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September 1990

EPA

Superfund Record of Decision:

Rogers Road Municipal Landfill, AR

50272-101

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Rogers Road Municipal Landfill, AR
First Remedial Action - Final

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16. Abstract (Limit: 200 words)

The 10-acre Rogers Road Municipal Landfill site is an inactive landfill in a residential and agricultural area in Pulaski County, outside the city limits of Jacksonville, Arkansas. Approximately 50 residences are located within one-half mile of the site. Furthermore, the site lies within a 100-year floodplain and has poor drainage because of slow percolation of rainwater. From 1953 until 1974, approximately one half of the site was used intermittently as a municipal waste disposal facility. Specific waste types and quantities are unknown; however, wastes appear to have been disposed of in a long excavated trench and in several surface piles. In addition, chemical waste materials probably originating from the nearby Vertac Chemical Corporation, including herbicides and associated dioxin impurities, have been disposed of at the site. Currently, as many as 50 drums of contaminated materials are estimated to be onsite, of which 30 drums are visibly corroded with their contents exposed. Investigations by EPA beginning in 1983 revealed that a 1/2-acre drum disposal area containing drums, waste piles of other types of contaminated debris, and associated soil contaminated with herbicides and dioxin, comprises the principal threat from the

(See Attached Page)

17. Document Analysis a. Descriptors
Record of Decision - Rogers Road Municipal Landfill, AR
First Remedial Action - Final
Contaminated Media: soil, debris
Key Contaminants: organics [dioxin, furans, 2,3,7,8-TCDD, pesticides (dieldrin), and herbicides (2,4-D, 2,4,5-T, 2,4,5-TP)]

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

18. Availability Statement	19. Security Class (This Report) None	21. No. of Pages 164
	20. Security Class (This Page) None	22. Price

(See ANSI-Z39.18) *See Instructions on Reverse*

OPTIONAL FORM 272 (4-77)
(Formerly NTIS-35)
Department of Commerce

EPA/ROD/R06-90/063
Rogers Road Municipal Landfill, AR
First Remedial Action - Final

Abstract (Continued)

site. Vertac Chemical Corporation wastes were also disposed of at the Jacksonville Municipal Landfill Superfund site, which is 1/2 mile east of the site. To achieve economies of scale, the two sites will be remediated concurrently, including excavating highly contaminated wastes and soil, and transporting these to Vertac for final treatment and disposition. The primary contaminants of concern affecting the soil and debris are organics including dioxin/furan (2,3,7,8-TCDD), the pesticide dieldrin, and herbicide compounds (2,4,5-T, 2,4-D, and 2,4,5-TP).

The selected remedial action for this site includes additional soil sampling with excavation of approximately 50 cubic yards of highly contaminated soil and debris (i.e., greater than 10 ug/kg of 2,3,7,8-TCDD), followed by offsite temporary storage of the material at the Vertac Chemical Corporation Superfund site; conducting thermal treatment of all Rogers Road site material stored at the Vertac site, followed by residual analysis to evaluate treatment effectiveness, backfilling of residuals on the Vertac site, and revegetating backfilled ash areas; steam cleaning and disposing of debris removed from the Rogers Road site at the Vertac site; backfilling excavated areas and the open trench with uncontaminated native soil and decontaminated refuse; covering onsite soil, debris, and waste contaminated at low levels (i.e., below the cleanup criteria) with twelve inches of native soil; inspecting and maintaining soil caps and fences; ground water monitoring; and implementing institutional controls including ground water and land use restrictions. The estimated present worth cost for this remedial action is $1,226,000, which includes a total O&M cost of $384,000 over 30 years.

PERFORMANCE STANDARDS OR GOALS: Pre-remedial action levels have been identified and will be used to determine where soil remediation is required. Post-remedial treatment goals will be used to assure that effective treatment has been achieved. Moderately-contaminated soil and debris triggering action levels, including 2,3,7,8-TCDD between 1 and 10 ug/kg (10^{-5} excess cancer risk), dieldrin greater than 37.0 ug/kg (10^{-7} excess cancer risk), and/or a dieldrin and herbicide (2,4,5-T and 2,4,5-TP) combination resulting in a cumulative Hazard Index (HI) exceeding 0.7, will be covered with 12 inches of clean soil. Thermal treatment will be used for approximately 50 cubic yards of soil and debris with 2,3,7,8-TCDD exceeding 10 ug/kg. Treatment goals include achieving 2,3,7,8-TCDD 1.0 ug/kg (health-based) or a 99.9999% destruction removal efficiency (40 CFR 264.343), and 2,4-D 10,000 ug/kg (40 CFR 268.43), 2,4,5-TP 7,900 ug/kg (40 CFR 268.43), and dieldrin 37 ug/kg (health-based), as well as a combined dieldrin and herbicide cumulative HI less than 0.7. The overall residual risk attained by these goals will be less than 8×10^{-5} and a maximum cumulative HI of 1.0.

Record of Decision

Rogers Road Municipal Landfill Superfund Site

U.S. Environmental Protection Agency
Region 6
September 1990

DECLARATION FOR THE RECORD OF DECISION
ROGERS ROAD MUNICIPAL LANDFILL, ARKANSAS

SEPTEMBER 1990

Statutory Preference for Treatment as a Principal Element is Met and Five-Year Review is Required.

SITE NAME AND LOCATION

Rogers Road Municipal Landfill
Pulaski County, Arkansas

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the Rogers Road Municipal Landfill site in Pulaski County, Arkansas, which was chosen in accordance with Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

This decision is based upon the contents of the administrative record file for the Rogers Road Municipal Landfill site.

The United States Environmental Protection Agency and the Arkansas Department of Pollution Control and Ecology agree on the selected remedy.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Record of Decision (ROD), may present an imminent and substantial endangerment to public health, welfare, or the environment.

DESCRIPTION OF THE SELECTED REMEDY

This final remedy addresses remediation of soil contamination by eliminating or reducing the principal and low-level threats posed by the site through treatment, engineering and institutional controls.

The major components of the selected remedy include:

- Sampling soil in ten-foot by ten-foot grids to more accurately define the amount of contaminated surface soil, debris, and waste onsite;

- Excavating and packaging for transport contaminated soil and debris containing more than 10 parts per billion (ppb) equivalent 2,3,7,8-Tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD);

- Transporting contaminated material to the Vertac Chemical Corp. Superfund site in Jacksonville, Arkansas, and providing temporary storage for the material at the Vertac site;

- Conducting thermal treatment of all Rogers Road Landfill material being temporarily stored at the Vertac site, and testing, disposal and revegetation of the resulting ash;

- Steam cleaning and disposing of large items of refuse removed from contaminated areas at the Rogers Road site;

- Backfilling and revegetating areas from which contaminated soil was removed with uncontaminated native soil and decontaminated refuse;

- Covering soil, debris and waste meeting the criteria stated below with twelve inches of native soil;

  CRITERIA: 1) Equivalent 2,3,7,8-TCDD concentrations greater than 1.0 ppb and less than or equal to 10.0 ppb, or

  2) Dieldrin concentrations greater than 37.0 ppb, or

  3) Cumulative Hazard Index greater than 0.7 for the following compounds:

  2,4,5-Trichlorophenoxy acetic acid (2,4,5-T),
  2,4,5-Trichlorophenoxy propionic acid (2,4,5-TP), and
  Dieldrin.

- Backfilling the open site trenches with clean fill;

- Ground water monitoring;

- Inspection and maintenance of the soil caps and of the existing fence; and

- Land-use controls limiting ground water use on and immediately downgradient of the site.

STATUTORY DETERMINATIONS

The selected remedy is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. This remedy utilizes permanent solutions and alternative treatment technologies (or resource recovery) to the maximum extent practicable and satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element.

Because this remedy will result in hazardous substances remaining onsite above health-based levels, a review will be conducted within five years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

Robert E. Layton Jr., P.E.
Regional Administrator
U.S. EPA - Region 6

9/27/90
Date

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SECTION 1.0
DECISION SUMMARY

DECISION SUMMARY

SITE LOCATION AND DESCRIPTION

SITE LOCATION

The Rogers Road Landfill Site is located in Pulaski County, outside the city limits of Jacksonville, Arkansas (Figures 1 and 2). It is situated immediately east of Rogers Road, one-tenth mile south of Graham Road. An old unpaved dirt road extends from Rogers Road and goes through the residential area, terminating at the landfill. Land records at the Pulaski County Court House describe the ten acre plot of land as the east half of the northeast quarter of Section 28, Township 3 North and Range 10 West. The site is approximately 12 miles northeast of Little Rock, Arkansas.

Less than one-half mile east of the Rogers Road Landfill site lies the Jacksonville Municipal Landfill. The Jacksonville site is also a nationally-ranked Superfund site which is at the same stage in the Superfund process as the Rogers Road Landfill site. Because of the proximity of the sites and the similarities in their features and characteristics, the site-related activities to date have been conducted concurrently. It is further intended that all future remedial activities will continue to be conducted simultaneously so that "economies of scale" can be realized.

SITE DESCRIPTION AND HISTORY

The property was acquired by the City of Jacksonville on September 16, 1953. Approximately half of the site was used intermittently as a municipal waste disposal facility, in conjunction with the Jacksonville Landfill, until October 1974. The landfill was closed when the Arkansas Department of Pollution Control and Ecology (ADPC&E) 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. 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 excavated trench, and in several surface piles, accompanied by open dumping in numerous areas around the site. After waste disposal, the trench, some of the surface piles and possibly other objects 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. The portion of the facility used for burning and land disposal was fenced in 1986, by the City of Jacksonville, to prevent

SITE LOCATION MAP

ROGERS ROAD LANDFILL, JACKSONVILLE, AR

FIG 1

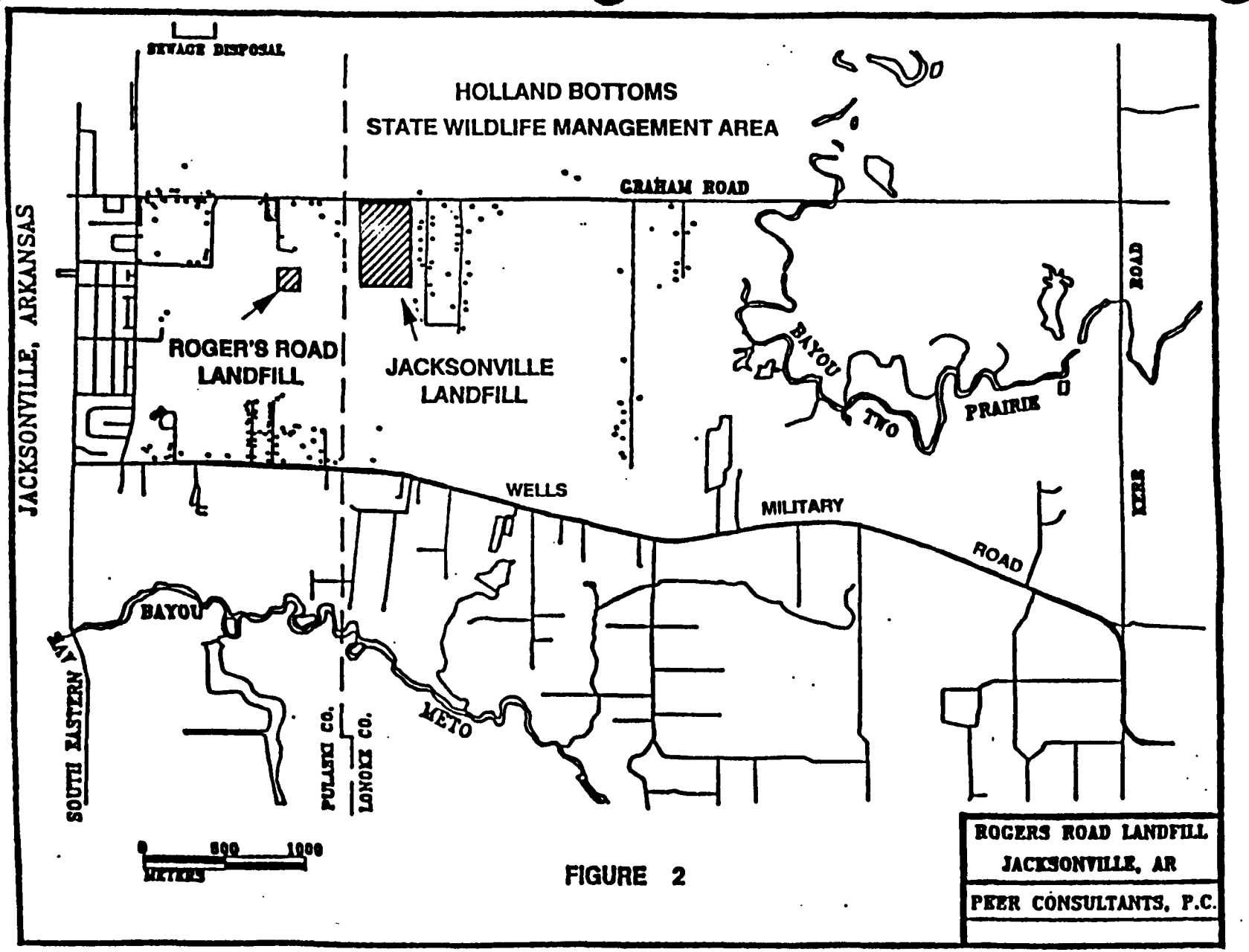

SEWAGE DISPOSAL
HOLLAND BOTTOMS
STATE WILDLIFE MANAGEMENT AREA
GRAHAM ROAD
JACKSONVILLE, ARKANSAS
ROGER'S ROAD LANDFILL
JACKSONVILLE LANDFILL
BAYOU TWO PRAIRIE
ROAD
WELLS
MILITARY
ROAD
BAYOU
SOUTH EASTERN
PULASKI CO.
LONOKE CO.
METO
0 500 1000
METERS
ROGERS ROAD LANDFILL
JACKSONVILLE, AR
PEER CONSULTANTS, P.C.

FIGURE 2

unauthorized access. The dimensions of this area are 300 feet x 237 feet (1.63 acres).

In addition to municipal waste, waste materials from the Vertac Chemical Corp in Jacksonville, Arkansas may have been disposed of at the Rogers Road site. This chemical plant produced numerous chemical products, including herbicides (and associated dioxin impurities). An estimated 15 to 50 drums of dioxin contaminated herbicide manufacturing waste were disposed of at the landfill. Approximately 30 drums are visible at the Rogers Road Landfill. They are not labeled and are very corroded. Parts of the drums are missing and the contents are exposed.

There are no structures on the landfill site property. The site is heavily vegetated, including the area used for drum disposal which is overgrown with tall grasses, except for the pile of corroded drums and herbicide waste, where herbicide contaminated material is exposed on the surface.

The Rogers Road Landfill was identified to EPA on May 10, 1983, through a citizens complaint while EPA was conducting a site inspection of the Jacksonville Landfill, located one-half mile to the east. During a private investigation conducted for the EPA as part of a Potentially Responsible Party search, it was reported that municipal wastes from the City of Jacksonville as well as chemical wastes were disposed of at the Rogers Road Landfill. No written records were apparently maintained by the commercial or residential users that identify the quantities or types of wastes disposed of at the site.

In May, 1983 a Technical Assistance Team (TAT) from Weston-SPER inspected the site. A Field Investigation Team (FIT) from Ecology and Environment inspected the site in May, 1985 for photo documentation and to assess the site for access. The Ecology and Environment FIT performed a site investigation in June 1985. A FIT report was prepared in September 1985 outlining the soil, residential well, surface water, sediment and air sampling results.

The Rogers Road Landfill was proposed for inclusion on the EPA National Priorities List (NPL) of uncontrolled hazardous waste sites on January 22, 1987. It was added to the NPL on July 22, 1987. The NPL score for this site was 29.64.

A remedial investigation (RI) was conducted at the Landfill, with field activities occurring between November 1988 and March 1990. In conjunction with the RI, a risk assessment (RA) was performed based upon the analytical results for the field samples. The results of the RI, along with those from prior site investigations, were summarized in an June 1990 Remedial Investigation Report prepared by PEER Consultants, P.C. and Resource Applications, Inc. The description of the site and of

associated contamination in this Feasibility Study is based largely on material in the RI report.

Having completed the RI and RA reports, the project proceeded to the Feasibility Study (FS) phase. The FS was conducted in order to screen and evaluate the most promising options for remediating the site. In addition, it provided a basis for remedy selection. The results of the FS are documented in the Feasibility Study Report, June 1990.

Topography and Surface Characteristics

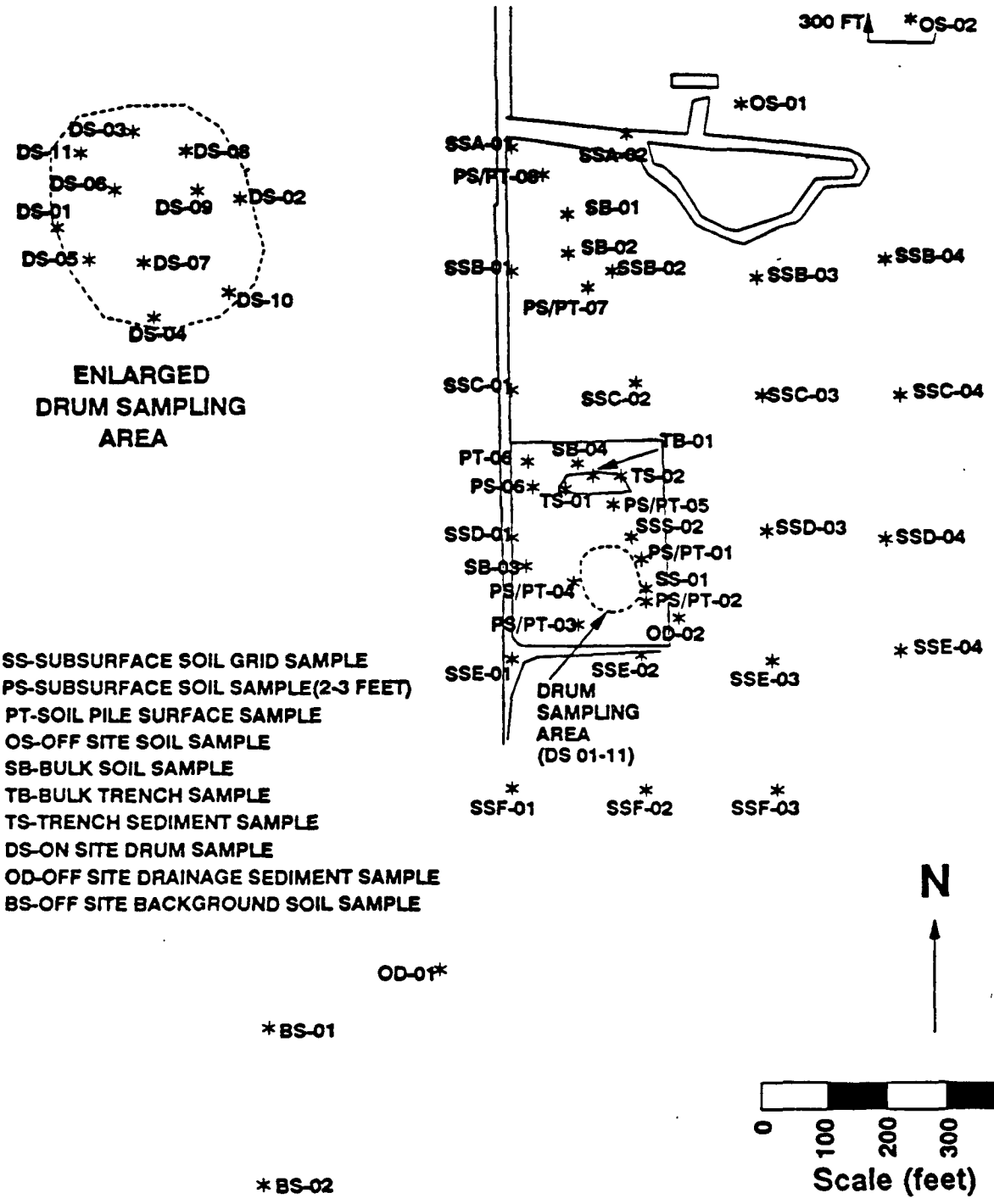
The natural terrain at the Rogers Road Landfill is flat. However, there are several soil mounds (approximately two to four feet high) covering piles of waste and possibly at least one buried container or transformer. A partially backfilled trench, where waste disposal and burning took place, is located at the north end of the fenced portion of the site. It appears that no excavation had taken place since the landfill was closed in 1974 until the remedial investigation.

Figure 3 shows the shows the locations from which soil and sediment samples were taken and the general layout of the site; Figure 4 shows general features of the fenced portion of the site, where the most contaminated soil is located.

The site is generally covered with grass and ten to fifteen year-old wooded growth. Vegetation is very lush throughout the landfill, with the exception of the drainage ditch alongside the western edge of the landfill and an area used for the disposal of drums of chemical waste, called the drum disposal area.

The drum disposal area contains a central waste pile and several smaller piles. The central pile includes pieces of corroded drums and shipping pallets, along with crusted, fibrous waste material contaminated with herbicides and dioxins. Smaller waste piles containing similar waste, debris and pieces of corroded drums are located near the central pile in the drum disposal area. Five mounds, each approximately three feet long, two feet wide and two feet tall are located at the west and northwest edges of the drum disposal area, within 50 feet of the nearest waste pile. At least one of the mounds contains contaminated waste and possibly transformers or other objects. A ridge is located northeast of the drum disposal area. A pile of rusty paint cans is located near the fence on the west side of the site; and a large portion of the south end of the site is covered with briars, bottles and broken glass.

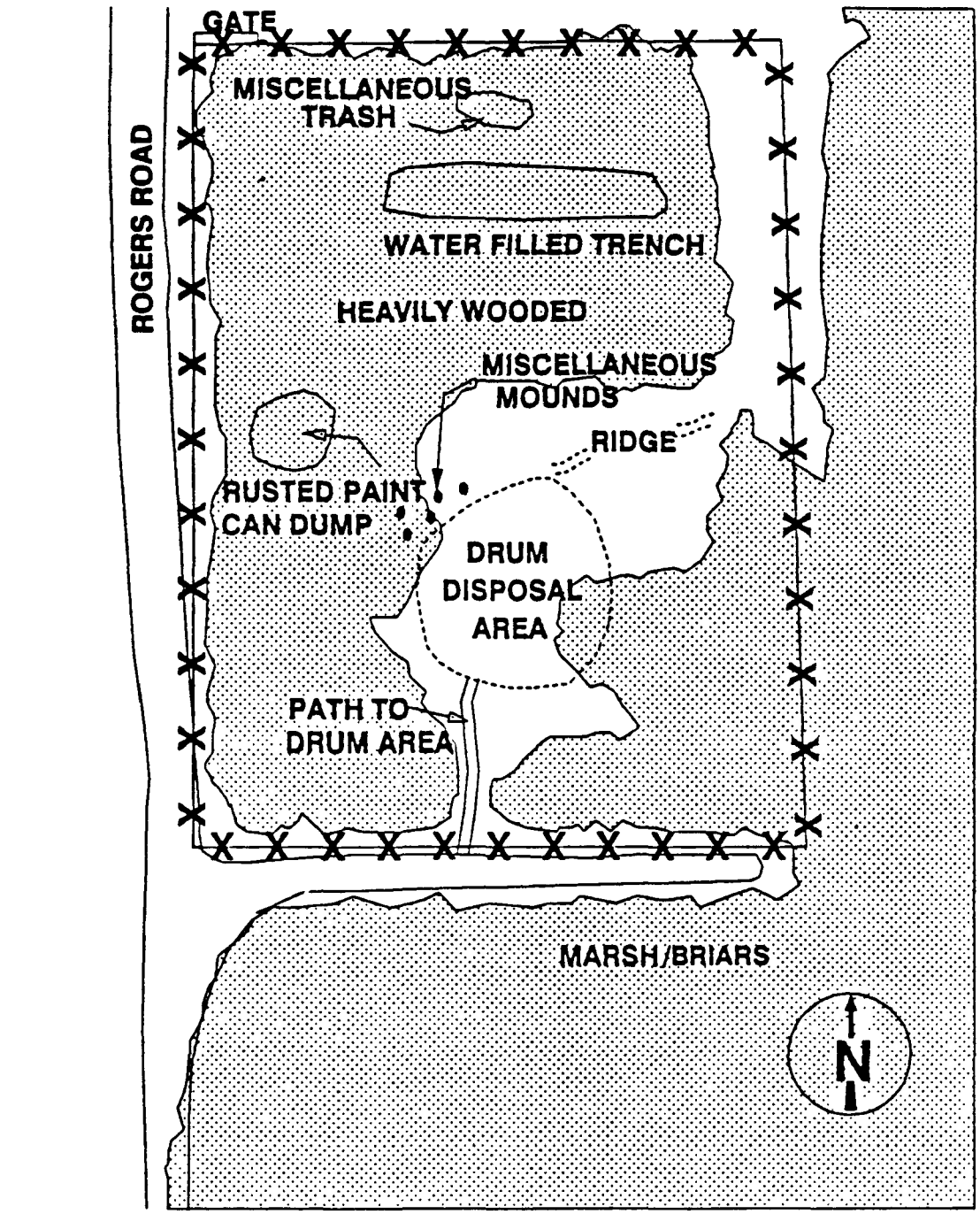
The contaminated portion of the site is surrounded with a four foot tall fence. It is not effective at keeping people off the site. Portions of the fence were barbed wire and were reported to have been removed by scavengers.



SOIL SAMPLING LOCATIONS

ROGER'S ROAD SITE, JACKSONVILLE, AR

FIG. 3



SITE DETAILS

ROGERS ROAD LANDFILL, JACKSONVILLE, AR

FIG. 4

The site is located within a 100-year flood plain and is poorly drained because of slow percolation of rainwater through the type CL clay and silty-clay at the surface. Annual rainfall averages 50 inches, but only two inches of rain is estimated to percolate into the ground water system. After precipitation events, the landfill typically has many areas with standing water; and the site becomes swampy during the winter months. In the area of the Rogers Road Landfill, there is also a seasonal perched water table within five feet of the surface that keeps surface soils saturated during wet seasons. The result is that the site gets extremely muddy during periods of extended rainfall. During the remedial investigation, heavy vehicles had serious problems with on-site mud. For example, a bulldozer reportedly got stuck in the mud. March, April and May are the wettest months; and August, September and October are the driest months. The site is reported to most likely be dry enough to avoid significant problems with mud during July and August, the hottest months of the year.

Bayou Two Prairie is located approximately two miles east and northeast of the landfill and exerts the greatest hydrological influence on the site area. The surface gradient at the landfill is predominantly to the east-northeast, and surface drainage is reported to be to be toward a manmade drainage ditch at the Lonoke-Pulaski County Line, which empties into the Holland Bottoms Wildlife Management Area.

Geology

The Rogers Road Landfill Site is located a short distance southeast of a fall zone formed by two major physiographic provinces. Underlying the site is the Paleocene Age Midway Formation and the Eocene Age Wilcox and Claiborne Groups of the Coastal Plain province. The Midway Formation is comprised of dark gray to blue to black, noncalcareous, nonfissile, waxy clays; intermixed with softer blue-gray, calcareous, foraminifera bearing clays.

Overlying the Midway Formation is the unfossiliferous, interbedded chocolate-brown lignitic clays; black sandy clays; and very fine sand of the Wilcox Group. Disconformably overlying the Wilcox is the Claiborne Group, consisting of interbedded white to light gray fine sand, gray to tan sandy clay, and lignite.

Thinning to the northwest, the Coastal Plain Sediments taper over the Pennsylvanian Age Atoka Formation of the Interior Highland physiographic provence, which outcrops along the fall zone. The Atoka formation consists of interbedded shale and tightly cemented siltstone and sandstone. This formation was not encountered in any of the borings.

Figures 2-2 through 2-8 of the Rogers Road Landfill Remedial Investigation Report show the locations of geologic cross sections for the Rogers Road and the nearby Jacksonville Landfill Sites. These cross sections illustrate the complexity of the subsurface strata, as well as details concerning the locations of monitoring wells.

The borings near the Rogers Road Site generally encountered a layer of clay, and then a layer of sand with intermittent, thin veins of clay. Clay from the Midway Formation was encountered at the bottom of boring MWR1 and MWR7, at 58.5 ft and 71.5 ft respectively and appears to underlay the sand in the aquifer under the area.

The geologic cross-section profiles were drawn based on lithologic data obtained from 20 ground water monitoring wells. Four groups of sediments were identified in the boring logs: clay, silty clay/clayey silt, fine silt, and medium sand. Two thick clay layers occur underneath Rogers Road Site, in contrast with three or more clay layers underneath the Jacksonville Landfill Site. At Rogers Road, the surface layer is clay, with a layer of clayey silt beneath. A fine to medium-grained sand layer occurs below this, with thin veins or lenses of clay within it. This is situated above a thick layer of clay. The silt and the sand with thin clay veins and lenses appear to function as one aquifer. Two separate aquifers exist at the Jacksonville Landfill Site because a clay layer at about 25 feet acts as an aquitard.

The transition from one aquifer at the Rogers Road Site to two aquifers at the Jacksonville Site occurs at MWR-06 (approximately mid-way between the two landfills), where a thin clay layer (4 feet thick) separates a reddish brown, clayey silt from fine sands.

Most of the surface soil at the Rogers Road site consists of the Amy Series Clay (CL) and Silty Clay (CL). The predominant soil units within the series are the Amy Silt Loam and the Amy-Urban land complex. Some of the surface soil can be described as high plastic clay (CH), organic clay (OH) and organic silt (OL). These types of soil tend to be corrosive to concrete and highly corrosive to steel. Glass fragments, rusty discarded appliances, and other refuse are mixed in with the soil in many areas of the site. The debris often interfered with subsurface sampling. It was not unusual for four or more attempts to be required before it was possible to take a soil sample with a hand auger at a depth of two feet near the southern end of the fenced portion of the site.

Hydrogeology

Ground water flow under and in the immediate vicinity of the Rogers Road Site is to the east-southeast. As previously indicated, standing water and near-surface water is sometimes

present on the site and keeps the soil saturated during the rainy season. During the hottest season (July and August), the surface conditions may become dry. Detailed information on seasonal variations in the depth to near-surface water is unavailable.

Shallow monitoring wells (with screen depths between 15 and 25 feet below the surface) were dug into the upper sand layer, except for one well (MWR-05), which was installed in the silty clay overlying the sand layer.

The section underlying both the Rogers Road and the Jacksonville Landfill Sites actually consists of deep sands and clays, which are probably representative of the Eocene series, and shallow silts and clays, which most likely represent the upper, fine grained Quaternary deposits. The boundary between the Eocene series and the Quaternary deposits is difficult to define because of the absence of the Quaternary basal sands and gravels. Therefore, the deposits overlying the Paleocene Midway Formation are defined as the Eocene/Quaternary section.

The Quaternary/Eocene alluvial aquifer (at a depth of about 100 feet) is the most important water bearing unit in the Rogers Road Area, providing water for agricultural, domestic and municipal uses. All municipal ground water wells tap Quaternary sand and gravel deposits.

The Quaternary/Eocene aquifer downgradient of the Rogers Road Site typically consists of 45 feet of basal sands and gravel, overlain by about 80 feet of silts and clays. However, under the Rogers Road Site, the surface clay and silty clay is only 10 to 25 feet thick.

Because of the presence of the clay layer at the surface at the Rogers Road Landfill, it is difficult for the rain water to percolate to the underlying silt and sand. However, when water does percolate into the sand layer, the thin veins and lenses of clays that occur within this sand may not function as aquitards because of their limited extent. This suggests that connections between the Quaternary/Eocene aquifer and the water percolating through the clay and silty clay at the surface may be fairly direct at the Rogers Road Site. However, while such connections may be reasonably inferred, they cannot be positively proven from the existing data.

Ground water was encountered in both shallow and deep wells across the two landfill sites. The deep wells (up to 130 feet deep) at both the Rogers Road and the Jacksonville Landfill Sites were screened across the lowermost sand units just above the Paleocene Midway Formation. Although local variations should persist between the wells, it is believed that the lower sand units are correlative and allow for direct hydraulic communication. In contrast, examination of the boring logs reveal that the shallow

wells were screened across different lithologies between the Rogers Road and Jacksonville sites.

At Rogers Road, the dominant shallow water bearing zone consists of a white to light gray, fine to medium grained, clean sand, which comprises most of the section and is believed to extend stratigraphically downward to the levels encountered by the deep wells. At the Jacksonville site, thick clay and silty clay layers separate the Quaternary/Eocene aquifer from one or more semi-confined aquifers above.

In general, the hydraulic conductivity values for wells completed in sand (average 7.3×10^{-5} ft/sec) were an order of magnitude higher than the values for wells completed in silt (average 8.3×10^{-6} ft/sec).

Classification of Ground Water

It is the policy of EPA's Superfund program to use as a guide the framework provided by EPA's Ground water Protection Strategy in determining the appropriate remediation for contaminated ground water. Three classes of ground water have been established on the basis of ground water value and vulnerability to contamination.

The various ground water classes follow:

Class I: Special ground water (Class I) is highly vulnerable to contamination because of hydrological characteristics of the areas in which it occurs, and characterized by either of the following factors:

- The ground water is irreplaceable; no reasonable alternative source of drinking water is available to substantial populations.

- The ground water is ecologically vital; the aquifer provides the base flow for a particularly sensitive ecological system that if polluted, would destroy a unique habitat.

Class II: This classification includes all other ground water that is currently used (IIA) or is potentially available (IIB) for drinking water, agriculture, or other beneficial use.

Class III: Class IIIA and IIIB ground water is that which is not considered a potential source of drinking water and of limited beneficial use. This classification may be used when the water is saline (i.e., it has a total dissolved solids level of 10,000 milligrams per liter (mg/l), or is otherwise contaminated beyond levels that allow remediation using methods reasonably employed in public water treatment systems. This contamination could be due to naturally occurring constituents, human activity that is not associated with a particular waste disposal activity or another

site. Class III also includes ground water that is not available in sufficient quantity at any depth to meet the needs of an average household.

Class IIIA includes ground water that is interconnected to surface water or adjacent ground water that potentially could be used for drinking water. Class IIIB includes ground water that has no interconnection to surface water or adjacent aquifers. For Class IIIA ground water, establishing cleanup levels should take into consideration the degree of interconnection to Class I or Class II ground water or the rate of discharge to surface water so that levels of contaminants in higher class ground water do not increase as a result of the interconnection.

The State of Arkansas has not yet instituted an active ground water classification program. The ground water below the Rogers Road site has not been State-classified and was therefore classified for the purposes of establishing remedial objectives according to the criteria set forth above. The results of the classification process are presented below.

The Quaternary alluvial aquifer (at a depth of approximately 100 feet) is the predominant water bearing unit in the Jacksonville area. Since this ground water unit is presently used as a drinking water source, it is classified for the purposes of this site as a Class IIA aquifer.

It should be noted that the classification provided above is site specific and limited in scope. Classifications performed by EPA under the Superfund program do not apply to the general geographic area in which they are performed, nor to any Federal, State, or private action other than Superfund remediation.

SURROUNDING LAND USE AND SENSITIVE RECEIVERS

The site is located within a residential and agricultural area. The area immediately adjacent to the site on the north, east, and south is wooded. Rogers Road is immediately to the west of the site. A pig pen is situated about 100 yards north of the fenced portion of site, past an area of forest. A house-trailer is situated about 160 yards north of the fenced portion of the site; and several more homes are located along Rogers Road, north and northwest of the site. The area immediately west of the site and Rogers Road is used for agriculture.

A residential well inventory was conducted as part of the Remedial Investigation. Information was collected from residences near the landfill. Only one residence near the Rogers Road Landfill ever used ground water; this household stopped using the well when municipal water was made available. The other residences have used only the City water system. The City of Jacksonville installed a municipal water system, which has been serving the

residents in the area of Rogers Road since sometime prior to 1974.

Within a one-half mile radius of the Rogers Road Landfill, there are approximately 51 single family homes. The one-half mile radius was chosen because of the population distribution. That is, there is a fairly high population density within one-half mile radius, followed by a more sparsely populated area. Assuming an average of three to four people per home, approximately 153 to 204 people live within a one-half mile radius of the site.

There are no businesses or commercial areas located within one and one-half miles of the landfill. There is a school within three quarters of a mile of the landfill. The types of receptors are not expected to change in the foreseeable future. This is because no new businesses, commercial areas or schools are expected to relocate within at least one mile of the landfill. The landfill is located within a predominantly agricultural area. Because of these factors, the area does not lend itself to commercial type development.

Within the next 50 years, the number of residences immediately adjacent to the landfill could increase (personal communication, City Engineer, Jacksonville, Arkansas). The numbers of people in the entire City of Jacksonville are expected to increase relatively slowly compared to more densely populated regions in the United States within the next 40 years. The Metropolitan Council of Governments for the Little Rock/North Little Rock Metropolitan Statistical Area has estimated the population of the City of Jacksonville to be 53,000 in the year 2020 and 62,540 in the year 2030. Taken together, within the next 50 years, the types of receptors are expected to remain relatively stable, increasing slightly in the number of people within the immediate area of the landfill.

The Holland Bottoms State Wildlife Management Area is located approximately one-half mile northeast of the site. Investigations indicate there are no sensitive or endangered species or critical habitats located within or immediately adjacent to the landfill. Animals most likely impacted are common wildlife, such as squirrels, rabbits, birds and deer and domestic animals that were observed on-site during the remedial investigation.

ENFORCEMENT HISTORY

During the years that the Rogers Road Landfill was operated, the site was run as a typical sanitary landfill and not as a RCRA permitted 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. The potentially responsible party (PRP) searches described below were used identify the parties involved

in waste operations at the site and the extent of their involvement.

In order to assist in the identification of generators and transporters of site wastes, EPA sent requests for information under CERCLA Section 104(e)(1) to several firms considered to have information regarding the disposal of wastes at the site. These requests were sent during the period of June 1985 to September 1985. Responses were received during the following months.

In February 1987, a potentially responsible party (PRP) search was initiated. The site owner/operator during the period of its operation as a sanitary landfill was identified as the City of Jacksonville. The investigation concluded that the two primary PRPs identified during the search as generators of chemical wastes at the Rogers Road Landfill were Hercules Inc., and Vertac Chemical Corp.

The PRPs were notified in writing on January 5, 1988 via special notice letters and given the opportunity to conduct the RI/FS under EPA oversight. None, however, elected to undertake these activities. As part of their responses to the special notice letters, the PRPs provided EPA with lists of additional parties which may have been involved in the disposal of chemical wastes at the site. EPA has initiated a second PRP search in effort to investigate the actual involvement of the parties identified on the lists, and to obtain additional information regarding previously identified PRPs.

HIGHLIGHTS OF COMMUNITY PARTICIPATION

A Community Relations Plan for the Rogers Road Landfill Municipal Landfill site was finalized in November 1988. This document lists contacts and interested parties throughout government and the local community. It also establishes communication pathways to ensure timely dissemination of pertinent information and emphasizes community involvement. A fact sheet outlining the Superfund process and the Remedial Investigation plans was distributed at an open house in July 1988. Updates were also released in November 1988, March 1989, July 1989, December 1989 and May 1990. The RI/FS and Proposed Plan were released to the public in July 1990. All of these documents were made available to the public at the two local information repositories: the Jacksonville City Hall and Public Library. The Administrative Record is maintained at City Hall. An open house was held on July 12, 1990 to provide an opportunity for residents to discuss the proposed plan and prepare their comments for the public meeting. A public comment period was held from July 9, 1990 through September 7, 1990. In addition, a public meeting was held on July 18, 1990 to present the results of the RI/FS and the preferred alternative. All comments received by EPA prior to the end of the public comment period, including those expressed verbally at the

public meeting, are addressed in the Responsiveness Summary which is attached to this Record of Decision.

SCOPE AND ROLE OF PROPOSED RESPONSE ACTION

The studies undertaken at the Rogers Road Landfill site revealed that contaminated soil (particularly one "hot spot" near the southeast end of the property) comprises the principal threat posed by the site. The scope of this Record of Decision is to address this and other low level site threats in the following fashion:

- Remedy contaminated soil using thermal treatment (for the principal threat) and soil cover (for the low level threat) so that it no longer presents a threat to human health or the environment.

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

- Establish a method of long term monitoring to ensure that the soil cover is properly maintained and that the ground water quality is adequately monitored.

This final remedy is intended to address the entire site with regard to the principal and low level threats to human health and the environment posed by site contaminants as indicated in the risk assessment for the site. The findings of the risk assessment are presented in the Rogers Road Landfill Risk Assessment Report, April 1990, and are summarized in a later section of this document.

As previously mentioned, the Jacksonville Municipal Landfill site is located approximately 1/2 mile east of the Rogers Road site and has been identified as having many similar site features and characteristics. Due to the similarities of the Rogers Road and Jacksonville sites, remedial activities for both are proposed to be conducted simultaneously. By implementing similar treatment methods and utilizing the same equipment, considerable cost, logistical, and administrative benefits can be obtained.

The Rogers Road and Jacksonville wastes are very similar in physical and chemical makeup to that waste produced by Vertac Chemical Corp., of Jacksonville, Arkansas. In addition, EPA holds evidence that indicates that the waste did indeed come from that facility. After careful consideration, it has been determined that in all likelihood the dioxin and herbicides located at these two landfills originated at Vertac. For this reason it is proposed that these wastes be excavated and transported back to the Vertac facility for ultimate disposal.

SUMMARY OF SITE CHARACTERISTICS

NATURE AND EXTENT OF CONTAMINATION

Soils

Onsite Soils and Sediment: The primary source of organic contamination at the Rogers Road Landfill Site is the drum disposal area and nearby mounds southeast of the middle of the fenced area. Remnants of an estimated 15 to 50 drums are visible in piles in the drum disposal area. The size of this area is less than one-half acre.

It appears probable that drums were disposed of only on the surface, rather than buried below the natural grade. However, a metal object was encountered at a depth of approximately eighteen inches below the surface of one of the five 2'x2'x3' mounds on the west and northwest side of the drum disposal area. The object could have been a buried or covered container or a transformer. The highest level of 2,3,7,8-TCDD observed anywhere on the Rogers Road Site (150 ppb) was collected from the sample immediately above the metal object.

The contamination of most concern is from dioxin/furan, dieldrin and herbicide compounds in the drum pile and adjacent mounds. The contaminants of concern that were detected in appreciable concentrations are 2,3,7,8-Tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD), the herbicides 2,4-Dichlorophenoxy acetic acid (2,4-D), 2,4,5-Trichlorophenoxy acetic acid (2,4,5-T) and 2,4,5-Trichlorophenoxy propionic acid (2,4,5-TP or Silvex) and the pesticide Dieldrin.

2,3,7,8-TCDD is the most toxic of the class of compounds known as chlorinated dibenzo-p-dioxins, or commonly referred to as simply "dioxins". There are 75 possible dioxins. 2,3,7,8-TCDD is a colorless solid with no known odor. It does not occur naturally nor is it intentionally manufactured by any industry, except as a reference standard. It can be inadvertently produced in very small amounts as an impurity during the manufacture of certain herbicides and germicides and has been detected in products of burned municipal and industrial wastes. At the present time, 2,3,7,8-TCDD is not used for any purpose other than scientific research.

In humans, 2,3,7,8-TCDD causes chloracne, a severe skin lesion that usually occurs on the head and upper body. Unlike common acne, chloracne is more disfiguring and often lasts for years after the initial exposure. There is suggestive evidence that 2,3,7,8-TCDD causes liver damage and digestive disorders in humans. Animal studies have indicated that dioxins produce toxicity to the immune system, promotes adverse reproductive effects, and can result in malformations in the offspring,

although these latter effects have not been demonstrated in humans. The human evidence for 2,3,7,8-TCDD alone is inadequate to demonstrate or reflect a carcinogenic hazard, but based on the positive evidence provided through animal studies, 2,3,7,8-TCDD is considered by EPA to be a probable human carcinogen.

During the late 1970s, the EPA was faced with assessing the human health significance of exposure to 2,3,7,8-TCDD. In preparation for the cancellation hearings for the herbicides 2,4,5-T and Silvex, the Agency generated risk assessments for several toxic responses for 2,3,7,8-TCDD. The quantitative cancer risk assessment developed by the Carcinogen Assessment Group was later adapted for use in the Water Quality Criteria Document for 2,3,7,8-TCDD. In addition to carcinogenicity concerns, the Water Quality Criteria document contains an assessment of systemic toxicity based on reproductive effects resulting from exposure to 2,3,7,8-TCDD.

Later, it became clear that exposure situations exist in the country which involve more than 2,3,7,8-TCDD alone. Data on emissions from combustion sources (e.g., hazardous waste and municipal waste incinerators and contents of waste from certain industrial production processes indicate that the majority of the 75 chlorinated dibenzo-p-dioxins (CDDs) and 135 chlorinated dibenzofurans (CDFs) can be detected in the environment.

In recent years, the reporting of at least homologue-specific data for the CDDs and CDFs has become commonplace, and the Agency has taken some steps to address the significance of these findings. For example, the Health Assessment Document for Polychlorinated Dibenzo-p-Dioxins, prepared for the Office of Air Quality Planning and Standards, contains a quantitative risk assessment for a mixture of hexachlorodibenzo-p-dioxins (HxCDDs) based on carcinogenicity studies conducted by the National Cancer Institute. These concerns have also led to regulatory action: e.g., several industrial wastes containing tetra-, penta-, and hexa-chlorodioxins, and -dibenzofurans were recently designated by the Agency as EPA hazardous wastes.

Faced with increasing amounts of isomer- and homologue-specific data, and recognizing the significant potency and structure-activity relationships exhibited in in-vivo and in-vitro studies of CDDs and CDFs, the CDD/CDF Technical Panel of the Risk Assessment Forum (Forum) perceived a need to address more generally the potential risks posed by mixtures of congeners other than 2,3,7,8-TCDD and HxCDDs. Detailed consideration of the toxicity of the vast majority of the CDDs and CDFs is limited by the lack of a complete toxicological data base on most of the congeners. Further, it is unlikely that many long-term test results will be available soon. For example, research on 2,3,7,8-TCDD has been under way for more than two decades at an estimated cost of more than one hundred million dollars. Therefore, the

Forum was instrumental in leading to EPA's adoption of an interim science policy position for use in assessing risks associated with CDD/CDF mixtures, until more definitive scientific data are available.

The toxicity equivalency factor (TEF) method is an interim procedure for assessing the risks associated with exposures to complex mixtures of CDDs and CDFs. The method relates the toxicity of the 210 structurally related chemical pollutants and is based on a limited data base of in-vivo and in-vitro toxicity testing. By relating the toxicity of the 209 CDDs and CDFs to the highly studied 2,3,7,8-TCDD, the approach simplifies the assessment of risks involving exposures to mixtures of CDDS and CDFs.

In 1987, the EPA formally adopted an interim TEF procedure (EPA-TEF/87), which was used by EPA regulatory programs and Regions in addressing a variety of situations of environmental contamination involving CDDs and CDFs. The EPA-TEF/87 method was published as "Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-dioxins and -Dibenzofurans (CDDs and CDFs)", (EPA/625/3-87/012). Since the time that the 1987 report was published, the Agency was active in an international project aimed at adopting a common set of TEFs, the International TEFs/89 (I-TEF/89), to promote consistency in addressing contamination involving CDDs and CDFs. The first update report, "1989 Update to the Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-dioxins and -Dibenzofurans (CDDs and CDFs)", identifies EPA's adoption of the I-TEF/89 as a revision to the EPA-TEF/87.

The I-TEF/89 method was followed throughout the RI/FS process at the Rogers Road Landfill project. For comparison, the EPA-TEF/87 calculations were produced and documented in the Rogers Road Landfill Risk Assessment Report. In general, the effect of the modifications reflected in the I-TEF/89 method were modest, with the calculated differences falling within 2 - 5 percent of each other. The equivalency factors used in each of these methods are presented in the Risk Assessment Report. Where the term "equivalent 2,3,7,8-TCDD" is mentioned in this Record of Decision, it refers to an equivalent concentration of 2,3,7,8-TCDD resulting from the I-TEF/89 method of calculation.

Dichlorophenoxy acetic acid (2,4-D) is a systemic herbicide widely used for control of broad leaf weeds in cereal crops and sugar cane and on turf, pastures and non-cropland. It is a component of Agent Orange, the defoliant most widely used in Vietnam. It promoted tumors after being painted on the skin of mice, and it probably is a weak mutagen. 2,4-D caused developmental abnormalities and was fetotoxic when administered to pregnant

rats, mice, and hamsters. Dermal exposure to 2,4-D causes severe peripheral neuropathy.

2,4,5-Trichlorophenoxy acetic acid (2,4,5-T) is an organic acid that possesses the property of regulating plant growth at low concentrations and killing plants at high concentrations. It has been used to induce coloration in fruit, as a fruit set and antidrop agent, for brush control and to control aquatic and herbaceous land plants. Possibly its most significant use was as one of the major constituents of Agent Orange. It is commonly contaminated with 2,3,7,8-TCDD, which may be responsible for some of the effects associated with exposure to technical 2,4,5-T. These effects include chloracne and the induction of microsomal mixed function oxidase activity. Administration of purified 2,4,5-T has been shown to cause fetal loss, disrupt fetal development, and induce fetal malformations. In 1979, EPA ordered an emergency ban on 2,4,5-T production based on a report of an increase in spontaneous abortions in women of a forestry community. That ban has never been lifted and all uses have been canceled.

2,4,5-Trichlorophenoxy propionic acid (2,4,5-TP) is a broad spectrum herbicide which is contaminated with 2,3,7,8-TCDD, a toxic byproduct formed during the manufacturing process. 2,4,5-TP acts as a hormone-type weed killer and is readily absorbed by leaves and stems. The toxic effects associated with exposure to 2,4,5-TP are generally considered to be caused by 2,3,7,8-TCDD. However, pure 2,4,5-TP may have an adverse effect on reproduction that is not attributable to 2,3,7,8-TCDD.

Dieldrin is the common name of an insecticide that has been used in agriculture for soil and seed treatment and in public health to control disease vectors such as mosquitos and tse-tse flies. It also had veterinary use as a sheep dip and has been used in treatment of wood and mothproofing of woolen products. Because dieldrin is not currently produced in, or imported into, the United States, their use is believed to be minimal. Studies with animals fed dieldrin have shown that the liver can be damaged and the ability of the immune system to protect against infections can be suppressed. Although there is inadequate evidence to judge whether dieldrin is carcinogenic in humans, the EPA considers it to be a probable carcinogen based on sufficient evidence in animals.

The highest concentration of 2,3,7,8-TCDD detected at the site was found within the drum disposal area in a subsurface sample eighteen inches below the surface of a mound west of the drum pile. The 2,3,7,8-TCDD concentration was 150 ppb, while the total 2,3,7,8-TCDD equivalence of this sample was 159 ppb. Also found within the drum disposal area were the highest concentrations of herbicides at 32,000,000 ppb (3.2%), 7,700,000 ppb (0.8%) and 1,000,000 ppb (0.1%) for 2,4-D, 2,4,5-T, and 2,4,5-TP

respectively. The highest concentration of dieldrin was 37,000 ppb, detected at the top of a mound southwest of the drum pile. Detected compounds, concentration ranges and detection frequencies associated with this location is summarized in Table 1.

Based upon the results documented in the Rogers Road Contaminant Mapping Study Report, July 27, 1990, it is estimated that within the drum disposal area approximately 250 cubic yards of soil, waste and debris contain more than 1 ppb of equivalent 2,3,7,8-TCDD. Because of the strong adhesion of dioxin/furan compounds to the clayey soil found at the site, all contamination appears to be limited to the top one foot of soil. This quantity also includes approximately 50 cubic yards of soil which was found to contain more than 10 ppb equivalent 2,3,7,8-TCDD.

An additional 120 cubic yards of soil containing dieldrin above 37 ppb, the concentration equivalent to the 1 x 10^{-6} risk level, was found at the perimeter of the drum disposal area. (An explanation of the derivation of this concentration and the associated risk level will be presented later in the ROD.) The degree of overlap between the areas contaminated with dieldrin and 2,3,7,8-TCDD is presently uncertain, but will be defined as part of the remedial design so that the appropriate method of remediating the soil can be determined. For the purposes of this study, however, the areas were considered to be mutually exclusive.

Contaminated soil volumes are as follows:

CONTAMINATED SOIL VOLUMES
IN DRUM DISPOSAL AREA

Contaminant	Action Level	Quantity
2,3,7,8-TCDD	1.0 < Conc. ≤ 10 ppb	200 cy
	< 10 ppb	50 cy
Dieldrin	< 37 ppb	120 cy
Total		370 cy

One of the primary factors considered when evaluating proper treatment and disposal of contaminated site soil is whether the waste material is "RCRA listed". That is, whether it is contained in one of the lists of hazardous wastes under 40 CFR Part 261, Subpart D.

Under 40 CFR Part 261.31, wastes from various processes that are likely to produce dioxins are listed as F020, F021, F022, F023, F026, F027 and F028 hazardous waste. For example, wastes from the production or manufacturing use of tri- or pentachlorophenol (or

TABLE 1

DRUM DISPOSAL AREA
SAMPLE ANALYSIS SUMMARY
ROGERS ROAD LANDFILL

Compound[1]	No. of Occurrences/ No. of Samples	Concentration Range (ppb)	Sample With Maximum Concentration[2]
Volatiles			
Bromomethane	1/12	9,900	DS-03 D
Methylene Chloride	5/12	6-15,000*	DS-08
Acetone	8/12	46-6,600*	DS-11
Toluene	3/12	6-1,600*	DS-04
Semivolatiles			
Phenol*	1/12	3,100*	DS-10
2-Chlorophenol	1/12	35	DS-10
Benzoic Acid	2/12	1,000	DS-10
2,4-Dichlorophenol	2/12	1,200-1,900	DS-10
2,4,5-Trichlorophenol	2/12	1,800-2,400	DS-10
Pentachlorophenol	2/12	600-2,200	DS-10
Di-n-butylphthalate	2/12	280-290	DS-10
Fluoranthene	1/12	92	DS-10
Pyrene	1/12	110	DS-10
Butylbenzylphthalate	1/12	330	DS-10
Benzo(a)anthracene	1/12	140	DS-10
Bis(2-Ethylhexyl) Phthalate	2/12	660-3800*	DS-10
Di-n-octyl Phthalate	1/12	570	DS-10
Pesticides/PCBs			
Dieldrin[3]	7/18	11-37,000	PT-03
Gamma-Chlordane	1/12	48	DS-10
Herbicides			
2,4-D	12/13	310,000-32,000,000	DS-11
2,4,5-TP	4/13	118-1,000,000	DS-01
2,4,5-T	9/13	140,000-7,700,000	DS-01

TABLE 1 (Cont'd)

DRUM DISPOSAL AREA
SAMPLE ANALYSIS SUMMARY
ROGERS ROAD LANDFILL

Compound[1]	No. of Occurrences/ No. of Samples	Concentration Range (ppb)	Sample With Maximum Concentration[2]
Dioxins			
TCDFs	9/13	7.2-134	DS-11
PeCDFs	12/13	2.1-66.0	DS-11
HxCDFs	4/13	0.18-9.9	DS-03 D
HpCDFs	4/13	0.17-10.8	DS-03 D
OCDF	2/13	1.3-10.7	DS-03 D
2,3,7,8-TCDF	1/13	30.3	DS-11/2
TCDDs	6/13	1.8-19.5	DS-11/2
PeCDDs	6/13	2.4-9.4	DS-03 D
HxCDDs	3/13	0.79-9.6	DS-03 D
HpCDDs	3/13	0.38-8.0	DS-03 D
OCDD	2/13	1.6-9.8	DS-03 D
2,3,7,8-TCDD	11/13	1.6-14.5	DS-02
2,3,7,8-TCDD[3]	8/24	0.15-150	PS-04
Inorganics			
Aluminum	12/12	1,130-6,040	DS-11
Antimony	2/12	12.9-16.0	DS-07
Arsenic	6/12	0.91-4.3	DS-09
Barium	9/12	5.3-155	DS-09
Calcium	12/12	69.3-1,790	DS-09
Chromium	12/12	65.4-3,450	DS-07
Cobalt	11/12	5.6-30.9	DS-07
Copper	12/12	2.5-260	DS-07
Iron	12/12	13,800-104,000	DS-09
Lead	12/12	4.7-252	DS-09
Magnesium	9/12	61.1-259	DS-09
Manganese	12/12	135-992	DS-06
Mercury	1/12	0.33	DS-08
Nickel	12/12	111-2,100	DS-04
Potassium	2/12	302-314	DS-07
Sodium	12/12	499-55,800	DS-07
Vanadium	12/12	3.4-26.8	DS-09
Zinc	12/12	12.9-243	DS-09

NOTES: (1) Only compounds which were detected are presented in this Table.

(2) Refer to Remedial Investigation Report for the Jacksonville Landfill Site, Jacksonville, Arkansas, April 1990, for figures showing individual sampling locations.

(3) This listing is from the set of selected surface soil samples (PS/PT designation) taken near the drum disposal area.

* These compounds were detected in one or more blank samples.

of intermediates used to produce their pesticide derivatives) are listed as hazardous waste number F020.

The list of chemicals detected at the Rogers Road Landfill Site includes such substances as 2,4-D, 2,4,5-TP, 2,4,5-T and trichlorophenol, disposed of in the drum disposal area at concentrations up to 3.2%, 0.1%, 0.8% and 600 ppb respectively.

No detailed records have yet been found that prove exactly how the herbicides, trichlorophenol and other related chemicals were placed in the drum pile or from which process they came. Records are required to determine the origin, and thus the "listability", of a waste.

It should be noted, however, that the site waste is suspected of having originated at the Vertac facility, whose waste has been listed as F020 and F023. If Vertac waste is indeed the same waste that exists at the Rogers Road site, then the Rogers Road waste could be considered to be a soil and debris contaminated with a RCRA listed waste. Because of the lack of detailed records regarding the specific origin of the Rogers Road site contaminants and the observation that the site waste is a contaminated filter material mixed in soil rather than a pure product or a "still bottom" waste, Rogers Road Landfill wastes are not considered to be listed. RCRA restrictions pertaining to the treatment of listed wastes will nonetheless be considered relevant in the determination of remediation goals. The selected remedy will not, however, include the delisting or disposal considerations contained in the Land Disposal Restrictions (LDRs) for listed wastes.

This determination is consistent with the RCRA "Contained-in" Rule, which states that any mixture of a non-solid waste (such as soil or ground water) and a RCRA listed hazardous waste must be managed as a hazardous waste as long as the material contains (i.e., is above health-based levels) the listed hazardous waste. Once the material has been treated to no longer "contain" the listed hazardous waste, the material itself will no longer be considered a hazardous waste.

The waste is also subject to the regulatory authority of 40 CFR Part 261 Subpart C, which identifies it as having the characteristics of hazardous waste, specifically the characteristic of EP toxicity.

The highest concentrations of 2,4-D and 2,4,5-TP observed at the Rogers Road Landfill Site were 32,000,000 ppb (3.2%) and 1,000,000 ppb (0.1%) respectively. If the leachate from leachability tests of this material contains concentrations of 2,4-D exceeding 10,000 micrograms per liter (ug/l) or 2,4,5-TP exceeding 1,000 ug/l, the material would be classified as D016 or D017 hazardous waste respectively under Part 261.24.

The waste material at the site has not been subject to the TCLP leachate tests, nor are there any detailed records indicating its derivation. Therefore D016 and D017 classification has not been shown to be applicable. However, it is likely that if the aforementioned materials were so tested, the leachate would exceed the limits for D016 and D017 hazardous waste classification. Thus, the waste can be considered "characteristic" and consequently, RCRA regulations for D016 and D017 hazardous waste are considered to be relevant and appropriate.

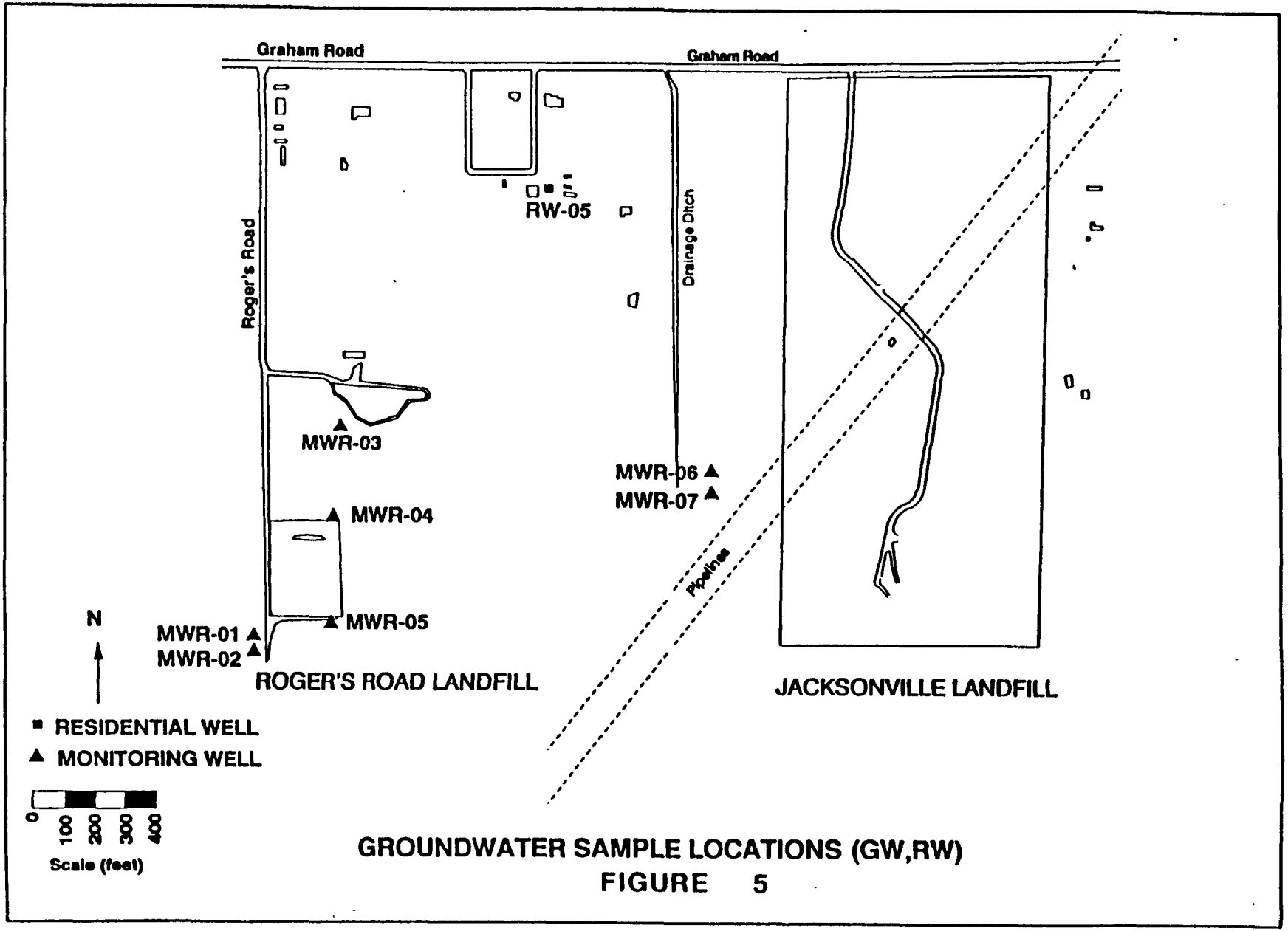
The high levels of contaminants in the drum disposal area render this area of the site extremely hazardous. Contaminants in this area comprise the principal health threat at the site. Calculations supporting this conclusion are presented in the Risk Assessment Report, which indicate excess lifetime cancer risks of 2.19×10^{-3} from dioxins, furans and dieldrin (for maximum plausible exposure) and a total hazard index of 163 from herbicides and dieldrin. This area will be the main focus of remedial actions performed at the site.

In addition, limited organic and inorganic contamination exists throughout the site, especially in the soil and refuse piles and former waste disposal trenches. Many of the compounds detected are those commonly found at municipal landfills. The areas outside of the dioxin disposal area contained no detectable contamination high enough to present a significant threat to public health. Risk calculations indicate excess lifetime cancer risks of 1×10^{-5} from dioxins and furans (for maximum plausible exposure) and a total hazard index of far less than 1.0 from herbicides and other noncarcinogenic compounds.

Offsite Soils: Offsite surface soil contamination is limited to octachlorodibenzo-p-dioxin (OCDD). The site is not likely to be the source of these compounds, however, as it was found in offsite background samples and is ubiquitous in the local environment. Nonetheless, regardless of the origin of these compounds, they were taken into account during the calculation of site risks in the risk assessment.

Ground water

Ground water samples were collected from monitoring wells installed during the Remedial Investigation and from one residential well north of the site. The locations of monitoring wells are shown in Figure 5. Detected compounds, concentration ranges and detection frequencies associated with this location is summarized in Table 2. Monitoring wells MWR-01, MWR-02, MWJ-01 and MWJ-02 were installed upgradient and used as background samples. Monitoring well MWR-03 was installed just to north of the site. Monitoring wells MWR-04 and MWR-05 were installed near the northeast and southwest corners of the fenced area of the



GROUNDWATER SAMPLE LOCATIONS (GW,RW)
FIGURE 5

TABLE 2

GROUNDWATER MONITORING WELL
SAMPLE ANALYSIS SUMMARY
ROGERS ROAD LANDFILL

Compound[1]	No. of Occurrences/ No. of Samples	Concentration Range (ppb)	Location of Maximum Concentration	ARAR[2] (ppb) or Criteria	No. of Occurrences above ARARs
Volatiles					
Methylene Chloride	7/7	8-24*	MWR-06/2	1,750 HA	0/7
Acetone	7/7	10-700*	MWR-01/2	-	-
Toluene	2/7	4-7	MWR-06/2	2,000 PMCL	0/7
Chlorobenzene	1/7	17	MWR-06/2	100 PMCL	0/7
Semivolatiles					
Bis(2-Ethylhexyl) Phthalate	2/6	2.0*	MWR-01/2	-	-
Herbicides					
2,4,5-T	1/13	3.9	MWR-07/2	21 HA	0/13

TABLE 2 (Cont'd)

GROUNDWATER MONITORING WELL
SAMPLE ANALYSIS SUMMARY
ROGERS ROAD LANDFILL

Compound[1]	No. of Occurrences/ No. of Samples	Concentration Range (ppb)	Location of Maximum Concentration	ARAR[2] (ppb) or Criteria	No. of Occurrences above ARARs
Inorganics					
Aluminum	7/7	419-9,370	MWR-02	-	-
Arsenic	2/7	1.4-1.8	MWR-02	50 MCL	0/7
Barium	7/7	18.7-166	MWR-02	1,000 MCL	0/7
Beryllium	3/7	1.2-1.6	MWR-02	-	-
Calcium	7/7	942-67,900	MWR-02	-	-
Chromium	6/7	6.4-23.7	MWR-02	50 MCL	0/7
Cobalt	5/7	5.7-16.2	MWR-02	-	-
Copper	7/7	6.0-17.2	MWR-02	1,300 MCLG	0/7
Iron	7/7	438-13,800	MWR-02	-	-
Lead	6/7	1.2-12.9	MWR-02	50 MCL	0/7
Magnesium	7/7	366-3,500	MWR-02	-	-
Manganese	7/7	71.4-192	MWR-02	-	-
Nickel	6/7	5.5-30.2	MWR-02	150 HA	0/7
Potassium	7/7	613-3,340	MWR-02	-	-
Silver	1/7	4.0	MWR-02	50 MCL	0/7
Sodium	7/7	1,510-16,300	MWR-02	-	-
Thallium	3/7	1.5-1.6	MWR-02	-	-
Vanadium	6/7	4.5-29.7	MWR-02	-	-
Zinc	7/7	32.3-869	MWR-02	-	-

TABLE 2 (Cont'd)

GROUNDWATER MONITORING WELL
SAMPLE ANALYSIS SUMMARY
ROGERS ROAD LANDFILL

NOTES: (1) Only compounds which were detected are presented in this Table.
(2) Applicable or Relevant and Appropriate Requirements or Criteria

MCL - Safe Drinking Water Act - Maximum Contaminant Level
MCLG - Safe Drinking Water Act - Max. Contaminant Level Goal
PMCL - Proposed MCL
HA - Health Advisory
"-" Significant criteria is not available or not applicable.
* - These compounds were detected in one or more blank samples.

SOURCES (ARARS): (1) U.S. Environmental Protection Agency, Office of Drinking Water, Fact Sheet: Drinking Water Regulations Under the Safe Drinking Water Act, Washington, D.C., December 1989.

(2) PEER Consultants, Risk Assessment for Jacksonville Landfill Site, Jacksonville, Arkansas, U.S. EPA Contract No. 68-01-7448, Rockville, MD, April 1990.

Rogers Road Site, respectively. These wells were installed to monitor any contaminant migration in the shallow water bearing zone. Monitoring wells MWR-06 and MWR-07 were between the Rogers Road and Jacksonville Sites, east-northeast of the fenced portion of the Rogers Road Site. Wells MWJ-01 and MWJ-02 were installed as part of the Remedial Investigation for the Jacksonville Landfill Site.

Monitoring Wells: Monitoring well samples (GW designation) were collected during two sampling events (February 1989 and May 1989) at the Rogers Road Landfill Site.

Monitoring wells at the Rogers Road Landfill Site consisted of three deep wells (MWR-01, MWR-06 & MWJ-01) and five shallow wells (MWR-02, 03, 04, 05 & 07). Ground water sampling depths in the deep wells averaged 62 feet below ground surface. Ground water sampling depths in the shallow wells averaged 27 feet below ground surface.

One shallow well sample from MWR-05, a shallow well at the southeast corner of the fenced portion of the landfill, contained toluene at an estimated concentration of 4 ppb. The deep monitoring well sample (from MWR-06, located between the Rogers Road Landfill and the Jacksonville Landfill) also contained toluene at 7 ppb and chlorobenzene at 17 ppb. Both of these samples were taken in May, 1989. Samples from the same wells taken in February 1989 revealed no volatile organic contamination.

Toluene is a common solvent used in paint and industrial applications, and was detected in three drum disposal area samples at concentrations up to 1,600 ppb. Toluene is moderately soluble in water and, therefore, is likely to be transported via ground water to some degree. However, toluene was not detected in any soil samples upgradient of MWR-05. Under the circumstances, no definitive conclusion can be drawn as to whether or not the toluene detected in the ground water is associated with the Rogers Road Site.

Chlorobenzene is an intermediate chemical used for the production of pesticides and other chemicals, a solvent carrier for chemicals such as methylene diisocyanate, and an industrial solvent. No chlorobenzene was detected in soil or drum waste samples, and monitoring well MWR-06 may or may not actually be downgradient of the contaminated portions of the Rogers Road Site. Under the circumstances, no definitive conclusion can be made on whether or not the chlorobenzene detected in MWR-06 is from the Rogers Road Site.

The concentrations of toluene and chlorobenzene were substantially less than the Safe Drinking Water Act (SDWA) proposed Maximum Contaminant Levels (MCLs) of 2,000 ppb for toluene and 100 ppb for chlorobenzene.

The herbicide 2,4,5-T was detected at 3.9 ppb in one shallow down gradient monitoring well, MWR-07, located approximately 1,300 feet east-northeast of the fenced portion of the Rogers Road Site. This compound was not detected in this well during the first round of sampling. The health advisory for 2,4,5-T is 21 ppb, more than five times the concentration detected. No other herbicides were detected in the deep wells.

Concentrations of inorganics detected in the monitoring wells are below MCLs for those compounds which have a MCL. Monitoring well samples were not analyzed for inorganic compounds in the second round of sampling conducted in May 1989 since they were within background ground water concentrations of the samples collected from the upgradient wells near the site (MWJ-01 and 02).

Since none of the detected chemicals exceeded National Primary Drinking Water Standards, active ground water remediation is not warranted. The selected remedial alternative will, however, incorporate a system of long-term ground water monitoring to ensure that the remedy remains effective in the protection of ground water quality and to aid in the identification of long-term trends in the quality of the ground water.

Residential Wells: Samples from the residential well north of the site (RW-05) were collected in conjunction with the Jacksonville Landfill Site RI. The data from this well was included as part of the Jacksonville Landfill RI report. Since this well is located approximately 400 yards northeast of the Rogers Road Site, the well is probably not downgradient of the Rogers Road Site. Nevertheless, the data is presented as an indicator of concentrations of contaminants in ground water in the vicinity of the Rogers Road Site.

No volatile, semivolatile, pesticide/PCB, dioxin/furan or herbicide compounds were detected at levels exceeding (or even approaching) regulatory limits.

Concentrations of inorganic compounds detected in the residential well were below the SDWA MCLs for those compounds which have SDWA MCLs. Concentrations of inorganics in this well are also within concentrations found in the background ground water samples collected near the site.

Surface Water

Surface water samples were collected from standing water in the onsite trenches and offsite ponds and drainage ditches. Background surface water samples were collected from Bayou Two Prairie and a creek running through the Holland Bottoms Wildlife Management Area.

Background Water: With the exception of beryllium and manganese, concentrations of all organic and inorganic compounds detected in background water samples were less than the Ambient Water Quality Criteria (WQC) for those compounds which have WQC values. The maximum concentration detected for beryllium was 0.2 ug/l (versus WQC = 0.0039 ug/l) and the maximum concentration of manganese was 336 ug/l (versus WQC = 10 ug/l).

Onsite Trench Water: Herbicides 2,4-D and 2,4,5-T were detected at low concentrations at two sampling locations in an open site trench near the drum disposal area (0.47 ug/l and 1.5 ug/l, respectively). The concentrations of herbicides were well below the SDWA MCLs of 100 ug/l for 2,4-D and the health advisory of 21 ug/l for 2,4,5-T. These detections, however, indicate that either some contamination migration from the drum disposal area into this trench is occurring or that direct herbicide waste disposal into the trench has taken place.

Concentrations of inorganic compounds detected in trench water samples were less than water quality criteria for those compounds which have WQC values, except for manganese. Manganese was detected at 220 ug/l and at 244 ug/l in the trench, and the water quality criteria is 10 ug/l. The detected concentrations, however, fall within the general range detected in the background surface water samples taken upgradient and away from the Rogers Road and Jacksonville sites (up to 336 ug/l). This indicates that the compound is common to the local area and not the result of site contamination.

Offsite Surface Water: The presence of inorganic compounds in an offsite surface water sample was detected during the Remedial Investigation. Beryllium and manganese were found in a shallow drainage ditch adjacent to the south end of the site at levels exceeding Ambient Water Quality Criteria (AWQC). AWQC are standards which are developed for protection of human health from two routes of exposure -- exposure from drinking the water and from consuming aquatic organisms, primarily fish, and from fish consumption alone. The sampling results for this location are shown below. Offsite background results and AWQC are included for comparison.

	MAXIMUM LEVEL DETECTED (ug/l)	
LOCATION	BERYLLIUM	MANGANESE
Offsite Ditch (OW-01)	0.7	9,330
Offsite Background	0.2	336
AWQC	0.0039	10

Observations made during a subsequent sampling attempt revealed that the area under consideration completely dries up during periods of dry weather and that although some intermittent ponding may occur during wet intervals, the area is not a consistent source of surface water. AWQC, therefore, are not ARARs for this location since the shallow ditch cannot be considered a consistent source of drinking water or fish production. Because of the inconsistent supply of water, exposure from humans, wildlife or domestic animals is estimated to be sporatic and of limited duration, thus health and environmental impacts from this route of exposure are expected to be very low.

Air Pollution

The only volatile organic contamination observed in surface soil, waste or sediment not attributable to laboratory contamination was from bromomethane, and the bromomethane was not consistently detected. The vegetation on most of the site, common wet muddy conditions, and the crust on the waste pile prevent significant dust emissions. A review of the available air sampling data by the Centers for Disease Control (CDC) concluded that "based on the data provided and the sampling conditions reported, airborne volatile organic compounds do not represent a public health problem on-site and do not appear to be contributing to off-site exposure."

CONTAMINANT FATE AND TRANSPORT

The environmental transport of the chemicals detected at the Rogers Road Landfill Site is dependant on their individual physical/chemical properties (especially sorption and solubility) as well as specific site characteristics.

Potential Routes of Migration

The mechanisms of release of the chemicals of concern at the Rogers Road Landfill Site from contaminated media are discussed below. These routes of migration can be soil erosion, ground water flow, air transport, and surface water/sediment transport. Due to the physical/chemical characteristics of contaminants found on-site the primary route of contaminant migration is soil erosion; secondary routes of migration are ground water flow and surface water/sediment transport. The primary chemicals of concern are dioxins (2,3,7,8-TCDD and other isomers); 2,4-D; 2,4,5-T; 2,4,5-TP; and dieldrin.

Soil: As a result of past operations and waste disposal practices, chemicals were released to the soil at the Rogers Road Landfill Site. These chemicals may remain in the soil or migrate from the soil to other media. The movement of a chemical once it has been released to the soil is dependent upon several factors,

including the type of soil, the tendency of the chemical to adsorb to soil particles, the solubility of the chemical in water and the vapor pressure of the chemical.

The surface soils present at the Rogers Road Landfill Site are comprised predominantly of silt/clay mixtures with very little organic carbon content. These soils are likely to provide little attenuative capacity, as they provide few sites for adsorption of organic chemicals or complexation of metals. The low attenuative capacity of the soils and the very low soil permeability result in conditions which promote migration of contaminants by erosion and surface water runoff.

Movement of organic chemicals of concern from the soil is predominantly influenced by solubility. For example, lower molecular weight compounds (dieldrin) are more soluble and, therefore, would be expected to leach from the soil faster than higher molecular weight compounds (dioxins).

Due to the chemical/physical properties of dioxins and furans which influence their ability to migrate in soils, the vertical migration in soils will be extremely slow. The primary indicators which determine chemical migration are the organic carbon partition coefficient (K_{oc}) and octanol water partition coefficient (K_{ow}). These values indicate a chemical's ability to remain sorbed to soil particles versus its ability to be leached by water. Dioxin/furan compounds values for these properties are relatively high indicating their inability to be leached from soils. Additional data to support this is presented in studies (National Dioxin Study, EPA, 1988) which show that approximately 98 percent of dioxin in soils will remain within the upper 12 inches of the soil.

Migration of inorganics in the environment is complicated and depends greatly on inorganic speciation. Speciation, in turn, is influenced by environmental conditions such as pH, oxidizing or reducing conditions of the environment, and microbial activity. With the exception of inorganic anions such as those formed by arsenic, chromium (VI), and cyanide, which are fairly mobile, metals are usually tightly bound to the soil constituents such as clays.

Ground water: Lithologic descriptions from the soil borings indicate that the site is underlain by a complex series of clays, silty clays and sandy silts. The water table is, at several times throughout the year, within two feet of the ground surface. This perched water is contained within the clay layer at the surface of the site.

Acetone, methylene chloride and toluene were detected in the drum pile. These chemicals are moderately soluble in water and therefore likely to be transported via leachate and ground water

to some degree. Some leachate production can be expected when this material gets saturated. Some of the chemicals in the leachate can be expected to reach the perched water table in the underlying clay. Some of this perched water may percolate down and reach the underlying aquifer. The aquifer below the Rogers Road Site is believed to be part of the regional drinking water aquifer system.

The presence of low concentrations of toluene in the ground water (4 ppb at MWR-05, and 7 ppb at MWR-06) indicates that migration of toluene into the ground water might have occurred. Chlorobenzene was also detected in ground water at MWR-06, at a concentration of 17 ppb. However, the concentrations of toluene and chlorobenzene were considerably lower than the proposed MCLs of 2,000 ppb and 100 ppb respectively. The concentrations detected do not pose a significant risk to public health or to the environment.

The distribution of the organic chemicals in the monitoring wells and soil do not show any patterns that clearly link them to the Rogers Road Landfill Site. The toluene and chlorobenzene detected may or may not be coming from the landfill. Toluene and chlorobenzene were seen in only one of the two sets of samples taken from the aforementioned wells, and the wells may not actually be downgradient of the contaminated portions of the Rogers Road Landfill.

Toluene was detected (at 2 ppb) in a residential well (RW-05) which is not believed to be downgradient of the Rogers Road Site, and in background well MWJ-02 (at 3 ppb), upgradient of the Rogers Road Site. Toluene was also detected in soil blank samples. This indicates that sources of toluene may exist near the Rogers Road Landfill other than the landfill itself or that it is a laboratory contaminant. Chlorobenzene was not detected in any soil samples at the Rogers Road site.

The herbicide 2,4,5-T was also detected at 3.9 ppb in a well (MWR-07) about 1,300 feet east-northeast of the fenced portion of the site. This well may not be downgradient of the contaminated portions of the Rogers Road Site. The health advisory for 2,4,5-T is 21 ppb, indicating that the 2,4,5-T does not pose a threat to public health.

Inorganic compounds detected in monitoring well and residential well samples were within the range detected in the background wells (MWJ-01 & 02).

Air: Contaminants may be released into the air by wind entrainment of soil particles onto which contaminants are adsorbed. Release of contaminants into the air by volatilization is not a concern due to the very low vapor pressures exhibited by the chemicals found on or near the surface of the landfill.

Migration of contaminants by wind entrainment of soil particles is dependent on several factors, including particle size, wind speed and direction, soil moisture content, site topography and presence of vegetation. In general, unvegetated sites which have low moisture soils containing high percentages of fine particles are likely to experience dusty conditions. Site topography will also affect the transport of soil particles, with sites located in flat, open unsheltered areas being susceptible to wind erosion.

Several characteristics at the Rogers Road Landfill render the site unsusceptible to wind transport of contaminants. The site is primarily flat and it is heavily vegetated. Even in the winter months the dried vegetation provides good ground cover. Soils in the area are not well drained. After precipitation events the landfill typically has many areas with standing water, and during the winter months the site becomes swampy. Given the site environmental factors, wind erosion of soil contaminants at the Rogers Road Landfill does not appear to be a significant pathway for contaminant migration.

Surface Water/Sediment: Surface water drainage at Rogers Road Landfill is a series of undefinable drainageways which flow generally east-northeast towards a manmade drainage ditch at the Lonoke/Pulaski County line. This ditch flows north under Graham Road and ultimately empties into the Holland Bottoms Wildlife Management Area.

Surface water and sediment samples collected from the drainage areas adjacent to the landfill contain no elevated concentrations of compounds, compared to background samples, with the exception of the herbicides (2,4,D at 3.48 ppb; 2,4,5-TP at 0.61 ppb and 2,4,5-T at 0.30 ppb) collected in the surface water just outside the south portion of the Rogers Road Landfill site fence. The herbicide concentrations are more than an order of magnitude less than drinking water standards, and pose no threat to public health.

Contaminant Persistence

Contaminant persistence in soils is primarily influenced by the soils ability to attenuate the chemicals of concern. These chemicals, at the Rogers Road Landfill, are: dioxins; 2,4-D; 2,4,5-T; 2,4,5-TP; and dieldrin. The organic chemicals of concern at the site can be generally categorized as one group, chlorinated benzene rings with additional substituents.

Factors which determine a soil's ability to attenuate contaminants include: the chemicals ability to adsorb to soil particles, water solubility of each chemical, cation exchange capacity of the soil, and organic content of the soil.

The water solubility of a substance is a critical property affecting its environmental fate and persistence. Solubilities of organic chemicals generally range from less than 0.001 mg/liter to 100,000 mg/liter. Solubilities of the chemicals of concern range from 620 mg/liter for 2,4-D to essentially insoluble for dioxins.

The organic carbon partition coefficient (K_{oc}) reflects the propensity of a compound to sorb to the organic matter in soils. The normal range of K_{oc} values is from 1 to 10^7, with higher values indicating higher sorption potential. Of the chemicals found at the site, dioxins have the highest K_{oc} values, and therefore are expected to have the highest environmental persistence. The half-life of the 2,3,7,8-TCDD isomer is estimated to be 10-12 years in soil.

The herbicides of concern are less persistent, but more mobile than dioxins. 2,4-D; 2,4,5-T; and 2,4,5-TP are found to be relatively mobile in the soil/ground water system when present at low dissolved concentrations. Bulk quantities of the solution (e.g., from a spill, heavy spray application, or improper disposal of excess formulations) can be transported more rapidly through the unsaturated zone. However, the herbicides under consideration have been shown to be highly susceptible to degradation in the soil/ground water system and are therefore not expected to be persistent. Under most environmental conditions, the esters which comprise the bulk of the active ingredients of herbicide formulations are hydrolysed in a matter of days. Biological hydrolysis of these materials in the subsurface has also been reported to be very rapid.

After evaluating the physical/chemical parameters of the chemicals of concern and the geology/hydrogeology at the site, several conclusions can be drawn. Mobility of the dioxin and herbicide contaminants at the site will mostly be by surface water run-off/erosion; vertical contaminant migration is not expected to be a major migration pathway because of the low solubility and mobility of dioxins and herbicides, and the low hydraulic conductivity of the clay at the surface. Even considering the hypothetical scenario that contaminants would migrate down to the drinking water aquifer, their mobility would be very limited due to the low solubility of these compounds in water. Since samples collected from the drainage courses and low lying areas near the drum disposal area contained relatively low levels of contamination, the surface water run-off/erosion migration pathway also appears to have historically had a limited role in the transportation of contaminants at the site. Previous studies at the site have shown that wind erosion of contaminated soil does not appear to be a significant migration pathway.

Persistence of chemicals in surface soils at the site is very high. As has been revealed during the RI, high levels of herbicides and dioxins still exist in the drum disposal area of

the site, 16 years after the site has been closed. Although the mobility of the contaminants at the site is limited, in the absence of additional action at the site, the contaminants can be expected to persist for many years.

SUMMARY OF SITE RISKS

The Baseline Risk Assessment outlines the type and degree of hazard posed by hazardous chemicals, the extent to which a particular group of people have been or may be exposed to the chemicals, and the present or potential health risk that exists at the Rogers Road Landfill. The assessment also serves as a baseline evaluation of the site under a "no-action" remedial alternative (i.e., in the absence of any remediation and assuming nonrestricted future site use). This will provide a basis for assessing remedial alternatives to be considered in the Feasibility Study. The methodology used for the baseline risk assessment and key results are summarized below. Additional details are provided in the Rogers Road Landfill Risk Assessment Report.

Risk characterization is performed by combining exposure and dose-response assessments to form conclusions regarding the health risks from the site. Quantitative risk estimates give an indication of the magnitude of the potential for adverse health effects resulting from exposure to toxic substances.

The methodology followed for the Baseline Risk Assessment was in accordance with the EPA Superfund Public Health Evaluation Manual (1986) and the Superfund Exposure Assessment Manual (1988).

The potential exposures identified at the Rogers Road Landfill area are based on the distribution and extent of chemical contamination, the potential for contaminant transport, opportunities for exposure and the toxicity of the contaminants. Plausible exposure results were derived using arithmetic and geometric means of laboratory chemical analyses of field data. Worst case exposure results were derived using the highest value for the laboratory chemical analyses of field data.

Assumptions used to estimate the "plausible maximum" exposure associated with dermal contact include:

- The amount of soil in contact with the skin is 2.77 mg/cm^2-day for clay soil. The choice of data for clay-like soil is based on actual field classification of soil types by geologists during the remedial investigation.

- Unless otherwise known, one hundred percent of a compound is assumed to be absorbed through the skin. For dioxin, three percent of the compound is absorbed

through the skin. Ten percent of the pesticides are absorbed through the skin. Negligible dermal absorption is assumed for inorganics.

- Assumed body weights are:
  Adult - 70 kg
  Teenager - 49 kg
  6-12 year old child - 30 kg
  2-6 year old child - 10 kg

- An expected lifetime is 70 years.

Assumptions used to estimate the "plausible maximum" exposure associated with accidental ingestion of contaminated soils include:

- Exposure durations are 1,825 days for a 2-6 year old child; 1440 days for a 6-12 year old grade schooler; 2,555 days for a teenager; and 18,250 days for an adult. These exposure duration assumptions are based on a knowledge of site conditions derived from personal observations, discussion with RI field team investigators and the rather temperate climate in Arkansas. That is, it was assumed that a teenager could, conservatively, frequent the landfill for eight months out of the year.

- 0.8 g/day of soil is ingested by a 2-6 year old child; 0.05 g/day of soil is ingested by an adult or teenager. 0.1 g/day is ingested by a 6-12 year old grade schooler. 0.8 g/day is considered to be an upper bound. Recent guidance recommended 0.2 g/day for a child of 1-6 years and 0.1 g/day for adults as soil ingestion rates. The soil ingestion rates used in the analyses were tailored to site conditions and scenarios.

- Unless otherwise known, one hundred percent of a compound is assumed to be absorbed through the gastrointestinal tract. For dioxin, twenty-six percent is assumed to be absorbed through the gastrointestinal tract.

- Body weights and expected lifetime are as shown above for dermal contact.

Assumptions used to estimate the dose associated with long-term ingestion of contaminated drinking water include:

- A receptor ingests 2 liters of water/day.

- An average man weighs 70 kg.

- o 100% of the compound is absorbed in the gastrointestinal tract.

Additional information regarding these assumptions and the resulting calculations can be found in the Risk Assessment for the Rogers Road Landfill site, April 1990.

In December 1989, EPA's Office of Emergency and Remedial Response published the interim final Risk Assessment Guidance for Superfund (RAGS) - Volume I. The purpose of this guidance was to supersede the Superfund Public Health Evaluation Manual (SPHEM) and Endangerment Assessment Handbook which, to that date, had been used for assessing the effects of chemical contamination on human health. RAGS revised the SPHEM methodology in several ways.

One key modification came through the introduction of the concept of Reasonable Maximum Exposure (RME). RME is defined as the highest exposure that could reasonably be expected to occur at a site. This approach differs from the SPHEM approach of defining worst-case exposure to site contaminants. One of the primary differences is that while SPHEM utilized a "worst-case" scenario based on continued exposure to the maximum detected concentration of a chemical constituent at the site, RME bases the maximum exposure on the 95th upper confidence limit of the mean, providing a spatially averaged exposure concentration.

The final RAGS guidance was not available until the risk assessment for the Rogers Road site was nearing completion. EPA considered redeveloping the complete risk analysis based upon the new guidance. However, upon close consideration, it was determined that the underlying assumptions being used under SPHEM were at least as conservative as those set forth in RAGS. Thus, the results of the Rogers Road Risk Assessment were at least as protective as those which would have been derived under the alternate guidance. Additionally, the Rogers Road Risk Assessment used exposure parameters (such as body weight, ingestion rates, exposure frequencies and durations, etc.) which were consistent with RAGS. Therefore, the decision was made to finalize the risk assessment under the SPHEM guidance, and so risks presented in this ROD are based upon "worst case" exposures rather than the RME.

EXPOSURE ASSESSMENT SUMMARY

To determine if exposure might occur, the human and environmental activity patterns near the site and the most likely pathways of chemical release and transport must be defined. A complete exposure pathway has four necessary components: (1) a source of chemical release to the environment; (2) a route of contaminant transport through an environmental medium; (3) an exposure or

contact point; and (4) the presence of a human or environmental receptor at the exposure or contact point.

The mode of exposure influences risks to receptors. Modes of exposure usually include ingestion, inhalation and direct contact. Ingestion may take the form of direct exposure through drinking or eating contaminated water and food or may involve indirect routes such as use of contaminated water for food preparation and ingestion of soil deposited on hands and transferred to food, cigarettes, etc. Dermal exposure may result from direct contact with contaminated water, soil or other material. The following is a media-by-media discussion of the major potential routes of exposure to hazardous constituents associated with the site.

Direct and Indirect Contact with Contaminated Surface Soil Onsite and/or Offsite

Contaminated soil can cause risks to public health through direct contact and associated incidental ingestion and dermal adsorption.

Compounds of concern include congeners and isomers of dioxin/furans; herbicides; and the pesticide dieldrin.

No quantitative data are available on the size of the population potentially exposed to onsite hazardous constituents via direct contact. Access to the site is now somewhat restricted with a fence and gate, but previous report(s) suggest that the landfill access was not restricted between 1973 to 1986.

The fencing is low enough to allow relatively easy access by trespassers. Receptors entering the site boundaries via this route are at risk. Receptors most likely to come into direct contact with surface soils are nearby residents. Direct exposure with on-site surface soils and sediments is therefore a likely exposure scenario.

Wildlife and domestic animals may also be exposed to onsite or offsite contaminated soils and sediments. Domestic animals could potentially carry contaminated sediments or soils to local residences and potentially affect human occupants. Wildlife could eat contaminated soil and the local population could eat contaminated wildlife (rabbits), potentially being exposed to the contaminants. Exposure to animals is, however, expected to be sporadic and of limited duration.

Contaminants may migrate via several mechanisms at the Rogers Road Landfill Site. These include percolation of contamination into ground water, surface runoff and soil erosion. It has been determined through previous studies that airborne transport of contamination is not a significant transport mechanism.

Direct and Indirect Contact With Ground water

Ground water at the site flows generally east-southeast. However, there are no residences located in this direction west of the Jacksonville Landfill, and residences near the Rogers Road landfill in other directions are using city water. The closest well downgradient of the Rogers Road Landfill Site that is used for any purpose (other than monitoring) is non-potable use by a resident located immediately east of the Jacksonville Landfill.

Under the circumstances, the only existing significant potential source of exposure to contaminated ground water on the Rogers Road Site would be to workers sampling wells or during associated sample handling, analysis and disposal. Appropriate protective equipment and procedures are used during such activities to prevent significant exposure.

Transport by Surface Runoff

During heavy rainfall events, contaminants in the surface soils around the drum disposal area can migrate via surface water runoff. Surface water drainage at Rogers Road Landfill is a series of drainageways which flow east-northeast towards a manmade drainage ditch at the Lonoke/Pulaski County line. This ditch flows north under Graham Road and empties into the Holland Bottoms Wildlife Management Area.

Surface water and sediment samples collected from the drainage areas adjacent to the landfill contain no elevated concentrations of compounds, compared to background samples. Therefore, it is assumed that these drainage ditches are not migration pathways for contaminants.

The site is located in a floodplain. Therefore, transport as a result of a major flood is also possible. However, chemical analyses suggest this has not been an important pathway for dioxin and herbicide migration from the site.

Direct and Indirect Exposure to Surface Water and Associated Biota

Manganese and beryllium have been detected in the drainage ditch south of the site. Manganese has also been detected in the landfill trench water. Human exposure to surface water contaminants could potentially occur in these bodies of water. People can gain access to the landfill, wade in the trench and accidentally ingest the contaminated water. However, such exposure would probably be sporadic and of short duration. The manganese in the water would make it taste bitter, discouraging any potential consumption.

Environmental receptors may also be exposed to hazardous constituents in surface waters. Wild and domestic animals may

frequent potentially impacted surface waters to wade or bathe and ingest the water. As with humans, their exposure would be sporadic and of short duration.

Aquatic flora and fauna inhabiting site-impacted surface waters may also be exposed. Ingestion of fish should not be a problem because there are no known fish in the off-site ditches and on-site trench.

Inhalation

Under present site conditions, inhalation of airborne contaminated dusts and/or inhalation of volatilized surface soil contaminants are considered to be very minor routes of human or environmental exposure. No dioxins and furans were observed in air samples during previous investigations. Dioxin and phenoxy herbicides adsorb strongly to the soil. The only organics detected in air samples at the landfill were ethylbenzene and xylene (FIT team document dated September 13, 1986). However, they were not found in high concentrations. Further, no volatile compounds were detected in high enough concentrations to register on field survey instruments (flame and photo ionization detectors) during the remedial investigation. Also, the vegetative cover over most areas of the site would tend to prevent suspension or emission of particulate contaminants.

RISK EVALUATION SUMMARY

The potency of substances and associated risks are evaluated separately for noncarcinogenic and carcinogenic effects.

Explanation of Carcinogenic Risk

EPA-approved methods for evaluating the carcinogenic and mutagenic potency of substances assume that any finite exposure will be associated with a finite amount of risk. This is because a genotoxic insult (even if caused by only one molecule) is assumed to have a finite probability of allowing a cell to grow into a malignant tumor. Carcinogenic risks below one percent (0.01) are generally computed by multiplying estimated average daily exposures over a lifetime by slope factors. A slope factor is an upper-bound estimate (with a 95% confidence) of the probability of an individual developing cancer per unit intake of a chemical over a lifetime, based on a linearized multistage model. The slope factor is also called the Cancer Potency Factor (CPF) and is expressed in units of $(mg/kg\text{-}day)^{-1}$. The term "upper bound" reflects the conservative estimate of the risks calculated from the CPF. Use of this approach makes underestimation of the actual cancer risk highly unlikely. Cancer risks from mixtures of substances are assumed to be the sum of the risks associated with the individual substances in the mixture when the total risk is less than one percent.

Explanation of Noncarcinogenic Risk

Forms of toxicity with endpoints other than cancer and gene mutations are treated as if there is an identifiable exposure threshold below which there are no observable adverse effects. Such toxicity is called "threshold toxicity." The underlying mechanism associated with threshold toxicity assumes that:

- Multiple cells must be injured before an adverse effect is experienced, and that
- The injury must occur at a rate exceeding the rate of cell repair.

In addition, cells and fluids between cells may contain metabolizing enzymes that modify contaminants and allow small amounts to be tolerated.

A chronic reference dose (RfD) is an estimated level of daily exposure to the human population (including sensitive subpopulations) that is likely to be without an appreciable risk of deleterious effects during a lifetime. These levels are estimated to be below threshold levels at which adverse effects would occur. RfDs are used to indicate acceptable levels of daily human exposure to individual chemicals.

Hazard indices are used to evaluate the potential noncarcinogenic impacts of pollutant mixtures. A hazard index is the sum of the ratios of predicted amounts of exposure to the corresponding chronic reference doses for all substances. A hazard index less than one indicates that adverse noncarcinogenic effects are unlikely. Ideally, hazard indices would be calculated separately for each threshold toxic effect for all pollutants that cause the effect by the same mechanism. However, adequate data to identify all effects associated with each pollutant is not available. As a result, the hazard index used includes all pollutants with reference doses, regardless of what effects they may or may not share. The result is an extreme upper limit to the hazard index.

Results

Using the above procedures, the health risks identified at the Rogers Road Landfill were determined based on the distribution and extent of chemical contamination, the potential for contaminant transport, opportunities for exposure and toxicity of the contaminants.

Risk assessment findings at the landfill indicate a potential health risk is predominantly associated with direct contact with or accidental ingestion of contaminated soil at the "hot spot" located at the drum site within the landfill. Specifically, the hot spot contaminants cause excess carcinogenic health risks and

noncarcinogenic health hazards. The excess carcinogenic risks calculated for the landfill and surrounding areas including the dioxins, furans and other carcinogens are summarized in Table 3. At the drum disposal area, the carcinogenic risk is 4.27×10^{-4} for plausible exposure and 2.19×10^{-3} for worst case exposure. "Plausible" or most likely exposure results are derived using arithmetic and geometric means of laboratory chemical analyses of field samples.. Worst case exposure values were calculated using the highest value for the laboratory chemical analyses of these samples. These risks, however, are limited to an extremely small area on the landfill property. The remainder of the landfill presents a worst case risk of 1.01×10^{-5}, due primarily to low levels of dioxin contamination.

Analytical results indicate that 2,3,7,8-TCDD, as well as 2,4,5-T or 2,4,5-TP herbicide contamination is not present in any offsite residential areas above analytical detection limits. These detection limits ranged from 0.006 to 0.08 ppb. A hypothetical calculation was made to determine what additional risks would occur if dioxin existed below detection limits. Assuming that the concentrations in the residential areas average one-half of the detection limit, risks were calculated for an offsite 2 to 6 year old child and an adult gardener. Risks were 1.05×10^{-5} for a child and 1.20×10^{-5} for an adult gardener for plausible exposure from 2,3,7,8-TCDD. The 2 to 6 year old age group was chosen for detailed calculation because their exposure rate and physical characteristics (e.g., low body weight) represent a worst case situation for children. It should be stressed that offsite risks from 2,3,7,8-TCDD and the family of dioxins (including 2,3,7,8-TCDD) and furans are only hypothetical values since no 2,3,7,8-TCDD; 2,4,5-T or 2,4,5-TP was ever detected at these offsite residential backyards.

Total risk from all detected carcinogenic contaminants calculated for the offsite residential soil is 9.42×10^{-6} for plausible exposure and 1.70×10^{-5} for worst possible exposure. The major contributor to this risk is arsenic in offsite areas which cannot be attributed to the site. These offsite risks quoted are for a 2 to 6 year-old child. Arsenic is fairly widely distributed on the landfill and offsite areas. This substance, a common component of soil, is known to exist at higher background concentrations in Central Arkansas than throughout the contiguous United States. Since downgradient arsenic concentrations are not higher than background levels, the offsite arsenic risk is not likely to be associated with the landfills.

The noncarcinogenic health hazards at the landfill drum site are related to the herbicides present in the drums. Hazard Indices (HIs) relating to on and offsite areas are presented in Table 4. HIs calculated for 2,4,5-T, 2,4,5-TP and dieldrin at the drum site were large and range from 12.4; 6.01 and 4.35, respectively, for plausible exposure, to 129; 20.9 and 13, respectively, for worst

TABLE 3

SUMMARY OF SITE RISKS ONSITE[1]
AND TO NEARBY RESIDENTIAL POPULATION

-- CARCINOGENIC EFFECTS --

Exposure Pathway	Chemical of Concern[2]	Chronic Daily Intake (CDI) (mg/kg-day)	Slope Factor (SF) $(mg/kg\text{-}day)^{-1}$	Risk[3] (CDI x SF)
ONSITE				
Soils: Ingestion, Direct and Indirect Contact.				
Hot Spot	2,3,7,8-TCDD	7.62×10^{-9}	1.56×10^{5}	1.19×10^{-3}
	2,3,7,8-TCDD eq[4]	7.72×10^{-7}	1.56×10^{5}	1.20×10^{-3}
	Dieldrin	6.18×10^{-5}	1.60×10^{1}	9.89×10^{-4}
		Primary Hot Spot Total:		2.19×10^{-3}
Landfill, Excluding Hot Spots	4,4'-DDT	4.01×10^{-6}	3.40×10^{-1}	1.36×10^{-6}
	Arsenic	4.98×10^{-6}	1.75×10^{0}	8.72×10^{-6}
		Landfill, Excl. H.S. Total:		1.01×10^{-5}
TOTAL FOR POTENTIAL ONSITE POPULATION				2.19×10^{-3}

TABLE 3 (Cont'd)

SUMMARY OF SITE RISKS ONSITE[1]
AND TO NEARBY RESIDENTIAL POPULATION

-- CARCINOGENIC EFFECTS --

Exposure Pathway	Chemical of Concern[2]	Chronic Daily Intake (CDI) (mg/kg-day)	Slope Factor (SF) $(mg/kg\text{-}day)^{-1}$	Risk[3] (CDI x SF)
OFFSITE				
Soils: Ingestion, Direct and Indirect Contact.				
Offsite Residential Areas	Arsenic[5]	9.71×10^{-6}	1.75×10^{0}	1.70×10^{-5}
		Offsite Res. Area Total:		1.70×10^{-5}
TOTAL FOR OFFSITE RESIDENTIAL AREAS				**1.70×10^{-5}**

NOTES:
1) Onsite results based on residential setting (potential future land-use) on landfill property.
2) Only the most significant contributors for each exposure pathway are shown.
3) Results based upon worst case exposure.
4) 2,3,7,8-TCDD equivalents include 2,3,7,8-TCDD.
5) The calculation does not reflect an increased cancer risk due to arsenic since the downgradient arsenic concentration equaled the upgradient concentration. The numbers reflect the background risk due to the naturally occurring concentrations of this inorganic substance.

4,4'-DDT = 1,1'-(2,2,2-Trichloroethylidene)bis[4-chlorobenzene]
2,3,7,8-TCDD = 2,3,7,8-Tetrachlorodibenzo-p-dioxin

TABLE 4

SUMMARY OF SITE RISKS ONSITE [1]
AND TO NEARBY RESIDENTIAL POPULATION

-- NONCARCINOGENIC EFFECTS --

Exposure Pathway	Chemical of Concern[2]	Chronic Daily Intake (CDI) (mg/kg-day)	RfD (mg/kg-day)	Hazard Index[3] (CDI / RfD)
ONSITE				
Soils: Ingestion, Direct and Indirect Contact.				
Hot Spot	2,4,5-T	1.29×10^{0}	1×10^{-2}	1.29×10^{2}
	2,4,5-TP	1.67×10^{-1}	8×10^{-3}	2.09×10^{1}
	Dieldrin	6.52×10^{-4}	5×10^{-5}	1.30×10^{1}
			Primary Hot Spot Total:	1.63×10^{2}
Landfill, Excluding Hot Spots	2,4,5-T	7.69×10^{-4}	1×10^{-2}	7.69×10^{-2}
	2,4,5-TP	1.09×10^{-3}	8×10^{-3}	1.36×10^{-1}
			Landfill, Excl. H.S. Total:	2.13×10^{-1}
TOTAL FOR POTENTIAL ONSITE POPULATION				**5.19×10^{2}**

TABLE 4 (Cont'd)

SUMMARY OF SITE RISKS ONSITE[1]
AND TO NEARBY RESIDENTIAL POPULATION

-- NONCARCINOGENIC EFFECTS --

Exposure Pathway	Chemical of Concern[2]	Chronic Daily Intake (CDI) (mg/kg-day)	RfD (mg/kg-day)	Hazard Index[3] (CDI / RfD)
OFFSITE				
Soils: Ingestion, Direct and Indirect Contact.				
Offsite Residential Areas	Beryllium	7.92×10^{-5}	5×10^{-3}	1.58×10^{-2}
		Offsite Res. Area Total:		1.58×10^{-2}
TOTAL FOR OFFSITE RESIDENTIAL AREAS				**1.58×10^{-2}**

NOTES:
1) Onsite results based on residential setting (potential future land-use) on landfill property.
2) Only the most significant contributors for each exposure pathway are shown.
3) Results based upon worst case exposure.

2,4,5-T = 2,4,5-Trichlorophenoxy acetic acid
2,4,5-TP = 2,4,5-Trichlorophenoxy propionic acid
RfD = Reference Dose

possible exposure. HIs greater than 1.00 indicate that chronic toxicity may occur in an exposed individual, for example, a teenager coming into contact with the drum contents or surrounding soils.

HIs were much lower for the remainder of the landfill, with worst case HIs of 7.69×10^{-2} and 1.36×10^{-1}, respectively, for 2,4,5-T and 2,4,5-TP. The concentrations of herbicides in these locations were not high enough to present significant health risks.

HIs for offsite herbicide exposure were insignificant, as concentrations were nondetectable.

Since investigations indicated no sensitive or endangered species or critical habitats located within or immediately adjacent to the landfill, environmental risks were not calculated. Animals most likely to be impacted are common wildlife such as squirrels, rabbits, birds and deer, and domestic animals that were observed onsite during the remedial investigation. Their exposure to site contaminants, however, is sporadic and of limited duration, thus detrimental effects due to exposure are considered to be minimal.

In conclusion, this risk assessment indicates that dioxin and herbicide concentrations exceed criteria for excess lifetime cancer risks and/or health hazards. Plausible routes of exposure and a likely exposed population have been defined. Therefore, a potential health hazard exists.

DEVELOPMENT OF REMEDIATION GOALS

Remediation goals are divided into two categories. The first, pre-remedial action levels, is used as criteria to determine whether cleanup is required. These levels are based upon the targeted residual risk to remain at the site. The second category, post-remedial treatment goals, is comprised of a combination of health-based and regulatory treatment standards. Both categories are discussed below and are summarized in Tables 5A and 5B.

Remediation goals are developed for contaminated soils only. Since none of the detected contaminants exhibited any consistent spacial pattern in the ground water that suggested downgradient migration of surface contamination, an active ground water remediation program was not considered. The selected remedial alternative will, however, incorporate a system of long-term ground water monitoring to ensure that the remedy remains effective in the protection of ground water quality and to aid in the identification of long-term trends in the quality of the ground water. If comparison of the monitoring results to MCLs or health-based levels indicates that significant degradation of ground water quality were occurring or imminent at any time, the data would be evaluated and confirmatory sampling performed, along

TABLE 5A

SUMMARY OF REMEDIATION GOALS
-- PRE-REMEDIAL ACTION LEVELS --
ROGERS ROAD LANDFILL

Compound	Action Level (ppb)	Resulting Action	Basis (See Notes)	Corresponding Risk Levels
2,3,7,8-TCDD[1]	1.0 < Conc. ≤ 10.0	Soil Cover	A	8×10^{-5} ELCR
	Conc. > 10.0	Thermal Trtm't	A	
Dieldrin	Conc. > 37.0	Soil Cover	B	1×10^{-6} ELCR
2,4,5-T 2,4,5-TP Dieldrin	Cumulative HI > 0.7[2]	Soil Cover	B	1.0 HI (max.)

POINT OF COMPLIANCE: Within Site Boundaries

NOTES: (1) Based on total 2,3,7,8-TCDD equivalents.
(2) Based on 2,4,5-T; 2,4,5-TP and Dieldrin.

ELCR - Excess Lifetime Carcinogenic Risk
HI - Hazard Index

BASIS: A - CDC Health-Based Recommendation
B - Site-Specific Health-Based Goal

TABLE 5B

SUMMARY OF REMEDIATION GOALS
-- POST-REMEDIAL TREATMENT GOALS --
ROGERS ROAD LANDFILL

Compound	Treatment Goal[1,2]	Basis
2,3,7,8-TCDD[3]	1.0 ppb,	CDC Health-Based Recommendation
	OR	
	99.9999% DRE, 1.8 kg/hr HCl, and 180 mg/m^3 particulates.	40 CFR 264.343
2,4-D	10,000 ppb	40 CFR 268.43
2,4,5-TP	7,900 ppb	40 CFR 268.43
Dieldrin	37.0	Site Specific Health Based Goal
	AND	
2,4,5-T 2,4,5-TP Dieldrin	Cumulative HI < 0.3[4]	Site Specific Health Based Goal

NOTES:
(1) Treatment must meet the more restrictive goal for each chemical compound.
(2) Based on chemical concentration in the soil.
(3) Based on total 2,3,7,8-TCDD equivalents.
(4) Based on 2,4,5-T; 2,4,5-TP and Dieldrin.

with an updated survey of ground water use. If imminent degradation of the Class IIB aquifer is confirmed, downgradient users would be notified and the need for, and feasibility of, remedial action would be re-evaluated during the next year. Options to be considered would include alternate water supplies, extraction and treatment methods, or other viable ground water restoration technologies.

Pre-Remedial Action Levels

The remediation goals for this alternative were derived from recommendations by the Centers for Disease Control (with respect to carcinogenic health threats) and from calculations produced in the Rogers Road Landfill Risk Assessment (regarding noncarcinogenic health effects).

Carcinogenic Risks: 2,3,7,8-TCDD and dieldrin are the only probable carcinogens detected at the site above health-based levels. Thus, they will be the only carcinogenic compounds assigned a remediation goal.

The Centers for Disease Control (CDC) has recommended that equivalent 2,3,7,8-TCDD concentrations not exceed 1 ppb in residential surface soils. This recommendation was made for a residential setting, where continual contact with soils would occur over a 70-year lifetime from infancy to old-age. Additionally, CDC has determined that subsurface soils containing concentrations of 2,3,7,8-TCDD not exceeding 10 ppb should not pose a significant health hazard if covered with 12 inches of clean soil.

Although present site conditions are nonconducive to residential development (i.e., trenched and mounded with municipal wastes) and there are no city or county zoning ordinances restricting land-use, it is nonetheless conceivable that the site could be used for residential purposes in the future. This is an unlikely scenario, but it cannot be entirely eliminated. In consideration of potential future land-use, the 1 ppb and 10 ppb equivalent 2,3,7,8-TCDD recommendations for the residential setting are appropriate and therefore adopted as a remedial action objective for the Rogers Road Landfill site.

If the maximum equivalent 2,3,7,8-TCDD concentration in surface soil is reduced to 1.0 ppb (a maximum reduction of 99.5%), the associated plausible maximum cancer risk from direct exposure to dioxins and furans would be 8×10^{-5} (based on the potency and exposure assumptions in the Baseline Risk Assessment). This risk would be in accordance with general EPA policy to limit maximum individual cancer risks to a range between 10^{-4} and 10^{-6}.

Under maximum plausible exposure, the maximum individual risk of cancer from dieldrin exposure was calculated to be 9.89×10^{-4} based

on a dieldrin concentration in one sample at 37,000 ppb. To reduce the cancer risk from exposure to dieldrin to less than 1 x 10^{-6} under maximum plausible exposure, the maximum dieldrin concentration would have to be reduced to 37.4 ppb.

A reduction in potential maximum plausible exposure to dieldrin by 99.90% at these locations would reduce the maximum individual risk attributable to this contaminant to $1x10^{-6}$.

Noncarcinogenic Risks: As mentioned previously, dieldrin and the herbicides 2,4,5-T and 2,4,5-TP may act on the same target organs by similar mechanisms. In addition, concentrations in the drum disposal area are very non-homogeneous. Under the circumstances, adding the aforementioned hazard indices for the above substances is an appropriate method for estimating the maximum combined HI for herbicides and dieldrin (for the purpose of conservatively estimating remedial action objectives). Thus, the combined maximum HI for 2,4,5-T, 2,4,5-TP, and dieldrin in the drum disposal area is 163, under maximum exposure.

The highest HI from substances other than herbicides and dieldrin under maximum plausible exposure is 0.127 from 9,900 ppb of bromomethane, detected near the center of the drum disposal area. The next highest HI for an organic substance is 0.085 from 4,4'-DDT (2,400 ppb), found outside the drum disposal area. Combining the above HIs for each of these constituents yields a total Hazard Index from substances other than herbicides and dieldrin of 0.212.

The combined hazard index for all site pollutants that act on the same target organs by the same mechanism should be less than one for threshold toxic effects to be considered unlikely. Reducing the hazard index for herbicides and dieldrin to 1.0 would not leave any margin of safety for exposure to other substances that may act in a similar manner (such as those described in the previous paragraph) or for exposure to the same substances from sources other than the Rogers Road Landfill Site. Under the circumstances, a representative remedial action objective is to reduce the combined hazard index for exposure to dieldrin and herbicides (2,4,5-T and 2,4,5-TP) from the Rogers Road Landfill Site to 0.7 or less.

As mentioned, the combined hazard index under worst case exposure from the herbicides is 163. Reducing this hazard index to 0.7 would require a 99.57% reduction in exposure. Based on the observed concentrations of herbicides and a 99.57% removal efficiency, target concentrations for herbicides and dieldrin to achieve a hazard index of 0.7 would be:

- 33,100 ppb for 2,4,5-T
- 4,300 ppb for 2,4,5-TP, and

- 160 ppb for dieldrin

If, after sampling, the concentrations of either 2,4,5-T, 2,4,5-TP or dieldrin exceed these action levels, the combined hazard index should be calculated (using the method employed in the risk assessment) to determine if it exceeds the 0.7 HI action level. If the recalculated HI is found to exceed the action level, these soils will be targeted for remedial action.

It should be noted that exceedances of the target concentrations for herbicides and dieldrin have only been detected within the drum disposal area, which also contains high dioxin concentrations. Therefore, it is expected that as the dioxin-contaminated soil is remediated, the herbicides will be addressed simultaneously.

The above discussion indicates that there are two target levels for dieldrin, 37.4 ppb based on cancer risk, and 160 ppb based on a non carcinogenic hazard index. Under the circumstances, the 37.4 ppb level, being the more restrictive number, is adopted as the cleanup criterion for dieldrin.

Post-Remedial Treatment Goals

As discussed in the Summary of Site Characteristics section of this ROD, the site waste is not RCRA-listed but it is characteristic. Therefore Land Disposal Restrictions (LDRs) are relevant and appropriate to certain constituents of the treated waste. Regulatory treatment goals for dioxin-waste are also adopted to ensure adequate treatment of site contamination.

LDRs for D016 and D017 hazardous waste were published in the June 1, 1990 Federal Register (under 40CFR part 268.43). Since D016 and D017 restrictions are considered to be relevant and appropriate, concentrations of 2,4-D in the waste will have to be reduced to 10,000 ppb and concentrations of 2,4,5-TP in the waste would have to be reduced to 7,900 ppb before the material can be disposed of. Complying with these limitations will require reducing maximum 2,4-D concentrations by 99.97% and reducing maximum 2,4,5-TP by 99.21%.

In addition to the regulatory treatment goals, the pre-remedial action levels will also be required of the treated waste. Compliance to the more stringent of the criteria would be required.

Thermal treatment is the best demonstrated available technology for treatment of the types of waste found in the Rogers Road Landfill soils (i.e., dioxins and herbicides). Performance standards applicable to this type of treatment include the requirement for a 99.9999% destruction and removal efficiency as well as limitations on HCl and particulate emissions. Treatment

to this degree will result in the attainment of all treatment levels specified for the above-mentioned contaminants. Dioxin-contaminated soil would be remediated to well below the 1 ppb health-based goal recommended by ATSDR for residential surface soil. Additionally, all contaminants causing the waste to be considered characteristic of EP toxicity would be destroyed to the point that it no longer exhibits the characteristic.

DESCRIPTION OF ALTERNATIVES

SARA requires that selected remedies utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. For the Rogers Road Landfill Site, a no-action alternative and a range of treatment and containment alternatives were developed. Based on the remedial technologies selected, five remedial alternatives have been developed. One of the alternatives is the no-action alternative; one involves containment and institutional controls; one involves offsite treatment, containment, and institutional controls; and two involve onsite treatment, containment and institutional controls. The alternatives are:

1) No-Action;

2) Fence, Caps, Land-Use Controls, and Monitoring;

3) Excavation, Offsite Thermal Treatment and Landfill, Soil Cover, Fence, Land-use Controls, and Monitoring;

4) Excavation, Thermal Treatment and Backfilling at the Jacksonville Municipal Landfill site, Soil Cover, Fence, Land-Use Controls, and Monitoring; and

5) Excavation, Thermal Treatment and Landfill at the Vertac Chemical Corp. Site, Soil Cover, Fence, Land-use Controls, and Monitoring.

COMMON ELEMENTS

Many of the remedial alternatives presented below share common elements. The most frequently shared components are presented as follows:

Component	Remedial Alternative				
	1	2	3	4	5
Ground Water Monitoring	X	X	X	X	X
Contaminant Mapping		X	X	X	X
Soil Cover		X	X	X	X
Filling in Site Trench		X	X	X	X
Land-Use Controls		X	X	X	X

Components

Ground Water Monitoring: The representative ground water monitoring program would consist of sampling two existing, and three new shallow monitoring wells annually. The ground water samples would be analyzed for Target Compound List (TCL) organics and inorganics, along with herbicides and pesticides. This evaluation would include a spatial and temporal analysis of existing data to determine increasing, decreasing, or stationary trends in contaminant concentrations. The results of this evaluation would be used to maintain, increase or decrease the number and types of samples and analysis required for the monitoring program. As required by RCRA, the monitoring and evaluation program would be implemented for 30 years, or another period of time as established by the EPA Regional Administrator.

Contaminant Mapping: The extent of contamination at the Rogers Road Landfill Site is based on linear interpolation of results from the June 1990 Contaminant Mapping Study. The estimated amount of soil, debris and waste containing more than 10 ppb equivalent 2,3,7,8-TCDD in these areas is 50 cubic yards (72 tons). 250 cubic yards (362 tons) of the site is estimated to contain equivalent 2,3,7,8 TCDD concentrations above 1 ppb. In addition, 120 cubic yards of soil contaminated with dieldrin above 37 ppb is expected to be encountered. The total area contaminated above 1 ppb equivalent 2,3,7,8-TCDD and 37 ppb dieldrin is estimated as 10,000 square feet.

Soil and waste containing greater than 1.0 ppb equivalent 2,3,7,8-TCDD or 37 ppb dieldrin, and/or dieldrin and herbicide contamination associated with a combined hazard index greater than 0.7 would be mapped in 10 foot cells, using the procedures described in Section 4.5.2 of the Rogers Road Landfill Feasibility Study.

Generally, the representative grid sampling program would involve:

- Dividing the areas estimated to be contaminated above the aforementioned limits into 10-foot grids,

- Collecting four grab samples of approximately equal volume from every cell within the grid (at the approximate center of every 5'x 5' quarter of the grid, at a depth of 3 to 9 inches),

- Homogenizing the four grab samples in a bowl and taking at least one aggregate sample from the bowl,

- Analyzing for 2,3,7,8-TCDD, dieldrin, and herbicides in each aggregate sample,

- Results of each aggregate sample will be interpreted as characterizing the chemical constituency of the total grid so that appropriate remedial measures can be taken.

Soil Cover: Soil containing between 1 and 10 ppb equivalent 2,3,7,8-TCDD, greater than 37 ppb dieldrin, and/or dieldrin and herbicide contamination associated with a hazard index above 0.7 would be graded (if necessary), covered with 12 inches of uncontaminated clay, and revegetated. The soil cover would be integrated into the surrounding soil for uniform, continuous coverage.

Filling in Site Trench: The trench at the site is an attractive nuisance and contributes to ground water recharge. This trench would be backfilled with clean, native clay and revegetated.

Land-Use Controls: Land-use restrictions would also be placed on the site and surrounding ground water use to prevent activities that could endanger public health. Representative land-use restrictions would limit ground water use onsite and deter use of the shallow ground water immediately downgradient of the site.

The method of imposing such restrictions would consist of negotiation with the City of Jacksonville concerning the Landfill and with owners of surrounding property concerning ground water use.

Costs

Cost estimates were prepared during the Feasibility Study for each of the alternatives. The accuracy range targeted for the estimates was +50% / -30%, meaning that the actual remediation costs may be up to 50 percent higher or 30 percent lower than the estimates accompanying the alternatives presented below. The cost evaluations were not produced with the intent to accurately predict remediation expenses, but rather to establish a uniform basis for evaluating the relative costs attributable to each alternative.

The cost estimates presented in this ROD have been revised from those presented in the Feasibility Study Report based upon the revised soil volumes calculated during the Contaminant Mapping Study.

Applicable or Relevant and Appropriate Requirements (ARARs)

This discussion will focus on only the most significant ARARs shared by the remedial alternatives.

RCRA Land Disposal Restrictions: Land Disposal Restrictions (LDRs) are presented in 40 CFR Part 268. LDRs establish a timetable and treatment criteria for the restriction of disposal of wastes and other hazardous materials.

As previously discussed, there is no affirmative evidence proving from which process the herbicides, trichlorophenol and other site related chemicals came. Records are required to determine the origin (and thus the "listability") of the waste. Since the evidence is inconclusive, land disposal restrictions are not applicable. Furthermore, Superfund LDR Guide No.7, "Determining When Land Disposal Restrictions (LDRs) Are Relevant and Appropriate to CERCLA Response Actions", states that EPA will not consider the LDRs to be relevant and appropriate for soil and debris contaminated with hazardous substances that are not RCRA restricted wastes. Therefore, LDRs are not considered relevant and appropriate for the dioxin-contaminated soils at the Rogers Road site. Nonetheless, in the interest of ensuring adequate treatment of the dioxin waste onsite, RCRA restrictions pertaining to the treatment of listed wastes will be considered relevant in the determination of remediation goals.

The contaminated soils are, however, considered "characteristic" of hazardous waste under waste codes D016 (for 2,4-D) and D017 (for 2,4,5-TP). These waste codes became subject to LDRs with the promulgation of the RCRA "Third Thirds Rule" in June 1990. Treatment standards specified in this regulation must be met prior to waste disposal. Please refer to the "DEVELOPMENT OF REMEDIATION GOALS" section of the ROD for more information regarding the applicability of this requirement.

Consideration was given to alternatives 4 and 5 with respect to ARARs relevant to disposal of the treated ash. Since the ash resulting from treatment will meet health-based treatment goals, it will be placed directly into the ground (rather than into a Subtitle C landfill) without any further processing, except to modify the pH of the soil mixture to make it more suitable for revegetation. Also, there would be no need to "delist" the ash since the waste was not a listed waste prior to treatment. Characteristic hazardous wastes never need to be delisted, but do require treatment until the characteristic is no longer exhibited.

This determination is consistent with the RCRA "Contained-in" Rule, which states that any mixture of a non-solid waste (such as soil or ground water) and a RCRA listed hazardous waste must be managed as a hazardous waste as long as the material contains (i.e., is above health-based levels) the listed hazardous waste. Once the material has been treated to no longer "contain" the listed hazardous waste, the material itself will no longer be considered a hazardous waste.

40 CFR 264.343, Subpart O - Incinerators: This regulation provides operational standards and monitoring requirements for hazardous waste incinerators. Key components of this regulation include the requirement for a dioxin-waste destruction and removal efficiency of 99.9999% for each principal organic hazardous constituent and places limitations on HCl and particulate emissions.

Subpart O is considered relevant and appropriate to all remedial alternatives which employ thermal destruction as a treatment element.

40 CFR Parts 260, 261, 264 and 270 - Standards for Owners and Operators of Hazardous Waste Incinerators... (Proposed Rule): These regulations are currently set forth in "Proposed Rule" status and are not promulgated, thus they are neither applicable nor relevant and appropriate. They are, however, "To Be Considered (TBCs)" as they amend the current hazardous waste incinerator regulations to improve control of toxic metal emissions, HCl emissions and residual organic emissions.

40 CFR Part 258, Criteria for Municipal Solid Waste Landfills (Proposed Rule): These regulations are also TBCs. They provide additional operating and design criteria for owners and operators of municipal solid waste landfills. Included are closure and post-closure requirements that are more stringent than current Subtitle D regulations.

State ARARs: No State regulations have been identified as being more stringent than their Federal counterparts. In order to qualify as a State ARAR, a State requirement should be:

- A State law;
- An environmental or facility siting law;
- Promulgated;
- More stringent than the Federal requirement;
- Identified in a timely manner; and
- Consistently applied.

Descriptions of the remedial alternatives follow:

ALTERNATIVE 1 -- NO ACTION

Description

During the development and evaluation of alternatives, EPA guidance requires that a no-action alternative be considered as a "baseline case," against which all other alternatives will be evaluated.

Under this alternative, no remedial action will be taken, other than the ground water monitoring program described above.

Because the wastes remain at the Rogers Road Landfill Site, SARA requires that the data collected from the site be evaluated every five years to ensure that the remedies implemented remain protective to human health and the environment. The first five year review will be initiated no more than five years after the Remedial Action begins.

Cost and Timing

The cost directly associated with implementation of this alternative is related to the long-term monitoring and the 5-year review program. The total cost of drilling and casing the new 40-foot deep wells is estimated to be $15,000, including indirect costs. The annual operation and maintenance (O&M) cost for monitoring is estimated to be about $17,000; and the cost of each five year review is estimated at $10,000. The total present worth is approximately $302,000 based on a 5% discount rate and a 30-year time period.

It is expected that this remedy would be fully implemented within 9 months of the signing of the ROD.

Compliance with ARARs

No Federal or state regulations specify soil cleanup levels for contaminated soil that is left in-place. Because the soil would not be treated or effectively contained, this alternative would not comply with relevant and appropriate clean closure or landfill closure requirements.

Action-Specific ARARs pertinent to the implementation of this alternative would apply to the monitoring activities only. Requirements for these activities include OSHA health and safety standards, and RCRA facility standards pertaining to preparedness and prevention, contingency plan and emergency procedures, recordkeeping, and closure and post-closure procedures.

ALTERNATIVE 2 -- FENCE, CAPPING, LAND-USE CONTROLS, MONITORING

Description

The objective of this alternative is the elimination of the major potential risks to public health and to the environment with minimum action. The most significant risk to the public is due to direct contact with dioxin contaminated soil onsite.

Under this alternative, soil and waste would be mapped in 10 foot cells, using the procedures described in the "COMMON ELEMENTS" section above. The soil and waste containing more than 10 ppb equivalent 2,3,7,8-TCDD would be wetted, excavated where necessary, consolidated into a pile in the drum disposal area (centered around the central waste pile in this area), graded, compacted, and covered with a multi-layer RCRA cap.

The soil containing between 1 and 10 ppb equivalent 2,3,7,8-TCDD, greater than 37 ppb dieldrin and/or containing dieldrin and herbicide contamination associated with a hazard index above 0.7 would be wetted, graded and capped with a 12 inch thick soil cover. The RCRA cap would be integrated into any adjacent soil cover or native soil to achieve a uniform, continuous coverage.

The trench at the site is an attractive nuisance and contributes to ground water recharge. This trench would be backfilled with clean, native, silty clay and revegetated.

All excavation should take place when the site (including the trenches) is most likely to be dry, to avoid problems with mud and with disposal of water in the trenches. A water spray should be used to control dust during excavation.

In addition, a 7 foot tall, heavy-duty chain link fence with outriggers and coiled razor wire would be erected to surround the southern third of the site, where dioxin, dieldrin and herbicide contamination exceeds action levels and where the caps would be located. The chain link would be of a fine mesh to make scaling extremely difficult. The fence posts would be anchored in corrosion resistant concrete, and the razor wire would be spot welded to the fence posts, outriggers, and horizontal supports, to discourage theft and breaching of the barrier. "No-trespassing" signs warning of the hazards within would also be posted at 100 foot intervals on the fence. The fence would have a padlocked gate to allow access. Such a fence should reduce trespassing on the dioxin contaminated portions of the site and the associated risks.

Land-use restrictions, as described under "COMMON ELEMENTS", would also be placed on the site and surrounding ground water use to prevent activities that could endanger public health.

The ground water monitoring and five year evaluation programs are identical to those described for the no-action alternative.

The boundary of ground water compliance will be delineated by the deep downgradient wells which are identified in the "DETAILED DESCRIPTION OF REMEDY" section of the ROD. If comparison of sampling results to MCLs or health-based levels indicates that significant degradation of ground water quality was occurring or imminent downgradient of the site at any time, the data would be evaluated and confirmatory sampling performed, along with an updated survey of ground water use. If imminent degradation of the Class IIB aquifer is confirmed and use of the water is occurring or likely to occur, ground water users would be notified and the need for, and feasibility of, remedial action would be re-evaluated during the next year. Options to be considered would include alternate water supplies, extraction and treatment methods, or other viable ground water restoration technologies. The need for a separate Record of Decision, Explanation of Significant Differences or other type of ROD amendment would be evaluated at the time that the situation arises.

Inspections of the fence, gate and lock, along with the RCRA cap and the soil cover would occur on an annual basis, and repair would take place as necessary and appropriate to assure their integrity.

During excavation and handling of contaminated material, dust and visible emissions would be measured and the monitoring required by OSHA would be performed, in accordance with detailed plans developed during the design of this alternative.

This alternative will reduce site risks by providing a protective cap, thus reducing the "direct contact" threat. It does not eliminate the site risks but does "control" them as long as the effectiveness of the cap is maintained.

Cost and Timing

The cost of ground water monitoring and five year evaluations associated with this alternative is approximately $293,000. Annual review of the data, fence and cap inspections, and maintenance will add $11,000 per year. Installation of the caps, the improved fence and gate is estimated to cost $364,000. The present worth of implementing this alternative is estimated to be $930,000.

It is expected that this remedy would be fully implemented within 15 months of the signing of the ROD.

Compliance with ARARs

Action-Specific ARARs pertinent to the implementation of this alternative would apply to the monitoring and capping activities. Requirements for these activities include OSHA health and safety standards, and RCRA facility standards pertaining to minimum technology requirements, preparedness and prevention, contingency plan and emergency procedures, recordkeeping, and closure and post-closure procedures.

Since no "placement" of RCRA contaminated waste would occur under this alternative, Land Disposal Restrictions are not considered to be ARARs.

This alternative would not remove contaminated material, but it would provide containment of contaminated soils with an impermeable cap. Relevant and appropriate RCRA closure/post-closure requirements in 40 CFR Sections 264.110 through 264.120 would be met.

ALTERNATIVE 3 -- EXCAVATION, OFFSITE THERMAL TREATMENT AND LANDFILL, SOIL COVER, LAND-USE CONTROLS, MONITORING

Description

Implementation of this alternative would begin with detailed soil monitoring. The objective of the representative monitoring program would be to define the 10 foot by 10 foot cells within which equivalent 2,3,7,8-TCDD and dieldrin concentrations in surface soil and debris exceed 10 ppb and 37 ppb, respectively, the cells within which the equivalent 2,3,7,8-TCDD concentrations exceed 1 ppb, and the cells in which the hazard index from dieldrin and herbicides exceed 0.7. The establishment of these remediation criteria is outlined in the SELECTED REMEDY section of this ROD.

The soil and waste containing more than 10 ppb equivalent 2,3,7,8-TCDD (and associated herbicides) would be excavated, screened and loosely packed in labeled 35-gallon fiber drums. These drums would be overpacked in 55-gallon drums and labeled with the cell number from which they came. The overpacked drums would be transported and stored in a shed erected in the north end of the Jacksonville Municipal Landfill Site designed to comply with all relevant and appropriate requirements for hazardous waste storage facilities. (The Jacksonville site was chosen because it is more easily accessible, there is more space available, and there would already be a shed erected there housing 1500 drums of Jacksonville Landfill waste.) Packing all of this material in 35-gallon overpacked drums would require about 575 drums and overpacks, assuming an average of 250 pounds of contaminated soil is packed into each drum. Drums of waste associated with monitoring and remedial action would also be stored in the shed. Storage would

continue until an offsite thermal treatment unit is permitted to treat the soil, debris and waste and an offsite landfill is permitted to accept the ash. The drums would then be manifested and transported to a licenced thermal treatment facility.

The soil that contains equivalent 2,3,7,8-TCDD concentrations between 1 ppb and 10 ppb, greater than 37 ppb dieldrin, and/or dieldrin and herbicide contamination associated with a hazard index above 0.7 would be graded, compacted, and capped with a soil cover. The site trench would be backfilled, as described for Alternative 2, along with the areas that had contained soil with equivalent 2,3,7,8-TCDD concentrations above 10 ppb.

For the representative thermal treatment unit, it is assumed that the facility will only be able to accept 38 tons of soil per day. At this rate, all 72 tons of contaminated soil could be shipped offsite for disposal within two days.

Ground water and OSHA monitoring, and five year evaluations would be similar to that described for Alternative 2, along with soil cover inspection and maintenance. For this alternative no new fence would be installed. However, the existing fence at the site would be maintained.

Land-use controls would be the same as described with Alternative 2.

This alternative will reduce the maximum risks of cancer from maximum plausible exposure to 8×10^{-5} and will eliminate significant risks of threshold toxic effects from herbicides (total hazard index ≤ 1.0).

Cost and Timing

This alternative would include capital costs of $222,000 to excavate, transport, and pack the estimated 50 cubic yards of contaminated soil and material containing more than 10 ppb equivalent 2,3,7,8-TCDD into approximately 580 thirty-five gallon overpacked drums. Storing the drums at the Jacksonville Landfill Site is estimated to cost $50,000, including $6,000 for periodic inspection, assuming the drums are stored for two years prior to disposal.

Incinerating the contaminated soil is estimated to cost $216,000, assuming an incineration and land disposal cost of $3,000 per ton. Transportation of the material is estimated to cost $16,000, assuming 80 overpacked drums per truck.

Installation of the soil cover at the Rogers Road Site and backfilling areas from which the highly dioxin contaminated soil was removed, along with the trenches, is estimated to cost $104,000.

Additional O&M costs would include $293,000 for monitoring and 5-year review as with Alternative 2. Annual review of the data, fence and soil cover inspections, and fence and soil cover maintenance would add $6,000 per year. The present worth of implementing this alternative is estimated to be $1,404,000.

It is expected that this remedy could be fully implemented within 2 years of the signing of the ROD if a thermal destruction facility could be permitted for dioxin waste within 12 months of the ROD.

Compliance with ARARs

ARARs for this alternative apply to excavation of contaminated soil, site closure with waste in place, reclamation of the areas excavated and monitoring activities. Requirements for these activities include OSHA health and safety standards; RCRA facility standards pertaining to storage as well as treatment unit operation and performance; preparedness and prevention; contingency plan and emergency procedures; manifesting and record keeping; and standards for ground water protection. RCRA Subtitle C requirements are relevant and appropriate to the dioxin, chlorophenol, and herbicide contaminated waste. This alternative would comply with all such requirements. Transportation would comply with Federal and Arkansas Department of Transportation regulations.

As discussed under "COMMON ELEMENTS", although LDRs are not ARARs for the dioxin-contaminated waste, they are applicable to waste characteristic of EP toxicity under waste codes D016 and D017. Treated waste will be required to meet the appropriate LDRs prior to disposal.

While this is not a RCRA facility, closure and post closure requirements are considered to be relevant and appropriate. This remedy would meet the requirements necessary to attain landfill-closure status. Post-closure inspections to insure the integrity of the soil cover and ground water monitoring to detect any significant offsite ground water impacts is expected to comply with closure requirements.

ALTERNATIVE 4 -- EXCAVATION, ONSITE THERMAL TREATMENT, SOIL COVER, LAND-USE CONTROLS, MONITORING

Description

This alternative is similar to Alternative 3, except that the soil is treated at the Jacksonville site. As was described for Alternative 3, the implementation of this alternative would begin with sufficient monitoring to define the areas within which equivalent 2,3,7,8 TCDD-dioxin concentrations in surface soil and

debris exceed 1 ppb, the cells within which equivalent 2,3,7,8-TCDD and dieldrin concentrations exceed 10 ppb and 37 ppb, respectively, and the cells in which the hazard index from dieldrin and herbicides exceeds 0.7.

For the representative process option, an estimated 72 tons of soil containing equivalent 2,3,7,8-TCDD concentrations above 10 ppb would be sampled, packed in 3,000 lb capacity labeled polyester bags, transported and stored in a shed at the north end of the Jacksonville Site in a manner complying with all relevant and appropriate requirements for a hazardous waste storage facility. Storage would continue until a suitable thermal treatment system is brought to the Jacksonville site and treats all of the bagged contaminated material from the landfill sites (along with any contaminated drummed material). Treatment unit sizing requirements and detailed operational specifications would be developed during the Remedial Design.

For the representative process, the treated soil, debris and waste would be analyzed to assure that it meets treatment goals specified in the "DEVELOPMENT OF REMEDIATION GOALS" section of the ROD, mixed with manure and seeds, and backfilled at the Jacksonville site where it would revegetate.

As with Alternative 3, soil containing between 1 and 10 ppb equivalent 2,3,7,8-TCDD, greater than 37 ppb dieldrin, and/or dieldrin and herbicide contamination associated with a hazard index above 0.7 would be covered with 12 inches of uncontaminated silty clay, and revegetated.

Also as with Alternative 3, the onsite trench would be backfilled, and the soil cover and the existing fence would be inspected and maintained. Ground water monitoring, land-use controls, and five year evaluations would also take place as described for Alternative 2.

As with the previous alternative, this alternative will reduce the maximum risks of cancer from maximum plausible exposure to 8×10^{-5} and will eliminate significant risks of threshold toxic effects from herbicides (total hazard index $\leq$ 1.0).

A variance to this Alternative was considered during the FS. It involved utilizing chemical dechlorination as the principal treatment technology rather than thermal treatment. Chemical dechlorination is a relatively new process capable of rendering certain hazardous wastes non-toxic. This technology has been successfully implemented at other commercial and Superfund sites. Literature and data searches into past applications of this process had indicated its potential effectiveness on the dioxins and herbicides contained in the landfill wastes.

The overall cost and implementation time for utilizing dechlorination, however, is approximately the same as for onsite incineration. This technology was, therefore, not selected for detailed analysis and presentation since it did not appear to provide any additional benefits above those available with thermal treatment. Additionally, it had the disadvantage of being neither as proven nor as effective as thermal technologies. Incineration has been demonstrated to be effective many times at full scale application, however dechlorination does not have a demonstrated track record with these contaminants in soils similar to those encountered at the Rogers Road Landfill site. Thermal treatment, therefore, was chosen as the preferred treatment method.

Cost and Timing

Testing of the selected treatment alternative (i.e. trial burn testing of the incinerator along with testing leachate from and the erosion resistance of treated soil mixtures) is estimated to cost $77,000. These costs are prorated, assuming the same tests will be applicable to the contaminated material at the Jacksonville Landfill Site.

The monitoring, excavation, transport to the Jacksonville Site, screening and packing of 50 cubic yards of contaminated soil is estimated to cost $167,000. Temporary storage at the Jacksonville Site is estimated to cost $59,000 including periodic inspection of the bags stored on-site, assuming the bags are stored for one year prior to disposal. The incineration of the contaminated soil and debris at the Jacksonville Site would cost $54,000.

The covering of low-level dioxin and herbicide contaminated soil and long term cover and fence inspection and maintenance would cost $104,000.

Additional O&M costs would include $293,000 for monitoring, annual review of the data, fence and soil cover inspections, and fence and soil cover maintenance, as with alternative 2. The present worth of implementing this alternative is estimated to be $1,201,000.

It is expected that this remedy would be fully implemented within 2 1/4 years of the signing of the ROD.

Compliance with ARARs

As with Alternative 3, ARARs for this alternative apply to excavation of contaminated soil, reclamation of the areas of excavation, and monitoring activities. Requirements for these activities include OSHA health and safety standards; RCRA facility standards pertaining to treatment unit operation and performance; preparedness and prevention; contingency plan and emergency procedures; record keeping; standards for ground water protection;

and closure and post-closure requirements. In addition, Land Disposal Restrictions are considered to be applicable only for waste codes D016 and D017. This remedy would comply with all such requirements.

Multiple Sites

Multiple, non-contiguous CERCLA sites may be treated as one for the purpose of a response action under CERCLA § 104(d)(4). The preamble to the 1990 NCP discusses the issue of how to determine whether to treat such sites as one for the purpose of a response action under this section. 55 Fed. Reg. 8690-8691 (March 8, 1990). As stated in the preamble, "CERCLA section 104(d)(4) allows EPA broad discretion to treat noncontiguous facilities as one site for the purpose of taking a response action. The only limitations prescribed by the statute are that the facilities be reasonably related 'on the basis of geography' or 'on the basis of the threat, or potential threat to the public health or welfare or the environment.' Once the decision is made to treat two or more facilities as one site, wastes from several facilities could be managed in a coordinated fashion ar one of the facilities and still be an 'on-site' action, within the permit waiver of CERCLA section 121(e)(1)." Id. at 8690.

EPA has determined that consolidation and thermal treatment of Rogers Road Landfill wastes at the Jacksonville Landfill site, along with the Jacksonville wastes, satisfies the criteria of CERCLA § 104(d)(4), and that these two sites should be considered as one for the purpose of such consolidation and treatment of wastes from both sites at Jacksonville. These two sites are within several hundred feet of each other, and are therefore reasonably close to each other such that they are reasonably related on the basis of geography. Also, the wastes at Jacksonville Landfill and Rogers Road Landfill are very similar in nature. They both consist of soils contaminated with herbicides and dioxins at approximately the same levels of contamination. Further, soils from both sites with contamination above an identical action level will be incinerated. Therefore, the sites are compatible for the selected treatment and disposal approach, and are reasonably related based on the threat to public health or welfare or the environment. The public, the PRPs and the State were provided an opportunity to comment on the preferred alternative and the other alternatives, in line with the NCP and the preamble section referenced above.

ALTERNATIVE 5 -- EXCAVATION, THERMAL TREATMENT AT THE VERTAC CHEMICAL CORP. SITE, SOIL COVER, LAND-USE CONTROLS, MONITORING

Description

This alternative is similar to Alternative 4, except that the soil is treated at the Vertac Chemical Corp. site in Jacksonville,

Arkansas. As was described for Alternative 4, the implementation of this alternative would begin with sufficient monitoring to define the areas within which equivalent 2,3,7,8 TCDD-dioxin concentrations in surface soil and debris exceed 1 ppb, the cells within which equivalent 2,3,7,8-TCDD and dieldrin concentrations exceed 10 ppb and 37 ppb, respectively, and the cells in which the hazard index from dieldrin and herbicides exceeds 0.7.

For the representative process option, an estimated 72 tons of soil containing equivalent 2,3,7,8-TCDD concentrations above 10 ppb would be placed in 12 cubic yard capacity storage containers. The storage containers would then be transported to the Vertac Chemical Corp. site and stored in a manner complying with all relevant and appropriate requirements for a hazardous waste storage facility. Storage would continue until a suitable thermal treatment system is brought to the site and treats all of the contained contaminated material. Treatment unit sizing requirements and detailed operational specifications would be developed during the Remedial Design.

The treated soil, debris and waste would be analyzed to assure that it meets the treatment goals specified in the "DEVELOPMENT OF REMEDIATION GOALS" section of the ROD, mixed with manure and seeds, and backfilled into suitable areas at the Vertac site.

As with Alternative 4, onsite soil containing between 1 and 10 ppb equivalent 2,3,7,8-TCDD, greater than 37 ppb dieldrin, and/or dieldrin and herbicide contamination associated with a hazard index above 0.7 would be covered with 12 inches of uncontaminated silty clay, and revegetated.

Also as with Alternative 4, the onsite trench would be backfilled, and the soil cover and the existing fence would be inspected and maintained. Ground water monitoring, five year evaluation and land-use control would also take place as described for Alternative 2.

As with the previous alternative, this alternative will reduce the maximum risks of cancer from maximum plausible exposure to 8×10^{-5} and will eliminate significant risks of threshold toxic effects from herbicides (total hazard index ≤ 1.0).

It should be noted that Alternative 5 does not appear in the Feasibility Study Report. This alternative was developed as a variation to Alternative 4 (Onsite thermal treatment) -- the sole modification being that the waste treatment and ash disposal would occur at the Vertac site rather than at the Jacksonville Landfill. All other elements of this alternative are identical to those comprising Alternative 4. Alternative 5 was, however, outlined and recommended in the Proposed Plan of Action, July 1990, for the purposes of providing information specific to this alternative and encouraging comments from interested parties on its components.

Cost and Timing

Testing during the selected treatment alternative (e.g. contaminant mapping, trial burn testing of the thermal treatment unit and testing leachate from treated soil) is estimated to cost approximately $176,000. The monitoring, excavation, screening, packing and transport of 50 cubic yards of contaminated soil is estimated to cost $135,000. The treatment of the Rogers Road Landfill contaminated soil and debris at Vertac would cost $54,000. The covering of low level dioxin contaminated soil and long term cover inspection and maintenance would cost $52,000.

Additionally, the O&M costs would include $384,000 for monitoring, annual review of the data, fence inspection and maintenance, as with Alternative 2 (except that the existing fence would be maintained, and no new fence installed). Periodic inspection of the containers stored at Vertac will cost $3,000, assuming they are stored for one year prior to treatment. The present worth of implementing this alternative is estimated to be $1,226,000.

It is expected that this remedy would be fully implemented within 2 1/4 years of the signing of the ROD.

Compliance with ARARs

As described in Alternative 3, ARARs for this alternative apply to excavation of contaminated soil, reclamation of the areas of excavation, and monitoring activities. Requirements for these activities include OSHA health and safety standards; RCRA facility standards pertaining to operation and performance; preparedness and prevention; contingency plan and emergency procedures, record keeping; and standards for ground water protection.

As discussed under "COMMON ELEMENTS", although LDRs are not ARARs for the dioxin-contaminated waste, they are applicable to waste characteristic of EP toxicity under waste codes D016 and D017. Treated waste will be required to meet the appropriate LDRs prior to disposal.

Since the ash resulting from treatment would meet health-based treatment goals, it will be placed directly into the ground (rather than into a Subtitle C landfill) without any further processing, except to modify the pH of the soil mixture to make it more suitable for revegetation. Also, there would be no need to "delist" the ash since the waste was not a listed waste prior to treatment.

While this is not a RCRA facility, closure and post closure requirements are considered to be relevant and appropriate. This remedy would meet the requirements necessary to attain landfill-closure status. Post-closure inspections to insure the integrity

of the soil cover and ground water monitoring to detect any significant offsite ground water impacts is expected to comply with closure requirements.

Multiple Sites

The previous alternative included a discussion regarding the NCP's provision for considering noncontiguous sites as one for the purposes of implementing CERCLA response actions. As was the case in Alternative 4, EPA has determined that consolidation and thermal treatment of wastes from Rogers Road at the Vertac facility, along with the Jacksonville wastes, meet the criteria of CERCLA § 104(d)(4) and that these three sites should be considered as one for the purpose of such consolidation and treatment. The sites are reasonably close to one another and the wastes at the sites are compatible for the selected treatment and disposal approach. In addition, EPA has received and responded to comments from the public, the PRPs, and the State regarding this strategy.

SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

The following section profiles the performance of the described remedial alternatives against the nine criteria that EPA uses for their evaluation. This evaluation provides support for EPA's selection of a site remedy by showing that the selected remedy would provide the best balance of trade-offs among the alternatives with respect to the nine criteria. The evaluation criteria are provided below.

DESCRIPTION OF THE NINE EVALUATION CRITERIA

* Overall Protection of Human Health and Environment addresses whether or not a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced, or controlled through treatment engineering controls or institutional controls.

* Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) addresses whether or not a remedy will meet all of the requirements of other Federal and State environmental statutes and/or provide grounds for invoking a waiver.

* Long-Term Effectiveness and Permanence refers to the magnitude of residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time once cleanup goals have been met.

* Reduction of Toxicity, Mobility, or Volume Through Treatment is the anticipated performance of the treatment technologies that may be employed in a remedy.

* Short-Term Effectiveness refers to the speed with which the remedy achieves protection, as well as the remedy's potential to create adverse impact on human health and the environment that may result during the construction and implementation period.

* Implementability is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement the chosen solution.

* Cost includes capital and operation and maintenance costs.

* State Acceptance indicates whether, based on its review of the RI/FS and Proposed Plan, the State concurs with, opposes, or has no comment on the preferred alternative.

* Community Acceptance is assessed in the Record of Decision following a review of the public comments received on the RI/FS report and the Proposed Plan.

The nine criteria are categorized into three groups: Threshold, primary balancing, and modifying. The threshold criteria must be satisfied in order for an alternative to be eligible for selection. The primary balancing criteria are used to weigh major tradeoffs among alternatives. The modifying criteria are taken into account after public comment is received on the Proposed Plan of Action.

Threshold Criteria

- o Overall Protection of Human Health and Environment
- o Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

Primary Balancing Criteria

- o Long-Term Effectiveness and Permanence
- o Reduction of Toxicity, Mobility, or Volume Through Treatment
- o Short-Term Effectiveness
- o Implementability
- o Cost

Modifying Criteria

- o State Acceptance

- o Community Acceptance

ANALYSIS

Overall Protection

The no-action alternative (Alternative 1) will provide no protection of human health and the environment since it does nothing to reduce the potential of exposure to site contaminants.

Alternatives 3, 4 and 5 all provide approximately the same overall protection to human health and to the environment (cancer risks of 8×10^{-5}). Additionally, they are the most protective since they will prevent exposure by treating and destroying the most contaminated surface soil and replacing it with clean fill, covering surface soil containing between 1 and 10 ppb TCDD, and maintaining the existing fence. Alternative 2 will prevent direct exposure to contaminated soil by installing and maintaining a capping and fence system. Alternatives 2, 3, 4 and 5 reduce risks posed by ponded surface water onsite by filling in site trenches and grading to promote drainage.

Overall, Alternatives 3, 4 and 5 provide a higher level of long-term protection than Alternative 2 because the most contaminated material is treated in these alternatives. Alternative 3 involves offsite treatment of contaminated soil and its replacement with clean native backfill. Alternative 4 involves onsite treatment of contaminated soil and backfilling the treated material onsite after verifying that the backfill meets treatment criteria. Alternative 5 involves onsite thermal treatment and disposal of the treated material at the Vertac plant site.

Overall, implementation of Alternatives 3 and 4 may cause higher material handling impacts in the immediate vicinity of the site than Alternatives 5. This could be due to fugitive emissions from packing the contaminated material in relatively low volume containers such as drums and 3,000 lb capacity bags versus packing the material in large volume 12 cubic yard bulk storage containers.

Alternatives 3, 4 and 5 would have higher potential offsite impacts because of the transportation of the material offsite. The offsite transportation risks between alternative 3, and alternatives 4 and 5 vary greatly in that the risk of accidents are much lower and are more easily controlled with alternatives 4 and 5 due to the very short hauling distance.

Land-use controls in Alternatives 2, 3, 4 and 5 are directed toward preventing potential future risks from improper use of ground water on and near the site. Obviously the risks associated

with development of alternative 2 is greatest among the action alternatives since wastes remain in place.

Compliance With ARARS

The no-action alternative (Alternative 1) will not meet RCRA closure requirements, while Alternatives 2, 3, 4 and 5 would meet their respective applicable or relevant and appropriate requirements of Federal and State environmental laws.

Long-Term Effectiveness

Alternative 1 will do nothing to eliminate the 2×10^{-3} maximum individual risk of cancer from incidental soil ingestion of dioxin and dieldrin-contaminated soil by trespassers. It will also not eliminate significant risks of threshold toxic effects from exposure to herbicides. The risk could become more severe if the land were to be improperly developed.

Alternative 2 will reduce site risks by providing a protective cap. This alternative does not eliminate the site risks but does "control" them as long as the effectiveness of the cap is maintained.

Alternatives 3, 4, and 5 would all reduce maximum risks of cancer from maximum plausible exposure to the same level (8×10^{-5}) and eliminate significant risks of threshold toxic effects from herbicides.

Alternative 2 would reduce the risk from incidental soil ingestion by capping contaminated soil and making contaminated areas much more difficult to access. Alternatives 3, 4 and 5 would use a combination of soil cover and permanent treatment of the most highly contaminated soil using thermal treatment. As a result, Alternatives 3, 4 and 5 are considered to be more reliable and permanent than Alternative 2.

Implementation of Alternative 2 will significantly reduce the possibility for future development. Alternatives 3, 4 and 5 may allow limited or controlled site development.

Reduction in Toxicity, Mobility, or Volume Through Treatment

Alternatives 1 and 2 provide no reduction in the current contaminant toxicity, mobility or volume through treatment. Risks to human health would remain unacceptable.

Alternatives 3, 4 and 5 reduce the volume and toxicity of an estimated 50 cubic yards of the most heavily contaminated soil onsite by thermal treatment methods. An additional estimated 170 cubic yards of low level dioxin contaminated soil is secured under a soil cover, preventing exposure.

Short-Term Effectiveness

Since the no-action alternative involves only annual monitoring, onsite activities will cause very little impact. Emissions from implementation of this alternative, the risk to workers, and the time to implement this alternative are all less than for any other alternatives. Exposure to waste remaining onsite, however, could still result to site workers in acute, short-term adverse health effects. Short-term risks to site workers from Alternative 2 are higher than those associated with the no-action alternative because of the direct contact risk associated with consolidation of contaminated soil and risks during installation, inspection, and maintenance of the fence and soil cover.

Potential short-term risks to site workers during implementation of Alternatives 3, 4 and 5 are higher than for Alternative 2 due to the increased handling of contaminated material during packing of drums and transportation. Alternatives 4 and 5 also have inherent short term risks associated with offsite transportation of the wastes, but are significantly less than those posed by Alternative 3. The risks associated with the highway transportation of 50 cubic yards of Rogers Road Landfill waste materials can be assessed by evaluating the statistical probability of a highway accident and the risk associated with the waste spill. Utilizing the Handbook of Chemical Hazard Analysis Procedures published by the Federal Emergency Management Agency, U.S. Department of Transportation and the U.S. EPA results in the following risk numbers:

Alternative	Accident Frequency (accidents/year)	Spill Frequency (spills/year)
3	0.029	0.006
4	0.0001	0.00002
5	0.0003	0.0001

An Accident Frequency of 0.029 can be interpreted to mean that the statistical chance of an accident occurring while waste is being transported is 29 out of 1000 or roughly one in 34. A Spill Frequency of 0.006 means that the chance of an accident resulting in the actual spilling of waste material is six in one thousand. The specific risks can be significantly reduced by a detailed transportation / spill prevention plan. Such a plan will be an integral part of any approved design dealing with highway transportation of wastes.

The potential risks to the communities near the treatment sites during implementation are highest for Alternatives 3, 4 and 5 due to the treatment of contaminated material at their respective locations. The risks to onsite workers are similar for the same Alternatives. However, the likelihood of adverse impacts to the

communities from all these activities is considered to be very low. Air pollution emissions can be detected very quickly with standard industrial hygiene monitoring equipment, visible emission monitoring for fugitive emissions, and stack monitoring instruments normally associated with hazardous waste thermal treatment units. Standard construction contingency plans can address fugitive dust emissions while adherence to federal air discharge standards will eliminate the possibility of adverse discharges from the treatment unit. Based on past experience with similar applications, maximum individual risks of cancer from emissions associated with these Alternatives are expected to be substantially less than 10^{-5}.

For all treatment technologies, site workers are not expected to be adversely impacted. This is because of personal protective equipment, implementation of proper personnel protection procedures in accordance with OSHA regulation, the design of the process equipment and procedures, and proper operating procedures.

Only 6 months would be required to start the no-action alternative, since nothing would be done except to perform limited annual monitoring. For Alternative 2, contaminated soil could be mapped, contaminated soil could be consolidated, and caps and fencing could be improved and installed, and land-use controls could be implemented within 15 months, provided the major field activities can be scheduled for the summer months, when the site is most likely to be dry. Alternative 3 could be fully implemented within approximately 2 years (assuming an offsite treatment facility is given appropriate permits with 12 months of the ROD). Alternative 4 could take up to 2 1/4 years to implement. Alternative 5 will likely take from 2 to 2 1/4 years to complete.

Implementability

All components of Alternatives 1, 2, 4 and 5 use commercially available equipment and services. Alternative 3, also uses thermal treatment, a proven and reliable technology for treating dioxins, although, to date no offsite commercial treatment facility has been issued appropriate permits to treat dioxin. However, there is expected to be at least one facility available within a year.

Alternative 1 is technically the easiest to implement, but may be administratively infeasible because of the high risks to public health associated with the contaminated material, EPA's legal mandate and institutional commitments to remediate such risks, and the concerns of the public, state and local officials.

Alternative 2 is easier technically to implement than Alternatives 3, 4 and 5 because it involves no treatment technology, however it may not be administratively easier to implement compared to

alternatives involving treatment, because of the congressionally mandated preference for alternatives involving treatment.

Thermal treatment is known to be technically implementable, and is in fact the Best Demonstrated Available Technology for RCRA-listed dioxin wastes. A variety of mobile treatment units are available with a proven history of effective treatment of dioxin-contaminated soil. However, at this time no stationary units are available with appropriate permits to burn dioxin contaminated soil. As a result, Alternatives 4 (treatment at the Jacksonville site) and 5 (treatment at Vertac) are administratively easier to implement than Alternative 3 (offsite treatment); however the situation could change if permits for offsite thermal treatment units to burn dioxin-contaminated soil are issued.

Some design considerations would be required to select the most cost effective method of performing Alternatives 3, 4 and 5. However, several proven and reliable soil cover, excavation, and soil processing technologies are available. Thermal treatment of dioxin-contaminated soil is known to be effective.

Cost

Alternative 1, No-Action, is the least expensive to implement with a total present worth of $302,000. The total present worth of Alternative 2 is $930,000. The total present worth of Alternative 3 is expected to be $1,404,000, assuming a cost of $3,000 per cubic yard for offsite treatment and landfilling services and that 50 cubic yards of dioxin-contaminated material must be packed in 35 gallon fiber drums to be accepted at the treatment facility. It should be noted that the price of $3,000 per cubic yard could easily vary by the time this remedy is implemented due to the uncertainties associated with price fluctuations in this (as yet unestablished) market. The total present worth for Alternatives 4 and 5 are $1,201,000 and $1,226,000, respectively.

The costs outlined above include Capital and Operation & Maintenance expenses, and are presented in more detail in the DESCRIPTION OF ALTERNATIVES section of this ROD.

State Acceptance

The Arkansas Department of Pollution Control and Ecology (ADPC&E) has been consulted and is in agreement with the EPA regarding the selected remedy outlined in this Record of Decision.

Community Acceptance

Judging from the comments received during the public meeting conducted in Jacksonville and the subsequent public comment period, the local citizens are split with regard to their preference for thermal treatment as the principal treatment

element. A summary of the public comments received and EPA's responses are presented in the "RESPONSIVENESS SUMMARY" section of the ROD.

SELECTED REMEDY

The selected remedy is Alternative 5 -- Excavation, Thermal Treatment at the Vertac Chemical Corp. Site, Soil Cover, Land-Use Controls, and Monitoring. The major components of the selected remedy include:

- Sampling soil in ten-foot by ten-foot grids to more accurately define the amount of contaminated surface soil, debris, and waste onsite;
- Excavating and packaging for transport contaminated soil and debris containing more than 10 ppb equivalent 2,3,7,8-TCDD;
- Transporting contaminated material to the Vertac Chemical Corp. Superfund site in Jacksonville, Arkansas and providing temporary storage for the material at the Vertac site;
- Conducting thermal treatment of all Rogers Road Landfill material being temporarily stored at the Vertac site, and testing, disposal and revegetation of the resulting ash;
- Steam cleaning and onsite disposal of large items of refuse removed from contaminated areas;
- Backfilling and revegetating areas from which contaminated soil was removed with uncontaminated native soil and decontaminated refuse;
- Covering soil, debris and waste meeting the criteria stated below with twelve inches of native soil;

  CRITERIA: 1) Equivalent 2,3,7,8-TCDD concentrations greater than 1.0 ppb and less than or equal to 10.0 ppb, and/or

  2) Dieldrin concentrations greater than 37 ppb, and/or

  3) Cumulative Hazard Index greater than 0.7 for the following compounds:

  2,4,5-Trichlorophenoxy acetic acid (2,4,5-T),
  2,4,5-Trichlorophenoxy propionic acid (2,4,5-TP), and
  Dieldrin.

- o Backfilling the site trench;
- o Ground water monitoring;
- o Inspection and maintenance of the soil cover and of the existing fence; and
- o Land-use controls limiting ground water use on and immediately downgradient of the site.

DETAILED DESCRIPTION OF REMEDY

The Rogers Road and Jacksonville wastes are very similar in physical and chemical makeup to that waste produced by Vertac Chemical Corp., of Jacksonville, Arkansas. In addition, EPA holds evidence that indicates that the waste did indeed come from that facility. After careful consideration, it has been determined that in all likelihood the dioxin and herbicides located at these two landfills originated at Vertac. For this reason it is proposed that these wastes be excavated and transported back to the Vertac facility for ultimate disposal.

Implementation of this alternative would begin with detailed soil monitoring. The objective of the monitoring program would be to define the 10 foot by 10 foot cells within which equivalent 2,3,7,8 TCDD-dioxin concentrations in surface soil and debris exceed 1 ppb, the cells within which the equivalent 2,3,7,8-TCDD and dieldrin concentrations exceed 10 ppb and 37 ppb, respectively, and the cells in which the hazard index from dieldrin and herbicides exceed 0.7. Detailed methodology of the soil monitoring program is described in Section 4.5.2 of the Rogers Road Landfill Feasibility Study.

After mobilization activities and detailed, cell by cell mapping of contaminated soil are completed, excavation will begin. Ten foot by ten foot cells of soil and debris with dioxin concentrations exceeding 10 ppb within one foot of the surface will be excavated one at a time. After all aforementioned surface soil is excavated, the soil in the underlying cells will be sampled again, and any soil in the next foot exceeding the 10 ppb equivalent 2,3,7,8-TCDD will be excavated down to an additional 12 inches. The process will continue to a maximum depth of 4 feet if necessary. A water spray will be used for dust control during excavation. It is estimated that approximately 50 cubic yards of soil will be addressed in this fashion. The general location of the contaminated soil to be mapped is provided previously on Figure 4.

The contaminated soil will be excavated and dumped directly into twelve cubic yard dump trailers next to the excavation. The dump trailers would then be labeled to indicate which cells of waste were placed into the dump trailer (each trailer would be used for

up to three cells), then covered and moved to a coarse grating facility. The contents of the trailer would be dumped through the coarse grating which would remove items larger than 4" in diameter. The screened material would drop directly into a separate twelve cubic yard dump trailer parked under the coarse grating.

Rocks and other large objects rejected by the grating would roll off the screen and be collected. They would then be decontaminated for use as rip rap onsite, after inspection and dioxin, chlorophenol and herbicide screening to assure that adequate decontamination has occurred.

The dump trailers containing the material passing through the coarse screen would be decontaminated and transported approximately 10 miles to the Vertac Chemical Corp. site in Jacksonville, Arkansas. Upon arrival at the Vertac site, the containers would be stored in a manner complying with all relevant and appropriate requirements for a hazardous waste storage facility. Storage would continue until a suitable thermal treatment system is brought to the site and treats all of the contained material.

The treated soil, debris and waste would be analyzed to assure that it meets the treatment goals outlined in the "DEVELOPMENT OF REMEDIATION GOALS" section of the ROD. Daily aggregate samples would be taken of the ash and analyzed for 2,3,7,8-TCDD, chlorophenols, and herbicides (to verify the effectiveness of the treatment process) and TCLP leachability (to verify that it does not have characteristics of hazardous waste). Any ash which does not meet treatment objectives would be retreated (if the problem is from organics) or solidified (if the problem is from the leaching of inorganics). Ash meeting treatment criteria would be mixed with manure and seeds, and backfilled into suitable areas on the Vertac site property.

The areas from which dioxin contaminated soil was excavated would be backfilled with at least 12" of clean silty clay. The backfill would be compacted and would extend to at least the level of the surrounding surface (6" above the surface where only one foot of soil was removed). The backfill would be integrated with the surrounding native soil and soil cover (over soil containing between 1 and 10 ppb equivalent 2,3,7,8-TCDD) and graded to promote drainage. In addition, these areas would be revegetated and rip-rap would be incorporated where necessary.

Soil containing between 1 and 10 ppb equivalent 2,3,7,8-TCDD, greater than 37 ppb dieldrin, and/or dieldrin and herbicide contamination associated with a hazard index above 0.7 would be graded (if necessary), covered with 12 inches of uncontaminated silty clay, and revegetated.

The open site trench which is an attractive nuisance and contributes to ground water recharge would be backfilled, and the site would be re-vegetated to minimize erosion. In addition, the non-contaminated areas disturbed during the implementation of this alternative would be graded and revegetated. Rip-rap would be used, where necessary and appropriate.

Continued monitoring of ground water would be needed. For a representative ground water monitoring program, the wells to be monitored and the rationale for monitoring them are shown below:

- MW-XX1 A new shallow well downgradient of Rogers Road Site.
- MW-XX2 A new shallow well downgradient of Rogers Road Site.
- MW-XX3 A new shallow well downgradient of Rogers Road Site.
- MWR-05 An existing shallow well on the southeast corner of the Site.
- MWR-01 An existing shallow well upgradient of the Rogers Road Site.

MW-XX1, MW-XX2 and MW-XX3 are about 500 feet downgradient of the drum disposal area at angles about 22.5 degrees apart centered around the most probable direction of ground water flow. They are shallow wells because contamination from the Rogers Road Site (within 500 feet of the site) is most likely to be detected in the upper portions of the aquifer rather than within the lower portions of the aquifer.

Ground water in the upper portions of the aquifer could ultimately be directed into the lower aquifer as a result of the clay and silt layers dipping down towards the lower portion of the aquifer between the Rogers Road and the Jacksonville Site, as shown in the geologic cross-sections found in the Remedial Investigation Report. The nearest users of the aquifer are east of the Jacksonville Site, and monitoring at wells XX1, XX2 and XX3 should constitute an early warning system if significant levels of contamination from the Rogers Road Site should ultimately occur. Well MWR-01 represents upgradient water quality, and Well MWR-05 would be sensitive to any ground water contamination from the southern portion of the site. The wells would be sampled annually. The ground water samples would be analyzed for TCL organics and inorganics, along with herbicides and pesticides.

The monitoring would occur for at least thirty years. The results of this monitoring would be summarized every five years. The

summaries would be used to help EPA decide whether or not to increase, decrease, or maintain the scope of the monitoring plan.

The boundary of ground water compliance will be delineated by the deep downgradient wells identified for sampling above. If comparison of sampling results to MCLs or health-based levels indicates that significant degradation of ground water quality was occurring or imminent downgradient of the site at any time, the data would be evaluated and confirmatory sampling performed, along with an updated survey of ground water use. If imminent degradation of the Class IIB aquifer is confirmed and use of the water is occurring or likely to occur, ground water users would be notified and the need for, and feasibility of, remedial action would be re-evaluated during the next year. Options to be considered would include alternate water supplies, extraction and treatment methods, or other viable ground water restoration technologies. The necessity of a separate Record of Decision, Explanation of Significant Differences or other type of ROD amendment would be evaluated at the time that the situation arises.

Inspections of the fence, gate and lock, along with the soil cover would occur on an annual basis, and repair would take place as necessary and appropriate to assure their integrity.

Land-use restrictions would also be placed on the site and surrounding ground water use to prevent activities that could endanger public health. Representative land-use restrictions would limit ground water use onsite and deter use of the shallow ground water immediately downgradient of the site.

Imposing such restrictions would be negotiated with the City of Jacksonville concerning the landfill and with owners of surrounding property concerning ground water use.

The activities described above outline the conceptual framework of the preferred alternative. Engineering design considerations will be taken into account during the detailed design which will optimize the efficiency of the remedial action. It is possible that minor changes could be made to the remedy outlined above which would reflect modifications resulting from the remedial design and construction processes.

REMEDIATION GOALS

The remediation goals for this alternative were derived from recommendations by the Centers for Disease Control (with respect to carcinogenic health threats) and from calculations produced in the Rogers Road Landfill Risk Assessment (regarding noncarcinogenic health effects). This discussion presents a summary of the remediation goals that were established in the "DEVELOPMENT OF REMEDIATION GOALS" section of the ROD.

Pre-remedial action levels will be used as criteria to determine whether soil remediation is required. The action levels are given as follows:

COMPOUND	ACTION LEVEL (ppb)	RESULTING ACTION
2,3,7,8-TCDD equivalents	1.0 < Conc. ≤ 10.0	Soil Cover
	Conc. > 10.0	Thermal Treatment
Dieldrin	Conc. > 37.0	Soil Cover
2,4,5-T 2,4,5-TP Dieldrin	Cumulative HI > 0.7	Soil Cover

Post-remedial treatment goals will be used as standards to assure that effective treatment of remediated soil and debris has been achieved and to determine whether additional treatment is required. Where more than one goal is provided for a single compound, the most restrictive applies. These goals are presented below:

COMPOUND	TREATMENT GOAL
2,3,7,8-TCDD equivalents	1.0 ppb, OR Thermal treatment unit operating requirements, as provided in 40 CFR Part 264.343.
2,4-D	10,000 ppb
2,4,5-TP	7,900 ppb
Dieldrin	37 ppb AND
2,4,5-T 2,4,5-TP Dieldrin	Cumulative HI < 0.7

Treatment to these levels will result in a residual site risk of less than 8×10^{-5} and a maximum cumulative Hazard Index of 1.0.

COST

Several of the costs included in this estimate were prorated among the Rogers Road and Jacksonville sites since they would both share much of the same equipment and facilities. The estimate for the Rogers Road site includes only its share of the costs.

Mobilization and general site preparation activities are estimated to cost approximately $62,000. Contaminant mapping will cost $99,000.

Excavation, packing, transport, storage, and treatment of the contaminated soil and debris is expected to cost $205,000. This cost includes the trial burn testing of the thermal treatment unit and bench scale tests of the chemical and physical properties of treated soil, which is estimated to cost approximately $70,000. Testing the ash to assure that it meets treatment criteria is estimated to cost an additional $30,000. The covering of low level dioxin - contaminated soil would cost $52,000. Site restoration and backfilling the trenches is estimated to cost $56,000. Additionally, the O&M costs would include $384,000 for monitoring, annual review of the data, soil cover and fence inspections, and maintenance.

The present worth is estimated to be $1,226,000. A complete cost summary is shown in Table 6. Additional details on costs are provided in Appendix D of the Rogers Road Landfill Feasibility Study.

STATUTORY DETERMINATIONS

Under its legal authorities, EPA's primary responsibility at Superfund sites is to undertake remedial actions that achieve protection of human health and the environment. In addition, section 121 of CERCLA establishes several other statutory requirements and preferences. These specify that when complete, the selected remedial action for this site must comply with applicable or relevant and appropriate environmental standards established under Federal and State environmental laws unless a statutory waiver is justified. The selected remedy also must be cost-effective and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. Finally, the statute includes a preference for remedies that employ treatment that permanently and significantly reduce the volume, toxicity, or mobility of hazardous wastes as their principal element. The following sections discuss how the selected remedy meets these statutory requirements.

PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

The selected remedy protects human health and the environment through thermal treatment of dioxin and herbicide-contaminated soil which presents the principal threat, and covering the lesser-contaminated soils which present low level threats. The areas to be covered will be closed in accordance with RCRA landfill closure requirements to reduce the likelihood of contaminant migration.

Thermal treatment will eliminate the threat of exposure to the most toxic contaminants from direct contact with or ingestion of contaminated soil. The current risks associated with these exposure pathways is 2×10^{-3} for carcinogenic risk and 163 total hazard index for noncarcinogenic risk. By excavating the hotspots

TABLE 6

COST ESTIMATE
ALTERNATIVE 5: EXCAVATION, TREATMENT AND BACKFILLING AT VERTAC, SOIL CAP, FENCE, LAND USE CONTROLS AND MONITORING

Rogers Road Landfill Site
Jacksonville, Arkansas

Activity	Estimated Quantity	Unit Price	Cost($) (1990)
I. Capital Cost			
A. Direct Cost			
1. General Actions/ Site Preparation			
• Clearing and Grubbing	1100 S.Y.	$1/S.Y.	1100
• Temporary Ditches, Dikes and Berms for Sediment Control and Runoff Diversion	L.S.		2,000
• Sediment Control Basin	L.S.		5,000
• Decontaminate Facility	L.S.		5,000
• Access Roads, etc.	L.S.		5,000
• Administrative and Health & Safety Trailers	2 months	$4,000/mo	8,000
	SUBTOTAL:		**26,100**
2. Contamination Mapping			
• Analytical			
- Background Finger Printing	4 Samples	$2,000/each	8,000
-Onsite Laboratory Mobilization	L.S.		5,000
- Onsite Laboratory for Sample Analysis	2 Weeks	$25,000/wk	50,000
			63,000

TABLE 6 (Cont'd)

COST ESTIMATE
ALTERNATIVE 5

Rogers Road Landfill Site
Jacksonville, Arkansas

Activity	Estimated Quantity	Unit Price	Cost($) (1990)
• Professional	L.S.		28,400
• Equipment	L.S.		2,180
• Other Direct Charges	L.S.		4,260
		SUBTOTAL:	**97,840**
3. Contaminated Soil Treatment			
• Mob/Demob for Excavation and Site Operations	L.S.		20,000
• Soil Excavation and Handling	50 C.Y.	$ 12/C.Y.	600
• 12 C.Y. Storage Container Cost	5 Containers	$2,000/each	10,000
• Packing, Loading, Transporting and Unloading Containers at Vertac. (Average 10 C.Y./Container)	5 Each	$750/each	3,750
• Mobilization, De-mobilization, and Set-up for Treatment Including Temporary Storage (Prorated)	L.S.		41,700
• Trial Burn Test (Prorated)	L.S.		41,700
• Water Spraying and other Miscellaneous Costs	L.S.		10,000

TABLE 6 (Cont'd)

COST ESTIMATE
ALTERNATIVE 5

Rogers Road Landfill Site
Jacksonville, Arkansas

Activity	Estimated Quantity	Unit Price	Cost($) (1990)
• Support Facilities and Dust Control, etc.	15 Days	$ 750/Day	11,250
• Soil Treatment	72 Tons	$ 750/Ton	54,000
• Confirmational Testing of Ash - One Aggregate Sample Per Day	15 Samples	$ 2,400/Each	36,000
• Construction of Storage Facility to Store 5 Containers for One Year	750 S.F.	$ 50/S.F.	37,500
		SUBTOTAL:	**266,500**
4. Environmental Studies			
• Environmental Impact Studies (Prorated)	L.S.		41,700
		SUBTOTAL:	**41,700**
5. Soil Cover			
• Covering Areas Containing 1 to 10 ng/g of Equivalent 2,3,7,8 - TCDD	8,650 S.F.	$6/SF	51,900
		SUBTOTAL:	**51,900**
6. Site Restoration and Backfilling			
• Steam Cleaning and Disposal of Large Items of Refuse Removed from Contaminated Areas	L.S.		15,000

TABLE 6 (Cont'd)

COST ESTIMATE
ALTERNATIVE 5

Rogers Road Landfill Site
Jacksonville, Arkansas

Activity	Estimated Quantity	Unit Price	Cost($) (1990)
• Mixing Incinerated Soil with Manure or Sewage Sludge and Backfilling	50 C.Y.	$200/C.Y.	10,000
• Revegetation	1,110 S.Y.	$1/S.Y.	1,110
• Backfilling the Trenches	2,000 C.Y.	$15/C.Y.	30,000
		SUBTOTAL:	**56,110**
7. Land Use Controls			
• Deed Restriction	L.S.		50,000
		SUBTOTAL:	**50,000**
8. Monitoring Well Inst.			
• Well Drilling (3 Wells)	120 L.F.	$30/L.F.	3,600
• Well Casing Inst. (Stainless Steel)	60 L.F.	$50/L.F.	3,000
• Mob/Demob and Decontamination	L.S.		5,000
		SUBTOTAL:	**11,600**
	TOTAL DIRECT COST:		**601,750**
B. Indirect Cost			
• Health & Safety @ 10% of Direct Cost			60,180
• Bid and Scope Contingency @ 15% of Direct Cost			90,260

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**

of contaminated soil and treating them in a thermal treatment unit, the cancer risks from exposure will be reduced to 8×10^{-5} for carcinogenic risk and less than 1.0 total hazard index for noncarcinogenic risk. This level is within the range of acceptable exposure levels of between 10^{-4} and 10^{-6} for carcinogenic risk and less than 1.0 total hazard index for noncarcinogenic risk. There are no short-term threats associated with the selected remedy that cannot be readily controlled.

COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

The selected remedy of excavation, thermal treatment, and soil cover will comply with all applicable or relevant and appropriate chemical-, action-, and location-specific requirements (ARARs). Key ARARs are presented below.

Action-specific ARARs:

RCRA Land Disposal Restrictions (LDRs) are presented in 40 CFR Part 268. LDRs establish a timetable and treatment criteria for the restriction of disposal of wastes and other hazardous materials.

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

40 CFR 264 Subpart O provides operational standards and monitoring requirements for hazardous waste incinerators. Key components of this regulation include the requirement for a destruction and removal efficiency of 99.9999% and limitations on HCl and particulate emissions.

40 CFR 256.23 provides guidance for the closure of open dumps. These regulations specify closure in a fashion that minimizes potential health hazards and incorporates long-term monitoring where necessary.

40 CFR 264.117(a)(1) Subpart G post-Closure and Monitoring requirements for thirty years or another period determined by the Regional Administrator.

Chemical-specific ARARs:

There are no chemical-specific ARARs for contaminated soil and debris.

Location-specific ARARs:

Executive Order on Floodplain Management, Executive Order No. 11988, requires Federal agencies to evaluate the potential effects of actions they may take in a floodplain to avoid

adverse impacts associated with direct and indirect development of a floodplain.

Other Criteria, Advisories or Guidance to be Considered for this Remedial Action (TBCs):

CDC's 2,3,7,8-TCDD recommendations for residential settings have been adopted for this remedial action. These recommendations provide that the following action levels will not result in excess threats to public health:

1.0 ppb TCDD on surface soil;
10 ppb TCDD, when covered by at least 12 inches of clean fill.

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

40 CFR Part 258 - Criteria for Municipal Solid Waste Landfills, is currently set forth in "Proposed Rule" status. These proposed regulations provide operating and design criteria for owners and operators of municipal solid waste landfills. Also included are closure and post-closure requirements that are more stringent than current Subtitle D regulations.

40 CFR Parts 260, 261, 264 and 270 - Standards for Owners and Operators of Hazardous Waste Incinerators... (Proposed Rule): These regulations amend the current hazardous waste incinerator regulations to improve control of toxic metal emissions, HCl emissions and residual organic emissions.

State ARARs:

No State regulations have been identified as being more stringent than the Federal requirements.

COST-EFFECTIVENESS

The selected remedy is cost-effective because it has been determined to provide overall effectiveness proportional to its costs, the net present worth value being $1,226,000. The estimated costs of the selected remedy are only slightly higher (only 1.30 times) than the costs associated with onsite capping of the contaminated soils, and yet the selected remedy assures a much higher degree of certainty that the remedy will be effective in the long-term due to the significant reduction of the toxicity and volume of the wastes achieved through thermal destruction of the principal contaminants onsite.

UTILIZATION OF PERMANENT SOLUTIONS AND ALTERNATIVE TREATMENT TECHNOLOGIES (OR RESOURCE RECOVERY TECHNOLOGIES) TO THE MAXIMUM EXTENT PRACTICABLE

The selected remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a cost-effective manner for the final source control operable unit at the Rogers Road Municipal Landfill site. Of those alternatives that are protective of human health and the environment and comply with ARARs, EPA and the State have determined that this selected remedy provides the best balance of tradeoffs in terms of long-term effectiveness and permanence, reduction in toxicity, mobility, or volume achieved through treatment, short-term effectiveness, implementability, and cost, also considering the statutory preference for treatment as a principal element and considering State and community acceptance.

Thermal treatment offers a high degree of long-term effectiveness and permanence and will significantly reduce the principal threat and inherent hazards posed by the contaminated soils. Low level threats can be effectively addressed through covering such that the residual material that remains onsite can be contained with a high degree of certainty over the long term.

The selection of treatment of the contaminated soil is consistent with program expectations that indicate that highly toxic and mobile waste are a priority for treatment and often necessary to ensure the long-term effectiveness of a remedy. Since the three treatment options evaluated are reasonably comparable with respect to compliance with ARARs, long-term effectiveness and the reduction of toxicity, mobility and volume, the major tradeoffs that provide the basis for this selection decision are implementability and community acceptance. The selected remedy can be implemented more easily and in a comparable timeframe as the second and third-choice remedies, and the community has expressed a preference for returning the contaminants back to the location of their originating source.

PREFERENCE FOR TREATMENT AS A PRINCIPAL ELEMENT

By treating the dioxin and herbicide-contaminated soils in a thermal treatment unit, the selected remedy addresses the principal threats posed by the site through the use of treatment technologies. Therefore, the statutory preference for remedies that employ treatment as a principal element is satisfied.

DOCUMENTATION OF NO SIGNIFICANT CHANGES

The Proposed Plan for the Rogers Road Municipal Landfill site was released for public comment in July 1990. The Proposed Plan identified Alternative 5, thermal treatment and disposal of ash at the Vertac site, as the preferred alternative. EPA reviewed all

written and verbal comments submitted during the public comment period. Upon review of these comments, it was determined that no significant changes to the remedy as it was originally identified in the Proposed Plan were necessary.

SECTION 2.0
RESPONSIVENESS SUMMARY

JACKSONVILLE AND ROGERS ROAD
MUNICIPAL LANDFILLS, ARKANSAS
RESPONSIVENESS SUMMARY

OVERVIEW

At the time of the public comment period, EPA had issued a Proposed Plan setting forth the preferred alternatives for the Jacksonville and Rogers Road Landfill sites near Jacksonville, Arkansas. These alternatives were presented to the public for their review and comment. EPA's recommended alternatives addressed the soil contamination problems at the sites and involved thermal treatment and capping of dioxin and herbicide contaminated soils, site grading and restoration, and long-term site and ground water monitoring.

Judging from the comments received during the public meeting conducted in Jacksonville and the subsequent public comment period, the local citizens are split with regard to their preference for thermal treatment as the principal treatment element. The Arkansas Department of Pollution Control and Ecology (ADPC&E) is in favor of thermally treating soils containing dioxin above 10 parts per billion (ppb), but is not in agreement with the need to cap residual soils containing dioxin concentrations between 1.0 and 10 ppb. Hercules, Inc., the only potentially responsible party (PRP) responding during the comment period, proposes deleting the thermal treatment and capping components from the site remedy altogether.

The responsiveness summary that follows is required by CERCLA. It provides a summary of the significant comments and concerns received during the public comment period, and EPA's responses to those comments and concerns. All comments received by EPA during the public comment period are considered in EPA's final decision for selecting the remedial alternative for addressing contamination at the Jacksonville and Rogers Road Landfill sites.

These sections follow:

- Background on Community Involvement.
- Summary of Comments Received during the Public Comment Period and Agency Responses.

BACKGROUND ON COMMUNITY INVOLVEMENT

Community interest in the Jacksonville and Rogers Road Landfills dates to 1973, when a citizen's complaint was submitted to EPA regarding the possible disposal of hazardous wastes at the sites.

Since then, community concern and involvement has remained relatively strong. Several individuals have been particularly vocal in expressing their concerns to the Jacksonville City Council, ADPC&E, and EPA. In addition, a considerable amount of media attention has been focused on the sites. A significant factor contributing to the amount of public involvement observed at the landfill sites is their close proximity to the City of Jacksonville and to the Vertac Chemical Corporation Superfund site. The Vertac site has been an ongoing source of controversy on the national scale for over ten years. Because of the attention and scrutiny that has been directed toward the city of Jacksonville, public sensitivity to environmental issues is quite high.

SUMMARY OF COMMENTS RECEIVED DURING PUBLIC COMMENT PERIOD

TECHNICAL QUESTIONS/CONCERNS REGARDING SELECTED ALTERNATIVE

1) Several local citizens and business persons offered their support for the remedial alternative set forth in the Proposed Plan of Action, July 1990.

   EPA Response: No response required.

2) Several citizens expressed transportation-oriented concerns regarding the shipment of contaminated soils from the landfills to the Vertac site.

   EPA Response: EPA seriously reviewed the merit of transporting the landfill wastes to the Vertac site, especially considering that transportation of the Vertac wastes to an offsite location was previously, and remains to be, regarded as unfavorable (although other factors in addition to transportation concerns were accounted for in the Vertac determination). Transport of the landfill soils to the Vertac facility is considered to be far safer than transporting the Vertac waste offsite, primarily due to the difference between the quantity and type of waste to be shipped. The landfills are estimated to contain only a total of approximately 200 cubic yards (cy) of soil contaminated with relatively low levels of hazardous substances while the wastes at Vertac consist of approximately 29,000 barrels of drummed, highly concentrated liquid waste. At 10 cy per truckload, 200 cy of landfill soil can be transported in 20 trips.

   Detailed transportation specifications will be developed during the remedial design, however a few general concepts can be outlined here. Haul routes between the landfill sites and the Vertac facility will be established only after careful consideration is made with respect to minimizing the number of affected parties, and after the development of

appropriate safety procedures and emergency plans.

Decontamination facilities will be constructed in order to properly rinse contaminants from the trucks and material containers prior to their leaving the landfill sites.

3) Two commenters requested that the Remedial Design include provisions for improving site drainage.

EPA Response: Based upon this comment, as well as through interviews with adjacent residents and visual observations, EPA recognizes that the site drainage patterns are undesirable in their present state. Although not specifically set forth in the Record of Decision (ROD), the remedial action will examine the need for site improvements such as drainage enhancement. One likely possibility is that the ditch which parallels the eastern fenceline of the Jacksonville site will be regraded to improve the efficiency of runoff from the site.

4) One citizen quoted a report that an earthquake of sizable proportion was predicted to occur in the early part of this decade - December 3, 1990, to be precise. The concern was raised regarding the capability of the thermal treatment unit to withstand seismic forces.

EPA Response: The thermal technology which is specified in the ROD will likely be carried out by a mobile treatment unit. Rather than design a treatment unit to withstand the extremely high stresses imposed by seismic events, EPA can require design and performance modifications of the unit which will minimize the volume of material which could potentially be exposed in the event of earthquakes or other natural disasters.

Since there is such a small volume of waste requiring treatment, the treatment unit used will likely be of small scale. The low capacity of these smaller units means that less than five cubic yards of material is would be undergoing the treatment process at any given time during operation. This, coupled with the automatic shutoff features which will be specified in the operating requirements, will result in a very low exposure potential even to those working in the immediate treatment area.

Another point worth mentioning is that because there is such a small amount of soil being treated, the total duration of treatment will be very short - likely 40 to 50 days for 200 cy of soil. This results in an extremely low probability of a predicted seismic event occurring within any given timeframe of such short duration.

5) One comment was raised regarding the need for appropriate qualifications of the construction personnel who would be conducting the remedial action.

EPA Response: Remedial Actions (RAs) which are paid for using Federal Superfund monies are required to follow EPA acquisition regulations. This process requires free and open competition, meaning that all jobs are subject to competitive bidding. EPA is then required to award the job to the lowest cost responsive, responsible bidder. An evaluation is conducted by EPA to make sure that the party being awarded the construction contract is capable of conducting the type of services requested. In addition, the contractor will be required to meet the health and safety standards found in 29 CFR 1910.120, and other quality assurance/quality control guidelines.

6) One person asked whether the thermal treatment unit would require permits.

EPA Response: The Superfund Law (known as CERCLA) exempts onsite response actions from the requirement of obtaining permits. Because the EPA has determined to treat these sites as one for the purpose of remedial action, incineration at Vertac is considered an "onsite" action. The permit exemption allows the response action to proceed in an expeditious manner, without the potential lengthy delays of obtaining approval by administrative bodies. While the formal process of obtaining and administering permits is not required, response actions must meet the substantive requirements of whatever permits would otherwise apply to the action. These requirements pertain directly to actions or conditions in the environment and include health-, technology- and location-based standards and restrictions.

7) A local citizen requested clarification as to whether the incinerator currently in operation at Vertac would be the treatment unit used for the Jacksonville and Rogers Road wastes.

EPA Response: As discussed in Comment No. 5, this remedial action is required to comply with EPA acquisition regulations which, among other things, requires free and open competition. This requirement precludes EPA from "pre-selecting" any single firm. EPA selects contractors through a formal open bidding process. VSC, who operates the incinerator currently located at Vertac, and any other interested qualified firms would be invited to submit a competitive bid for the Landfill contracts.

8) One citizen asked when the Remedial Design (RD) would be complete.

EPA Response: EPA anticipates that the RD will be complete within 12 months from the signing of the ROD.

9) One citizen asked how long "long term" monitoring would be conducted.

EPA Response: Current regulations specify a monitoring period of 30 years from the completion of the remedial action. This period of time can be extended or reduced depending on when the determination is made by EPA and the State that the remedy is, and will remain, protective to human health and the environment.

QUESTIONS/COMMENTS REGARDING REMEDIAL ALTERNATIVE PREFERENCES

10) One individual asserted his distrust for thermal destruction and recommended that EPA cap the contaminated soils in place without treatment until more is known about effective dioxin treatment.

EPA Response: Thermal destruction is a widely used technology, capable of safely and permanently destroying dioxin waste. It has been identified by EPA as being the Best Demonstrated Available Technology (BDAT) for the types of contaminants encountered at the Landfill sites, and has been documented as being able to treat the wastes to the levels specified in the ROD.

The BDAT classification signifies a type of "approval" rating. In order for a technology to be classified as BDAT, EPA performs an analysis to make sure that the technology meets the following criteria: 1) performance data must show that the technology is significantly more effective than any others for a given waste type; 2) a full-scale facility is known to be in operation and successfully treating similar wastes; and 3) the process is generally or commercially available.

It is unlikely that another technology could be developed and demonstrated to be as effective as thermal destruction in the near future. Thus, the present course of action is consistent with EPA's goals of providing timely and expeditious action at sites which present human health and environmental threats.

11) Several commenters requested that the waste be incinerated somewhere other than Jacksonville.

EPA Response: This alternative was seriously considered in the Feasibility Study and is, in fact, presented as Alternative 3 in the "DESCRIPTION OF ALTERNATIVES" section of

the ROD. There are two principal issues that discourage the selection of this alternative. The first is the fact that there are currently no commercial hazardous waste incinerators permitted to accept dioxin waste from the Landfill sites. Some facilities have submitted permit applications for this type of waste but, to date, none have been approved. It is uncertain when, if ever, approval would come.

The second consideration taken into account is EPA's strong preference for onsite action. That is, it is EPA's policy to give preference to remedies that are conducted onsite rather than sending the waste offsite to private treatment, storage or disposal facilities, etc. (It should be noted that the National Contingency Plan, EPA's "guidance" document for Superfund sites, allows the selected remedy to be considered an onsite action because it satisfies the criteria of site proximity and waste similarity.)

12) One resident who lives near the landfills proposed that any and all soils containing detectable levels of dioxins be excavated and treated at Vertac.

EPA Response: Because the selected remedy removes the most heavily contaminated soil and reduces site-related risks to levels within the acceptable risk range, no further treatment will be specified. A review will be initiated within five years of the remedial action to re-evaluate whether the remediation goals remain protective. If the re-assessment reveals that further action is warranted to assure protectiveness, studies would be conducted to determine the most efficient method of accomplishing this.

13) One local citizen asked that EPA consider excavating the hot spot near the eastern fence line of the Jacksonville landfill (at Sample No. SS-F4-01) and consolidating it in the vicinity of the other secondary hot spots prior to capping.

EPA Response: Although sufficient protection would be achieved by capping the hot spot in place, other considerations make the idea of consolidating this hot spot among the others more attractive. An obvious benefit would be more "aesthetic" in nature, as removal of the hot spot from near the eastern fenceline would place some distance between the hot spot and the residential back yards which are adjacent to the fence. A more tangible benefit comes from possible capital and maintenance cost savings due to having one less cap to construct and maintain. This is a comment worth further consideration during design.

14) One commenter expressed her disappointment that In-Situ Vitrification (ISV) was not examined further.

EPA Response: ISV was evaluated in the early stages of the Feasibility Study. It was screened out because of technical impracticalities including the high moisture content and garbage contained in the soils which would make implementation of this technology difficult. Also, there was concern that ISV might generate other hazardous constituents as by-products of the process.

15) One commenter proposed that the capping of soils containing between 1.0 and 10 ppb of dioxin is unnecessary considering present land use.

EPA Response: The Agency for Toxic Substances and Disease Registry (ATSDR) is the governmental agency which EPA consults regarding health matters. ATSDR has recommended that, in a residential setting, subsurface soils containing concentrations of 2,3,7,8-TCDD not exceeding 10 ppb should not pose a significant health hazard if covered with 12 inches of clean soil. This recommendation has been used at several other Superfund sites contaminated with dioxins. Based upon ATSDR's recommendation, EPA has incorporated a component into the site remedy which calls for placing 12 inches of clean fill over areas found to contain dioxins between 1.0 and 10 ppb. (Recall that soils containing over 10 ppb will be removed and thermally treated.)

The commenter's main point is that the Jacksonville and Rogers Road landfill sites are not presently considered residential areas. They assert that perhaps EPA should use ATSDR's less stringent recommendations for commercial / industrial sites. This is a valid claim, however, Superfund site remedies are required to provide protectiveness not only with regard to present land use, but also based upon future land use scenarios. As discussed in the ROD, present site conditions are not very conducive to residential development (i.e., the site is partially located within the 100-year floodplain and is trenched and mounded with municipal wastes). However, there are no city or county zoning ordinances restricting land-use and therefore it is conceivable that the site could potentially be used for residential purposes in the future. This is an unlikely scenario, but it cannot be eliminated and EPA is therefore required to consider residential use as a possible future land use. In consideration of this potential scenario, the residential setting and corresponding action levels are appropriate and therefore adopted with regard to remedial action objectives for the landfill sites.

16) Hercules, Inc., one of the PRPs for the sites, proposed that the treatment and capping components of the site remedies be

deleted altogether. Hercules maintains that adequate protection of human health and the environment can be afforded even without treatment or capping.

EPA Response: Hercules' basis for this proposition is a risk analysis produced by a private company (ChemRisk) on Hercules' behalf. Their conclusion contends that the allowable level of TCDD in residential soils should be 28 ppb, and 113 to 209 ppb at industrial sites. By adopting the levels calculated for the industrial setting, Hercules concludes that no treatment or capping of site soils is required.

Two issues need to be addressed in order to respond to this comment: 1) the use of residential vs. industrial settings, and 2) the reasoning behind using EPA's Risk Assessments rather than ChemRisk's for the landfill sites. Issue number 1 was discussed in the previous comment; i.e., EPA has adopted the residential setting as the basis for determining acceptable remediation goals.

Regarding issue number 2, Hercules Inc. submitted a report prepared by ChemRisk which provided calculations resulting in cleanup goals differing from EPA's for dioxin. The report utilized certain calculations and assumptions which were contrary to EPA guidance and resulted in cleanup goals much less restrictive than those calculated used by EPA. The paragraphs below discuss some of the discrepancies between EPA's and ChemRisk's methods of calculating site related risks.

The cancer potency factor for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) of 9,700 $(mg/kg-day)^{-1}$ is presented in ChemRisk's Section 2 ("Dose-Response Assessment for Dioxin"). This cancer potency factor or slope factor has not been verified by the CRAVE workgroup and is not in accordance with EPA policy. The EPA slope factor for 2,3,7,8-TCDD is 1.56×10^{5} $(mg/kg-day)^{-1}$.

Several exposure parameters used in ChemRisk's Section 4 ("Recommended Action Levels for TCDD-Contaminated Soil") are not in accordance with EPA guidance. ChemRisk uses a soil contact rate or adherence factor of 0.5 mg/cm^2, which underestimates by a factor of 3 to 6 the quantity of soil adhering to the skin, and which results in an underestimate of dermal absorption.

ChemRisk uses soil ingestion rates of 10 mg/day for children aged 0 to 1 years, 50 mg/day for children aged 1 to 5 years, and 10 mg/day for older children and adults. EPA's Exposure Factors Handbook (EPA/600/8-89/043) provides upper-range soil ingestion rates of 800 mg/day for children aged 1 to 6 years,

and 100 mg/day for older children and 50 mg/day for adults.

ChemRisk uses fish consumption rates of 0 g/day, 0.49 g/day, and 1.48 g/day for ages 0 to 1 years, 1 to 12 years, and 12 to 70 years, respectively. The EPA guidance recommends fish consumption rates of 38 g/day for the 50th percentile daily intake. This rate represents per capita consumption and may underestimate recreational fishermen who consume larger amounts of fish than the general population.

EPA, in preparing the risk assessment, used the cancer potency factor, soil contact rate, soil ingestion rates and fish consumption rates that were in accordance with agency guidance and policy. Using EPA's risk assessment approach, the cleanup levels provided in the selected remedy will result in excess cancer risks within the National Contingency Plan's acceptable range of 10^{-4} to 10^{-6}. ChemRisk's proposed cleanup goals, using EPA's risk assessment approach, would not result in excess cancer risks (after remediation) within the acceptable risk range.

In addition, Hercules questions how the 1984 risk assessment produced by Dr. Renate Kimbrough for the Times Beach, Missouri Superfund site relates to the landfill sites. In response, Kimbrough's paper was not relied on for the derivation of the landfills' risk assessments. However, the results of the Kimbrough paper were cross-referenced in an informal comparison at the completion of the landfill risk analyses in order to see where we fell with respect to Kimbrough's findings. Results of this comparison revealed that, as was the case with Times Beach, an action level of 1.0 ppb for 2,3,7,8-TCDD resulted in the risks for the landfill sites falling within the range of acceptable risk provided in the National Contingency Plan. This action level is consistent with current EPA thinking regarding dioxin-contaminated Superfund sites.

The risk assessments themselves were produced independently of Kimbrough's paper and in accordance with the methodology outlined in the Superfund Public Health Evaluation Manual (1986) and the Superfund Exposure Assessment Manual (1988). The assumptions and standard exposure parameters used in assessing landfill site risks were consistent with the aforementioned guidance documents, and were not intended to be consistent on all counts with the Kimbrough paper.

As a final note, it should be emphasized that long term protection to human health and the environment would <u>not</u> be achieved without the treatment and containment components of the ROD. Without further treatment or containment, the risks at the Jacksonville and Rogers Road Landfill sites will remain unabated. The remedies that Hercules proposes --

primarily comprised of fencing, land use controls and long term monitoring -- will not reduce the toxicity, mobility, or volume of site contaminants. Further, these measures have not been proven effective in precluding direct contact to contaminated surface soils. Fences are easily breached and land use controls are difficult, if not impossible, to enforce. For these reasons, EPA has chosen not to rely on these types of controls as primary measures for effective site remediation.

QUESTIONS REGARDING EFFECTIVENESS OF INCINERATION

17) Several commenters expressed concerns over the effectiveness of thermal treatment on dioxins, and the safety of those residing in the proximity of the treatment unit.

EPA Response: EPA has experience in treating these types of wastes at other sites (Times Beach, Denny Farm - Missouri). Test burns completed at these sites indicated that the incinerated soils met all appropriate goals. The trial burn for the landfill sites' waste will be required to attain a 99.9999% reduction of dioxin in the stack emissions. Also, the treated ash will be sampled to verify that all other treatment goals have been met. All of EPA's experience with thermal destruction indicates it provides protection of human health and the environment. Therefore, as previously discussed, incineration is considered the "Best Demonstrated Available Technology" for the destruction of dioxin.

18) Two local citizens asked whether this type of incineration had ever been conducted within a residential area.

EPA Response: The incineration of hazardous material has been occurring for many years. There are numerous facilities in operation throughout the country which incinerate many different types of hazardous wastes on an ongoing basis. Only a small fraction of the incinerators of this type are operated under the authority of Superfund. Instead, most are private or commercial facilities regulated under other Federal Laws such as the Recourse Conservation and Recovery Act, the Hazardous and Solid Waste Amendments, and the Toxic Substances Control Act, among others. Additionally, there are other agencies besides EPA which oversee the operations of these facilities, for example, the Department of Energy and the Department of Defense.

Although there are known instances of hazardous waste (i.e., dioxin) incineration being conducted in or adjacent to cities and towns, information detailing the specific location of incinerators relative to population density within a known proximity is not readily available.

QUESTIONS REGARDING THE REMEDIAL INVESTIGATION, RISK ASSESSMENT AND FEASIBILITY STUDY METHODS AND CONCLUSIONS

19) Several citizens were concerned that EPA may not have sampled deep enough to find all of the waste that may be buried onsite.

EPA Response: This is an understandable concern, since no records were kept regarding the locations or depths of the wastes that were disposed of at the sites. EPA recognized this at the outset of the Remedial Investigation (RI), thus the sampling strategy which was instituted at the sites included provisions for sampling at various depths. Shallow soils (<2 feet) were sampled using a short hand-driven auger. Deeper soils (up to 30 feet or more) were monitored through the use of large drilling rigs. For these samples, soil borings were sampled at regularly spaced intervals and at any other location suspected of being contaminated. A third sampling method involved digging to the bottom of the existing site trenches, where dumping was known to have occurred, until native undisturbed soils were encountered. Samples were taken at the bottoms of these trenches in order to characterize the waste. Finally, in an attempt to locate any other areas where we might not have thought to look, EPA and their site contractor solicited the assistance of a nearby resident who suspected that drums were buried onsite. At the discretion and direction of the resident, EPA trenched the site at various locations until all parties were satisfied that the suspected areas had been addressed. More information regarding sampling methods employed at the sites can be found in Chapter 3.0 of the sites' respective Remedial Investigation Reports.

20) A local resident asked if the city water supply was being polluted by Jacksonville landfill site contaminants.

EPA Response: No. As far as the City's municipal wells are concerned, it is highly unlikely that they could be even remotely affected by contamination from the Jacksonville and Rogers Road sites. The most obvious reason is because no ground water contamination which could be attributable to the site was found even immediately down-gradient (down-stream) of the sites. In addition, ground water flow in the area is toward the east-southeast and the closest municipal wells are approximately 2 miles southwest of the landfills.

EPA recognizes, however, that the ground water near sites which operated in the fashion as these (i.e., open dumping) can be somewhat vulnerable to leaching from buried wastes onsite. Because of this, EPA is instituting a long-term ground water monitoring program to ensure that the remedies taken at the sites continue to provide protection to the

ground water quality in the area. Through this monitoring program, any trends in water quality will be detected and appropriate actions will promptly be taken.

21) One commenter, speaking on behalf of a local citizen's group, requested that a full health study be performed throughout the City of Jacksonville.

EPA Response: The Agency for Toxic Substances and Disease Registry (ATSDR), in association with the Arkansas Health Department and ADPC&E, is currently evaluating the scope of a possible health study in the Jacksonville area. They are presently seeking the input of a Community Advisory Panel comprised of members of the local and medical communities, elected officials, and representatives of public environmental groups. It should be noted that the decision to conduct the health study rests with ATSDR and the Arkansas Health Department, not EPA.

QUESTIONS REGARDING OTHER ISSUES

22) Several citizens referred to the "No Burn Ordinance" and asked why it appears that the ordinance is not being observed.

EPA Response: CERCLA mandates that Superfund response actions comply with all Applicable or Relevant and Appropriate Requirements (ARARs). ARARs consist of all Federal or State environmentally protective requirements that either address specific circumstances related to Superfund sites, or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. Compliance with the substantive requirements of State regulations is required only when the regulation is uniformly applied on a State-wide basis. Local ordinances would not qualify under this criteria because they are not applied consistently across the state. Another reason that compliance with standards other than Federal and State regulations (i.e., local ordinances) is not required is that they might unduly restrict or otherwise encumber timely remedial response at Superfund sites.

23) One commenter was concerned that the remedial action would set a precedent for the importing of Superfund wastes to Vertac from other areas of the State and beyond.

EPA Response: EPA will not establish the Vertac site as a hazardous waste treatment center. EPA's rationale for bringing the landfill wastes back to Vertac is that they are suspected of having originated at that facility in the first place. As mentioned in Comment No. 11, the sites satisfy the NCP's criteria of close proximity and similarity of wastes to

the degree that the selected remedy is considered an "onsite" action. Other unrelated sites would not very likely be able to satisfy such criteria.

APPENDIX A
ADMINISTRATIVE RECORD INDEX

INTRODUCTION

Section 113(j)(1) of the Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA**) provides that judicial review of any issues concerning the adequacy of any response action shall be limited to the administrative record which has been compiled for the site at issue.

Section 113(k)(1) of **CERCLA**, requires that the United States Environmental Protection Agency (Agency) establish administrative records for the selection of **CERCLA** response actions. The administrative record is the body of documents upon which the Agency based its selection of a remedy. The agency's selection of a particular response action must be documented thoroughly in the administrative record. The Agency must ensure that the record is a compilation of documents leading up to and reflecting the Agency's response decision.

In accordance with U.S. EPA Headquarters OSWER Directive 9833.3, Section 113(k) of the Comprehensive Environmental Response, Compensation and Liability Act (**CERCLA**), as amended in 1986 by the Superfund Amendments and Reauthorization Act (**SARA**) the U.S. EPA is required to compile and make available to the public Administrative Records containing documents used to support response actions authorized under **CERCLA** and **SARA**. The Administrative Records are to be maintained at the relevant U.S. EPA Regional Offices as well as "at or near the facility at issue".

This Administrative Record File Index consists of information upon which the Agency based its decision on selection of response actions. It is a subset of information included in the site files. The records in this Administrative Record File Index have been arranged in chronological order (from the earliest date to the most recent date), based on the date of the corresponding document. Each document contained in the Administrative Record File has been stamped with sequential document numbers, to assist in the location of the document with the Record File.

This Administrative Record File Index has been compiled in accordance with OSWER Directive Number 9833.1a Interim Guidance on Administrative Records for Decisions on Selection of **CERCLA** Response Actions. This guidance reflects, to the extent practicable revisions being made to the National Contingency Plan (NCP).

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL

SITE NUMBER: ARD 981055809

INDEX DATE: 10/01/90

I. CHRONOLOGICAL LISTING

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000001 - 000003
DOCUMENT DATE: 04/18/84
NUMBER OF PAGES: 3
AUTHOR: Allyn M. Davis, Director, Air and Waste Management Division
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Bill Owen, City Engineer, City of Jacksonville
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: 104(e) letter

DOCUMENT NUMBER: 000004 - 000004
DOCUMENT DATE: 05/18/84
NUMBER OF PAGES: 1
AUTHOR: Keith Vaughan, City Attorney
COMPANY/AGENCY: City of Jacksonville, AR
RECIPIENT: Bonnie DeVos, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Re: Response to letter from Allyn M. Davis on 04/18/84, addressed to Bill Owen, City Engineer for the City of Jacksonville

DOCUMENT NUMBER: 000005 - 000012
DOCUMENT DATE: 05/13/85
NUMBER OF PAGES: 8
AUTHOR: Gene A. McDonald, Field Investigation Team (FIT)
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Assessment Report
DOCUMENT TITLE: Re: Rogers Road Landfill Site, Potential Hazardous Waste Site Identificiation and Preliminary Assessment

DOCUMENT NUMBER: 000013 - 000013
DOCUMENT DATE: 05/21/85
NUMBER OF PAGES: 1
AUTHOR: Keith Bradley, FIT Remedial Project Officer (RPO), Hazardous Waste Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Marth McKee, Chief, Compliance Section, U.S. EPA Region 6
DOCUMENT TYPE: Cover Sheet
DOCUMENT TITLE: Preliminary Assessment and Site Inspection Report

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000014 - 000014
DOCUMENT DATE: 05/28/85
NUMBER OF PAGES: - 1
AUTHOR: Gary W. Guerra, FIT
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Keith Bradley, RPO, Hazardous Waste Section, U.S. EPA Region 6
DOCUMENT TYPE: FIT Task Request
DOCUMENT TITLE: Request to complete sampling and investigative work

DOCUMENT NUMBER: 000015 - 000025
DOCUMENT DATE: 05/30/85
NUMBER OF PAGES: 11
AUTHOR: Gene A. McDonald, FIT Technician
COMPANY/AGENCY: Ecology and Environment, Inc.
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Report
DOCUMENT TITLE: Site Inspection Report

DOCUMENT NUMBER: 000026 - 000035
DOCUMENT DATE: 06/01/85
NUMBER OF PAGES: 10
AUTHOR: Keith Bradley, FIT RPO, Hazardous Waste Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Martha McKee, Chief, Compliance Section, U.S. EPA Region 6
DOCUMENT TYPE: Site Report
DOCUMENT TITLE: Site Inspection Report, field data, and sampling plan

DOCUMENT NUMBER: 000036 - 000044
DOCUMENT DATE: 06/06/85
NUMBER OF PAGES: 9
AUTHOR: Frank E. Onellion, Technical Assistance Team (TAT) member, Region 6-Dallas
COMPANY/AGENCY: Weston-Sper
RECIPIENT: Gerald Fontenot, Deputy Project Officer (DPO), Emergency Response Branch (ERB), U.S. EPA Region 6
DOCUMENT TYPE: Report
DOCUMENT TITLE: Rogers Road Hazardous Waste Site-FIT site inspection

ADMINISTRATIVE RECORD INDEX

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SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000045 - 000045
DOCUMENT DATE: 06/06/85
NUMBER OF PAGES: 1
AUTHOR: Samuel L. Nott, Chief, Superfund Branch
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Don-Michael Bradford, Captain, USAF, Director, Environmental Planning Div., AF Regional Civil Eng.
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Re: Investigation at the Rogers Road Site and City of Jacksonville Landfill

DOCUMENT NUMBER: 000046 - 000049
DOCUMENT DATE: 06/06/85
NUMBER OF PAGES: 4
AUTHOR: Bill Hathaway for Allyn M. Davis, Director, Air & Waste Management Division
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Doug Keilman, Hercules, Inc.
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Re: City of Jacksonville Landfill and Rogers Road Site, requesting information about generic name and chemical character of hazardous wastes

DOCUMENT NUMBER: 000051 - 000052
DOCUMENT DATE: 06/11/85
NUMBER OF PAGES: 2
AUTHOR: James L. Graham, Jr., P.E. Chief, Public Water Supply Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Martha McKee, Chief, Superfund Compliance Section, U.S. EPA Region 6
DOCUMENT TYPE: Site Inspection Report
DOCUMENT TITLE: Potential Hazardous Waste Site- Response to CERCLA investigation reports sent to the Water Supply Branch

DOCUMENT NUMBER: 000053 - 000054
DOCUMENT DATE: 06/19/85
NUMBER OF PAGES: 2
AUTHOR: Bill Hathaway for Allyn M. Davis, Director, Air & Waste Management Division
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: James G. Reid, Mayor, City of Jacksonville, AR
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: 104(e) letter request for information on City of Jacksonville Landfill and Rogers Road Site

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FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000055 - 000055
DOCUMENT DATE: 06/24/85
NUMBER OF PAGES: 1
AUTHOR: Roxanne Jayne
COMPANY/AGENCY: Hercules Incorporated
RECIPIENT: Tim Perdue, U.S. EPA Region 6
DOCUMENT TYPE: Record of Communication
DOCUMENT TITLE: Re: Rogers Road/Jacksonville Landfill- Response to 104(e) letter and request 30 day extension

DOCUMENT NUMBER: 000056 - 000056
DOCUMENT DATE: 06/24/85
NUMBER OF PAGES: 1
AUTHOR: Roxanne E. Jayne, Associate Counsel, Law Department
COMPANY/AGENCY: Hercules Incorporated
RECIPIENT: Gary Guerra, Superfund Compliance Section, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Acknowledge receipt of Allyn M. Davis' letter dated 06/06/85. Request 30 day extension to respond until August 12, 1985

DOCUMENT NUMBER: 000056 - 000162
DOCUMENT DATE: 06/24/85
NUMBER OF PAGES: 107
AUTHOR: Kendall Young, Chief Laboratory Section, Houston Branch
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Keith Bradley, Hazardous Waste Section, U.S. EPA Region 6
DOCUMENT TYPE: Analytical Data
DOCUMENT TITLE: Contract Laboratory Program (CLP) Data Review, Organic #1731F-01 - 1731F-03

DOCUMENT NUMBER: 000164 - 000333
DOCUMENT DATE: 06/27/85
NUMBER OF PAGES: 170
AUTHOR: Jill B. Henes, Dioxin Project Manager
COMPANY/AGENCY: Compuchem Laboratories
RECIPIENT: Richard Thacker, Viar and Company
DOCUMENT TYPE: Correspondence and Attachment
DOCUMENT TITLE: Report of Data - EPA Contract #68-01-6915, Case # 4463-1

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SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000334 - 000348
DOCUMENT DATE: 07/01/85
NUMBER OF PAGES: 15
AUTHOR: Jairo Guevara, Chemical Engineer, FIT Region 6
COMPANY/AGENCY: Ecology and Environment Inc., Region 6
RECIPIENT: Keith Bradley, DPO, Hazardous Waste Section, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: Re: Interim Report-Sampling residential wells in the vicinity of the old Jacksonville City Landfill

DOCUMENT NUMBER: 000349 - 000407
DOCUMENT DATE: 07/02/85
NUMBER OF PAGES: 59
AUTHOR: Kendall Young, Chief Laboratory Section, Houston Branch
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Keith Bradley, Hazardous Waste Section, U.S. EPA Region 6
DOCUMENT TYPE: Lab Data
DOCUMENT TITLE: Re: CLP Data Review, Rogers Road Landfill, Case #4463

DOCUMENT NUMBER: 000408 - 000408
DOCUMENT DATE: 07/08/85
NUMBER OF PAGES: 1
AUTHOR: Martha M. McKee, Chief, Superfund Compliance Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Roxanne E. Jayne, Associate Counsel, Hercules Incorporated
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Re: Request for a 30 day extension to the 07/11/85 deadline

DOCUMENT NUMBER: 000409 - 000410
DOCUMENT DATE: 07/10/85
NUMBER OF PAGES: 2
AUTHOR: Kendall Young, Chief Laboratory Section, Houston Branch
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Keith Bradley, Hazardous Waste Section, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: CLP Data Review for Organic #DF017305, DF017312, Case #4463

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SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000411 - 000463
DOCUMENT DATE: 07/11/85
NUMBER OF PAGES: 53
AUTHOR: Kendall Young, Chief Laboratory Section, Houston Branch
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Keith Bradley, Hazardous Waste Section, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: CLP Data Review of Case #4463-Inorganic MFA 706- MFA 710 and MFA 753 - MFA 755

DOCUMENT NUMBER: 000464 - 000469
DOCUMENT DATE: 07/16/85
NUMBER OF PAGES: 6
AUTHOR: M.L. Ritter, Chemist, Houston Branch Laboratory
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: K. Young, Laboratory Chief, Houston Branch Laboratory, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: Re: Pesticide Surrogate Recovery Data in Case #4463 and SAS 1731F.

DOCUMENT NUMBER: 000470 - 000471
DOCUMENT DATE: 07/18/85
NUMBER OF PAGES: 2
AUTHOR: James G. Reid, Mayor
COMPANY/AGENCY: City of Jacksonville, AR
RECIPIENT: Gary Guerra, Superfund Compliance, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Re: EPA letter dated 06/19/85, City of Jacksonville operated two sanitary landfills from 1953-1974 for the disposal of garbage and misc. rubbish debris

DOCUMENT NUMBER: 000472 - 000473
DOCUMENT DATE: 07/22/85
NUMBER OF PAGES: 2
AUTHOR: Roxanne E. Jayne, Associate Counsel, Law Department
COMPANY/AGENCY: Hercules Incorporated
RECIPIENT: Gary Guerra, Superfund Compliance, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Response to letter of 06/06/85 to Doug Keilman concerning Hercules lack of liability

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000474 - 000655
DOCUMENT DATE: 07/24/85
NUMBER OF PAGES: 182
AUTHOR: Ken D. Faust, Section Manager, EPA Organic Superfund Division
COMPANY/AGENCY: Rocky Mountain Analytical Laboratory
RECIPIENT: Tony Nesky, Sample Management Office, U.S. EPA Region 6
DOCUMENT TYPE: Sampling and Analysis
DOCUMENT TITLE: Results for Case #4463/SAS 1731F analyzed for TCDD under contract #68-07-6914

DOCUMENT NUMBER: 000656 - 000708
DOCUMENT DATE: 07/26/85
NUMBER OF PAGES: 53
AUTHOR: Kendall Young, Chief Laboratory Section, Houston Branch
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Keith Bradley, Hazardous Waste Section, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: CLP Data Review for Case #4463

DOCUMENT NUMBER: 000709 - 000710
DOCUMENT DATE: 08/02/85
NUMBER OF PAGES: 2
AUTHOR: Oscar Cabra, Jr., P.E., Chief, Water Supply Branch
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Bruno Kirsch, Jr., P.E., Director, Division of Engineering, Arkansas Department of Health
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Organics Analysis for samples taken from Jacksonville Public Water Supply on 06/07/85

DOCUMENT NUMBER: 000711 - 000712
DOCUMENT DATE: 08/30/85
NUMBER OF PAGES: 2
AUTHOR: Ken D. Faust, Section Manager, EPA Organic Superfund Division
COMPANY/AGENCY: Rocky Mountain Analytical Laboratory
RECIPIENT: Mel Ritter, Houston Branch, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence and Attachment
DOCUMENT TITLE: Re: Resubmission of Form B-1 for Case #4463/SAS 1731F

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SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000713 - 000760
DOCUMENT DATE: 09/10/85
NUMBER OF PAGES: 48
AUTHOR: Gene A. McDonald, FIT
COMPANY/AGENCY: Ecology and Environment Inc., Region 6
RECIPIENT: Keith Bradley, RPO, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: Re: Sampling Inspection of Rogers Road Site, Jacksonville, AR. Describes sampling operations conducted during the period 06/04-07/85

DOCUMENT NUMBER: 000761 - 000763
DOCUMENT DATE: 09/11/85
NUMBER OF PAGES: 3
AUTHOR: Allyn M. Davis, Director, Air & Waste Management Division
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: R.D. Karkkainen, Director, Environment and Safety, Vertac Chemical Corporation
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Re: 104(e) letters concerning City of Jacksonville Landfill and Rogers Road Site.

DOCUMENT NUMBER: 000764 - 000764
DOCUMENT DATE: 09/24/85
NUMBER OF PAGES: 1
AUTHOR: James L. Graham, Jr., P.E., Chief, Public Water Supply Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Martha McKee, Chief, Superfund Compliance Section
DOCUMENT TYPE: Site Inspection Report
DOCUMENT TITLE: Response to CERCLA investigation reports

DOCUMENT NUMBER: 000765 - 000765
DOCUMENT DATE: 10/02/85
NUMBER OF PAGES: 1
AUTHOR: Staff Consultants
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Letter
DOCUMENT TITLE: Re: Data received from sampling conducted at Jacksonville and Rogers Road Landfill, and area drinking water

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SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000766 - 000766
DOCUMENT DATE: 10/16/85
NUMBER OF PAGES: 1
AUTHOR: Mary Ellen Crowley
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Site Identification
DOCUMENT TITLE: Citizen's complaint of 05/10/85 alleging that the landfill accepted hazardous waste during its operation 07/53-10/74

DOCUMENT NUMBER: 000767 - 000767
DOCUMENT DATE: 10/18/85
NUMBER OF PAGES: 1
AUTHOR: Dick Karkkainen, Director of Environment and Safety
COMPANY/AGENCY: Vertac Chemical Corporation
RECIPIENT: Gary Guerra, Superfund Compliance, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Re: City of Jacksonville Landfill and Rogers Road Site investigated and Vertac has no documents pertinent to questions 1-6 of Mr. Davis's 09/13/85 letter

DOCUMENT NUMBER: 000768 - 000770
DOCUMENT DATE: 10/25/85
NUMBER OF PAGES: 3
AUTHOR: Stephen Margolis, Ph.D, Acting Director, Office of Health Assessment
COMPANY/AGENCY: Agency for Toxic Substances and Disease Registry (ATSDR)
RECIPIENT: Carl Hickam, Public Health Advisor, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: Health Assessment

DOCUMENT NUMBER: 000771 - 000772
DOCUMENT DATE: 11/06/85
NUMBER OF PAGES: 2
AUTHOR: Dale Bumpers
COMPANY/AGENCY: United States Senate
RECIPIENT: Dick Whittington, Regional Administrator, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: Test results from samplings at the Jacksonville, Arkansas landfill

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FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000773 - 000774
DOCUMENT DATE: 11/07/85
NUMBER OF PAGES: 2
AUTHOR: Office of Public Awareness
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Public
DOCUMENT TYPE: Environmental News
DOCUMENT TITLE: Re: Test results from sampling at the Rogers Road hazardous waste site near Jacksonville, AR

DOCUMENT NUMBER: 000775 - 000775
DOCUMENT DATE: 11/18/85
NUMBER OF PAGES: 1
AUTHOR: Dick Whittington, Regional Administrator
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Dale Bumpers, U.S. Senate
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: Letter of 11/06/85 regarding the inclusion of the Jacksonville Landfill on the Superfund National Priority List (NPL), also the Rogers Road Landfill

DOCUMENT NUMBER: 000776 - 000776
DOCUMENT DATE: 11/26/85
NUMBER OF PAGES: 1
AUTHOR: Staff Consultants
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Attachment #1
DOCUMENT TITLE: Enforcement Sensitive - included in Action Memo

DOCUMENT NUMBER: 000777 - 000780
DOCUMENT DATE: 01/09/86
NUMBER OF PAGES: 4
AUTHOR: Dick Whittington, Rigional Administrator
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Honorable Dale Bumpers, United States Senate
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Response to inquiry of 12/12/85 concerning security at the landfill

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SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000781 - 000781
DOCUMENT DATE: 08/14/86
NUMBER OF PAGES: 1
AUTHOR: Robert Hannesschlager, Chief, Superfund Enforcement Branch
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Russ Wyer, Director, Hazardous Site Control Division, U.S. EPA Headquarters
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: RE: Narrative summaries for Region 6 NPL update 6 sites

DOCUMENT NUMBER: 000782 - 000783
DOCUMENT DATE: 11/05/86
NUMBER OF PAGES: 2
AUTHOR: B. Bobbie, Supervisor, Dioxin Unit
COMPANY/AGENCY: Ministry of the Environment, Ontario
RECIPIENT: J. Oskowis, Manager - Engineer, Jacksonville Water Commission
DOCUMENT TYPE: Correspondence and Attachment
DOCUMENT TITLE: Results of analysis of two Jacksonville well water samples for chlorinated dibenzo-p-dioxins (CDD) and chlorinated dibenzofurans (CDF) received on 09/08/86

DOCUMENT NUMBER: 000784 - 000786
DOCUMENT DATE: 11/13/86
NUMBER OF PAGES: 3
AUTHOR: Jim Oskowis, P.E. , Manager-Engineer
COMPANY/AGENCY: Jacksonville Water Commission
RECIPIENT: Harold Seifert, Division of Engineering, Arkansas Department of Health
DOCUMENT TYPE: Correspondence and Attachment
DOCUMENT TITLE: Analysis transmitted to recipient for his files concerning lab report (see 11/05/86 document)

DOCUMENT NUMBER: 000787 - 000790
DOCUMENT DATE: 07/30/87
NUMBER OF PAGES: 4
AUTHOR: Barry L. Johnson, Ph.D., Associate Administrator
COMPANY/AGENCY: Department of Health & Human Services
RECIPIENT: David Wagoner, Director, Waste Management Division, U.S. EPA Region 7
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Response to request for elaboration on the mathematics underlying the development of support for the 20 parts per billion (ppb) cleanup level for certain Missouri dioxin sites

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SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000791 - 000795
DOCUMENT DATE: 10/02/87
NUMBER OF PAGES: 5
AUTHOR: Allyn M. Davis, Director, Hazardous Waste Management Division
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Honorable Tommy Swain, Mayor
DOCUMENT TYPE: Notice Letter
DOCUMENT TITLE: City of Jacksonville may be Potentially Responsible Party (PRP) - request for written response

DOCUMENT NUMBER: 000796 - 000801
DOCUMENT DATE: 12/02/87
NUMBER OF PAGES: 6
AUTHOR: Allyn H. Davis, Director, Hazardous Waste Management Division
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Lee Thalheimer, Esq., Vertac Chemical Corporation, Arnold, Grobmeyer & Haley
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Notification letter to a PRP

DOCUMENT NUMBER: 000802 - 000804
DOCUMENT DATE: 12/16/87
NUMBER OF PAGES: 3
AUTHOR: Carl E. Edlund, Chief, Superfund Program Branch
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Joe Gillespiey, Manager, State Programs, Office of Intergovernmental Services, Dept. of Fin. & Admin
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Notification of a proposed Superfund project that includes the Remedial Investigation/Feasibility (RI/FS) at the Rogers Road Municipal Landfill site

DOCUMENT NUMBER: 000805 - 000805
DOCUMENT DATE: 01/04/88
NUMBER OF PAGES: 1
AUTHOR: Bill Hall, Acting State Historic Preservation Officer
COMPANY/AGENCY: Arkansas Historic Preservation Program
RECIPIENT: Carl E. Edlund, Chief, Superfund Program Branch, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Environmental Review-EPA Rogers Road Municipal Landfill Site; response to inquiry of 12/16/87

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FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000806 - 000809
DOCUMENT DATE: 01/05/88
NUMBER OF PAGES: 4
AUTHOR: Allyn M. Davis, Director, Hazardous Waste Management Division
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Doug Keilman, Hercules, Inc.
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: EPA has information to indicate that Hercules, Inc. may be a responsible party. EPA has reason to believe that Hercules transported hazardous material to Jacksonville Landfill

DOCUMENT NUMBER: 000810 - 000816
DOCUMENT DATE: 01/05/88
NUMBER OF PAGES: 7
AUTHOR: Allyn M. Davis, Director, Hazardous Waste Mangement Division
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Tommy Swain, Mayor, City of Jacksonville, AR
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Investigation by EPA indicate that the City of Jacksonville may be a responsible party. EPA has reason to believe that the City of Jacksonville was owner of Jacksonville & Rogers Road Landfills

DOCUMENT NUMBER: 000817 - 000818
DOCUMENT DATE: 01/19/88
NUMBER OF PAGES: 2
AUTHOR: Martin Swanson, RPM, ALONM Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Bill Hall, Acting State Historic Preservation Officer, Arkansas Historic Preservation Program
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Re: Review of the Jacksonville and Rogers Road Municipal Landfills, per request, enclosing site location map, Statements of Work and copies of photos depicting structures adjacent to site

DOCUMENT NUMBER: 000819 - 000819
DOCUMENT DATE: 01/25/88
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALONM Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Carl R. Stapleton, Ph.D., Environmental Sciences and Resource Planning, Inc.
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: Freedon of Information Act (FOIA) request on Jacksonville Municipal Landfill (Graham Rd. Landfill) and the Rogers Road Municipal Landfill

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SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000820 - 000823
DOCUMENT DATE: 01/27/88
NUMBER OF PAGES: 4
AUTHOR: Allyn M. Davis, Director, Hazardous Waste Management Division
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: C.P. Bomar, Jr., Director/Officer, Phoenix Capital Enterprises, Inc.
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Notice of potential liability

DOCUMENT NUMBER: 000824 - 000824
DOCUMENT DATE: 02/02/88
NUMBER OF PAGES: 1
AUTHOR: Bill Hall, Acting State Historic Preservation Officer
COMPANY/AGENCY: Arkansas Historic Preservation Program
RECIPIENT: Martin Swanson, RPM, ALONM Remedial Section, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence and Attachment
DOCUMENT TITLE: Recommendation that a cultural resources survey be conducted of both landfill locations since records indicate that an archeological site is located at the sites

DOCUMENT NUMBER: 000825 - 000826
DOCUMENT DATE: 02/09/88
NUMBER OF PAGES: 2
AUTHOR: Robert E. Bamburg, Assistant City Attorney
COMPANY/AGENCY: City of Jacksonville, AR
RECIPIENT: Suzette Turner, Enforcement Branch, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Re: Letter received, dated 01/05/88, designating the City of Jacksonville as a PRP

DOCUMENT NUMBER: 000827 - 000827
DOCUMENT DATE: 02/18/88
NUMBER OF PAGES: 1
AUTHOR: Douglas J. Keilman
COMPANY/AGENCY: Hercules, Inc.
RECIPIENT: Suzette Turner, Superfund Enforcement Branch, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Request for extension of 30 days to respond to 01/12/88 request for Hercules to voluntarily undertake a RI/FS

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SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000828 - 000828
DOCUMENT DATE: 02/24/88
NUMBER OF PAGES: 1
AUTHOR: Scott Slaughter
COMPANY/AGENCY: Mott & Associates, P.C.
RECIPIENT: Suzette Turner, Superfund Enforcement Branch, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Re: 01/09/88 letter sent to Lee Thalheimer, Receiver for the Vertac Corp. asking Vertac to perform the RI/FS at Jacksonville and Rogers Road Landfill

DOCUMENT NUMBER: 000829 - 000829
DOCUMENT DATE: 03/01/88
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: John Vetter, Consulting Archeologist
DOCUMENT TYPE: Record of Communication
DOCUMENT TITLE: Mr. Vetter feels that a cultural resource survey has to be conducted at the site and that the lead agency is responsible for the work

DOCUMENT NUMBER: 000830 - 000830
DOCUMENT DATE: 03/28/88
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALONM Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Bob Lombardi, Peer Consultants, P.C.
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Federal funding is currently being allocated for the RI/FS at the Jacksonville Landfill and Rogers Road Landfill

DOCUMENT NUMBER: 000831 - 000834
DOCUMENT DATE: 04/18/88
NUMBER OF PAGES: 4
AUTHOR: Roxanne E. Jayne, Counsel
COMPANY/AGENCY: Hercules, Inc.
RECIPIENT: Suzette Truner, Superfund Enforcement Branch, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: Response to Mr. Davis' letter requesting Hercules voluntarily undertake an RI/FS at the site

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FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000835 - 000837
DOCUMENT DATE: 04/19/88
NUMBER OF PAGES: - 3
AUTHOR: Curtis L. Frisbie, Jr.
COMPANY/AGENCY: Gardere & Wynne, Attorneys and Counselors
RECIPIENT: Allyn M. Davis, Director, Hazardous Waste Management Division, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: PRP information

DOCUMENT NUMBER: 000838 - 000841
DOCUMENT DATE: 04/22/88
NUMBER OF PAGES: 4
AUTHOR: Robert E. Bamburg, Assistant City Attorney
COMPANY/AGENCY: City of Jacksonville
RECIPIENT: Suzette Turner, Superfund Enforcement Branch, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: Potentially Responsible Party (PRP) Letter Graham Road and Rogers Road Landfills - response to 01/05/88 and request for extension of time to respond to PRP letter

DOCUMENT NUMBER: 000842 - 000842
DOCUMENT DATE: 05/20/88
NUMBER OF PAGES: 1
AUTHOR: Cath Buford, State Historic Preservation Officer
COMPANY/AGENCY: Arkansas Historic Preservation Program
RECIPIENT: Michael A. Klevenz, PEER Consultants, P.C.
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: After reviewed of additional information, no cultural resources survey will be necessary

DOCUMENT NUMBER: 000843 - 000843
DOCUMENT DATE: 06/08/88
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Doice Hughes, Hazardous Waste Division, Arkansas Department of Pollution Control & Ecology (ADPC&E)
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Transmittal for Draft Work Plans

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FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000844 - 000844
DOCUMENT DATE: 06/14/88
NUMBER OF PAGES: 1
AUTHOR: Mike Bates, Chief, Hazardous Waste Division
COMPANY/AGENCY: ADPC&E
RECIPIENT: Martin Swanson, RPM, ALONM Remedial Section, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Re: Letter to Doice Hughes, dated 06/08/88, regarding comments on draft work plans, etc.

DOCUMENT NUMBER: 000845 - 000845
DOCUMENT DATE: 06/29/88
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALONM Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Suzette Turner, Compliance Section, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: Re: Replacement of missing fence at the Rogers Road Landfill Site. During 04/29/88 visit EPA & City of Jacksonville personnel observed approx 200' of fence missing from the southern boundary.

DOCUMENT NUMBER: 000846 - 000846
DOCUMENT DATE: 07/12/88
NUMBER OF PAGES: 1
AUTHOR: Suzette Turner
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Martin Swanson, RPM, ALOMN Remedial Section, U.S. EPA Region 6
DOCUMENT TYPE: Record Of Communication
DOCUMENT TITLE: Re: City Council approved the dollars needed to replace the stolen fence at Jacksonville and Rogers Road Landfill site

DOCUMENT NUMBER: 000847 - 000998
DOCUMENT DATE: 07/27/88
NUMBER OF PAGES: 152
AUTHOR: Robert A. Lombard, Jr., Program Manager
COMPANY/AGENCY: PEER Consultants, P.C.
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Report
DOCUMENT TITLE: Performance of Remedial Response Activities at Uncontrolled Hazardous Waste Sites, Sampling and Analysis Plan, Quality Assurance Project Plan, Data Management Plan for Rogers Road Landfill

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000999 - 000999
DOCUMENT DATE: 08/04/88
NUMBER OF PAGES: - 1
AUTHOR: Martin Swanson, RPM, ALONM Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Hank Thompson, ESD
DOCUMENT TYPE: Memorandum and Attachment
DOCUMENT TITLE: Re: CLP Sample Bottle Repository Authorization

DOCUMENT NUMBER: 001000 - 001001
DOCUMENT DATE: 08/04/88
NUMBER OF PAGES: 2
AUTHOR: Dennis C. Cossey, Executive Vice President
COMPANY/AGENCY: Innotek Corporation
RECIPIENT: Steve Gilrein, Chief, ALONM/Remedial Section, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: In Situ Vitrification

DOCUMENT NUMBER: 001002 - 001002
DOCUMENT DATE: 08/09/88
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALONM Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Dave Stockton, CLP/DPO, Houston Branch, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: Re: CLP Detection Limits for Dioxins and Furans.

DOCUMENT NUMBER: 001003 - 001269
DOCUMENT DATE: 08/12/88
NUMBER OF PAGES: 267
AUTHOR: Robert A. Lombard, Jr., Program Manager
COMPANY/AGENCY: Peer Consultants, P.C.
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Report
DOCUMENT TITLE: Final Work Plan for Rogers Road Landfill RI/FS Jacksonville, AR, Vol. 1 - Technical, (Vol. 2 - Cost, Health & Safety Plan)

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001270 - 001270
DOCUMENT DATE: 08/22/88
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALONM Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Ben Chavez, Inter-Agency Agreement (IAG) Coordinator, Management Division, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: Re: Jacksonville Landfill and Rogers Road Landfill, IAG

DOCUMENT NUMBER: 001271 - 001271
DOCUMENT DATE: 09/09/88
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Dave Stockton, CLP/DPO, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: RE:: CLP Detection Limits for Dioxins and Furans

DOCUMENT NUMBER: 001272 - 001275
DOCUMENT DATE: 09/14/88
NUMBER OF PAGES: 4
AUTHOR: Martin Swanson, RPM, ALONM Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Seth Low, Office of Regional Counsel (ORC), U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: Re: Access Agreements for Investigations at the Jacksonville and Rogers Road Landfill Sites

DOCUMENT NUMBER: 001276 - 001279
DOCUMENT DATE: 09/19/88
NUMBER OF PAGES: 4
AUTHOR: David Rosa, Site Manager
COMPANY/AGENCY: Resource Applications, Inc. (RAI)
RECIPIENT: Martin Swanson, RPM, ALONM Remedial Section, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Re: Property Ownership Search Information for the proposed monitoring well and soil sampling locations recently collected for properties around Rogers Road Landfill sites

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001280 - 001280
DOCUMENT DATE: 09/30/88
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALONM Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Duane Reel, Jacksonville City Engineer, Jacksonville, AR
DOCUMENT TYPE: Record Of Communication
DOCUMENT TITLE: Re: Fence replacement at the Rogers Road Landfill site

DOCUMENT NUMBER: 001281 - 001285
DOCUMENT DATE: 10/07/88
NUMBER OF PAGES: 5
AUTHOR: Martin Swanson, RPM, ALONM Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Vincent Gonzles, Contract Officer (CO), Contracts and Procurement Mgmt. Division, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: Re: Technical Direction Memorandums Pertaining to the Jacksonville and Rogers Road Landfill sites to allow for reallocation of previously approved funds.

DOCUMENT NUMBER: 001286 - 001286
DOCUMENT DATE: 10/17/88
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALONM Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Suzette Turner, Compliance Section, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: Re: Missing Fence at the Rogers Road Landfill Site - summary of 09/20/88 telephone conversation with Duane Reel regarding approval of funds to replace the fence.

DOCUMENT NUMBER: 001287 - 001287
DOCUMENT DATE: 10/20/88
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALONM Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Myra Perez, CLP Coordinator, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Re: Copies of sample request forms for the Jacksonville and Rogers Road Landfill sites. Sampling & shipping dates are 11/07 - 11/12 and additional sampling through the end of 12/88.

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001288 - 001290
DOCUMENT DATE: 10/20/88
NUMBER OF PAGES: 3
AUTHOR: Martin Swanson, RPM, ALONM Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Addressees Listed
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Re: Consent to access a portion of addressees property so EPA and its contractors can proceed with the the investigation activities at the Rogers Road Landfill

DOCUMENT NUMBER: 001291 - 001292
DOCUMENT DATE: 10/24/88
NUMBER OF PAGES: 2
AUTHOR: Martin Swanson, RPM, ALONM Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Myra Perez, CLP Coordinator, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: Re: Sample request forms for the Jacksonville and Rogers Road Landfill sites, sampling and shipping dates are 11/14-19/88.

DOCUMENT NUMBER: 001293 - 001296
DOCUMENT DATE: 10/26/88
NUMBER OF PAGES: 4
AUTHOR: Myra Perez, CLP Coordinator
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Jeb Livingood, U.S. EPA Regio 6 Memorandum
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: RE: Special Analytical Services (SAS) request forms - Sampling event 11/07/88 to 12/19/88

DOCUMENT NUMBER: 001297 - 001298
DOCUMENT DATE: 10/31/88
NUMBER OF PAGES: 2
AUTHOR: Martin Swanson, RPM, ALOMN Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Jimmy Wright, Jr., Little Rock, AR
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Request consent to access a portion of Mr. Wright's property so investigation activities by EPA and its contractors can proceed at the Rogers Road Landfill

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001299 - 001299
DOCUMENT DATE: 11/02/88
NUMBER OF PAGES: 1
AUTHOR: Bob Bland
COMPANY/AGENCY: Arkansas Alliance
RECIPIENT: Ellen Greeney, Community Relations, U.S. EPA Region 6
DOCUMENT TYPE: Record of Communication (ROC)
DOCUMENT TITLE: RE: Tours of Jacksonville and Rogers Road Landfill

DOCUMENT NUMBER: 001300 - 001303
DOCUMENT DATE: 11/07/88
NUMBER OF PAGES: 4
AUTHOR: Myra Perez
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Brian Burgess, U.S. EPA Region 6
DOCUMENT TYPE: Report
DOCUMENT TITLE: Weekly sample report 11/07/88 - 11/12/88

DOCUMENT NUMBER: 001304 - 001304
DOCUMENT DATE: 11/07/88
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALONM Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Doice Hughes, ADPC&E
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Re: Remedial activities at the Jacksonville and Rogers Road Landfill sites from 11/7-12/88. Contractors will conduct thorough investigation to determine nature and extent of contamination

DOCUMENT NUMBER: 001305 - 001316
DOCUMENT DATE: 11/07/88
NUMBER OF PAGES: 12
AUTHOR: Martin Swanson, RPM
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: David Rosa, RAI
DOCUMENT TYPE: Correspondence and Attachments
DOCUMENT TITLE: RE: Access Agreements

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001317 - 001317
DOCUMENT DATE: 12/12/88
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALONM Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Bob Lombard, Peer Consultants, P.C.
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: CLP Sampling Schedule

DOCUMENT NUMBER: 001318 - 001318
DOCUMENT DATE: 12/16/88
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALOMN Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: John Wicklund, U.S. EPA Region 6
DOCUMENT TYPE: ROC
DOCUMENT TITLE: Replacement of Fence at the Rogers Road Landfill Site

DOCUMENT NUMBER: 001319 - 001320
DOCUMENT DATE: 12/16/88
NUMBER OF PAGES: 2
AUTHOR: Robert A. Lombard, Program Manager
COMPANY/AGENCY: Peer Consultants, P.C.
RECIPIENT: Martin Swanson, RPM, ALOMN Remedial Section, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: CLP Sampling Schedule

DOCUMENT NUMBER: 001321 - 001321
DOCUMENT DATE: 01/12/89
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALOMN Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Myra Perez, CLP Coordinator, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: CLP to mail results to Resource Applications Inc.

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001322 - 001323
DOCUMENT DATE: 02/24/89
NUMBER OF PAGES: 2
AUTHOR: Martin Swanson, RPM, ALOMN Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Jeff Parks, Peer Consultants, P.C.
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RI/FS status meeting

DOCUMENT NUMBER: 001324 - 001324
DOCUMENT DATE: 02/28/89
NUMBER OF PAGES: 1
AUTHOR: Jon Rauscher, Toxicologist
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Teresa Hoffman, PEER Consultants, P.C.
DOCUMENT TYPE: ROC
DOCUMENT TITLE: RE: Risk Assessment Assumption for a 6-12 year old child

DOCUMENT NUMBER: 001325 - 001326
DOCUMENT DATE: 03/01/89
NUMBER OF PAGES: 2
AUTHOR: Staff
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Site Status Update
DOCUMENT TITLE: Update for Rogers Road and Jacksonville Municipal Landfill

DOCUMENT NUMBER: 001327 - 001329
DOCUMENT DATE: 03/15/89
NUMBER OF PAGES: 3
AUTHOR: Martin Swanson, RPM, ALOMN Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Tom Simmons, Corps of Engineers
DOCUMENT TYPE: ROC
DOCUMENT TITLE: Site background information

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001330 - 001330
DOCUMENT DATE: 03/20/89
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALOMN Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Dave White, Chief, Automatic Data Procvessing (ADP) Section, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: CLP/ADP user accounts for PEER Consultants

DOCUMENT NUMBER: 001331 - 001331
DOCUMENT DATE: 03/29/89
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALOMN Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Tom Simmons, Corps of Engineers
DOCUMENT TYPE: Transmittal Letter
DOCUMENT TITLE: Transmittal of RI/FS Study Work Plans for Rogers Road

DOCUMENT NUMBER: 001332 - 001332
DOCUMENT DATE: 03/30/89
NUMBER OF PAGES: 1
AUTHOR: Bob Wassmann
COMPANY/AGENCY: PEER Consultants
RECIPIENT: Martin Swanson, RPM, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Transmittal letter for slides and prints taken during the first round of sampling at the Jacksonville and Rogers Road Lanfill (no attachments)

DOCUMENT NUMBER: 001333 - 001333
DOCUMENT DATE: 04/03/89
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Doice Houghes, ADPC&E
DOCUMENT TYPE: Transmittal Letter
DOCUMENT TITLE: Dioxin analytical results from the Jacksonville Landfill and Rogers Road Landfill projects (no Attachments)

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001334 - 001334
DOCUMENT DATE: 04/04/89
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Pat Hammack, Emergency Response Branch, U.S. EPA Region 6
DOCUMENT TYPE: Transmittal Memorandum
DOCUMENT TITLE: RE: Analytical results from the Jacksonville Landfil and Rogers Road Landfill

DOCUMENT NUMBER: 001335 - 001335
DOCUMENT DATE: 04/06/89
NUMBER OF PAGES: 1
AUTHOR: Robert A. Lombard, Jr, Program Manager
COMPANY/AGENCY: Peer Consultants, P.C.
RECIPIENT: Helen Newman, Regional Project Officer, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Assignment of RAI as Feasibility Study Contractor

DOCUMENT NUMBER: 001336 - 001340
DOCUMENT DATE: 04/14/89
NUMBER OF PAGES: 5
AUTHOR: David S. Rosa, Site Manager
COMPANY/AGENCY: RAI
RECIPIENT: Martin Swanson, RPM, ALOMN Remedial Section, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Phase 2 - Groundwater and Air Sampling

DOCUMENT NUMBER: 001341 - 001348
DOCUMENT DATE: 04/18/89
NUMBER OF PAGES: 8
AUTHOR: Myra I. Perez, Primary Coordinator
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Sampling Analyses
DOCUMENT TITLE: Sampling results for 05/08/89 and 05/15/89

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001349 - 001349
DOCUMENT DATE: 04/18/89
NUMBER OF PAGES: 1
AUTHOR: Myra I. Perez, Primary Coordinator
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Diane Cutler, Coordinator, Sample Management Office, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: Soil testing requirements

DOCUMENT NUMBER: 001350 - 001350
DOCUMENT DATE: 04/27/89
NUMBER OF PAGES: 1
AUTHOR: Freddy D. Gentry
COMPANY/AGENCY: Property Owner, Rogers Road Landfill
RECIPIENT: Freedom of Information Officer
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Consent was given EPA to access property to investigate, monitor, and test for contamination on 10/13/88

DOCUMENT NUMBER: 001351 - 001352
DOCUMENT DATE: 05/01/89
NUMBER OF PAGES: 2
AUTHOR: Mike Wilson
COMPANY/AGENCY: Jacksonville People With Pride Cleanup Coalition
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Superfund Fact Sheet
DOCUMENT TITLE: Technical assistance grant awarded

DOCUMENT NUMBER: 001353 - 001360
DOCUMENT DATE: 05/08/89
NUMBER OF PAGES: 8
AUTHOR: Unspecified
COMPANY/AGENCY: Unspecified
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Sampling Results
DOCUMENT TITLE: Analysis for Polychlorinated Dioxins and Furans - CLP Analyses

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001361 - 001362
DOCUMENT DATE: 05/22/89
NUMBER OF PAGES: - 2
AUTHOR: Myra I. Perez, Primary Coordinator
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Brian Burgess, U.S. EPA Region 6
DOCUMENT TYPE: Weekly Sample Report
DOCUMENT TITLE: Report for 05/15/89 - 05/20/89

DOCUMENT NUMBER: 001363 - 001364
DOCUMENT DATE: 05/24/89
NUMBER OF PAGES: 2
AUTHOR: Martin Swanson, RPM, ALOMN Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Robert Lombard, PEER Consultants
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: CLP shipping, well installation cleaning

DOCUMENT NUMBER: 001365 - 001365
DOCUMENT DATE: 05/25/89
NUMBER OF PAGES: 1
AUTHOR: Russell F. Rhoades, Director, Environmental Services Division
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Allyn Davis, Director, Hazardous Waste Management Division, U.S. EPA Region 6
DOCUMENT TYPE: Transmittal Memorandum
DOCUMENT TITLE: Transmittal for follow-up on Rogers Road/Jacksonville Landfill Issues (no attachment)

DOCUMENT NUMBER: 001366 - 001366
DOCUMENT DATE: 05/26/89
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALOMN Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Freddy Gentry, Property Owner, Rogers Road Landfill
DOCUMENT TYPE: Record of Communication
DOCUMENT TITLE: Re: Request for analytical results

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001367 - 001369
DOCUMENT DATE: 05/26/89
NUMBER OF PAGES: - 3
AUTHOR: Martin Swanson, RPM, ALOMN Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: James White, Chairman, Bayou Two Water Users Association
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: City water usage

DOCUMENT NUMBER: 001370 - 001395
DOCUMENT DATE: 05/31/89
NUMBER OF PAGES: 26
AUTHOR: Office of Waste Programs Enforcement
COMPANY/AGENCY: U.S. EPA Headquarters
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Compendium and Users Manual
DOCUMENT TITLE: "Compendium of CERCLA Response Selection Guidance Documents - Users Manual"

DOCUMENT NUMBER: 001396 - 001396
DOCUMENT DATE: 05/31/89
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALOMN Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Freddy Gentry, Property Owner, Rogers Road Landfill
DOCUMENT TYPE: Record of Communication
DOCUMENT TITLE: Re: Property damage at the Rogers Road Landfill site

DOCUMENT NUMBER: 001397 - 001397
DOCUMENT DATE: 06/02/89
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALOMN Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Freddy Gentry, Property Owner, Rogers Road Landfill
DOCUMENT TYPE: Response to FOIA
DOCUMENT TITLE: Re: Sampling activities at the Rogers Road Landfill site

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001398 - 001398
DOCUMENT DATE: 06/06/89
NUMBER OF PAGES: - 1
AUTHOR: Martin Swanson, RPM, ALOMN Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Dave Rosa, RAI
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Property owner at the Rogers Road Landfill site requests that property damage be repaired

DOCUMENT NUMBER: 001399 - 001399
DOCUMENT DATE: 06/07/89
NUMBER OF PAGES: 1
AUTHOR: Allyn M. Davis, Director, Hazardous Waste Management Division
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Russell F. Rhoades, Director, Environmental Services Division, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: RE: Site security; runoff

DOCUMENT NUMBER: 001400 - 001400
DOCUMENT DATE: 06/09/89
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALOMN Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Doice Hughes, ADPC&E
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Request for State Applicable or Relevant and Appropriate Regulations (ARARs)

DOCUMENT NUMBER: 001401 - 001403
DOCUMENT DATE: 06/09/89
NUMBER OF PAGES: 3
AUTHOR: Carl R. Hickam, R.S., Senior Regional Representative
COMPANY/AGENCY: ATSDR/ROHR Region 6
RECIPIENT: Martin Swanson, RPM, ALOMN Remedial Section, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: Health Consultation

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FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001404 - 001405
DOCUMENT DATE: 07/01/89
NUMBER OF PAGES: 2
AUTHOR: Unspecified
COMPANY/AGENCY: Unspecified
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Superfund Update
DOCUMENT TITLE: Jacksonville Landfill and Rogers Road Landfill

DOCUMENT NUMBER: 001406 - 001418
DOCUMENT DATE: 07/06/89
NUMBER OF PAGES: 13
AUTHOR: Dave Rosa
COMPANY/AGENCY: RAI
RECIPIENT: Martin Swanson, RPM, ALOMN Remedial Section, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: Preliminary Risk Assessment results

DOCUMENT NUMBER: 001419 - 001419
DOCUMENT DATE: 07/11/89
NUMBER OF PAGES: 1
AUTHOR: Unspecified
COMPANY/AGENCY: Unspecified
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: EPA Announcement
DOCUMENT TITLE: Open House 07/11/89 - Ramada Inn in Jacksonville, AR

DOCUMENT NUMBER: 001420 - 001420
DOCUMENT DATE: 07/13/89
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALOMN Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Dave Rosa, RAI
DOCUMENT TYPE: Record of Communication
DOCUMENT TITLE: Conference call for RI/FS meeting

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001421 - 001421
DOCUMENT DATE: 07/18/89
NUMBER OF PAGES: 1
AUTHOR: David Gray, On-Scene Coordinator
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Martin Swanson, RPM, ALOMN Remedial Section, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: Review of sample results

DOCUMENT NUMBER: 001422 - 001422
DOCUMENT DATE: 07/25/89
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALOMN Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Duane Reel, City Engineer, City of Jacksonville, AR
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Warning signs at the site

DOCUMENT NUMBER: 001423 - 001423
DOCUMENT DATE: 08/17/89
NUMBER OF PAGES: 1
AUTHOR: Martin Swanson, RPM, ALOMN Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Tom Simmons, U.S. Army Corps of Engineers
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Sampling activities nearly complete - preliminary evaluations indicate that none of the adjacent residential areas have been contaminated

DOCUMENT NUMBER: 001424 - 001459
DOCUMENT DATE: 11/30/89
NUMBER OF PAGES: 36
AUTHOR: Stephen A. Veale, RPM
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Robert Lombard, Jr., PEER Consultants
DOCUMENT TYPE: Correspondence and Attachment
DOCUMENT TITLE: RE: Comments on the Jacksonville Landfill Superfund Site Draft Remedial Investigation Report (October 1989)

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FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001460 - 001460
DOCUMENT DATE: 11/30/89
NUMBER OF PAGES: 1
AUTHOR: Robert A. Lombard, Jr., Program Manager
COMPANY/AGENCY: PEER Consultants
RECIPIENT: Steve Veale, RPM, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Transmittal letter for the Draft Remedial Investigation and Risk Assessment Reports

DOCUMENT NUMBER: 001461 - 001462
DOCUMENT DATE: 12/01/89
NUMBER OF PAGES: 2
AUTHOR: Staff
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Site Update
DOCUMENT TITLE: RE: Remedial Investigation; Opportunities for involvement

DOCUMENT NUMBER: 001463 - 001463
DOCUMENT DATE: 12/19/89
NUMBER OF PAGES: 1
AUTHOR: Steve Veale, RPM
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Myra Perez, Regional Sample Control Coordinator, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: RE: Missing CLP Data Jacksonville and Rogers Road Landfill Superfund Sites, Jacksonvill, Arkansas

DOCUMENT NUMBER: 001464 - 001465
DOCUMENT DATE: 12/20/89
NUMBER OF PAGES: 2
AUTHOR: Myra I. Perez, Primary Coordinator
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Diane Cutler, Region 6 Coordinator, Sample Management Office, U.S. EPA Region 6
DOCUMENT TYPE: Memorandum and Attachment
DOCUMENT TITLE: RE: Attached memo from Steve Veale concerning missing CLP data was received today

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FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001466 - 001466
DOCUMENT DATE: 12/28/89
NUMBER OF PAGES: 1
AUTHOR: Jon Rauscher
COMPANY/AGENCY: EPA Toxicologist
RECIPIENT: Teresa Haffman, PEER Consultants
DOCUMENT TYPE: Record of Communication
DOCUMENT TITLE: RE: Risk Assessment Assumptions for a 6-12 year old child for Jacksonville Landfill site

DOCUMENT NUMBER: 001467 - 001493
DOCUMENT DATE: 01/10/90
NUMBER OF PAGES: 27
AUTHOR: Stephen A. Veale, RPM
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Robert Lombard, Jr., Project Manager, PEER Consultants, P.C.
DOCUMENT TYPE: Correspondence and Attachment
DOCUMENT TITLE: Comments on the Rogers Road Landfill site draft RI Report, dated 11/01/89

DOCUMENT NUMBER: 001494 - 001525
DOCUMENT DATE: 01/12/90
NUMBER OF PAGES: 32
AUTHOR: Steve Veale, RPM
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Robert A. Lombard, Jr., Program Manager, PEER Consultants, P.C.
DOCUMENT TYPE: Correspondence and Attachment
DOCUMENT TITLE: EPA's comments on the Rogers Road Landfill site draft Risk Assessment Report dated 11/01/89

DOCUMENT NUMBER: 001526 - 001526
DOCUMENT DATE: 01/22/90
NUMBER OF PAGES: 1
AUTHOR: Steve Veale, RPM
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Dave Rosa, Resource Applications, Inc.
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: Removal Strategy

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001527 - 001529
DOCUMENT DATE: 01/26/90
NUMBER OF PAGES: - 3
AUTHOR: Doice Hughes, Manager, Superfund Program, Hazardous Waste Division
COMPANY/AGENCY: ADPC&E
RECIPIENT: Steve Veale, RPM, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Transmittal of State Environmental Regulations for ARARs

DOCUMENT NUMBER: 001530 - 001533
DOCUMENT DATE: 01/29/90
NUMBER OF PAGES: 4
AUTHOR: Don R. Clay, Assistant Administrator
COMPANY/AGENCY: EPA Headquarters
RECIPIENT: Regional Administrators, Regions 1-10
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: RE: Twenty First Remedy Delegation Report

DOCUMENT NUMBER: 001534 - 001537
DOCUMENT DATE: 02/06/90
NUMBER OF PAGES: 4
AUTHOR: David S. Rosa, P.E., Site Manager
COMPANY/AGENCY: Resource Applications, Inc.
RECIPIENT: Steve Veale, RPM, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: Post Remedial Investigation Site Conditions

DOCUMENT NUMBER: 001538 - 001538
DOCUMENT DATE: 02/13/90
NUMBER OF PAGES: 1
AUTHOR: Steve Veale, RPM
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Doice Hughes, ADPC&E
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: EPA requires a concise summary of ARARs which apply to the Jacksonville and Rogers Road Sites

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001539 - 001539
DOCUMENT DATE: 02/16/90
NUMBER OF PAGES: 1
AUTHOR: Robert A. Lombard, Project Manager
COMPANY/AGENCY: Peer Consultants, P.C.
RECIPIENT: Steve Veale, RPM, U.S. EPA Region 6
DOCUMENT TYPE: Corrspondence
DOCUMENT TITLE: Cover letter for Risk Assessment (no attachment)

DOCUMENT NUMBER: 001540 - 001547
DOCUMENT DATE: 03/01/90
NUMBER OF PAGES: 8
AUTHOR: Stephen A. Veale, RPM
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Robert Lombard, Jr., Peer Consultants, P.C.
DOCUMENT TYPE: Correspondence and Attachment
DOCUMENT TITLE: Comments on the Rogers Road Landfill site draft RI Report dated 02/01/90

DOCUMENT NUMBER: 001548 - 001550
DOCUMENT DATE: 03/14/90
NUMBER OF PAGES: 3
AUTHOR: Steve Veale, RPM
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Robert A. Lombard, Jr., Program Manager, PEER Consultants, P.C.
DOCUMENT TYPE: Correspondence and Attachment
DOCUMENT TITLE: EPA's comments on the Rogers Road Landfill site draft Risk Assessment Report dated 02/01/90

DOCUMENT NUMBER: 001551 - 001778
DOCUMENT DATE: 04/01/90
NUMBER OF PAGES: 228
AUTHOR: Staff
COMPANY/AGENCY: PEER Consultants
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Report
DOCUMENT TITLE: Risk Assessment for Rogers Road Landfill Site

ADMINISTRATIVE RECORD INDEX

FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001779 - 001779
DOCUMENT DATE: 04/11/90
NUMBER OF PAGES: - 1
AUTHOR: Robert A. Lombard, Jr., Program Manager
COMPANY/AGENCY: PEER Consultants, P.C.
RECIPIENT: Steve Veale, RPM, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Transmittal letter for the Draft Feasibility Study Report

DOCUMENT NUMBER: 001780 - 001789
DOCUMENT DATE: 04/12/90
NUMBER OF PAGES: 10
AUTHOR: Robert A. Lombard, Jr., Program Manager
COMPANY/AGENCY: PEER Consultants, P.C.
RECIPIENT: Steve Veale, RPM, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence and Attachment
DOCUMENT TITLE: Sampling Plan for Contamination Mapping for the Jacksonville and Rogers Road Landfill

DOCUMENT NUMBER: 001790 - 001790
DOCUMENT DATE: 04/12/90
NUMBER OF PAGES: 1
AUTHOR: Robert A. Lombard, Jr., Program Manager
COMPANY/AGENCY: PEER Consultants, P.C.
RECIPIENT: Steve Veale, RPM, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Transmittal letter for the Final Draft Risk Assessment report

DOCUMENT NUMBER: 001791 - 001791
DOCUMENT DATE: 04/27/90
NUMBER OF PAGES: 1
AUTHOR: Robert A. Lombard, Jr., Program Manager
COMPANY/AGENCY: PEER Consultants, P.C.
RECIPIENT: Steve Veale, RPM, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Transmittal letter for the revised RI report for the Rogers Road Landfill

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FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001792 - 001797
DOCUMENT DATE: 04/27/90
NUMBER OF PAGES: - 6
AUTHOR: Steve Veale, RPM
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Robert A. Lombard, Jr., Program Manager, PEER Consultants, P.C.
DOCUMENT TYPE: Correspondence and Attachment
DOCUMENT TITLE: EPA's comments on the Rogers Road Municipal Landfill site draft Feasibility Study dated 04/11/90

DOCUMENT NUMBER: 001798 - 001799
DOCUMENT DATE: 05/01/90
NUMBER OF PAGES: 2
AUTHOR: Staff
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Fact Sheet
DOCUMENT TITLE: RE: Results of the Remedial Investigation; upcoming site work

DOCUMENT NUMBER: 001800 - 001802
DOCUMENT DATE: 05/09/90
NUMBER OF PAGES: 3
AUTHOR: Robert A. Lombard, Jr., Program Manager
COMPANY/AGENCY: PEER Consultants, P.C.
RECIPIENT: Steve Veale, RPM, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: Report and Subcontract Documents for the Rogers Road and Jacksonville Landfill Sites RI/FSs

DOCUMENT NUMBER: 001803 - 001805
DOCUMENT DATE: 05/29/90
NUMBER OF PAGES: 3
AUTHOR: Sam Becker, Chief, Superfund Enforcement Branch
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Edwin K. Gray, Chief, Emergency Response and Consultation Branch, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Follow-up to 05/03/90 meeting in Atlanta with regard to Vertac, Jacksonville Landfill and Rogers Road Landfill Superfund Sites

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FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 001806 - 002111
DOCUMENT DATE: 06/01/90
NUMBER OF PAGES: 306
AUTHOR: Staff
COMPANY/AGENCY: PEER Consultants
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Report
DOCUMENT TITLE: Remedial Investigation Report for the Rogers Road Landfill Site

DOCUMENT NUMBER: 002112 - 002116
DOCUMENT DATE: 06/07/90
NUMBER OF PAGES: 5
AUTHOR: Steve Veale, RPM
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Robert A. Lombard, Jr., Program Manager, PEER Consultants, P.C.
DOCUMENT TYPE: Correspondence and Attachment
DOCUMENT TITLE: RE: EPA's comments on the Rogers Road Landfill draft Feasibility Study Report dated 05/31/90

DOCUMENT NUMBER: 002117 - 002119
DOCUMENT DATE: 06/11/90
NUMBER OF PAGES: 3
AUTHOR: Edwin Kent Gray, Chief, Emergency Response and Consultation Branch
COMPANY/AGENCY: Agency for Toxic Substances and Disease Registry (ATSDR)
RECIPIENT: Sam Becker, Chief, Superfund Enforcement Branch, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Request for ATSDR to approve the Remedial Plans for the Vertac, Jacksonville/Rogers Road Landfill Superfund Sites

DOCUMENT NUMBER: 002120 - 002120
DOCUMENT DATE: 06/19/90
NUMBER OF PAGES: 1
AUTHOR: Barbara J. Goetz, Congressional Liaison
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Ken Smith, Special Assistant for Natural and Cultural Resources, Governor's Office
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Scheduled meeting with the Arkansas Congressional delegation

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FINAL

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 002121 - 002121
DOCUMENT DATE: 06/20/90
NUMBER OF PAGES: 1
AUTHOR: Robert A. Lombard, Jr., Program Manager
COMPANY/AGENCY: PEER Consultants
RECIPIENT: Steve Veale, RPM, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Transmittal for page revisions to the Remedial Investigation Report

DOCUMENT NUMBER: 002122 - 002122
DOCUMENT DATE: 06/26/90
NUMBER OF PAGES: 1
AUTHOR: Robert A. Lombard, Jr., Program Manager
COMPANY/AGENCY: PEER Consultants
RECIPIENT: Steve Veale, RPM, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Transmittal letter for the Final Remedial Investigation & Risk Assessment Reports for the Rogers Road/Jacksonville Landfills

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ADDENDUM

SITE NAME: ROGERS ROAD LANDFILL

SITE NUMBER: ARD 981055809

INDEX DATE: 10/02/90

I. CHRONOLOGICAL LISTING

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ADDENDUM

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000009 - 000009
DOCUMENT DATE: 06/25/90
NUMBER OF PAGES: 001
AUTHOR: Steve Veale, RPM
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Bob Lombard, PEER Consultants
DOCUMENT TYPE: ROC
DOCUMENT TITLE: RE: Resampling the Ditch at Rogers Road

DOCUMENT NUMBER: 000010 - 000010
DOCUMENT DATE: 06/26/90
NUMBER OF PAGES: 1
AUTHOR: Robert A. Lombard, Jr., Program Manager
COMPANY/AGENCY: PEER Consultants, P.C.
RECIPIENT: Steve Veale, RPM, U.S. EPA Region 6
DOCUMENT TYPE: Transmittal Letter
DOCUMENT TITLE: RE: Transmittal for Final RI and Risk Assessment Reports

DOCUMENT NUMBER: 000011 - 000026
DOCUMENT DATE: 07/01/90
NUMBER OF PAGES: 16
AUTHOR: Unspecified
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Proposed Plan
DOCUMENT TITLE: EPA announces Proposed Plan for the remedial action at the Site

DOCUMENT NUMBER: 000027 - 000027
DOCUMENT DATE: 07/09/90
NUMBER OF PAGES: 1
AUTHOR: Robert A. Lombard, Jr., Program Manager
COMPANY/AGENCY: PEER Consultants, P.C.
RECIPIENT: Steve Veale, RPM, U.S. EPA Region 6
DOCUMENT TYPE: Transmittal Letter
DOCUMENT TITLE: RE: Transmittal for the Draft Final FS Report

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ADDENDUM

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000001 - 000004
DOCUMENT DATE: 07/30/87
NUMBER OF PAGES: 4
AUTHOR: Barry L. Johnson, Ph.D., Associate Administrator
COMPANY/AGENCY: ATSDR
RECIPIENT: David Wagoner, Director, Waste Management Division, U.S. EPA Region 7
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Response to request for elaboration on the mathematics underlying the development of support for the 20 ppb cleanup level for certain Missouri dioxin sites

DOCUMENT NUMBER: 000005 - 000006
DOCUMENT DATE: 05/22/90
NUMBER OF PAGES: 2
AUTHOR: Steve Veale, RPM
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: ROC
DOCUMENT TITLE: RE: Meeting with ADPC&E

DOCUMENT NUMBER: 000007 - 000007
DOCUMENT DATE: 06/07/90
NUMBER OF PAGES: 1
AUTHOR: Bert Cooper
COMPANY/AGENCY: ATDCR
RECIPIENT: Sam Becker, U.S. EPA Region 6
DOCUMENT TYPE: ROC
DOCUMENT TITLE: RE: Letter to EPA from ATSDR regarding approval of EPA's proposed remedies for the site

DOCUMENT NUMBER: 000008 - 000008
DOCUMENT DATE: 06/19/90
NUMBER OF PAGES: 1
AUTHOR: Barbara Goetz, Congressional Liaison
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Ken Smith, Special Assistant for Natural & Cultural Resources, Governor's Office, State Capitol
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: Confirmation for meeting scheduled 06/26/90 in the Governor's Conference room

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ADDENDUM

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000157 - 000272
DOCUMENT DATE: 07/26/90
NUMBER OF PAGES: 116
AUTHOR: Robert A. Lombard, Jr., Program Manager
COMPANY/AGENCY: PEER Consultants, P.C.
RECIPIENT: Steve Veale, RPM, U.S. EPA Region 6
DOCUMENT TYPE: Technical Memorandum
DOCUMENT TITLE: Draft Technical Memorandum for contaminant mapping at the Jacksonville Landfill and Rogers Road Landfill

DOCUMENT NUMBER: 000273 - 000273
DOCUMENT DATE: 07/29/90
NUMBER OF PAGES: 1
AUTHOR: Robert A. Lombard, Jr., Program Manager
COMPANY/AGENCY: PEER Consultants, P.C.
RECIPIENT: Steve Veale, RPM, U.S. EPA Region 6
DOCUMENT TYPE: Transmittal Letter
DOCUMENT TITLE: RE: Transmittal for Final Draft Feasibility Study Report

DOCUMENT NUMBER: 000274 - 000275
DOCUMENT DATE: 07/30/90
NUMBER OF PAGES: 2
AUTHOR: Allyn M. Davis, Director, Hazardous Waste Management Division
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: D.J. Keilman, Director, Environmental Affairs, Hercules, Incorporated
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: Response to request for 60 day extension to the public comment periods for the Feasibility Studies and Proposed Plans of action for the sites

DOCUMENT NUMBER: 000276 - 000276
DOCUMENT DATE: 08/03/90
NUMBER OF PAGES: 1
AUTHOR: Mike Bates, Chief, Hazardous Waste Division
COMPANY/AGENCY: ADPC&E
RECIPIENT: Carl Edlund, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: "Extension Request of Comment Period"

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ADDENDUM

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000028 - 000151
DOCUMENT DATE: 07/18/90
NUMBER OF PAGES: 124
AUTHOR: Patricia Hendrix
COMPANY/AGENCY: Hendrix Reporting Service
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Public Meeting Transcript
DOCUMENT TITLE: Transcript of public meeting held regarding Jacksonville and Rogers Road Landfills proposed plan

DOCUMENT NUMBER: 000152 - 000152
DOCUMENT DATE: 07/20/90
NUMBER OF PAGES: 1
AUTHOR: Henry Smith
COMPANY/AGENCY: Jacksonville Resident
RECIPIENT: Steve Veale, RPM, U.S. EPA Region 6
DOCUMENT TYPE: ROC
DOCUMENT TITLE: Landfill Operator Personal Observations

DOCUMENT NUMBER: 000153 - 000154
DOCUMENT DATE: 07/23/90
NUMBER OF PAGES: 2
AUTHOR: Bill Wright
COMPANY/AGENCY: Operating Engineers Local 38
RECIPIENT: Ellen Greeney, Community Relations Coordinator, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Question regarding site contractor's qualifications

DOCUMENT NUMBER: 000155 - 000156
DOCUMENT DATE: 07/23/90
NUMBER OF PAGES: 2
AUTHOR: D.J. Keilman, Director, Environmental Affairs
COMPANY/AGENCY: Hercules, Incorporated
RECIPIENT: Allyn M. Davis, Director, Hazardous Waste Management Division, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: Request for 60 day extension to the public comment period for the FS

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ADDENDUM

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000283 - 000283
DOCUMENT DATE: 08/13/90
NUMBER OF PAGES: 1
AUTHOR: Betty Williamson, Chief, Superfund Management Branch
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Ms. Kelly Jones, Resident, Mayflower, AR
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: Request from citizen to sample her yard for dioxin

DOCUMENT NUMBER: 000284 - 000285
DOCUMENT DATE: 08/14/90
NUMBER OF PAGES: 2
AUTHOR: M. Blackman
COMPANY/AGENCY: PEER Consultants, Inc.
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Sampling Information
DOCUMENT TITLE: Recalculation of Health Risks Presented by the Jacksonville and Rogers Road Landfills (Excluding "Hot Spots")

DOCUMENT NUMBER: 000286 - 000286
DOCUMENT DATE: 08/20/90
NUMBER OF PAGES: 1
AUTHOR: Wally Tucker, General Manager
COMPANY/AGENCY: KEZQ Radio Station
RECIPIENT: Ellen Greeney, Community Relations Coordinator, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: Comments regarding the dioxin burn

DOCUMENT NUMBER: 000287 - 000290
DOCUMENT DATE: 09/01/90
NUMBER OF PAGES: 4
AUTHOR: Tim Herrin
COMPANY/AGENCY: Resident of Cabot
RECIPIENT: Ellen Greeney, Community Relations Coordinator, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: Comments on the dioxin burn

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ADDENDUM

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000277 - 000279
DOCUMENT DATE: 08/10/90
NUMBER OF PAGES: 3
AUTHOR: James R. Weber, M.D.
COMPANY/AGENCY: Resident of Jacksonville
RECIPIENT: Ellen Greeney, Community Relations Coordinator, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Comments regarding the dioxin burn at the site

DOCUMENT NUMBER: 000280 - 000280
DOCUMENT DATE: 08/13/90
NUMBER OF PAGES: 1
AUTHOR: Mr. & Mrs. Ronald L. Knight
COMPANY/AGENCY: Residents of Jacksonville, AR
RECIPIENT: Ellen Greeney, Community Relations Coordinator, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: Comments on dioxin burn at the site

DOCUMENT NUMBER: 000281 - 000281
DOCUMENT DATE: 08/13/90
NUMBER OF PAGES: 1
AUTHOR: Nicholas P. Kohut
COMPANY/AGENCY: Resident of Jacksonville
RECIPIENT: Ellen Greeney, Community Relations Coordinator, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: Comments regarding the dioxin burn

DOCUMENT NUMBER: 000282 - 000282
DOCUMENT DATE: 08/13/90
NUMBER OF PAGES: 1
AUTHOR: S. Andres
COMPANY/AGENCY: Resident of Jacksonville
RECIPIENT: Carl E. Edlund, Chief, Superfund Program, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: Comments regarding the dioxin burn at the site

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ADDENDUM

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000445 - 000447
DOCUMENT DATE: 09/07/90
NUMBER OF PAGES: 3
AUTHOR: Mike Bates, Chief, Hazardous Waste Division
COMPANY/AGENCY: ADPC&E
RECIPIENT: Steve Veale, RPM, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: Review comments of the Proposed Remedial Plan

DOCUMENT NUMBER: 000448 - 000448
DOCUMENT DATE: 09/10/90
NUMBER OF PAGES: 1
AUTHOR: Randall Mathis, Director
COMPANY/AGENCY: ADPC&E
RECIPIENT: Allyn M. Davis, Director, Hazardous Waste Section, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: Comments on Proposed Plan for the "offsite" superfund sites

DOCUMENT NUMBER: 000449 - 000451
DOCUMENT DATE: 09/18/90
NUMBER OF PAGES: 003
AUTHOR: Stephen A. Gilein, Chief, ALNM, Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: Mike Bates, Solid and Hazardous Waste Division, ADPC&E
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: RE: Response to ADPC&E's 09/07/90 comments regarding proposed plans

DOCUMENT NUMBER: 000452 - 000452
DOCUMENT DATE: 09/24/90
NUMBER OF PAGES: 001
AUTHOR: Stephen A. Gilrein, Chief, ALNM Remedial Section
COMPANY/AGENCY: U.S. EPA Region 6
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: ROC
DOCUMENT TITLE: RE: State concurrence with proposed remedy at Jacksonville and Rogers Road Landfills

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ADDENDUM

SITE NAME: ROGERS ROAD LANDFILL
SITE NUMBER: ARD 981055809

DOCUMENT NUMBER: 000291 - 000292
DOCUMENT DATE: 09/05/90
NUMBER OF PAGES: 002
AUTHOR: Nancy Bailey
COMPANY/AGENCY: Resident
RECIPIENT: U.S. EPA Region 6 Site Files
DOCUMENT TYPE: Letter
DOCUMENT TITLE: RE: Incineration at the sites

DOCUMENT NUMBER: 000293 - 000442
DOCUMENT DATE: 09/05/90
NUMBER OF PAGES: 150
AUTHOR: Staff
COMPANY/AGENCY: ChemRisk
RECIPIENT: Hercules, Inc.
DOCUMENT TYPE: Report
DOCUMENT TITLE: Establishing Acceptable Levels of TCDD in Residential and Industrial Soils

DOCUMENT NUMBER: 000443 - 000443
DOCUMENT DATE: 09/06/90
NUMBER OF PAGES: 1
AUTHOR: Donna C. Hartzell
COMPANY/AGENCY: Resident of Cabot
RECIPIENT: Ellen Greeney, Community Relations Coordinator, U.S. EPA Region 6
DOCUMENT TYPE: Correspodence
DOCUMENT TITLE: Comments regarding dioxin burn at the site

DOCUMENT NUMBER: 000444 - 000444
DOCUMENT DATE: 09/06/90
NUMBER OF PAGES: 1
AUTHOR: Kathy Copas
COMPANY/AGENCY: Resident of Cabot
RECIPIENT: Ellen Greeney, Community Relations Coordinator, U.S. EPA Region 6
DOCUMENT TYPE: Correspondence
DOCUMENT TITLE: Comments regarding dioxin burn at the site

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ADDENDUM

SITE NAME:	ROGERS ROAD LANDFILL
SITE NUMBER:	ARD 981055809
DOCUMENT NUMBER:	000453 - 000569
DOCUMENT DATE:	09/27/90
NUMBER OF PAGES:	117
AUTHOR:	Robert Layton, Regional Administrator
COMPANY/AGENCY:	U.S. EPA Region 6
RECIPIENT:	U.S. EPA Region 6 Site Files
DOCUMENT TYPE:	Record of Decision
DOCUMENT TITLE:	Rogers Road Landfill Record of Decision