakage at penetration ☐ Needs O&M
Remarks:

3. Monitoring Wells (within surface area of landfill) ☐ N/A
☐ Routinely sampled
☐ Properly secured/locked ☐ Functioning ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs O&M
Remarks:

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

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

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

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

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

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

6. Cover Drainage Layer ☐ Applicable ☒ N/A

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

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

7.	Detention/Sedimentation Ponds	☐ Applicable ☒ N/A	
1.	Siltation Areal extent: Remarks:	☐ Siltation evident Depth:	☐ N/A
2.	Erosion Areal extent: Remarks:	☐ Erosion evident Depth:	☐ N/A
3.	Outlet Works Remarks:	☐ Functioning	☐ N/A
4.	Dam Remarks:	☐ Functioning	☐ N/A
8.	Retaining Walls	☐ Applicable ☒ N/A	
1.	Deformations Horizontal displacement: Remarks:	☐ Location shown on site map Vertical displacement:	☐ Deformation not evident Rotational displacement:
2.	Degradation Remarks:	☐ Location shown on site map	☐ Degradation not evident
1.	Perimeter Ditches/Off-site discharge	☐ Applicable ☒ N/A	
1.	Siltation Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ Siltation not evident
2.	Vegetative Growth Areal extent: Remarks:	☐ Location shown on site map Type:	☐ Vegetation does not impede flow
3.	Erosion	☐ Location shown on site map	☐ Erosion not evident

Areal extent: Depth:
Remarks:

4. Discharge Structure ☐ Location shown on site map ☐ N/A
☐ Functioning ☐ Good Condition
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 ☐ N/A
☐ Performance not monitored
☐ Performance monitored Frequency:
☐ Evidence of breaching Head differential:
Remarks:

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

1. Groundwater Extraction Wells, Pumps, and Pipelines ☐ Applicable ☐ N/A

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

2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances ☐ N/A
☐ System located ☐ Good condition ☐ Needs O& M
Remarks:.

3. Spare Parts and Equipment ☐ N/A
☐ Readily available ☐ Good condition
☐ Requires Upgrade ☐ Needs to be provided
Remarks:

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

1. Collection Structures, Pumps, and Electrical ☐ N/A

☐ Good condition ☐ Needs O& M
Remarks:

2. Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances ☐ N/A
☐ Good condition ☐ Needs O& M
Remarks: Not observed.

3. Spare Parts and Equipment ☐ N/A
☐ Readily available ☐ Good condition
☐ Requires Upgrade ☐ Needs to be provided
Remarks:

3. Treatment System ☐ Applicable ☐ N/A

1. Treatment Train (Check components that apply)
☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
☐ Air stripping ☐ Carbon adsorbers ☐ Filters (list type): Sand
☐ Additive (list type, e.g., chelation agent, flocculent)
☐ Others (list):
☐ Good condition ☐ Needs O&M
☐ Sampling ports properly marked and functional
☐ Sampling/maintenance log displayed and up to date
☐ Equipment properly identified
☐ Quantity of groundwater treated annually (list volume): Approximately 6,000,000 gallons
☐ Quantity of surface water treated annually (list volume): 0
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) ☐ N/A
☐ All required wells located ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled
☐ Good condition ☐ Needs O&M
Remarks:

4. Monitored Natural Attenuation ☐ Applicable ☐ N/A

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

5. Long Term Monitoring ☐ Applicable ☒ N/A

2. Monitoring Wells ☐ N/A
☐ All required wells located ☒ Properly secured/locked ☐ Functioning ☐ Routinely sampled
☒ Good condition ☐ Needs O&M
Remarks: Several monitor wells were identified on this site. One well has a cracked well pad, and the other is overgrown with vegetation. All wells were locked and in otherwise good condition.

X. OTHER REMEDIES ☐ Applicable ☒ N/A

XI. OVERALL OBSERVATIONS

1. Implementation of the Remedy

The Remedial Action Objectives are to:

1) Minimize exposure to lead, arsenic, and antimony present at the site through direct contact, inhalation, and ingestion; and,
2) Reduce the potential for these contaminants to migrate.

These objectives were met by the following:

1) Containment of slag, battery chips, and contaminated soils exceeding site action levels under an onsite soil cover.

A deed notice is to be filed on the property providing notice of the location of the soil cover, require maintenance of the soil cover, and provide for EPA review and concurrence on future site development.

2. Adequacy of O&M

O&M of the site includes inspection of the soil cover and vegetation, and maintenance of both.

Proper maintenance and inspection procedures are in place to ensure the integrity of the soil cover.
3. Early Indicators of Potential Remedy Failure
The vegetation at this site is sparse and should be re-established. This is necessary to prevent erosion of the soil covers. Several monitor wells are present on the site. There are no plans to sample these wells. The wells should be abandoned to remove a potential conduit for contaminants to enter the subsurface.
4. Opportunities for Optimization
No optimization opportunities are identified for this site.

RSR Corp – Inspection Team Roster

Date of Site Inspection – July 6, 2005

Name	Organization	Title
Carlos Sanchez	USEPA	Remedial Project Manager
Margaret O'Hare	CH2M HILL	Project Manager
Darren Davis	CH2M HILL	Associate Consultant
Ben Shields	TCEQ	Assistant Project Manager
Homer Hine	RSR Corporation	
Jenny Elste	ENTACT	Project Manager

RSR Corporation Superfund Site – OU4
Dallas, Dallas County, Texas
Five-Year Review Site Inspection Checklist

Please note that "O&M" is referred to throughout this checklist. At sites where Long-Term Response Actions are in progress, O&M activities may be referred to as "system operations" since these sites are not considered to be in the O&M phase while being remediated under the Superfund program. N/A means "not applicable".

I. SITE INFORMATION	
Site Name: RSR Corp. Superfund Site	**EPA ID:** TXD079348397
City/State: Dallas, Texas	**Date of Inspection:** July 6, 2005
Agency Completing 5 Year Review: EPA	**Weather/temperature:** Sunny, 95 degrees

Remedy Includes: (Check all that apply)
- ☒ Landfill cover/containment
- ☐ Access controls
- ☒ Institutional controls
- ☐ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Other:

Attachments: ☒ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

1. O&M site manager:
   Name: Homer Kirby – Murmur Corporation
   Title:
   Date: 8-12-05
   Interviewed: ☐ at site ☐ at office ☒ by phone Phone Number: 214-630-5400
   Problems, suggestions: ☒ Additional report attached (if additional space required).

2. O&M staff:
   Name:
   Title:
   Date:
   Interviewed: ☐ at site ☐ at office ☐ by phone Phone Number:
   Problems, suggestions: ☐ Additional report attached (if additional space required).

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:
Name: Ben Shields
Title: Assistant Project Manager
Date: 8-15-2005
Phone Number: 512-239-5054
Problems, suggestions: ☒ Additional report attached (if additional space required).

Agency:
Contact:
Name:
Title:
Date:
Phone Number:
Problems, suggestions: ☐ Additional report attached (if additional space required).

Agency:
Contact:
Name:
Title:
Date:
Phone Number:
Problems, suggestions: ☐ Additional report attached (if additional space required).

Agency:
Contact:
Name:
Title:
Date:
Phone Number:
Problems, suggestions: ☐ Additional report attached (if additional space required).

4. Other interviews (optional) ☐ N/A ☒ Additional report attached (if additional space required).

Ann Grimes – City of Dallas Redevelopment
Mattie Mash – Former Member, Dallas City Council
John Capello – West Dallas Chamber of Commerce

III. ONSITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. O&M Documents

☐ O&M Manuals	☐ 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: O&M not required by the ROD.

2. Health and Safety Plan Documents

☐ 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
Remarks:

6. Settlement Monument Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

7. Groundwater Monitoring Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

8. Leachate Extraction Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

9. Discharge Compliance Records ☐ 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 ☐ Applicable ☒ N/A

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

From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached

3. Unanticipated or Unusually High O&M Costs During Review Period ☐ N/A
Describe costs and reasons:

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

1. Fencing

1. Fencing damaged ☐ Location shown on site map ☐ Gates secured ☐ N/A
Remarks:
Fencing is not required as part of the remedy. Site is currently surrounded by a fence and brick wall.

2. Other Access Restrictions

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

3. 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):
Frequency:
Responsible party/agency:
Contact:
Name:
Title:
Date:
Phone Number:
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: ☐ Additional report attached (if additional space required).

2. Adequacy ☒ ICs are adequate ☐ ICs are inadequate ☐ N/A
Remarks: ICs in the form of deed notices are to be filed on the property. The notices have not yet been filed. No other ICs are required.

4. General

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

2. Land use changes onsite ☐ N/A
Remarks: Site has been leased and is being used by a local construction company as an equipment and materials storage yard for the road construction on Westmoreland Road.

3. Land use changes offsite ☒ N/A
Remarks:

VI. GENERAL SITE CONDITIONS

1. Roads ☐ Applicable ☒ N/A

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

2. Other Site Conditions

Remarks:

VII. LANDFILL COVERS ☒ Applicable ☐ N/A

1. 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: 1 – 20 ft Widths: 1 mm -3 mm Depths: not measured
Remarks: Numerous but small desiccation cracks are present.

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

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

5. Vegetative Cover
☐ Cover properly established ☐ No signs of stress ☒ Grass ☐ Trees/Shrubs
Remarks: Vegetation is ok.

6.	Alternative Cover (armored rock, concrete, etc.) Remarks:		☒ N/A
7.	Bulges Areal extent: Remarks:	☐ Location shown on site map Height:	☒ Bulges not evident
8.	Wet Areas/Water Damage ☐ Wet areas ☐ Ponding ☐ Seeps ☐ Soft subgrade Remarks:	☒ Wet areas/water damage not evident ☐ Location shown on site map Areal extent: ☐ Location shown on site map Areal extent: ☐ Location shown on site map Areal extent: ☐ Location shown on site map Areal extent:	
9.	Slope Instability Areal extent: Remarks:	☐ Slides ☐ Location shown on site map	☒ No evidence of slope instability
2.	Benches (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.)	☐ Applicable ☒ N/A	
1.	Flows Bypass Bench Remarks:	☐ Location shown on site map	☐ N/A or okay
2.	Bench Breached Remarks:	☐ Location shown on site map	☐ N/A or okay
3.	Bench Overtopped Remarks:	☐ Location shown on site map	☐ N/A or okay
3.	Letdown Channels	☐ Applicable ☒ N/A	
1.	Settlement Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ No evidence of settlement

2.	Material Degradation Material type: Remarks:	☐ Location shown on site map Areal extent:	☐ No evidence of degradation
3.	Erosion Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ No evidence of erosion
4.	Undercutting Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ No evidence of undercutting
5.	Obstructions Type: Areal extent: Remarks:	☐ Location shown on site map Height:	☐ N/A
6.	Excessive Vegetative Growth ☐ Evidence of excessive growth ☐ Location shown on site map Remarks:	☐ No evidence of excessive growth ☐ Vegetation in channels but does not obstruct flow Areal extent:	
4.	Cover Penetrations	☐ Applicable ☒ N/A	
1.	Gas Vents ☐ Active ☐ Passive ☐ Properly secured/locked ?Evidence of leakage at penetration Remarks:	☐ Routinely sampled ☐ Functioning ☐ Needs O& M	☐ N/A ☐ Good condition
2.	Gas Monitoring Probes ☐ Routinely sampled ☐ Properly secured/locked ☐ Evidence of leakage at penetration Remarks:	☐ Functioning ☐ Needs O&M	☐ N/A ☐ Good condition
3.	Monitoring Wells (within surface area of landfill) ☐ Routinely sampled ☐ Properly secured/locked ☐ Evidence of leakage at penetration	☐ Functioning ☐ Needs O&M	☐ N/A ☐ Good condition

	Remarks:			
4.	Leachate Extraction Wells ☐ Routinely sampled ☐ Properly secured/locked ☐ Evidence of leakage at penetration Remarks:		☐ Functioning ☐ Needs O&M	☐ N/A ☐ Good condition
5.	Settlement Monuments Remarks:	☐ Located	☐ Routinely surveyed	☐ N/A
5.	Gas Collection and Treatment	☐ Applicable	☒ N/A	
1.	Gas Treatment Facilities ☐ Flaring ☐ Good condition Remarks:	☐ Thermal destruction ☐ Needs O& M	☐ Collection for reuse	☐ N/A
2.	Gas Collection Wells, Manifolds and Piping ☐ Good condition Remarks:	☐ Needs O& M		☐ N/A
3.	Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings) ☐ Good condition Remarks:	☐ Needs O& M		☐ N/A
6.	Cover Drainage Layer	☐ Applicable	☒ N/A	
1.	Outlet Pipes Inspected Remarks:	☐ Functioning		☐ N/A
2.	Outlet Rock Inspected Remarks:	☐ Functioning		☐ N/A
7.	Detention/Sedimentation Ponds	☐ Applicable	☒ N/A	
1.	Siltation Areal extent: Remarks:	☐ Siltation evident Depth:		☐ N/A
2.	Erosion	☐ Erosion evident		☐ N/A

	Areal extent: Remarks:	Depth:	
3.	Outlet Works Remarks:	☐ Functioning	☐ N/A
4.	Dam Remarks:	☐ Functioning	☐ N/A
8.	Retaining Walls	☐ Applicable ☒ N/A	
1.	Deformations Horizontal displacement: Remarks:	☐ Location shown on site map Vertical displacement:	☐ Deformation not evident Rotational displacement:
2.	Degradation Remarks:	☐ Location shown on site map	☐ Degradation not evident
1.	Perimeter Ditches/Off-site discharge	☐ Applicable ☒ N/A	
1.	Siltation Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ Siltation not evident
2.	Vegetative Growth Areal extent: Remarks:	☐ Location shown on site map Type:	☐ Vegetation does not impede flow
3.	Erosion Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ Erosion not evident

4. Discharge Structure ☐ Location shown on site map ☐ N/A
☐ Functioning ☐ Good Condition
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 ☐ N/A
☐ Performance not monitored
☐ Performance monitored Frequency:
☐ Evidence of breaching Head differential:
Remarks:

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

1. Groundwater Extraction Wells, Pumps, and Pipelines ☐ Applicable ☐ N/A

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

2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances ☐ N/A
☐ System located ☐ Good condition ☐ Needs O& M
Remarks:.

3. Spare Parts and Equipment ☐ N/A
☐ Readily available ☐ Good condition
☐ Requires Upgrade ☐ Needs to be provided
Remarks:

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

1. Collection Structures, Pumps, and Electrical ☐ N/A
☐ Good condition ☐ Needs O& M
Remarks:

2. Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances ☐ N/A
☐ Good condition ☐ Needs O& M
Remarks: Not observed.

3. Spare Parts and Equipment ☐ N/A
☐ Readily available ☐ Good condition
☐ Requires Upgrade ☐ Needs to be provided
Remarks:

3. Treatment System ☐ Applicable ☐ N/A

1. Treatment Train (Check components that apply)
☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
☐ Air stripping ☐ Carbon adsorbers ☐ Filters (list type): Sand
☐ Additive (list type, e.g., chelation agent, flocculent)
☐ Others (list):
☐ Good condition ☐ Needs O&M
☐ Sampling ports properly marked and functional
☐ Sampling/maintenance log displayed and up to date
☐ Equipment properly identified
☐ Quantity of groundwater treated annually (list volume): Approximately 6,000,000 gallons
☐ Quantity of surface water treated annually (list volume): 0
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) ☐ N/A
☐ All required wells located ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled
☐ Good condition ☐ Needs O&M
Remarks:

4. Monitored Natural Attenuation ☐ Applicable ☐ N/A

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

5. Long Term Monitoring ☐ Applicable ☒ N/A

2. Monitoring Wells ☐ N/A
☐ All required wells located ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled
☐ Good condition ☐ Needs O&M
Remarks:

X. OTHER REMEDIES ☐ Applicable ☒ N/A

XI. OVERALL OBSERVATIONS

1. Implementation of the Remedy

The Remedial Action Objectives are to:

1) Minimize exposure to lead, arsenic, cadmium, and antimony present at the site through direct contact, inhalation, and ingestion; and,
2) Reduce the potential for these contaminants to migrate.

These objectives were met by the following:

1) Removal, treatment, and disposal of residual materials;
2) Decontamination and demolition of site buildings, structures, smelter stack, and equipment;
3) Plugging and abandonment of site drains and sumps;
4) Offsite disposal of building debris;
5) Excavation and offsite disposal of battery chips, slag, and contaminated soils; and,
6) Backfilling the site with clean soil.

A deed notice is to be filed on the property providing notice of the location of the soil cover, require maintenance of the soil cover, and provide for EPA review and concurrence on future site development.

2. Adequacy of O&M

There are no O&M requirements for OU4.

3. Early Indicators of Potential Remedy Failure

There are no indications of potential remedy failure based on current site conditions.
4. Opportunities for Optimization
No optimization opportunities are identified for this site.

RSR Corp – Inspection Team Roster

Date of Site Inspection – July 6, 2005

Name	Organization	Title
Carlos Sanchez	USEPA	Remedial Project Manager
Margaret O'Hare	CH2M HILL	Project Manager
Darren Davis	CH2M HILL	Associate Consultant
Ben Shields	TCEQ	Assistant Project Manager

RSR Corporation Superfund Site – OU5 – Subarea 1
Dallas, Dallas County, Texas
Five-Year Review Site Inspection Checklist

Please note that "O&M" is referred to throughout this checklist. At sites where Long-Term Response Actions are in progress, O&M activities may be referred to as "system operations" since these sites are not considered to be in the O&M phase while being remediated under the Superfund program. N/A means "not applicable".

I. SITE INFORMATION	
Site Name: RSR Corp. Superfund Site	**EPA ID:** TXD079348397
City/State: Dallas, Texas	**Date of Inspection:** July 6, 2005
Agency Completing 5 Year Review: EPA	**Weather/temperature:** Sunny, 95 degrees

Remedy Includes: (Check all that apply)
- ☒ Landfill cover/containment
- ☐ Access controls
- ☒ Institutional controls
- ☐ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Other:

Attachments: ☒ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

1. O&M site manager:
   Name: Homer Kirby – Murmur Corporation
   Title:
   Date: 8-12-05
   Interviewed: ☐ at site ☐ at office ☒ by phone Phone Number: 214-630-5400
   Problems, suggestions: ☒ Additional report attached (if additional space required).

2. O&M staff:
   Name:
   Title:
   Date:
   Interviewed: ☐ at site ☐ at office ☐ by phone Phone Number:
   Problems, suggestions: ☐ Additional report attached (if additional space required).

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:
Name: Ben Shields
Title: Assistant Project Manager
Date: 8-15-2005
Phone Number: 512-239-5054
Problems, suggestions: ☒ Additional report attached (if additional space required).

Agency:
Contact:
Name:
Title:
Date:
Phone Number:
Problems, suggestions: ☐ Additional report attached (if additional space required).

Agency:
Contact:
Name:
Title:
Date:
Phone Number:
Problems, suggestions: ☐ Additional report attached (if additional space required).

Agency:
Contact:
Name:
Title:
Date:
Phone Number:
Problems, suggestions: ☐ Additional report attached (if additional space required).

4. Other interviews (optional) ☐ N/A ☒ Additional report attached (if additional space required).

Ann Grimes – City of Dallas Redevelopment
Mattie Mash – Former Member, Dallas City Council
John Capello – West Dallas Chamber of Commerce

III. ONSITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. O&M Documents

☒ O&M Manuals	☒ 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. Health and Safety Plan Documents

☐ 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: Health and Safety Plan Documents not examined. Contingency and emergency response plan included as part of O&M plan.

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
Remarks:

6. Settlement Monument Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

7. Groundwater Monitoring Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

8. Leachate Extraction Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

9. Discharge Compliance Records ☐ 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 ☐ Applicable ☒ N/A

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

From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached

3. Unanticipated or Unusually High O&M Costs During Review Period ☐ N/A
Describe costs and reasons:
O&M costs not reviewed as part of this Five-Year Review. Murmur Corporation is currently negotiating with EPA to fund O&M and let EPA perform the O&M.

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

1. Fencing

1. Fencing damaged ☐ Location shown on site map ☒ Gates secured ☐ N/A
   Remarks:
   Fencing is not required as part of the remedy. Site is currently surrounded by a fence. There was a breach in the fence near the vehicle maintenance facility.

2. Other Access Restrictions

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

3. 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):
   Frequency:
   Responsible party/agency:
   Contact:
   Name:
   Title:
   Date:
   Phone Number:
   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: ☐ Additional report attached (if additional space required).

2. Adequacy ☒ ICs are adequate ☐ ICs are inadequate ☐ N/A
   Remarks: ICs in the form of deed notices are to be filed on the property. The notices have not yet been filed. No other ICs are required.

4. General

1. Vandalism/trespassing ☐ Location shown on site map ☒ No vandalism evident
   Remarks:
Mr. Kirby indicated that the site is frequented by homeless people.

2.	Land use changes onsite Remarks:	☒ N/A
3.	Land use changes offsite Remarks:	☒ N/A

VI. GENERAL SITE CONDITIONS

1.	Roads	☐ Applicable	☒ N/A
1.	Roads damaged Remarks:	☐ Location shown on site map	☐ Roads adequate ☐ N/A
2.	Other Site Conditions		
	Remarks:		

VII. LANDFILL COVERS ☒ Applicable ☐ N/A

1.	Landfill Surface		
1.	Settlement (Low spots) Areal extent: Remarks:	☐ Location shown on site map Depth:	☒ Settlement not evident
2.	Cracks Lengths: Widths: Depths: Remarks:	☐ Location shown on site map	☒ Cracking not evident
3.	Erosion Areal extent: limited Depth: <1 inch Remarks: Minor erosion gullies observed on the slag burial area. Minor erosion present along the toe on the north side of the former surface impoundment.	☐ Location shown on site map	☐ Erosion not evident
4.	Holes Areal extent: one hole noted Depth: unknown Remarks: One animal burrow was observed just below the toe on the south side of the former surface impoundment.	☐ Location shown on site map	☐ Holes not evident

5. Vegetative Cover
☒ Cover properly established ☒ No signs of stress ☒ Grass ☐ Trees/Shrubs
Remarks: Vegetation is well established. Site could use mowing. A few small bare spots were present on the slag burial area. One bare spot observed on the former surface impoundment.

6. Alternative Cover (armored rock, concrete, etc.) ☐ N/A
Remarks: Rock placed in drainage creek along south side of slag burial area. It is in good condition.

7. Bulges ☐ Location shown on site map ☒ Bulges not evident
Areal extent: Height:
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:

2. 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:

3. Letdown Channels ☐ Applicable ☒ N/A

1.	Settlement Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ No evidence of settlement
2.	Material Degradation Material type: Remarks:	☐ Location shown on site map Areal extent:	☐ No evidence of degradation
3.	Erosion Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ No evidence of erosion
4.	Undercutting Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ No evidence of undercutting
5.	Obstructions Type: Areal extent: Remarks:	☐ Location shown on site map Height:	☐ N/A
6.	Excessive Vegetative Growth ☐ Evidence of excessive growth ☐ Location shown on site map Remarks:	☐ No evidence of excessive growth ☐ Vegetation in channels but does not obstruct flow Areal extent:	
4.	Cover Penetrations	☐ Applicable ☒ N/A	
1.	Gas Vents ☐ Active ☐ Passive ☐ Properly secured/locked ?Evidence of leakage at penetration Remarks:	☐ Routinely sampled ☐ Functioning ☐ Needs O& M	☐ N/A ☐ Good condition
2.	Gas Monitoring Probes ☐ Routinely sampled ☐ Properly secured/locked ☐ Evidence of leakage at penetration	☐ Functioning ☐ Needs O&M	☐ N/A ☐ Good condition

Remarks:

3. Monitoring Wells (within surface area of landfill) ☐ N/A
☐ Routinely sampled
☐ Properly secured/locked ☐ Functioning ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs O&M
Remarks:

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

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

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

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

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

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

6. Cover Drainage Layer ☐ Applicable ☒ N/A

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

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

7.	Detention/Sedimentation Ponds	☐ Applicable ☒ N/A	
1.	Siltation Areal extent: Remarks:	☐ Siltation evident Depth:	☐ N/A
2.	Erosion Areal extent: Remarks:	☐ Erosion evident Depth:	☐ N/A
3.	Outlet Works Remarks:	☐ Functioning	☐ N/A
4.	Dam Remarks:	☐ Functioning	☐ N/A
8.	Retaining Walls	☐ Applicable ☒ N/A	
1.	Deformations Horizontal displacement: Remarks:	☐ Location shown on site map Vertical displacement:	☐ Deformation not evident Rotational displacement:
2.	Degradation Remarks:	☐ Location shown on site map	☐ Degradation not evident
1.	Perimeter Ditches/Off-site discharge	☐ Applicable ☒ N/A	
1.	Siltation Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ Siltation not evident
2.	Vegetative Growth Areal extent: Remarks:	☐ Location shown on site map Type:	☐ Vegetation does not impede flow
3.	Erosion	☐ Location shown on site map	☐ Erosion not evident

Areal extent: Depth:
Remarks:

4. Discharge Structure ☐ Location shown on site map ☐ N/A
☐ Functioning ☐ Good Condition
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 ☐ N/A
☐ Performance not monitored
☐ Performance monitored Frequency:
☐ Evidence of breaching Head differential:
Remarks:

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

1. Groundwater Extraction Wells, Pumps, and Pipelines ☐ Applicable ☐ N/A

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

2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances ☐ N/A
☐ System located ☐ Good condition ☐ Needs O& M
Remarks:.

3. Spare Parts and Equipment ☐ N/A
☐ Readily available ☐ Good condition
☐ Requires Upgrade ☐ Needs to be provided
Remarks:

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

1. Collection Structures, Pumps, and Electrical ☐ N/A

☐ Good condition ☐ Needs O& M
Remarks:

2. Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances ☐ N/A
☐ Good condition ☐ Needs O& M
Remarks: Not observed.

3. Spare Parts and Equipment ☐ N/A
☐ Readily available ☐ Good condition
☐ Requires Upgrade ☐ Needs to be provided
Remarks:

3. Treatment System ☐ Applicable ☐ N/A

1. Treatment Train (Check components that apply)
☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
☐ Air stripping ☐ Carbon adsorbers ☐ Filters (list type): Sand
☐ Additive (list type, e.g., chelation agent, flocculent)
☐ Others (list):
☐ Good condition ☐ Needs O&M
☐ Sampling ports properly marked and functional
☐ Sampling/maintenance log displayed and up to date
☐ Equipment properly identified
☐ Quantity of groundwater treated annually (list volume): Approximately 6,000,000 gallons
☐ Quantity of surface water treated annually (list volume): 0
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) ☐ N/A
☐ All required wells located ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled
☐ Good condition ☐ Needs O&M
Remarks:

4. Monitored Natural Attenuation ☐ Applicable ☐ N/A

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

5. Long Term Monitoring ☒ Applicable ☐ N/A

2. Monitoring Wells ☐ N/A
☒ All required wells located ☒ Properly secured/locked ☒ Functioning ☒ Routinely sampled
☒ Good condition ☐ Needs O&M
Remarks:

X. OTHER REMEDIES ☐ Applicable ☒ N/A

XI. OVERALL OBSERVATIONS

1. Implementation of the Remedy

The Remedial Action Objectives are to:

1) Minimize exposure to lead, arsenic, and antimony present at the site through direct contact, inhalation, and ingestion; and,
2) Reduce the potential for these contaminants to migrate.

These objectives were met by the following:

1) Decontamination of the vehicle maintenance facility;
2) Decontamination and demolition of the battery wrecking facility ;
3) Plugging and abandonment of site drains and sumps;
4) Offsite disposal of building debris;
5) Consolidation of contaminated soils, slag, and battery chips in the buried slag area and placing materials under a clay cap;
6) Upgrading the existing cap on the former surface impoundment; and,
7) Backfilling the site with clean soil.

A deed notice is to be filed on the property providing notice of the location of the soil cover, require maintenance of the soil cover, and provide for EPA review and concurrence on future site development.
2. Adequacy of O&M
O&M for the site includes inspection and maintenance of the caps over the surface impoundment, buried slag area, and maintenance and inspection of the backfilled and covered portions of the site. Ground water sampling is performed at the former surface impoundment. Proper maintenance and inspection procedures are in place to ensure the integrity of the remedy.
3. Early Indicators of Potential Remedy Failure
There are no indications of potential remedy failure based on current site conditions.
4. Opportunities for Optimization
No optimization opportunities are identified for this site.

RSR Corp – Inspection Team Roster

Date of Site Inspection – July 6, 2005

Name	Organization	Title
Carlos Sanchez	USEPA	Remedial Project Manager
Margaret O'Hare	CH2M HILL	Project Manager
Darren Davis	CH2M HILL	Associate Consultant
Ben Shields	TCEQ	Assistant Project Manager

RSR Corporation Superfund Site – OU5 – Subarea 2
Dallas, Dallas County, Texas
Five-Year Review Site Inspection Checklist

Please note that "O&M" is referred to throughout this checklist. At sites where Long-Term Response Actions are in progress, O&M activities may be referred to as "system operations" since these sites are not considered to be in the O&M phase while being remediated under the Superfund program. N/A means "not applicable".

I. SITE INFORMATION	
Site Name: RSR Corp. Superfund Site	**EPA ID:** TXD079348397
City/State: Dallas, Texas	**Date of Inspection:** July 6, 2005
Agency Completing 5 Year Review: EPA	**Weather/temperature:** Sunny, 95 degrees

Remedy Includes: (Check all that apply)

- ☒ Landfill cover/containment
- ☐ Access controls
- ☒ Institutional controls
- ☐ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Other:

Attachments: ☒ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

1. O&M site manager:
   Name: Homer Hine – RSR Corporation
   Title:
   Date: 8-15-05
   Interviewed: ☐ at site ☐ at office ☒ by phone Phone Number: 214-631-6070
   Problems, suggestions: ☒ Additional report attached (if additional space required).

2. O&M staff:
   Name: Jenny Elste - ENTACT
   Title: Project Manager
   Date: 8-15-05
   Interviewed: ☐ at site ☐ at office ☒ by phone Phone Number: 972-5800-1323
   Problems, suggestions: ☒ Additional report attached (if additional space required).

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:
Name: Ben Shields
Title: Assistant Project Manager
Date: 8-15-2005
Phone Number: 512-239-5054
Problems, suggestions: ☒ Additional report attached (if additional space required).

Agency:
Contact:
Name:
Title:
Date:
Phone Number:
Problems, suggestions: ☐ Additional report attached (if additional space required).

Agency:
Contact:
Name:
Title:
Date:
Phone Number:
Problems, suggestions: ☐ Additional report attached (if additional space required).

Agency:
Contact:
Name:
Title:
Date:
Phone Number:
Problems, suggestions: ☐ Additional report attached (if additional space required).

4. Other interviews (optional) ☐ N/A ☒ Additional report attached (if additional space required).

Ann Grimes – City of Dallas Redevelopment
Mattie Mash – Former Member, Dallas City Council
John Capello – West Dallas Chamber of Commerce

III. ONSITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. O&M Documents

☒ O&M Manuals	☒ 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. Health and Safety Plan Documents

☐ 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: Health and Safety Plan Documents not examined. Contingency and emergency response plan included as part of O&M plan.

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
Remarks:

6. Settlement Monument Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

7. Groundwater Monitoring Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

8. Leachate Extraction Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

9. Discharge Compliance Records ☐ 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 ☐ Applicable ☒ N/A

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

From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached
From (Date):	To (Date):	Total cost:	☐ Breakdown attached

3. Unanticipated or Unusually High O&M Costs During Review Period ☐ N/A
Describe costs and reasons:
O&M costs not reviewed as part of this Five-Year Review.

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

1. Fencing

1. Fencing damaged ☐ Location shown on site map ☒ Gates secured ☐ N/A
Remarks:
Fencing is not required as part of the remedy. Site is currently surrounded by a fence.

2. Other Access Restrictions

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

3. 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):
Frequency:
Responsible party/agency:
Contact:
Name:
Title:
Date:
Phone Number:
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: ☐ Additional report attached (if additional space required).

2. Adequacy ☒ ICs are adequate ☐ ICs are inadequate ☐ N/A
Remarks: ICs in the form of deed notices are to be filed on the property. The notices have not yet been filed. No other ICs are required.

4. General

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

2. Land use changes onsite ☒ N/A
Remarks:

3. Land use changes offsite ☒ N/A
Remarks:

VI. GENERAL SITE CONDITIONS

1. Roads ☐ Applicable ☒ N/A

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

2. Other Site Conditions

Remarks:

VII. LANDFILL COVERS ☒ Applicable ☐ N/A

1. 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: 1 – 20 ft. Widths: 1 mm – 1 inch Depths: not measured
Remarks: Numerous desiccation cracks present on capped areas.

3. Erosion ☐ Location shown on site map ☐ Erosion not evident
Areal extent: limited Depth: <1 inch to over 4 ft.
Remarks: A few major erosion channels are present west of the landfill cover near the fence. The channels do not currently impact the landfill cover.

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

5. Vegetative Cover
☐ Cover properly established ☐ No signs of stress ☒ Grass ☐ Trees/Shrubs
Remarks: Vegetation is sparse.

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

7. Bulges ☐ Location shown on site map ☒ Bulges not evident
Areal extent: Height:
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:

2. 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:

3. Letdown Channels ☐ Applicable ☒ N/A

1.	Settlement Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ No evidence of settlement
2.	Material Degradation Material type: Remarks:	☐ Location shown on site map Areal extent:	☐ No evidence of degradation
3.	Erosion Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ No evidence of erosion
4.	Undercutting Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ No evidence of undercutting
5.	Obstructions Type: Areal extent: Remarks:	☐ Location shown on site map Height:	☐ N/A
6.	Excessive Vegetative Growth ☐ Evidence of excessive growth ☐ Location shown on site map Remarks:	☐ No evidence of excessive growth ☐ Vegetation in channels but does not obstruct flow Areal extent:	
4.	Cover Penetrations	☐ Applicable ☒ N/A	
1.	Gas Vents ☐ Active ☐ Passive ☐ Properly secured/locked ?Evidence of leakage at penetration Remarks:	☐ Routinely sampled ☐ Functioning ☐ Needs O& M	☐ N/A ☐ Good condition
2.	Gas Monitoring Probes ☐ Routinely sampled ☐ Properly secured/locked ☐ Evidence of leakage at penetration Remarks:	☐ Functioning ☐ Needs O&M	☐ N/A ☐ Good condition

3.	Monitoring Wells (within surface area of landfill) ☐ Routinely sampled ☐ Properly secured/locked ☐ Evidence of leakage at penetration Remarks:		☐ Functioning ☐ Needs O&M	☐ N/A ☐ Good condition
4.	Leachate Extraction Wells ☐ Routinely sampled ☐ Properly secured/locked ☐ Evidence of leakage at penetration Remarks:		☐ Functioning ☐ Needs O&M	☐ N/A ☐ Good condition
5.	Settlement Monuments Remarks:	☐ Located	☐ Routinely surveyed	☐ N/A
5.	Gas Collection and Treatment	☐ Applicable	☒ N/A	
1.	Gas Treatment Facilities ☐ Flaring ☐ Good condition Remarks:	☐ Thermal destruction ☐ Needs O& M	☐ Collection for reuse	☐ N/A
2.	Gas Collection Wells, Manifolds and Piping ☐ Good condition Remarks:	☐ Needs O& M		☐ N/A
3.	Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings) ☐ Good condition Remarks:	☐ Needs O& M		☐ N/A
6.	Cover Drainage Layer	☐ Applicable	☒ N/A	
1.	Outlet Pipes Inspected Remarks:	☐ Functioning		☐ N/A
2.	Outlet Rock Inspected Remarks:	☐ Functioning		☐ N/A
7.	Detention/Sedimentation Ponds	☐ Applicable	☒ N/A	
1.	Siltation	☐ Siltation evident		☐ N/A

	Areal extent: Remarks:	Depth:	
2.	Erosion Areal extent: Remarks:	☐ Erosion evident Depth:	☐ N/A
3.	Outlet Works Remarks:	☐ Functioning	☐ N/A
4.	Dam Remarks:	☐ Functioning	☐ N/A
8.	Retaining Walls	☐ Applicable ☒ N/A	
1.	Deformations Horizontal displacement: Remarks:	☐ Location shown on site map Vertical displacement:	☐ Deformation not evident Rotational displacement:
2.	Degradation Remarks:	☐ Location shown on site map	☐ Degradation not evident
1.	Perimeter Ditches/Off-site discharge	☐ Applicable ☒ N/A	
1.	Siltation Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ Siltation not evident
2.	Vegetative Growth Areal extent: Remarks:	☐ Location shown on site map Type:	☐ Vegetation does not impede flow
3.	Erosion Areal extent: Remarks:	☐ Location shown on site map Depth:	☐ Erosion not evident

4. Discharge Structure ☐ Location shown on site map ☐ N/A
☐ Functioning ☐ Good Condition
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 ☐ N/A
☐ Performance not monitored
☐ Performance monitored Frequency:
☐ Evidence of breaching Head differential:
Remarks:

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

1. Groundwater Extraction Wells, Pumps, and Pipelines ☐ Applicable ☐ N/A

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

2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances ☐ N/A
☐ System located ☐ Good condition ☐ Needs O& M
Remarks:.

3. Spare Parts and Equipment ☐ N/A
☐ Readily available ☐ Good condition
☐ Requires Upgrade ☐ Needs to be provided
Remarks:

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

1. Collection Structures, Pumps, and Electrical ☐ N/A
☐ Good condition ☐ Needs O& M
Remarks:

2. Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances ☐ N/A
☐ Good condition ☐ Needs O& M
Remarks: Not observed.

3. Spare Parts and Equipment ☐ N/A
☐ Readily available ☐ Good condition
☐ Requires Upgrade ☐ Needs to be provided
Remarks:

3. Treatment System ☐ Applicable ☐ N/A

1. Treatment Train (Check components that apply)
☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
☐ Air stripping ☐ Carbon adsorbers ☐ Filters (list type): Sand
☐ Additive (list type, e.g., chelation agent, flocculent)
☐ Others (list):
☐ Good condition ☐ Needs O&M
☐ Sampling ports properly marked and functional
☐ Sampling/maintenance log displayed and up to date
☐ Equipment properly identified
☐ Quantity of groundwater treated annually (list volume): Approximately 6,000,000 gallons
☐ Quantity of surface water treated annually (list volume): 0
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) ☐ N/A
☐ All required wells located ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled
☐ Good condition ☐ Needs O&M

Remarks:

4. Monitored Natural Attenuation ☐ Applicable ☐ N/A

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

Remarks:

5. Long Term Monitoring ☐ Applicable ☒ N/A

2. Monitoring Wells ☐ N/A
☐ All required wells located ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled
☐ Good condition ☐ Needs O&M
Remarks:

X. OTHER REMEDIES ☐ Applicable ☒ N/A

XI. OVERALL OBSERVATIONS

1. Implementation of the Remedy

The Remedial Action Objectives are to:

1) Minimize exposure to lead, arsenic, and antimony present at the site through direct contact, inhalation, and ingestion; and,
2) Reduce the potential for these contaminants to migrate.

These objectives were met by the following:

1) Excavation and/or containment of slag, battery chips, and contaminated soils exceeding site action levels under an onsite soil cover at the former landfill.

A deed notice is to be filed on the property providing notice of the location of the soil cover, require maintenance of the soil cover, and provide for EPA review and concurrence on future site development.

2. Adequacy of O&M

O&M of the site includes inspection of the soil cover and vegetation, and maintenance of both.

Proper maintenance and inspection procedures are in place to ensure the integrity of the soil cover.

3. Early Indicators of Potential Remedy Failure

There is erosion near the west fence near the landfill cover. The erosion channels are not impacting the cover yet. If not addressed, the erosion will grow and potentially expose contaminants. The vegetation at this site is sparse and should be re-established. This is necessary to prevent erosion of the soil covers.
4. Opportunities for Optimization
No optimization opportunities are identified for this site.

RSR Corp – Inspection Team Roster

Date of Site Inspection – July 6, 2005

Name	Organization	Title
Carlos Sanchez	USEPA	Remedial Project Manager
Margaret O'Hare	CH2M HILL	Project Manager
Darren Davis	CH2M HILL	Associate Consultant
Ben Shields	TCEQ	Assistant Project Manager
Homer Hine	RSR Corporation	
Jenny Elste	ENTACT	Project Manager

Attachment 4

Site Inspection Photographs

[filename: RSR_DSCN0781.jpg]

Photo 1: OU5, Subarea 2 – view of the former landfill cover, facing southwest.

[filename: RSR_DSCN0782.jpg]

Photo 2: OU5, Subarea 2 – view of the former landfill cover, facing south.

[filename: RSR_DSCN0783.jpg]

Photo 3: OU5, Subarea 2 – view of the former landfill cover.

[filename: RSR_DSCN0784.jpg]

Photo 4: OU5 – Subarea 2 – view of desiccation crack in cover.

[filename: RSR_DSCN0785.jpg]

Photo 5: OU5 – Subarea 2 – view across cover of former landfill, facing southwest.

[filename: RSR_DSCN0786.jpg]

Photo 6: OU5 – Subarea 2, view of cover on former landfill, facing northwest.

[filename: RSR_DSCN0787.jpg]

Photo 7: OU5, Subarea 2 – view of sparse vegetation and minor desiccation cracking in cover over former landfill.

[filename: RSR_DSCN0788.jpg]

Photo 8: OU5 Subarea 2 – view of erosion channel near former landfill cover.

[filename: RSR_DSCN0789.jpg]

Photo 9: OU5, Subarea 2 – View of large erosion channel west of cover over former landfill.

[filename: RSR_DSCN0790.jpg]

Photo 10: OU5, Subarea 2 – view of large erosion channel near fence just west of cover over former landfill.

[filename: RSR_DSCN0791.jpg]

Photo 11: OU3, Site 1 – view of site facing north.

[filename: RSR_DSCN0792.jpg]

Photo 12: OU3, Site 1 – View of electrical substation built on property to the south of site, facing west.

[filename: RSR_DSCN0793.jpg]

Photo 13: OU3, Site 1 – View of slope in middle of site. Erosion channels are visible in middle of slope. Rock material was placed on top of slope. View is facing north.

[filename: RSR_DSCN0796.jpg]

Photo 14: OU3, Site 1 – View of slope in middle of site. Erosion channels are visible in middle of slope. Rock material was placed on top of slope. View is facing south.

[filename: RSR_DSCN0797.jpg]

Photo 15: OU3, Site 1 – View of creek at base of slope. Garbage and debris in area is evidence that people have been using the site.

[filename: RSR_DSCN0798.jpg]

Photo 16: OU3, Site 1 – View up the slope of the erosion channels in the slope. View is facing to the east.

[filename: RSR_DSCN0799.jpg]

Photo 17: OU3, Site 3 – View of one of the discharge pipes placed by adjacent property owner on the cover at the southern portion of the Site. Also, desiccation cracks are present on the cap.

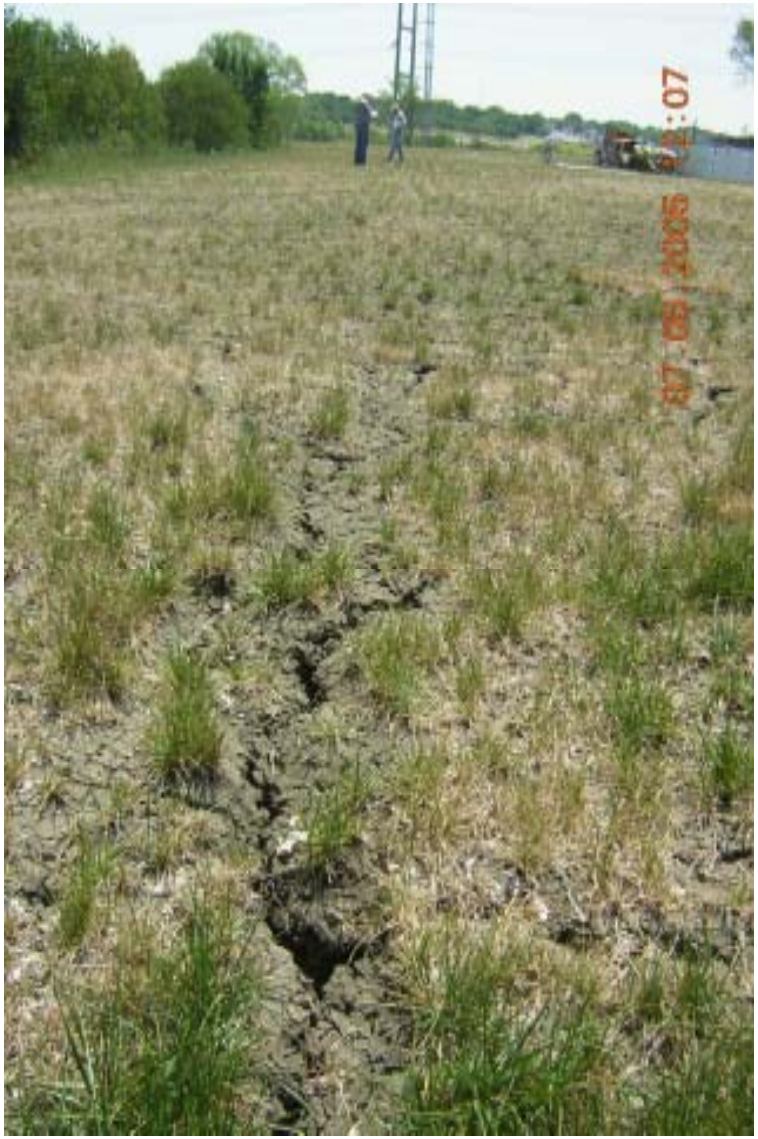

Photo 18: OU3, Site 3 – View of the clay cover at the southern area of the site, facing east. Large desiccation cracks and sparse vegetation were present on the cover.

[filename: RSR_DSCN0800.jpg]

Photo 19: OU3, Site 3 – View of monitor well. Settlement can be observed at the base of the well's concrete pad.

[filename: RSR_DSCN0801.jpg]

[filename: RSR_DSCN0803.jpg]

Photo 20: OU3, Site 3 – View of a monitor well installed at the north end of the site.

[filename: RSR_DSCN0804.jpg]

Photo 21: OU3, Site 3 – View of the soil cover in the northern portion of the site. The vegetation is sparse and large desiccation cracks are observed in this photo. View is facing west.

[filename: RSR_DSCN0805.jpg]

Photo 22: OU3, Site 3 – View of monitor well near soil cover in northern area of site. Monitor well lacks a well pad.

[filename: RSR_DSCN0806.jpg]

Photo 23: OU3, Site 4 – View across site facing southwest.

[filename: RSR_DSCN0807.jpg]

Photo 24: OU3, Site 4 – View of monitor well at site.

[filename: RSR_DSCN0808.jpg]

Photo 25: OU3, Site 4 – view of soil cover at site, facing west. There are numerous desiccation cracks in the surface of the soil cover and the vegetation is sparse.

[filename: RSR_DSCN0809.jpg]

Photo 26: OU3, Site 4 – View of monitor well at site. The well is almost covered by vegetation.

[filename: RSR_DSCN0810.jpg]

Photo 27: OU5, Subarea 1 – View of site facing northwest from the top of the buried slag area. The former surface impoundment is visible in the background.

[filename: RSR_DSCN0811.jpg]

Photo 28: OU5, Subarea 1 – View of the cover over the buried slag area, facing west. The drainage channel is present on the left.

[filename: RSR_DSCN0812.jpg]

Photo 29: OU5, Subarea 1 – View of a monitor well at the site, located near the former UST area.

[filename: RSR_DSCN0813.jpg]

Photo 30: OU5, Subarea 1 – View of the former surface impoundment, facing north.

Photo 31: OU5, Subarea 1 – View of the west side of the former surface impoundment.

[filename: RSR_DSCN0814.jpg]

[filename: RSR_DSCN0815.jpg]

Photo 32: OU5, Subarea 1 – View of bare spot on cover at the former surface impoundment.

[filename: RSR_DSCN0816.jpg]

Photo 33: OU5, Subarea 1 – View of the north side of the former surface impoundment, facing east.

[filename: RSR_DSCN0817.jpg]

Photo 34: OU4 – View of site, facing east.

[filename: RSR_DSCN0818.jpg]

Photo 35: OU4 – View of site. Construction company has stored equipment and materials on the site.

[filename: RSR_DSCN0819.jpg]

Photo 36: OU4 – View of road surface and stockpiled dirt placed on site by construction company that is leasing the property.

Attachment 5

Notices to the Public Regarding the Five-Year Review

RSR CORPORATION SUPERFUND SITE

U.S. EPA Region 6 Begins Five-Year Review of Site Remedy

August 2005

The U.S. Environmental Protection Agency (EPA) is conducting the five-year review for the RSR Corporation Superfund site located in Dallas, Texas. The review will evaluate if the remedy for operable units (OUs) 3, 4, and 5 continue to protect public health and the environment.

The EPA began the remedy for the RSR OU No. 4 site approximately five (5) years ago with the start of the remedial action for the former smelter facility, OU No. 4. In September 2004, a construction completion was achieve for the all five (4) operable units that comprise the RSR site. The site is currently under operation and maintenance (O&M) activities.

The RSR Corporation site is located in west Dallas, Dallas County, Texas, and encompasses an area of approximately 13.6 square miles in size. 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. This smelter property, known as OU No. 4, together with the former battery wrecking facility, referred to as OU No. 5, located on the southwest corner of the Westmoreland Road and Singleton Boulevard intersection comprised the smelting operations which ceased in 1984. The other non-residential operable unit included in the five-year review is OU No. 3, the former landfills and slag piles located at three different sites within west Dallas.

The five-year review for the RSR site started with the site inspection on July 6, 2005, and is scheduled for completion in September 2005. Results of the five-year review will be made available to the public at the following information repository:

Dallas Public Library - West Branch
2332 Singleton Blvd.
Dallas, Texas 75212
(214) 670-6445

For more information, contact Beverly Negri, U.S. EPA Region 6 Community Involvement, at 1-800-533-3508 (toll-free).

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