FIVE-YEAR REVIEW

Rogers Road Municipal Landfill Superfund Site
EPA ID #ARD981055809
Pulaski County, Arkansas

This memorandum documents EPA's approval of the Rogers Road Municipal Landfill Superfund Site Five-Year Review Report prepared by CH2MHill on behalf of EPA.

Summary of Five-Year Review Findings

This is the first five-year review of the Rogers Road Municipal Landfill Site (the "Site") located near Jacksonville, in Pulaski County, Arkansas. The results of the five-year review indicate that the remedy is protective of human health and the environment. Based on this five-year review, Site documentation confirms the remedial action at the Site as originally set forth in the Record of Decision (ROD) has been implemented as planned (except as noted in the following section) and is protective of human health and the environment.

Actions Needed

Overall, the remedial action performed is functioning as designed, and the Site has been maintained appropriately. No deficiencies were noted that impact the protectiveness of the remedy, and the remedy should remain protective if Site Operations and Maintenance is continued. Ground water monitoring must also continue until the City of Jacksonville puts restrictive covenants in place, and the Site is deleted from the National Priorities List. The restrictive covenants described in the ROD have been developed, but have not been put in place by the city because of legal controversy over title to the property. In addition to the placement of restrictive covenants, the Arkansas Department of Environmental Quality has requested that the appropriate solid waste regulating authority be notified of the low detects of non-Site-related metals in the monitoring wells that may be caused by leaching from the municipal landfill.

Determinations

I have determined that the remedy for the Rogers Road Municipal Landfill Superfund Site is protective of human health and the environment.

Myron O. Knudson

9-27-00

Myron O. Knudson, P.E.
Director, Superfund Division
U.S. Environmental Protection Agency
Region 6

Date

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CONCURRENCES

FIRST FIVE-YEAR REVIEW REPORT
for
Rogers Road Municipal Landfill Superfund Site
Pulaski County, Arkansas
EPA ID#ARD981055809

Kathleen A. Aisling, U.S. EPA
Remedial Project Manager, Technical Support Team

9/21/00
Date

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Date

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Chief, AR/OK/TX Project Management Section

9/25/00
Date

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Writer Editor, Superfund Division

9/27/00
Date

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Five-Year Review Report

First Five-Year Review Report
for
Rogers Road Municipal Landfill
Pulaski County, Arkansas

September 27, 2000

PREPARED BY:

CH2M HILL
Contract Number 68-W6-0036
Work Assignment Number 048-FRFE-06ZZ

PREPARED FOR:

Region 6
United States Environmental Protection Agency
Dallas, Texas

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Executive Summary

The first five-year review of the Rogers Road Municipal Landfill site located near Jacksonville, in Pulaski County, Arkansas, was completed in September 2000. The results of the five-year review indicate that the remedy is expected to be protective of human health and the environment. Overall, the remedial actions performed appear to be functioning as designed, and the site has been maintained appropriately. No deficiencies were noted that impact the protectiveness of the remedy.

The remedy was chosen to remove the principal health threats that presented excess lifetime cancer risk, prevent further actual or threatened releases of hazardous substances from the site, and establish a method of long term monitoring to ensure protectiveness. Materials containing above10 parts per billion (ppb) dioxin concentrations were removed and incinerated at the nearby Vertac Superfund Site, and the affected areas were backfilled and re-graded. Soil cover was placed on materials that were between 1 and 10 ppb dioxin level, greater than 37 ppb dieldrin, and dieldrin and herbicide contamination associated with a hazard index above 0.7.

Operations and maintenance (O&M) at the site consists of site inspections to confirm fence integrity, and maintenance of the soil cover. Site inspections show that the fencing is effectively preventing access to the site and site groundwater. Annual groundwater monitoring was also performed. Because no contaminants of concern defined by the Record of Decision were detected in the four years of annual groundwater monitoring, the Arkansas Department of Environmental Quality has recommended discontinuing groundwater monitoring. EPA concurs that this recommendation will be appropriate to implement once restrictive covenants are in place prohibiting groundwater use on the property, and the site is deleted from the National Priorities List (NPL). (The City of Jacksonville is in the process of putting the restrictive covenants in place, pending resolution of legal issues associated with title to the remediated area.) Some metals were detected in low concentrations in groundwater during monitoring, but they are not contaminants of concern associated with the hazardous materials disposed of onsite. These metals may be associated with the solid waste portions of the landfill, and should be referred to the appropriate solid waste regulatory authority.

Based on this five-year review, site documentation confirms the remedial action at the site as originally set forth in the Record of Decision (ROD) has been implemented as planned (except for the implementation of restrictive covenants) and continues to be protective of human health and the environment.

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Attachments

List of Acronyms

ADEQ	Arkansas Department of Environmental Quality
ADPC&E	Arkansas Department of Pollution Control and Ecology
ARARs	Applicable or Relevant and Appropriate Requirements
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CD	Consent Decree
CDC	Center for Disease Control
CFR	Code of Federal Regulations
E&E	Ecology and Environment
ERCS	Emergency Response Clean-up Service
EPA	United States Environmental Protection Agency
FR	Federal Register
HI	Hazard Index
LDR	Land Disposal Restrictions
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
MCLs	Maximum Contaminant Limits
O&M	Operation and Maintenance
OSWER	Office of Solid Waste and Emergency Response
OUs	Operable Units
ppb	part per billion
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
TAT	Technical Assistance Team
TBC	To Be Considered
TCDD	Tetrachlorodibenzo-p-dioxin

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Five-Year Review Summary Form

SITE IDENTIFICATION

Site name (from WasteLAN): Rogers Road Municipal Landfill

EPA ID (from WasteLAN): ARD981055809

Region: EPA Region 6 | **State:** AR | **City/County:** NA/Pulaski

SITE STATUS

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

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

Multiple OUs? ☐ Yes ☒ No | **Construction completion date:** September 1995

Has site been put into reuse? ☐ Yes ☒ No

REVIEW STATUS

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

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

Review period: August 1994 through September 2000

Date(s) of site inspection: June 27, 2000

Type of review:
☒ Statutory
☐ Policy
- ☐ Post-SARA ☐ Pre-SARA ☐ NPL-Removal only
- ☐ Non-NPL Remedial Action Site ☐ NPL State/Tribe-lead
- ☐ Regional Discretion

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

Triggering action:
☒ Actual RA Onsite Construction ☐ Actual RA Start at OU# _____
☐ Construction Completion ☐ Recommendation of Previous Five-Year Review Report
☐ Other (specify):

Triggering action date (from WasteLAN): August 4, 1994

Due date (five years after triggering action date): August 4, 1999

Five-Year Review Summary Form

Deficiencies:

No deficiencies noted.

Recommendations and Follow-up Actions:

- Maintain records of annual O&M costs and site security logs; submittal of such records/logs is not required.
- After four annual groundwater monitoring events conducted from 1994 through 1997, no Contaminants of Concern as defined by the ROD were detected and the ADEQ recommended cessation of sampling. Based on a review of ADEQ data, EPA concurs with this recommendation pending finalization of restrictive covenants prohibiting groundwater use on the property, and the deletion of the site from the NPL. Requirements for groundwater monitoring under solid waste regulations for the municipal landfill portions of the site may also apply, and the current monitoring well network could potentially be used for that purpose, as well as the data collected by ADEQ from 1994 through 1997. The appropriate agencies should be notified of the availability of the groundwater wells to be used for monitoring under that program, and of the detection of metals in groundwater samples that may be associated with the solid waste portion of Rogers Road Municipal Landfill and neighboring Jacksonville Municipal Landfill.

Protectiveness Statement(s):

The remedy completed for the Rogers Road Municipal Landfill site is protective of human health and the environment.

Other Comments:

None.

First Five-Year Review Report
Rogers Road Municipal Landfill

The United States Environmental Protection Agency Region 6 has conducted a five-year review of the remedial actions implemented at the Rogers Road Municipal Landfill site located near Jacksonville, Pulaski County, Arkansas for the period August 1994 through September 2000. The purpose of a five-year review is to determine whether the remedy at a site is protective of human health and the environment. This report documents the results of the review for this site, conducted in accordance with EPA guidance on five-year reviews. EPA RAC6 contractor CH2M HILL provided support for preparation of this Five-Year Review Report.

Existing EPA guidance on five-year reviews includes the following:

- Office of Solid Waste and Emergency Response (OSWER) Directive 9355.7-02 (May 23, 1991), *Structure and Components of Five-Year Reviews* (introduced five-year review requirements).
- OSWER Directive 9355.7-02FS1 (August 1991), Fact Sheet: *Structure and Components of Five-Year Reviews.*
- OSWER Directive 9355.7-02A (July 26, 1994), *Supplemental Five-Year Review Guidance* (introduced level of review considerations for sites where response is ongoing).
- OSWER Directive 9355.7-03A (December 21, 1995), *Second Supplemental Five-Year Review Guidance* (identified three purposes of five-year review and emphasized that reviews must include a signed protectiveness determination, along with recommendations to correct deficiencies.

Guidance provided in these documents has been incorporated into the five-year review performed for this site, as have the concepts outlined in the *Draft Comprehensive Five-Year Review Guidance,* October 1999, OSWER Directive 9355.7-03B-P.

1.0 Introduction

The five-year review for the Rogers Road Municipal Landfill site is required by statute.

Statutory reviews are required for sites where, after remedial actions are complete, hazardous substances, pollutants, or contaminants will remain onsite at levels that will not allow for unrestricted use or unrestricted exposure. This requirement is set forth by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Statutory reviews are required only if the ROD was signed on or after the effective date of the Superfund Amendments and Reauthorization Act of 1986 (SARA). CERCLA §121(c), as amended by SARA, states:

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

The NCP §300.430(f)(4)(ii) of the Code of Federal Regulations (CFR) states:

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

This is the first five-year review for the Rogers Road Municipal Landfill site. The triggering action for this statutory review is the date of initiation of the remedial action on August 4, 1994. This review is required because hazardous substances, pollutants, or contaminants were left onsite above levels that allow for unlimited use and unrestricted exposure, and the Record of Decision (ROD) called for institutional controls limiting groundwater use on and immediately downgradient of the site (EPA, 1990).

2.0 Site Chronology

A chronology of significant site events and dates are 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

The Rogers Road Municipal Landfill site is about one acre of the ten-acre landfill located outside the city limits of Jacksonville in Pulaski County, Arkansas. The site is approximately 12 miles northeast of Little Rock, Arkansas. The landfill is situated immediately east of Rogers Road, one-tenth mile south of Graham Road. The southern portion of Rogers Road which adjoins the landfill is unpaved. Land records at the Pulaski County Courthouse describe the plot of land as the east half of the northeast quarter of Section 28, Township 3 North and Range 10 West (EPA, 1990). Less than one-half mile east of the Rogers Road Municipal Landfill Superfund Site is the Jacksonville Municipal Landfill Superfund Site (see Figure 1). Because of the proximity of the sites and the similarities in their features and characteristics, the site characterization and remedial action activities for these sites were carried out concurrently.

The Rogers Road Municipal Landfill site is located within a residential and agricultural area. The area to the north, south, and east is wooded. Rogers Road adjoins the site to the immediate west (see Figure 1); the property beyond Rogers Road to the west is agricultural. There is a fairly high population density within one-half mile radius of the site (approximately 51 single-family homes); areas further out are more sparsely populated. At the time of the ROD it was assumed that approximately 153 to 204 people lived within a one-half mile radius (EPA, 1990). The ROD also stated that the landfill was located in a predominantly agricultural area, the area did not lend itself to commercial types of development, that there were no businesses or commercial areas located within one and one-half miles of the site, and that the types of receptors were not expected to change in the foreseeable future. Observations during the June 2000 site inspection (see Section 6) indicate this continues to be the case.

A residential well inventory was conducted as part of the Remedial Investigation (RI) and information was collected from residences near the landfill. The City of Jacksonville installed a municipal water system which has served the residents in the area of Rogers Road since sometime prior to 1974 (EPA, 1990). Reportedly only one residence near the Rogers Road Landfill ever used groundwater, and this household stopped using the well when municipal water was made available. The other residences were reported to have used only the City water system.

The City of Jacksonville acquired the property on September 16, 1953. Approximately half of the site was used intermittently as a municipal waste disposal facility, in conjunction with the Jacksonville Landfill (see Figure 1), until October 1974. The landfill was closed when the Arkansas Department of Pollution Control and Ecology (ADPC&E, now Arkansas Department of Environmental Quality [ADEQ]) refused to grant a landfill permit because of the high water table and poor drainage in the area.

Records indicate that open burning and trenching with bucket and dragline were the waste handling methods used until 1974, along with open dumping and landfilling. During the years that the facility was operated, the site was run as a typical sanitary landfill and not a permitted RCRA disposal facility. As a result, companies which hauled waste to the landfill were not required to provide the site operator with detailed information regarding generators, waste types, or quantities. No detailed records indicating specific waste types or quantities are known to have been kept by the site owner/operator, making identification of generators and operators difficult.

Wastes appear to have been disposed of in one long trench and in several surface piles, accompanied by open dumping in numerous areas around the site, which appear to have been covered with a layer of soil. After the landfill was closed, local residents continued to use the site as an open dump until the site was fenced. To prevent unauthorized access, the City of Jacksonville fenced the portion of the facility used for burning and land disposal (a 300 by 237 foot area) in 1986. Wastes from the Vertac Superfund Site in Jacksonville, Arkansas, which

produced numerous chemical products including dioxins, are believed to have been disposed of at the Rogers Road site. An estimated 15 to 50 drums of dioxin contaminated herbicide-manufacturing waste were disposed at the landfill.

The Rogers Road Municipal Landfill was identified to EPA on May 10, 1983, through a citizen's complaint. At that time, EPA was conducting a site inspection of the Jacksonville Landfill. After a field investigation, the Rogers Road Municipal Landfill was proposed for inclusion on the National Priorities List (NPL) of uncontrolled hazardous waste sites on January 22, 1987. The site was added to the NPL on July 22, 1987.

A Remedial Investigation (RI) was conducted between November 1988 and March 1990, and a risk assessment was performed based on the analytical findings of the RI. The results of the RI and risk assessment and prior investigations are summarized in the RI Report (Peer and Resource Applications, Inc., 1990a). The Feasibility Study (FS) was also released at this time (Peer and Resource Applications, 1990b). Onsite soil and decaying drums were found to be contaminated with dioxin (2,3,7,8-tetrachlorodibenzo-p-dioxin [TCDD] equivalents), the herbicides 2,4-D and 2,4,5-T, and the pesticide dieldrin (EPA, 1996).

The investigations undertaken at the Rogers Road landfill revealed that contaminates in the soil comprised the principal threat posed by the site. A remedy was chosen based on the following criteria:

- Remedy the contaminated soil using thermal treatment and soil cover to ensure it no longer presents a threat to human health or the environment.

- Eliminate the health risks due to ponded water onsite by filling in the existing site trenches with clean fill.

- Establish a method of long term monitoring to ensure that the soil cover is properly maintained and the groundwater quality is adequately monitored. (EPA, 1990)

The remedial actions undertaken to meet these criteria are described in the following paragraphs.

4.0 Remedial Actions

The remedial action completed at the Rogers Road Municipal Landfill Superfund Site included removal and incineration at the nearby Vertac Superfund Site of materials containing concentrations of dioxin above10 ppb, and backfilling and regrading of the affected areas. The remedy also included placement of soil cover over materials demonstrating concentrations between 1 and 10 ppb dioxin, greater than 37 ppb dieldrin, and dieldrin and herbicide contamination associated with a hazard index (HI) above 0.7. A total of 200 cubic yards and 76 drums of material were removed, treated, and disposed at Vertac.

Included in the following subsections is a description of the remedy selection process employed at the Rogers Road Municipal Landfill Superfund Site, the implementation of the remedy, the Operations and Maintenance (O&M), and the progress made at the site since initiation of remedial action and construction completion.

4.1 Remedy Selection

The ROD for this site was signed on September 27, 1990. The selected remedy included:

- Excavation of contaminated soil and debris containing greater than 10 ppb equivalent 2,3,7,8-TCDD and backfilling the excavated area.
- Transportation of the excavated material to the Vertac Superfund Site in Jacksonville, Arkansas.
- Incineration of the excavated contaminated material and disposal of residuals at Vertac.
- Steam-cleaning and disposal of large items of refuse removed from contaminated areas at the Rogers Road Site.

- Covering soil, debris and water meeting the criteria stated below with twelve inches of soil:
    - 2,3,7,8-TCDD concentrations >1.0 and ≤10 ppb
    - Cumulative HI >.7 for 2,4,5-T; 2,4,5 TP; and dieldrin, or
    - Dieldrin >37 ppb.
- Backfilling the site trench;
- Institutional controls such as fence maintenance and land-use restrictions limiting ground water use on and immediately downgradient of the site; and
- Ground water monitoring.

On June 20, 1994, a Consent Decree (CD) between EPA and the City of Jacksonville regarding the Site was entered in Federal District Court. This CD and the CD for the nearby Jacksonville Landfill Site were the first in the country between a municipality and EPA that utilized this type of mixed work settlement. Under the agreement, EPA performed the work that involved handling the hazardous substances, including excavation of the hot spots of contamination, transporting the material to Vertac, incineration, and decontamination. The City performed the non-hazardous work, including fencing, backfilling, grading, re-vegetating, inspection and maintenance, installation of additional groundwater wells, groundwater sampling and analysis, and land-use controls.

4.2 Remedy Implementation

On August 22, 1995, Ecology and Environment (E&E), the EPA Technical Assistance Team (TAT) and the Emergency Response Clean-up Service (ERCS) contractor, Riedel-Peterson, mobilized to begin remedial operations at the Site. After preliminary road work was completed, excavation of contaminated soil was initiated.

During the action, Riedel-Peterson re-containerized contaminated material that was in decaying drums and excavated soil. This material, along with investigation-derived waste such as contaminated personal protective equipment, was transported to the Vertac Superfund Site for

treatment at the incinerator. Confirmation soil samples were collected after this initial excavation to verify the degree of contaminant removal and to determine the areas of moderate contamination (2,3,7,8-TCDD concentrations >1.0 and ≤10 ppb and dieldrin >37 ppb) which would later be covered with clean soil.

A total of 200 cubic yards of contaminated soil and 76 drums of hazardous materials (including 19 drums of investigation-derived wastes) were transported to Vertac and incinerated. This is a higher volume than the 130 cubic yards estimated in the ROD. Despite this increase in volume, remedial activities went smoothly. Incineration at Vertac began on October 20, 1994, and ended on December 4, 1994. The January 20, 1995, Technical Assistance Report for the Rogers Road Municipal Landfill written by E&E (E&E, 1995), details the remedial action activities performed by EPA and its contractors.

The total cost for the action was $129,070.00 for the excavation, preliminary sampling, and transportation of the waste and $1.07 million for the confirmatory sampling and incineration at Vertac.

During the fall of 1994, the City of Jacksonville continued regrading activities and installed three additional groundwater monitoring wells between the Jacksonville Landfill and the Rogers Road Landfill as required by the ROD and CD. The City demobilized in late October when heavy rains in the area made passage through the site difficult. City activities recommenced in July 1995 when the site was sufficiently dry for vehicles to pass. The City regrading activities were completed in September 1995.

4.3 Operations and Maintenance

The City of Jacksonville, as agreed upon in the CD and accompanying Statement of Work and as detailed in the Remedial Action Work Plan (City of Jacksonville, 1994), has assumed all responsibility for O&M at the Rogers Road. Site. O&M activities include routine site

inspections to ensure that positive drainage is occurring, and maintenance of perimeter fencing. These activities maintain the protectiveness of the remedy.

The ROD specified annual groundwater monitoring for up to thirty years to ensure that the remedy was effective and operating properly (with review every five years to determine continued necessity). ADEQ assumed responsibility for groundwater monitoring, and performed the monitoring for four annual events, from 1994 to 1997. Because no COCs as defined by the ROD were detected during these four events, ADEQ recommended cessation of the groundwater monitoring after the 1997 event.

See Section 6.2 for a summary of projected versus actual annual O&M costs.

4.4 Progress Since Initiation of Remedial Action

All remedial action construction requirements have been completed. The site is fenced and the City of Jacksonville is controlling access to the site and site groundwater. ADEQ has provided official concurrence for deleting the site from the NPL once restrictive covenants are in place restricting groundwater use (ADEQ, 1999a). These restrictive covenants are the type of institutional controls contemplated in the site Record of Decision (EPA, 1999a). The City of Jacksonville is in the process of putting the restrictive covenants in place, pending resolution of legal issues associated with title to the remediated area (EPA, 2000; EPA, 2000a; City of Jacksonville, 2000).

Control of groundwater use immediately downgradient of the site is not strictly enforceable, but residents are on municipal water supply. ADEQ has requested that the appropriate solid waste regulating authority be notified of the low detects of non-Site-related metals in the monitoring wells that may be caused by leaching from the municipal landfill. ADEQ recommends that the appropriate solid waste regulating authority be notified and that the 1994-1997 groundwater monitoring data be considered under such authority.

O&M procedures appear to be adequate although documentation of O&M frequency and annual costs have not always been consistently maintained in the period following construction completion (reporting to EPA is not required). As discussed previously, groundwater monitoring at the site was discontinued due to the lack of detection of COC's defined in the ROD, but it is EPA's position that groundwater monitoring should continue until institutional controls in the form of restrictive covenants are in place and the site is deleted from the NPL.

5.0 Five-Year Review Process

This five-year review has been conducted using the concepts found in EPA's Draft *Comprehensive Five-Year Review Guidance*, dated October 1999 (EPA, 1999), and in accordance with the guidance contained in the existing final five-year review guidance documents that are listed on page 1 of this report. The EPA made information available to the public regarding its intent to perform the five-year review through the Rogers Road site status summary on EPA's Region 6 website, at http://www.epa.gov/earth1r6/6sf/pdffiles/rogersrd.pdf. It is EPA's intention to advertise the availability of the five-year review report in a newspaper local to the site and on the site status summary website referenced above, and to provide a copy of the report to the information repositories. The five-year review consisted of interviews with relevant parties, a site inspection conducted at the site, and a review of applicable data and documentation covering the period of the review. The findings of the review are described in the following section.

6.0 Five-Year Review Findings

The information collected during the interviews, the site inspection, the standards review, and the data review are described in the following subsections.

6.1 Interviews

Interviews were conducted with representatives from the City of Jacksonville, and with representatives of state and federal regulatory agencies at the City of Jacksonville offices and at the Jacksonville and Rogers Road Municipal Landfill sites on June 27, 2000. Interview Record Forms which document the issues discussed during these interviews are provided in Attachment 2.

Interviews were conducted with Murice Green of the City of Jacksonville, Brian Wakelyn of the ADEQ, and Kathleen Aisling and Kenneth Clark of the EPA. The overall impression from all respondents was that the remedy implementation went smoothly and had a positive effect on the surrounding community. The health risks were removed, the grading done at the site as part of the remedy resulted in drainage improvements, and the site is now maintained, whereas prior to remedy implementation, the entire site was overgrown. No community concerns have been expressed regarding this site since prior to the initiation of the remedial action in 1994.

O&M costs associated with the site have not been individually tracked; submission of documentation was not specified in the O&M plans. Based on the interviews, however, the City indicated no significant changes had occurred in the ongoing O&M activities, and therefore the costs have most likely remained consistent since the completion of the remedy (see Section 6.2).

6.2 Site Inspection

A site inspection was conducted at the site on June 27, 2000. The completed site inspection checklist is provided in Attachment 3. Photographs taken during the site visit are provided in Attachment 4.

The area around the site along Rogers Road is densely wooded (Photo 1, Attachment 4). The fencing around the site appeared intact and secure, although no signs were posted on the fence or the gate (Photos 2 -5, Attachment 4). No vandalism was evident, and the roads were adequate

(Photos 1 and 9, Attachment 4). Unauthorized dumping reportedly took place prior to the remedial action, and debris was noted outside the perimeter of the site. The soil cover appeared to be in good condition; no settlement, cracks, or erosion was evident (Photos 2-4, and 6, Attachment 4). The site was dry on the day of the site inspection and appeared well-graded. The presence of poison oak, poison ivy, and numerous ticks were observed.

However, the site is situated in a natural low area, and standing water in the area surrounding Rogers Road Landfill has been noted by the City of Jacksonville staff following rain events. Monitor wells MWR-01 and MWR-02 were located and photographed (Photo 8, Attachment 4; locations noted on Figure 1). Surface completions appeared to be in good condition. Not all wells were located during the site inspection due to the presence of dense vegetation, including poison oak and ivy, and the abundance of ticks observed in the area. The wells are visited by City personnel during the periodic inspections several times per year.

As part of the review, actual O&M costs are compared to the projected costs to determine if there have been any unanticipated or unusually high O&M costs during the review period. The ROD estimated an annual O&M cost of $5,000 for fence maintenance and site inspection, and $16,900 for groundwater monitoring (EPA, 1990). The O&M costs presented in the ROD as well as the FS Table referenced in the ROD estimate are provided in Attachment 3. Although detailed O&M cost documentation has not been maintained, a current annual O&M estimate was provided by the City of Jacksonville and ADEQ (also provided in Attachment 3). Table 2 provides a summary of these costs for Rogers Road. The annual total for site inspection and cover maintenance for both the Rogers Road and Jacksonville sites was $13,440, the annual groundwater monitoring cost for both sites was estimated at $7,000 for a total of $20,440. It was assumed for the purposes of this review that half of the amount, or $10,220, is the approximate annual cost of O&M for Rogers Road. Although the site inspection and maintenance costs are slightly more than what was projected in the ROD, the groundwater monitoring costs are significantly lower. Therefore the O&M costs are not an issue of concern for this site.

6.3 Standards Review

Applicable or Relevant and Appropriate Requirements (ARARs) for this site were identified in the ROD dated September 27, 1990. This Five-Year Review included identification of and evaluation of changes in these ARARs to determine whether such changes may affect the protectiveness of the selected remedy.

The ROD identified the following ARARs as having an impact on the proposed remedy:

1. RCRA Land Disposal Restrictions (LDRs), as regulated under 40 CFR Part 268.

2. Transportation of hazardous wastes, as regulated under 40 CFR Part 263 and 49 CFR Parts 107 and 171-177.

3. The operational standards and monitoring requirements for hazardous waste incinerators, as regulated under 40 CFR Part 264 Subpart O.

4. Guidance for the closure of open dumps as regulated under 40 CFR 256.23.

5. The post-closure care and monitoring requirements for hazardous waste disposal facilities as regulated under 40 CFR 264.117(a)(1).

6. Requirements to evaluate the potential impacts to floodplains as regulated under the Executive Order on Floodplain Management, Executive Order No. 11988.

The Rogers Road Landfill ROD identified the following criteria as to be considered (TBCs) for the remedial action:

1. The Center For Disease Control's (CDC's) 2,3,7,8-TCDD concentration recommendations for residential settings of 1.0 ppb in surface soil and 10.0 ppb when covered by at least 12 inches of clean fill.

2. CERCLA section 104(d)(4), which allows EPA to treat noncontiguous facilities as one where those facilities are reasonably related on the basis of geography or threat.

3. 40 CFR Part 258 (Proposed), which contains the operating, design, closure, and post-closure criteria for municipal solid waste landfills.

4. 40 CFR Parts 260, 261, 264, and 270, which contain proposed standards for owners and operators of hazardous waste incinerators.

No state ARARs were identified in the ROD.

Hazardous waste incineration is no longer occurring as part of the site remedy, and the 40 CFR Part 264 Subpart O regulations no longer apply to the site. This also would apply to the regulations relating to hazardous waste incineration under 40 CFR Parts 260, 261, 264, and 270. In addition, since hazardous waste is no longer being transported at the site, the regulations at 40 CFR Part 263 and 49 CFR Parts 107 and 171-177 are no longer applicable.

Since the ROD was signed, there have been no changes to the regulations under 40 CFR 256.23 (guidance for closure of open dumps), and there have been no changes to Executive Order No. 11988 (floodplains). In addition, there have been no changes to CERCLA section 104(d)(4) (noncontiguous facilities) since the ROD was signed. No promulgated changes could be found in the CDC's concentration recommendations for 2,3,7,8-TCDD.

In addition, there have been no changes to the regulatory requirements described under 40 CFR 264.117(a)(1). This regulation requires 30 years of post-closure care and monitoring or for another period determined by the Regional Administrator. The EPA has determined, based on groundwater sampling results, that the groundwater is not impacted by the COCs and that continued monitoring is not necessary, once restrictive covenants are in place at this site. The proposed regulations under 40 CFR Part 258 were promulgated on October 9, 1991 (56 FR 51016). However, the Rogers Road Landfill met the requirements for closure as a hazardous waste landfill under 40 CFR 264.117(a)(1), and the regulations of 40 CFR 258 would not apply.

The EPA has promulgated changes in the LDRs with regards to the classification of contaminated soil (40 CFR 268.49, 63 FR 28602-28622). The remedy satisfies these ARAR requirements.

In summary, it appears that no new laws or regulations have been promulgated or enacted that would call into question the effectiveness of the remedy at Rogers Road to protect human health and the environment.

6.4 Data Review

During the remedial action, the confirmatory sampling involved a 14 x 14 grid around all the areas that were visibly contaminated or shown to be contaminated during the remedial investigation. Sample locations that did not meet remedial action goals and all the adjacent grid locations were then re-excavated, and the entire re-excavated area was resampled. This process was continued until all grid locations met remedial action goals.

As per the ROD and the CD, areas where 2,3,7,8-TCDD equivalent concentrations were greater than or equal to 10 ppb were excavated and the material was transported to Vertac for incineration. In several areas, this involved excavation deeper than the one foot projected from previous investigations. A total of 200 cubic yards of waste material was removed. Final

confirmatory sampling showed that removal of this quantity of material was sufficient to meet remedial action goals. The complete results of the confirmatory sampling are given in the Technical Assistance Report for the Rogers Road Municipal Landfill (E&E, 1995). The data contained in this report demonstrate that cleanup levels specified in the ROD were achieved.

Groundwater monitoring at the site was conducted concurrently with the groundwater monitoring of the Jacksonville Municipal Landfill Superfund Site between 1994 and 1997. Five wells were sampled annually (MWR-01, MWR-05, MWR-08, MWR-09, and MWR-10 - see Figure 1) and submitted for analysis for dioxins, metals, volatiles, semivolatiles, and pesticides. None of the compounds of concern listed in the ROD (Equivalents of 2,3,7,8-TCDD, chlorophenols, herbicides, and pesticides) were observed during the four sampling events (ADEQ, 1999).

During the last sampling event, aluminum and iron were detected at concentrations above secondary drinking water standards (established for taste and aesthetics) at wells MWR-08, MWR-09, and MWR-10. Many wells exhibited metals concentrations above background well concentrations in this and previous events (ADEQ, 1999). These metals are not contaminants of concern associated with the Superfund portion of the site, and are possibly associated with the municipal waste portions of the landfill.

7.0 Assessment

Based on the site interviews, the site inspection, and the data review, it appears the remedy is functioning as intended by the ROD. The assumptions used at the time of the remedy selection are still valid, and no additional information has been identified that would call into question the protectiveness of the remedy. No erosion or standing water is evident at the site, onsite groundwater use is currently restricted by the City of Jacksonville through control of site access through fencing. The establishment of permanent restrictive covenants prohibiting groundwater use is pending. In addition, no COCs have been detected in groundwater to-date.

8.0 Deficiencies

No deficiencies were noted.

9.0 Recommendations and Follow-up Actions

It is suggested that individual O&M cost records for this site be maintained by the City, to facilitate review of the appropriateness of O&M costs in future 5-year reviews. Although groundwater appears to be free of COC contamination, some metals were detected that may be associated with the solid waste portion of the landfill, and the appropriate solid waste regulatory authority should be notified. In addition, groundwater monitoring should continue for the Superfund portion of the landfill until the restrictive covenants are in-place which prohibit groundwater use on the site, and until the site is deleted from the NPL.

10.0 Protectiveness Statement

Once the restrictive covenants are finalized, this site meets all the site completion requirements as specified in OSWER Directive 9320.2-3C, Procedures for Completion and Deletion of National Priorities List Sites and Update. Specifically, confirmatory sampling verified that the site has achieved the ROD cleanup standards: all contaminated soil and debris containing greater than 10 ppb equivalent 2,3,7,8-TCDD were excavated and all soil and debris with 2,3,7,8-TCDD concentrations >1.0 and ≤10 ppb, or with a Cumulative HI >.7 for 2,4,5-T; 2,4,5 TP and dieldrin were either excavated or covered with one foot of clean soil. In addition, no soil was left onsite with a dieldrin concentration above 37 ppb, and the site was backfilled with clean soil. Ground water monitoring conducted after the remedial action was completed provides further assurance that implementation of the remedy eliminated the source of contamination at the site. The soil cover has been maintained since completion of the remedial action.

Because the remedial actions at the Rogers Road Municipal Landfill site are protective, the remedy for the site is protective of human health and the environment.

11.0 Next Review

Since the first five year review was due on or before August 4, 1999, the next five year review should be completed on or before August 2004. The subsequent review should include a site inspection and review of O&M procedures, costs, and surrounding groundwater use.

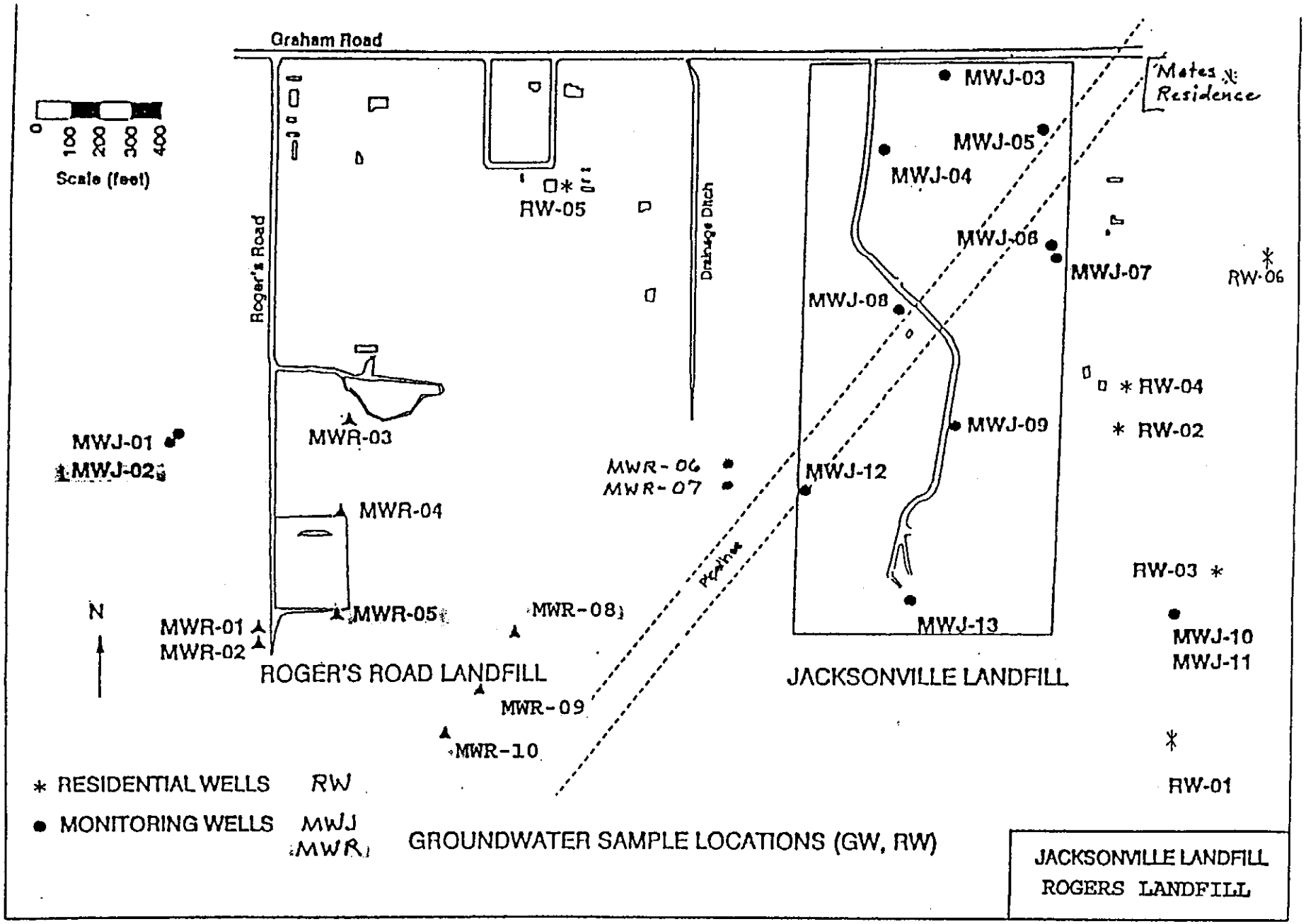

Figure 1: Site Map and Monitoring Well Network
Rogers Road and Jacksonville Municipal Landfills

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Table 1
Chronology of Site Events

Date	Event
May 10, 1983	Site was identified to EPA by citizen complaint
July 22, 1987	Site added to the NPL list with a score of 29.64
November 1988- March 1990	Remedial Investigation and Risk Assessment conducted
June 30, 1990	Remedial Investigation/Feasibility Study report completed
September 27, 1990	Record of Decision signed
August 1994 - September 1995	Remedial Action activities conducted, start of review period
November 1994	First annual groundwater monitoring event conducted.
November 1995	Second annual groundwater monitoring event conducted.
November 1996	Third annual groundwater monitoring event conducted.
November 1997	Fourth annual groundwater monitoring event conducted; cessation of groundwater monitoring recommended due to lack of detections of site-related constituents.
August 2000	First Five Year Review Report Completed

Table 2
Annual O&M Estimated Costs

Item	Estimated cost	Frequency	Cost
Site clearing equipment rental	$1080	6/year	$6,480
Site Inspector monthly cost	$20	1/month	$240
Groundwater Monitoring annual cost	$3,500	1/year	$3,500
		TOTAL:	$10,220

Table 3
Recommendations and Follow-up Actions

Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Follow-up Actions: Affects Protectiveness (Y/N)
Maintain annual O&M cost records and site access logs to facilitate future 5-year reviews	City of Jacksonville	EPA	ongoing	N
Continue groundwater monitoring until restrictive covenants are in place and site is deleted from the NPL.	ADEQ	EPA	2001	N
Refer site to appropriate solid waste regulatory authority, and refer monitor well network details and monitoring results for consideration as needed/appropriate.	EPA	NA	2001	N

Attachment 1

Documents Reviewed

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Attachment 1
Documents Reviewed

Arkansas Department of Environmental Quality (ADEQ), 1999. Letter Report from Mr. Mike Bates/ADEQ to Mr. Bill Honker/U.S. EPA Region 6 regarding *Jacksonville Landfill and Rogers Road Landfill Superfund Sites, Jacksonville, Arkansas*. Summary of 4th annual groundwater sampling event, November 17-19, 1997, and statistical evaluation of Events 1 through 4. April 12, 1999.

Arkansas Department of Environmental Quality (ADEQ), 1999a. Letter from Randall Mathis, Director, to Myron Knudson, Director Superfund Division, EPA, regarding "Jacksonville and Rogers Road Landfills". Provides ADEQ concurrence of deletion of the referenced sites from the NPL. June 21, 1999.

Arkansas Department of Pollution Control and Ecology (ADPC&E), 1995. Letter Report from Mr. Devon Hobby/ADPC&E to Ms. Kathleen Aisling/U.S. EPA Region 6 regarding *Jacksonville Landfill and Rogers Road Landfill Superfund Sites, Jacksonville, Arkansas.* Summary of first annual groundwater sampling event, November-December 1994. March 28, 1995.

City of Jacksonville, 2000. Letter from Robert Bamburg, City Attorney, City of Jacksonville, to James L. Turner, Senior Attorney, EPA, regarding "United States v. City of Jacksonville, United States Federal Court No. LR-C-94-196." Response to EPA's April 25, 2000, request for update regarding City of Jacksonville's progress toward establishing restrictive covenants at the Rogers Road property in support of the site's deletion from the NPL. May 3, 2000.

City of Jacksonville, 1994. *Remedial Action Work Plan for the Rogers Road Municipal Landfill Superfund Site.* September 1994.

Ecology and Environment (E&E), 1995. *Technical Assistance Report* (includes Remedial Action Sampling and Analysis Plan, Quality Assurance Project Plan, Health and Safety Plan, and Remedial Action Closeout Report). January 1995.

U. S. Environmental Protection Agency (EPA), 1990. Record of Decision: Rogers Road Municipal Landfill, AR. ROD/R06-90/063. Final, September 1990.

U.S. Environmental Protection Agency (EPA), 1991. *Structure and Components of Five-Year Reviews*. Office of Solid Waste and Emergency Response (OSWER) Directive 9355.7-02. May 23, 1991.

U.S. Environmental Protection Agency (EPA), 1991. Factsheet: *Structure and Components of Five-Year Reviews*. OSWER Directive 9355.7-02FS1. August 1991.

U.S. Environmental Protection Agency (EPA), 1994. *Supplemental Five-Year Review Guidance*. OSWER Directive 9355.7-02A. July 26, 1994.

U.S. Environmental Protection Agency (EPA), 1995. *Second Supplemental Five-Year Review Guidance*. OSWER Directive 9355.7-03A. December 21, 1995.

U.S. Environmental Protection Agency (EPA), 1996. *Rogers Road Municipal Landfill Superfund Site Closeout Report*. April 30, 1996.

U. S. Environmental Protection Agency (EPA), 1999. Comprehensive Five-Year Review Guidance. EPA540R-98-050. OSWER Directive 9355.7-03B-P. Draft, October 1999.

U. S. Environmental Protection Agency (EPA), 1999a. Letter from James L. Turner, Assistant Regional Counsel, EPA, to Robert Bamburg, City of Jacksonville Attorney, regarding "Jacksonville Municipal Landfill and Rogers Road Landfill Superfund Sites". Requests the City of Jacksonville establish deed restrictions as a component of the sites' deletion from the NPL. August 18, 1999.

U. S. Environmental Protection Agency (EPA), 2000. Letter from James L. Turner, Senior Attorney, EPA, to Robert Bamburg, Attorney, City of Jacksonville, regarding "Rogers Road Landfill Superfund NPL Site". Summarizes telephone conversation regarding status of City's efforts toward establishing restrictive covenants at Rogers Road property in support of the site's deletion from the NPL. February 15, 2000.

U. S. Environmental Protection Agency (EPA), 2000a. Letter from James L. Turner, Senior Attorney, EPA, to Robert Bamburg, Attorney, City of Jacksonville, regarding "Rogers Road Landfill Superfund NPL Site". Requests update regarding City of Jacksonville's progress toward establishing restrictive covenants at the Rogers Road property in support of the site's deletion from the NPL. April 25, 2000.

Peer Consultants, P. C., and Resource Applications, Inc., 1990a. Remedial Investigation Report for Rogers Road Landfill Site, Jacksonville, Arkansas. June 1990.

Peer Consultants, P. C., and Resource Applications, Inc., 1990b. Feasibility Study Report for Rogers Road Landfill Site, Jacksonville, Arkansas. June 1990.

Attachment 2

Interview Record Forms

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Five-Year Review Interview Record Rogers Road/Jacksonville Pulaski/Lonoke Counties, Arkansas	**Interviewee:** **Brian Wakelyn** **Arkansas Department of Environmental Quality** Phone: (501) 682-0845

Site Name	**EPA ID No.**	**Date of Interview**	**Interview Method**
Rogers Road Municipal Landfill	EPA ID# ARD981055809	June 27, 2000	In person
Jacksonville Municipal Landfill	EPA ID# ARD980809941	June 27, 2000	In person

Interview Conducted by	**Organization**	**Phone**	**Email**	**Address**
Margaret O'Hare	CH2M HILL, as rep of EPA	972-980-2170	mohare@ch2m.com	5339 Alpha Road Suite 300 Dallas, Texas 75240
Katie Swanson	CH2M HILL, as rep of EPA	972-980-2170	kswanso2@ch2m.com	5339 Alpha Road Suite 300 Dallas, Texas 75240

Interview Questions and Responses

1. What is your overall impression of the work conducted at each site? (general sentiment)

Response: No additional response (beyond that provided by other interviewees).

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

Response: No additional response.

3. Are you aware of any ongoing community concerns regarding the site or its operation and administration? Please provide details.

Response: No additional response.

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

Response: In the mid-90's, raw sewage was being discharged to the Jacksonville site near MWJ-07 by a neighboring resident; the discharge was halted when it was identified.

5. Have there been routine communications or activities (site visits, inspections, reporting activities, etc.) conducted by your office regarding either site since the startup of remedial action other than the annual site inspection? If so, please describe purpose and results.

Response: Groundwater monitoring was conducted annually by the state through 1997; during those visits it has been observed that the area around the Rogers Road landfill is underwater for extended periods due to poor drainage unrelated to the remedial activities. Portions of the Jacksonville landfill are also very wet. Because no detections of site-related contaminants were reported in the monitoring wells during any annual sampling event, annual groundwater monitoring has not been conducted since 1997.

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 summarize the events and results of the responses.

Response: No.

7. Were any problems or difficulties encountered after the initiation of remedial action which impacted construction progress and implementability?

Response: No additional response.

8. Were or have any problems been encountered at either site which required or will require changes in the Record of Decision or remedial action performed?

Response: No additional response.

9. Have there been any significant changes in the site status or maintenance requirements since completion of remedial action? If so, do they affect the protectiveness or effectiveness of the remedy? Please describe changes and impacts.

Response: Annual groundwater monitoring conducted by ADEQ was discontinued after the 1997 monitoring event, because no site-related constituents had been detected in any groundwater samples during 4 annual monitoring events. A recommendation to permanently discontinue groundwater monitoring has been sent to EPA.

10. Have there been unexpected O&M difficulties or costs at either site since the start of O&M? If so, please give details

Response: No.

11. What are the approximate annual O&M costs for each site?

Response: Groundwater monitoring was generally $6,000 - $7,000 per event.

12. Is groundwater use restricted beyond the perimeter fenced area of either site? Is the groundwater use restriction by institutional control verified as part of each site's annual inspection?

Response: The only restrictions are within the perimeter fence. Although nearby residential wells are not used for drinking water, ADEQ recommends that letters be sent to residents communicating the results of groundwater samples and that institutional controls be established to prevent future use.

13. Have there been opportunities to optimize the operation, maintenance, or sampling efforts at the site since the start of the remedial action? Please describe changes and the resultant or desired cost savings or improved efficiency.

Response: As indicated in the response to Question 9, groundwater monitoring was discontinued after the 1997 event, pending EPA concurrence. During the years the groundwater monitoring was being done, the government contracting process meant the low bidder had to be selected, which resulted in 3 different contractors being used for the 4 events. The process would have been easier, more consistent, if the same contractor could have been used for all events.

14. Do you have any comments, suggestions, or recommendations regarding either site?

Response: Impose institutional controls for groundwater use from neighboring properties, permanently discontinue groundwater monitoring related to the Superfund site portion of the landfills, and notify solid waste regulating authority of the potential need to monitor groundwater for constituents related to the municipal landfill portion of the sites.

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Five-Year Review Interview Record Rogers Road/Jacksonville Pulaski/Lonoke Counties, Arkansas	**Interviewee: Murice Green** **City of Jacksonville** Phone: 501-982-6071

Site Name	**EPA ID No.**	**Date of Interview**	**Interview Method**
Rogers Road Municipal Landfill	EPA ID# ARD981055809	June 27, 2000	In person
Jacksonville Municipal Landfill	EPA ID# ARD980809941	June 27, 2000	In person

Interview Conducted by	**Organization**	**Phone**	**Email**	**Address**
Margaret O'Hare	CH2M HILL, as rep of EPA	972-980-2170	mohare@ch2m.com	5339 Alpha Road Suite 300 Dallas, Texas 75240
Katie Swanson	CH2M HILL, as rep of EPA	972-980-2170	kswanso2@ch2m.com	5339 Alpha Road Suite 300 Dallas, Texas 75240

Interview Questions and Responses

1. What is your overall impression of the work conducted at each site? (general sentiment)

Response: The work done at the sites [Rogers Road Landfill and neighboring Jacksonville Landfill] took care of the problem, in fact, the regrading necessary as part of the remedy took care of a lot of the drainage problems at the sites. Both sites are now in a condition that they could be applied to recreational use; there is good ground cover, trees, and grass.

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

Response: The remediation had a positive effect on the surrounding area, both sites are now more attractive than some of the surrounding areas. At Jacksonville Landfill, mulch from the city mulching operation was used to dress up the site. About 3 to 4 years ago the National Tree Foundation sent the city some saplings and a tree farm was started onsite (although a drought recently killed many of the trees). The trees are used for city beautification projects. The ditches at the site are maintained by the county. At Rogers Road, there were drainage improvements due to the remedy, although no mulch was applied to this site. There is a low area at the back of the site where drainage is not as good.

3. Are you aware of any ongoing community concerns regarding the site or its operation and administration? Please provide details.

Response: A homeowner that lives near the Southeast corner of the Jacksonville site complained about water draining from the site onto his property. This was not a result of the remedial action, however, the City responded to his complaint by dredging out the drainage ditch in the area; there have been no further complaints.

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

Response: There haven't been any problems since the completion of the remedial action (during the remedial activities there was a problem with theft of the barb wire fencing and gates). There is a gas line that runs down the middle of the Jacksonville site that requires periodic access by the operators of the gas line, but there have been no signs of tampering.

5. Have there been routine communications or activities (site visits, inspections, reporting activities, etc.) conducted by your office regarding either site since the startup of remedial action other than the annual site inspection? If so, please describe purpose and results.

Response: The city does not keep a log or submit O&M reports, but the sites are inspected on a monthly basis (or as needed) to check the area, ensure the fence and gates are intact, check the condition of the wells, and check the need for mowing/bush-hogging/regrading. The city plans to keep a log of these activities in the future.

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 summarize the events and results of the responses.

Response: Not since completion of the remedial action (see response to questions 3 and 4).

7. Were any problems or difficulties encountered after the initiation of remedial action which impacted construction progress and implementability?

Response: Nothing out of the ordinary. The remedial action was delayed for approximately a month or so due to wet weather, there is standing water in the area of the landfills since it is a natural low area. Roads had to be built to facilitate access.

8. Were or have any problems been encountered at either site which required or will require changes in the Record of Decision or remedial action performed?

Response: No.

9. Have there been any significant changes in the site status or maintenance requirements since completion of remedial action? If so, do they affect the protectiveness or effectiveness of the remedy? Please describe changes and impacts.

Response: Not in terms of activities managed by the City.

10. Have there been unexpected O&M difficulties or costs at either site since the start of O&M? If so, please give details

Response: Costs for O&M activities conducted by the city have not been historically tracked by the city (not part of the O&M responsibilities as understood by the city). There have been no significant changes in the activities involved, however, and therefore the costs have most likely remained consistent since the completion of the remedy.

11. What are the approximate annual O&M costs for each site?

Response: See response to Question 10; the city can provide an estimated annual cost upon request.

12. Is groundwater use restricted beyond the perimeter fenced area of either site? Is the groundwater use restriction by institutional control verified as part of each site's annual inspection?

Response: The restrictions only apply within the fenced area of each site. Although the existing residential wells have been sampled, these wells are not known to be used (the area is on city water).

13. Have there been opportunities to optimize the operation, maintenance, or sampling efforts at the site since the start of the remedial action? Please describe changes and the resultant or desired cost savings or improved efficiency.

Response: As indicated in the response to Question 10, there have been no significant changes in the O&M activities under the city's responsibility since the completion of remedial action.

14. Do you have any comments, suggestions, or recommendations regarding either site?

Response: No.

Five-Year Review Interview Record Rogers Road/Jacksonville Pulaski/Lonoke Counties, Arkansas	**Interviewee: Kathleen Aisling** **EPA Region 6, RPM** Phone: (214) 665-8509

Site Name	**EPA ID No.**	**Date of Interview**	**Interview Method**
Rogers Road Municipal Landfill	EPA ID# ARD981055809	June 27, 2000	In person
Jacksonville Municipal Landfill	EPA ID# ARD980809941	June 27, 2000	In person

Interview Conducted by	**Organization**	**Phone**	**Email**	**Address**
Margaret O'Hare	CH2M HILL, as rep of EPA	972-980-2170	mohare@ch2m.com	5339 Alpha Road Suite 300 Dallas, Texas 75240
Katie Swanson	CH2M HILL, as rep of EPA	972-980-2170	kswanso2@ch2m.com	5339 Alpha Road Suite 300 Dallas, Texas 75240

Interview Questions and Responses

1. What is your overall impression of the work conducted at each site? (general sentiment)

Response: The construction at both sites went very well, it was a very thorough job.

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

Response: The action took away some of the stigma attached to the sites as Superfund sites and landfills, had a positive effect on the community, and returned the land to some amount of reuse. The sites were very overgrown prior to the action, now they both have access roads and are routinely mowed. Also, odors noticeable prior to the action are gone.

3. Are you aware of any ongoing community concerns regarding the site or its operation and administration? Please provide details.

Response: No ongoing community concerns.

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

Response: At the beginning of the remedial action, there were two incidents of note, one involving the theft of some fencing from the sites, and the other involving the discharge onsite of raw sewage from a neighboring property onto the Jacksonville landfill property. No incidents since 1995.

5. Have there been routine communications or activities (site visits, inspections, reporting activities, etc.) conducted by your office regarding either site since the startup of remedial action other than the annual site inspection? If so, please describe purpose and results.

Response: Since the completion of remedial action, EPA representatives were present at the first two annual groundwater monitoring events, and have performed two additional site visits (generally at least one visit per year).

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 summarize the events and results of the responses.

Response: No.

7. Were any problems or difficulties encountered after the initiation of remedial action which impacted construction progress and implementability?

Response: No.

8. Were or have any problems been encountered at either site which required or will require changes in the Record of Decision or remedial action performed?

Response: No.

9. Have there been any significant changes in the site status or maintenance requirements since completion of remedial action? If so, do they affect the protectiveness or effectiveness of the remedy? Please describe changes and impacts.

Response: None, except for the discontinuation of groundwater monitoring by ADEQ. EPA concurs with ADEQ that it is appropriate to discontinue groundwater monitoring.

10. Have there been unexpected O&M difficulties or costs at either site since the start of O&M? If so, please give details

Response: No.

11. What are the approximate annual O&M costs for each site?

Response: The city and ADEQ are responsible for O&M costs; the ROD provides projected O&M costs.

12. Is groundwater use restricted beyond the perimeter fenced area of either site? Is the groundwater use restriction by institutional control verified as part of each site's annual inspection?

Response: Groundwater use is restricted for the entire landfill even though the area where contamination was left in place and capped makes up only a portion of the property, less than an acre. No institutional controls are in place for neighboring properties.

13. Have there been opportunities to optimize the operation, maintenance, or sampling efforts at the site since the start of the remedial action? Please describe changes and the resultant or desired cost savings or improved efficiency.

Response: Yes, with the discontinuation of groundwater monitoring. EPA concurs with the appropriateness of this action.

14. Do you have any comments, suggestions, or recommendations regarding either site?

Response: Officially discontinue annual groundwater as part of the annual O&M for these sites. Pass the sites and control of the groundwater monitoring wells over to the appropriate regulatory authority for use in solid waste post-closure monitoring as appropriate.

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Five-Year Review Interview Record Rogers Road/Jacksonville Pulaski/Lonoke Counties, Arkansas	**Interviewee: Ken Clark** **EPA Region 6, OSC** Phone:

Site Name	**EPA ID No.**	**Date of Interview**	**Interview Method**
Rogers Road Municipal Landfill	EPA ID# ARD981055809	June 27, 2000	In person
Jacksonville Municipal Landfill	EPA ID# ARD980809941	June 27, 2000	In person

Interview Conducted by	**Organization**	**Phone**	**Email**	**Address**
Margaret O'Hare	CH2M HILL, as rep of EPA	972-980-2170	mohare@ch2m.com	5339 Alpha Road Suite 300 Dallas, Texas 75240
Katie Swanson	CH2M HILL, as rep of EPA	972-980-2170	kswanso2@ch2m.com	5339 Alpha Road Suite 300 Dallas, Texas 75240

Interview Questions and Responses

1. What is your overall impression of the work conducted at each site? (general sentiment)

Response: Concur with the city's assessment of the work (The work done at the sites [Rogers Road Landfill and neighboring Jacksonville Landfill] took care of the problem, in fact, the regrading necessary as part of the remedy took care of a lot of the drainage problems at the sites. Both sites are now in a condition that they could be applied to recreational use; there is good ground cover, trees, and grass.)

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

Response: Positive impact, noting in particular the tree farms, which involve the National Tree Foundation and local scouts.

3. Are you aware of any ongoing community concerns regarding the site or its operation and administration? Please provide details.

Response: No additional response provided (beyond that provided by other respondents).

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

Response: No additional response provided.

5. Have there been routine communications or activities (site visits, inspections, reporting activities, etc.) conducted by your office regarding either site since the startup of remedial action other than the annual site inspection? If so, please describe purpose and results.

Response: No additional response provided.

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 summarize the events and results of the responses.

Response: No.

7. Were any problems or difficulties encountered after the initiation of remedial action which impacted construction progress and implementability?

Response: No.

8. Were or have any problems been encountered at either site which required or will require changes in the Record of Decision or remedial action performed?

Response: No.

9. Have there been any significant changes in the site status or maintenance requirements since completion of remedial action? If so, do they affect the protectiveness or effectiveness of the remedy? Please describe changes and impacts.

Response: No additional response provided.

10. Have there been unexpected O&M difficulties or costs at either site since the start of O&M? If so, please give details

Response: No additional response provided.

11. What are the approximate annual O&M costs for each site?

Response: No additional response provided.

12. Is groundwater use restricted beyond the perimeter fenced area of either site? Is the groundwater use restriction by institutional control verified as part of each site's annual inspection?

Response: No additional response provided.

13. Have there been opportunities to optimize the operation, maintenance, or sampling efforts at the site since the start of the remedial action? Please describe changes and the resultant or desired cost savings or improved efficiency.

Response: No additional response provided.

14. Do you have any comments, suggestions, or recommendations regarding either site?

Response: No additional response provided.

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Attachment 3

Site Inspection Checklist

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Rogers Road Municipal Landfill
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: Rogers Road Municipal Landfill	**EPA ID:** ARD981055809
City/State: Pulaski County, Arkansas	**Date of Inspection:** June 27, 2000
Agency Completing 5 Year Review: US EPA	**Weather/temperature:** 80 F, overcast, calm

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: Murice Green
Title: Chief of Public Works, City of Jacksonville
Date: June 27, 2000
Interviewed: ☒ at site ☒ at office ☐ by phone Phone Number: (501)982-6071
Problems, suggestions: ☐ Additional report attached (if additional space required).

2. O&M staff:
Name: James Whisker
Title: City Engineer
Date: June27, 2000
Interviewed: ☒ at site ☒ at office ☐ by phone Phone Number: (501)982-6071
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: Arkansas Department of Environmental Quality
Contact: Brian Wakelyn
Name:
Title: Project Manager
Date: June 27, 2000
Phone Number: (501) 682-0845
Problems, suggestions: ☐ Additional report attached (if additional space required).

Agency: U.S. Environmental Protection Agency
Contact: Ken Clark
Name:
Title: OSC
Date: June 27, 2000
Phone Number: (214)665-6774
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).

Kathleen Aisling/EPA Remedial Project Manager

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

1. O&M Documents

☐ O&M Manual	☐ 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: There are no site conditions that would restrict normal emergency response

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: $5,000 for site inspection and cover maintenance ☒ Breakdown attached
$16,900 for groundwater monitoring (see attached ROD and FS cost information)

Total annual cost by year for review period if available - not available, estimated annual cost for site inspection and cover maintenance provided by City of Jacksonville (see attached estimate) is $6,720/year. Estimated groundwater cost is $3,000 - $3,500/year.

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

A. Fencing

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

Remarks: No damage evident, the City of Jacksonville reported that the former city engineer had done thorough inspection of fence perimeter

B. Other Access Restrictions

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

Remarks: No signs posted on gate or fencing

C. Institutional Controls

1. Implementation and enforcement

Site conditions imply ICs not properly implemented: ☐ Yes ☒ No ☐ N/A
Site conditions imply ICs not being fully enforced: ☐ Yes ☒ No ☐ N/A
Type of monitoring (e.g, self-reporting, drive by): Site inspections of fencing used to restrict access
Frequency: monthly
Responsible party/agency: City of Jacksonville
Contact: Murice Green
Name:
Title: Chief of Public Works
Date: June 27, 2000
Phone Number: (501)982-6071
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 are adequate at restricting access to the site and site groundwater. Although groundwater immediately downgradient is not under control of City, residents are on municipal supply and groundwater use is not expected.

D. 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

A. Roads ☒ Applicable ☐ N/A

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

B. Other Site Conditions

Remarks: Some offsite dumping is evident, tires, trash and wood debris are present near the site. The City of Jacksonville reported that unauthorized dumping took place prior to initiation of the remedy.

VII. LANDFILL COVERS ☒ Applicable ☐ N/A

A. Landfill Surface

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

2. Cracks ☐ Location shown on site map ☒ Cracking not evident
Lengths: Widths: Depths:
Remarks:

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:

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: There is poor drainage in the surrounding areas, site has been graded to prevent the occurrence of standing water.

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

B. Benches ☐ Applicable ☒ N/A
(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

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

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

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

C. Letdown Channels ☐ Applicable ☒ N/A
(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)

1. Settlement ☐ Location shown on site map ☐ No evidence of settlement
Areal extent: Depth:
Remarks:

2. Material Degradation ☐ Location shown on site map ☐ No evidence of degradation
Material type: Areal extent:
Remarks:

3. Erosion ☐ Location shown on site map ☐ No evidence of erosion
Areal extent: Depth:
Remarks:

4. Undercutting ☐ Location shown on site map ☐ No evidence of undercutting
Areal extent: Depth:
Remarks:

5. Obstructions ☐ Location shown on site map ☐ N/A
Type:
Areal extent: Height:
Remarks:

6. Excessive Vegetative Growth ☐ No evidence of excessive growth
☐ Evidence of excessive growth ☐ Vegetation in channels but does not obstruct flow
☐ Location shown on site map Areal extent:
Remarks:

D. Cover Penetrations ☐ Applicable ☒ N/A

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

2. Gas Monitoring Probes ☐ N/A
☐ Routinely sampled
☐ Properly secured/locked ☐ Functioning ☐ 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:

E.	**Gas Collection and Treatment**	☐ Applicable	☒ N/A
1.	**Gas Treatment Facilities** ☐ Flaring ☐ Thermal destruction ☐ Collection for reuse ☐ Good condition ☐ Needs O& M Remarks:		☐ N/A
2.	**Gas Collection Wells, Manifolds and Piping** ☐ Good condition ☐ Needs O& M Remarks:		☐ N/A
3.	**Gas Monitoring Facilities** (e.g., gas monitoring of adjacent homes or buildings) ☐ Good condition ☐ Needs O& M Remarks:		☐ N/A
F.	**Cover Drainage Layer**	☐ Applicable	☒ N/A
1.	**Outlet Pipes Inspected** ☐ Functioning Remarks:		☐ N/A
2.	**Outlet Rock Inspected** ☐ Functioning Remarks:		☐ N/A
G.	**Detention/Sedimentation Ponds**	☐ Applicable ☒ N/A	
1.	**Siltation** ☐ Siltation evident Areal extent: Depth: Remarks:		☐ N/A
2.	**Erosion** ☐ Erosion evident Areal extent: Depth: Remarks:		☐ N/A
3.	**Outlet Works** ☐ Functioning Remarks:		☐ N/A
4.	**Dam** ☐ Functioning Remarks:		☐ N/A
H.	**Retaining Walls**	☐ Applicable	☒ N/A

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

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

I. Perimeter Ditches/Off-site discharge ☒ Applicable ☐ N/A

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

2. Vegetative Growth ☐ Location shown on site map ☒ Vegetation does not impede flow
Areal extent: Type:
Remarks:

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

4. Discharge Structure ☐ Location shown on site map ☒ N/A
☐ Functioning ☐ Good Condition
Remarks: No discharge structure, drainage managed by site grading.

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

A. 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:

B. 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:

3. Spare Parts and Equipment ☐ N/A

☐ Readily available ☐ Good condition

☐ Requires Upgrade ☐ Needs to be provided

Remarks:

C. Treatment System ☐ Applicable ☒ N/A

1. Treatment Train (Check components that apply)

☐ Metals removal ☐ Oil/water separation ☐ Bioremediation

☐ Air stripping ☐ Carbon adsorbers ☐ Filters (list type):

☐ 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):

☐ Quantity of surface water treated annually (list volume):

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:

D. 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: All wells were not located during the site visit due to dense vegetation including poison oak/ivy and ticks. The background wells are difficult to access due to land owner and animals present in the area. These wells are inspected routinely during the periodic inspections by the city.

X. OTHER REMEDIES ☐ Applicable ☒ N/A

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

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

The remedy is effective and functioning as designed. The remedy was chosen to remove the principal health threats that presented excess lifetime cancer risk, and prevent further actual or threatened releases of hazardous substances from the site. Materials containing above10 ppb dioxin concentrations were removed and treated, and the affected areas were backfilled and re-graded. Soil cover was placed on materials that were between 1 and 10 ppb dioxin level, greater than 37 ppb dieldrin, and/or dieldrin and herbicide contamination associated with a hazard index above 0.7. Institutional controls include site inspections to confirm fence integrity and land use restrictions. Site inspections show that the fencing is effectively preventing access to the site. Annual groundwater monitoring was also conducted, but was halted in 1997 since no contaminants of concern were detected.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

O&M procedures appear to be adequate. Written records of O&M frequency and annual costs have not been individually maintained, and the City indicated an effort will be made to keep these records up-to-date and readily accessible in the future. Groundwater monitoring at the site was discontinued due to lack of detected site-related contaminants. The existing monitoring well network could potentially be used for monitoring under the appropriate solid waste regulatory authority, so abandonment is not recommended at this time.

C. Early Indicators of Potential Remedy Failure

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

None observed.

D. Opportunities for Optimization

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

Groundwater monitoring was determined to no longer be necessary, once the restrictive covenants are in place. However, solid waste regulations may still apply. The current monitoring well network could possibly be used for solid waste monitoring purposes, and groundwater data and information about the wells should be conveyed to the appropriate solid waste regulatory authority.

Inspection Team Roster
Rogers Road Municipal Landfill Site, 5 Year Review
June 27, 2000

Name	Agency	Phone Number
Margaret O'Hare	CH2M HILL	(972) 980-2170
Katie Swanson	CH2M HILL	(972) 980-2170
Kin Siew	ADEQ	(501) 682-0855
Brian Wakelyn	ADEQ	(501) 682-0845
Jay Whisker	City of Jacksonville	(501) 982-6071
Murice Green	City of Jacksonville	(501) 982-3146
Kathleen Aisling	USEPA	(214) 665-8509
Kenneth Clark	USEPA/ERCS	(214) 665-6774

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TABLE 6 (Cont'd)

COST ESTIMATE
ALTERNATIVE 5

Rogers Road Landfill Site
Jacksonville, Arkansas

Activity	Estimated Quantity	Unit Price	Cost($) (1990)
• Administrative & Legal @ 5% of Direct Cost			30,190
• Engineering & Services @ 10% of Direct Cost			60,180
TOTAL INDIRECT COST:			**240,710**
TOTAL CAPITAL COST (DIRECT + INDIRECT):			**842,460**
II. O & M Cost			
• Annual Data Review	8 Hrs	$60/Hr	480
• 5-Year Evaluation	160 Hrs	$60/Hr	9,600
• Maintenance of Existing Fence	L.S.		2,000
• Annual Inspection and Maintenance of Soil Cover	L.S.		3,000
A. Periodic Inspection of Containers Stored Onsite for One Year	L.S.		3,000
B. Present Worth of Long-Term Groundwater Monitoring (Annual and 5-Year) (See Rogers Road FS Report, Table 6-1 for Details).			259,800
C. Present Worth of Annual Data Review ($480 X 15.3725)			7,380
D. Present Worth of 5-Year Evaluation ($9,600 X 2.782)			26,700

TABLE 6 (Cont'd)

COST ESTIMATE
ALTERNATIVE 5

Rogers Road Landfill Site
Jacksonville, Arkansas

Activity	Estimated Quantity	Unit Price	Cost($) (1990)
E. Present Worth of Existing Fence Maintenance Based on 5% Discount Rate for 30 Years ($2,000 X 15.3725)			30,750
F. Present Worth of Inspection and Maintenance of Soil Cover Based on 5% Discount Rate for 30 Years ($3,000 X 15.3725)			46,120
G. Land Use Control Contingencies for 30 Years			10,000
TOTAL O & M COST (NET PRESENT WORTH):			**383,750**
III. TOTAL COST OF ALTERNATIVE 5 (CAPITAL + O & M) (NET PRESENT WORTH):			**$ 1,226,210**

TABLE 6-1

COST ESTIMATE
ALTERNATIVE 1: NO ACTION

Rogers Road Landfill Site
Pulaski County, Arkansas

Activity	Estimated Quantity	Unit Price	Cost ($) (1990)	References/ Remarks
I. Capital Cost				
A. Direct Cost				
• Well Drilling (3 New Wells)	120 L.F.	$30/L.F.	3,600	Reference 20
• Well Casing Installation (Stainless Steel)	60 L.F.	$50/L.F.	3,000	Reference 20
• Mobilization and Decontamination	L.S.		5,000	
		SUBTOTAL:	**11,600**	
B. Indirect Cost				
• Health & Safety @ 5% of Direct Cost			600	
• Bid & Scope Contingency @ 10% of Direct Cost			1,200	

TABLE 6-1 (continued)

COST ESTIMATE
ALTERNATIVE 1: NO ACTION

Rogers Road Landfill Site
Pulaski County, Arkansas

Activity	Estimated Quantity	Unit Price	Cost ($) (1990)	References/ Remarks
• Administrative and Legal @ 10 % of Direct Cost			1,200	
• Engineering & Services During Drilling @ 5% of Direct Cost			600	
		SUBTOTAL:	**3,600**	
		TOTAL CAPITAL COST:	**15,200**	
II. O & M Cost				
A. Monitoring				
(1) Annual Monitoring:				
• Groundwater Sampling	30 Hrs	$30/Hr	900	
• Groundwater Lab Analysis				

TABLE 6-1 (continued)

COST ESTIMATE
ALTERNATIVE 1: NO ACTION

Rogers Road Landfill Site
Pulaski County, Arkansas

Activity	Estimated Quantity	Unit Price	Cost ($) (1990)	References/ Remarks
Five Well Samples, One Field Blank. One Spike Sample and One QC Sample	8 Samples	$1,500/Sample	12,000	Reference 30
• Contingency Analysis	8 Samples	$250/Sample	2,000	
		SUBTOTAL:	**14,900**	
• Maintenance Contingency			2,000	
		TOTAL ANNUAL MONITORING COST:	**16,900**	
(2) Report Preparation:				
A. 5-year Review Report	160 Hrs	$60/Hr	9,600	
		TOTAL 5-YEAR REPORT PREPARATION COST:	**9,600**	

TABLE 6-1 (continued)

COST ESTIMATE
ALTERNATIVE 1: NO ACTION

Rogers Road Landfill Site
Pulaski County, Arkansas

Activity	Estimated Quantity	Unit Price	Cost ($) (1990)	References/ Remarks
B. Present Worth of Annual Monitoring & Maintenance Cost Based on 5% Discount for 30 years - ($16,900 X 15.3725)			259,800	
C. Present Worth of 5-year Review Reports ($9.600 X 2.782)			26,700	
TOTAL PRESENT WORTH OF O & M COST:			**286,500**	
III. TOTAL COST (NET PRESENT WORTH) OF ALTERNATIVE C-1			**302,000**	

CITY OF JACKSONVILLE

ENGINEERING DEPARTMENT

FACSIMILE TRANSMITTAL SHEET

TO:	FROM:
Margaret P. O'Hare	James S. Whisker
COMPANY:	DATE:
CH2MHILL	July 7, 2000
FAX NUMBER:	TOTAL NO. OF PAGES INCLUDING COVER:
(972)385-0846	2
PHONE NUMBER:	CC:

RE:
Superfund Sites

NOTES/COMMENTS:

DCN 00-1974 page 1 of 2

P.O. BOX 126
JACKSONVILLE, AR 72078
(501)982-6871 FAX#. (501)982-0168

CITY OF JACKSONVILLE

ENGINEERING DEPARTMENT

James S. Whisker, City Engineer

Cost of Operating and Maintaining Superfund Sites
Jacksonville Landfill and Rogers Road Landfill

Bush Hog____$45.00/hr.
Sidecutter____$45.00/hr.
Inspection____$20.00/hr.

Two (2) bush hogs and one (1) sidecutter require sixteen (16) hours to clear both sites. The city clears sites six (6) times per year. Inspection once a month by two (2) people per year. Therefore:

3 machines @ $45.00/hour = $ 135.00/hour
x 16 hours
$ 2,160.00

$2,160.00 x 6 times per year = $ 12,960.00

2 inspectors @ $ 20.00 per hour = $ 40.00/hour
x 12 hours
$ 480.00

$ 12,960.00 + $ 480.00 = $ 13,440.00

Total cost is $ 13,440.00 per year. This cost estimate does not include the $6,000.00 - $7,000.00 per year of ground water sampling from 1994 – 1998.

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Attachment 4

Site Inspection Photographs

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Photograph 1.

Facing south along Rogers Road. Photo taken from south of Rogers Road residences/north of site.

Photograph 2.

Facing east-northeast from outside perimeter fence just north of main access gate. View is of north end of excavated/covered area of site.

Perimeter fence visible in foreground.

Photo overlaps to right with Photograph 3.

Photograph 3.

Facing east, from outside perimeter fence, on Rogers Road just north of main access gate.

Perimeter fence visible in foreground.

Overlaps to left with Photograph 2, and to right with Photograph 4.

Photograph 4.

Facing east-southeast, from outside perimeter fence, on Rogers Road just north of main access gate.

Perimeter fence visible in foreground.

Excavated/backfilled area is the vegetated area without trees.

Photograph overlaps to left with Photograph 3.

Photograph 5.

Facing east-southeast into site through main access gate, from Rogers Road.

Photograph 6.

Facing east, from outside perimeter fence, on Rogers Road just south of main access gate.

Perimeter fence visible in near foreground.

Excavated/backfilled area is the vegetated area without trees.

Photograph 7.

Facing northeast, from just north of southwest corner of perimeter fence. Clearing in background is the excavated/covered area of the landfill.

Photograph 8.

Facing south at south end of Rogers Road. Monitor wells MWR-01 (foreground) and MWR-02 (background). Surface completions appear in good condition.

Photograph 9.

Facing east along southern perimeter road along south side of site.

Perimeter fence runs along north side of road, at left.

Monitor well MWR-05 is at end of this road, at the southeast corner of the perimeter fence.