

**THIRD FIVE-YEAR REVIEW
FOR THE
MID-SOUTH WOOD PRODUCTS SUPERFUND SITE
MENA, ARKANSAS**



SEPTEMBER 2007

Prepared By:

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997018



**THIRD FIVE-YEAR REVIEW FOR
MID-SOUTH WOOD PRODUCTS SUPERFUND SITE
MENA, ARKANSAS
EPA ID# ARD092916188**

This memorandum documents EPA's performance, determinations, and approval of the Mid-South Wood Products (Mid-South) Superfund Site Third Five-Year Review, including the attached Five-year Review Report prepared by the U.S. Environmental Protection Agency (EPA).

Summary of Five-Year Findings

The selected remedy (1986 Record of Decision [ROD]) at the Mid-South Site includes three components:

1. Excavation, consolidation, and solidification/stabilization of contaminated soil from the North and South Land Farms and Old Pond Area, followed by clay capping; with Operation and Maintenance (O&M) following the implementation of the remedy.
2. Ground water recovery treatment and monitoring and operation of the water treatment plant, which was the responsibility of Mid-South Wood Products.
3. Mitigation of contaminant runoff from the active chromated copper arsenate (CCA) wood-treating facility currently operated by Mid-South Wood Products.

The remedy was completed in September 1989. Since 1989, O&M activities have been performed by the E. H. Lumber Co. Trust. The first Five-Year Review was completed in June 1997; the second completed in September 2002. The site has had a National Pollutant Discharge Elimination System (NPDES) monitoring system since 1989. In 1999, the U.S. Environmental Protection Agency (EPA) determined that an NPDES permit was not required at a Superfund Site. The NPDES monitoring data collected during the past 9 years at four off-site stream monitoring stations indicate that any exceedances for arsenic, chromium, and pentachlorophenol (PCP)—the primary contaminants of concern (COC) at the site—are very rare. This demonstrates that the hazardous chemicals associated with the Superfund site are not likely to be migrating off site, and thus there are no adverse ecological impacts on the surrounding areas.

Findings:

During the Third Five-Year Review (2002 to 2007), EPA found the following:

1. The ground water recovery and treatment system is not operating as designed, with no sampling in 2004-2005. The major operational problem with the recovery system has been in securing a trained operator for the facility. The continued absence of capable and committed personnel to operate the plant is a problem that has seen no improvement.
2. In a 1999 surface and subsurface soil investigation, the Arkansas Department of Environmental Quality (ADEQ) detected chromium at levels that exceeded the current soil cleanup standard (1986 ROD). Previous investigations from 1994 through 1997 also detected arsenic and chromium exceedances in the remediated part of the site. While these levels exceed the ROD cleanup standard, they do not appear to exceed an EPA risk-based level of concern.
3. Following review of pumping data from the deeper fractured bedrock aquifer, it appears the capture of contaminants in the aquifer may be technically impracticable.
4. Following preliminary review of existing data, it appears a Mini/Supplemental Remedial Investigation may be required immediate to the CCA plant to determine the potential for subsurface sources and dissolved constituents to migrate past the existing french drain ground water capture system in that area; and to collect additional soil samples in that area.

5. The Potentially Responsible Party's contractor stated that the CCA Plant no longer conducts CCA operations. but does continue to manage the lumber business.

Actions Needed:

1. Mid-South must hire a trained licensed operator to maintain the ground water recovery and treatment system, install a storm water runoff system, and develop measures for preventing off-site migration. If Mid-South cannot address these issues, EPA and ADEQ must determine the most appropriate path to address the remedial deficiencies.
2. In accordance with Title 40 Code of Federal Regulations 300.430(e)(2)(i)(A)(2), EPA intends to revise the Primary Remediation Goals (PRGs) to reflect industrial land use scenario (i.e., risk based cleanup levels):
 - a. Revise the soil remediation goals consistent with the anticipated land use for the site based on a 2007 risk evaluation; add PCP and Copper as COCs. An appropriate decision document will be required to document this change in cleanup levels.
3. Partially shut down the existing ground water recovery and treatment system, for the deeper fractured aquifer, under a Technical Impracticability (TI) waiver. Capture well pumping data indicate that contaminant capture may be impracticable.
4. Review all relevant existing data to determine the extent/need for a Supplemental Remedial Investigation immediate to the CCA plant to determine the potential for source and/or dissolved constituents to migrate past the existing french drain ground water collection system; and for additional soil samples in that area.

Determinations/Protectiveness Statement:

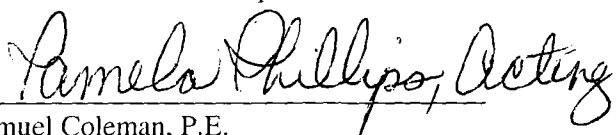
The capped Landfarm and Old Pond areas remedy at Mid-South is currently protective of human health and the environment because:

1. The solidified material passed all treatment standards.
2. The cap was constructed as designed and is maintained.
3. Evaluation of groundwater levels, concentrations and recovery volumes in surrounding recovery and monitoring wells indicates that no infiltration into the capped material is occurring.

The ground water recovery and treatment system is considered to be currently protective in the short-term, because a deed-restriction for no drilling and use is in place, and no evidence of offsite migration has been found. However, in order for the remedy to be protective in the long-term, the following actions need to be taken to assure long-term protectiveness:

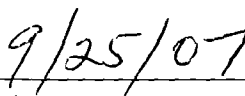
1. A trained ground water recovery and treatment operator must be hired to operate and maintain the system.

I have determined that the remedy for the Mid-South Wood Products Superfund site is protective of human health and the environment in the short-term, and will be protective in the long-term provided the action items identified in this report are addressed as described above.



Samuel Coleman, P.E.

Director
Superfund Division

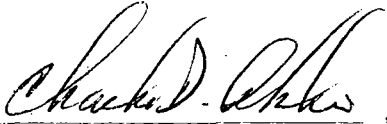



Date

CONCURRENCES:


THIRD FIVE-YEAR REVIEW FOR
MID-SOUTH WOOD PRODUCTS SUPERFUND SITE

EPA ID# ARD092916188

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ACRONYMS AND ABBREVIATIONS

ADEQ	Arkansas Department of Environmental Quality
ADPCE	Arkansas Department of Pollution Control and Ecology
ARAR	Applicable or relevant and appropriate requirement
B&F	B & F Engineering, Inc.
bgs	Below ground surface
CCA	Chromated copper arsenate
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	Contaminant of concern
cPAH	Carcinogenic polycyclic aromatic hydrocarbon
DOJ	U.S. Department of Justice
EPA	U.S. Environmental Protection Agency, Region 6
FS	Feasibility study
Hines	Edward Hines Lumber Company
HRS	Hazard Ranking System
IC	Institutional Control
mg/kg	Milligram per kilogram
mg/L	Milligram per liter
Mid-South	Mid-South Wood Products
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
O&M	Operation and Maintenance
O&M Manual	Mid-South Superfund Site Remediation O&M Manual
PAH	Polycyclic aromatic hydrocarbon
PCP	Pentachlorophenol
ppm	Part per million
PRG	Preliminary remediation goal
PRP	Potentially responsible party
RA	Remedial action
RAO	Remedial Action Objective
RD	Remedial design
RI	Remedial investigation
RI/FS	Remedial investigation/feasibility study
ROD	Record of Decision
SMS	Stream monitoring station
TCLP	Toxicity characteristic leaching procedure
WWTP	Wastewater treatment plant

EXECUTIVE SUMMARY

The U.S. Environmental Protection Agency, Region 6 (EPA), conducted a five-year review of the remedial actions (RA) implemented at the Mid-South Wood Products (Mid-South) Superfund site in Mena, Arkansas. The purpose of the five-year review is to determine if the remedy at the site is protective of human health and the environment. This review was conducted from June through September 2007, and the findings and conclusions are documented in this report. The site inspection and interviews were conducted on August 31, 2007; attendees were from the USEPA (Shawn Ghose and David Abshire) and from the Arkansas Department of Environmental Quality (ADEQ – Dianna Kilburn, Jay Rich and Rita Jones). The inspection found that although some of the recommendations for deficiencies found in the second five-year review were implemented, several were not implemented.

EPA placed the Mid-South site on the National Priorities List on September 8, 1983. The remedial action objectives listed in the ROD for the Mid-South site are to: (1) minimize the threat to the public health from the ingestion of or contact with on-site contaminated soil; (2) minimize the threat to the public health from direct ingestion of shallow ground water, both on site and downgradient of the site; (3) minimize erosion of contaminated soil and off-site migration to protect public health and environmental quality; (4) minimize leaching of contaminants into surface water and ground water; and (5) identify cost-effective alternatives for remediation of the site.

The 1986 ROD called for excavation, consolidation, solidification/stabilization of oils and sludges (contaminated soils) and disposal in a capped on-site cell; with recovery, treatment and monitoring for the contaminated ground. The solidification/stabilization of oily soils met all treatment standards; the cap was constructed as designed. The ground water collection and treatment system is not operated or properly maintained due to Mid-South not employing trained personnel. EPA and the ADEQ are evaluating options to address this issue.

Mid-South was required to take any necessary measures to reduce contaminant runoff from the active CCA wood-treating facility. Remedial activities performed at the CCA wood-treating facility included constructing a roof over the drip pad, which is used to store freshly treated lumber and collect drippings of CCA solution. Other activities included cleaning out the old sump area beneath the treatment vessel; backfilling the sump area and replacing it with a steel-lined sump and gravity flow return line; cleaning out the treatment building sump; and installing a float-actuated pump in the CCA treatment building. The recent August 31, 2007 site investigation revealed that Mid-South no longer conducts CCA operations,

but continues with the lumber portion of the business; however, the possibility of additional investigations to determine if past operations may have contaminated soils immediate to the CCA operations due to tank spillage may be necessary. Mid-South is responsible for maintaining the disposal cell and cap, drainage ditches and inspection and repair of site roads and fencing.

In EPA's Feasibility Study (FS) Report, cleanup action levels were derived to limit exposure to arsenic, chromium, and carcinogenic polycyclic aromatic hydrocarbons (including benzo[a]pyrene, benzo[a]anthracene, benzo[b]fluoranthene, benzo[k]fluoranthene, and chrysene) in contaminated soils. EPA proposes to revise the ROD cleanup action levels, through an appropriate decision document, to reflect the more applicable risk based action levels.

National Pollutant Discharge Elimination System discharge data since 1989 indicate that few exceedances have been reported for arsenic, chromium, or pentachlorophenol at any of the four off-site stream monitoring stations, which demonstrates that these hazardous constituents are not likely to be impacting the area surrounding the Superfund site; thus, the ecological impact of the site on the surrounding area is negligible. The EPA intends to propose a decision document to revise the soil remediation goals consistent with the anticipated land use for the site (industrial) based on the recent risk evaluation.

The ADEQ has voiced concerns for possible offsite migration of source and/or dissolved constituents from the CCA plant. EPA will evaluate all relevant data to determine the necessity/extent of conducting a supplemental investigation to determine the effectiveness of the existing french drains to address offsite migration of groundwater or surface water and the potential for contact with contaminated surface soils/sediments onsite or migrating offsite.

Recommendations and follow-up actions include: (1) hire a trained licensed operator to maintain the ground water treatment facility and complete ground water remediation; (2) repair the hinged protective casing for monitoring well MW-11; (3) determine the necessity/extent of additional supplemental investigation down-gradient of the french drains immediate to the CCA plant to determine if source/dissolved constituents are by-passing the collections system; and of soils immediate to the CCA plant to determine if past (period between the RA and present) CCA operations have contaminated soils in this area; 4) develop the TI waiver for the deep fractured bedrock aquifer; and 5) develop an appropriate decision document to address the EPA proposed risk levels.

A restrictive covenant was filed by Mid-South with the Polk County Clerk on September 25, 1989, to ensure that residential use, destroying the integrity of the cap, drilling into the contaminated aquifer, and use of ground water within the site boundary is prohibited.

The assessment of this five-year review found that capped onsite cells/landfills are protective of human health and the environment; however, although the ground water issue is protective in the short-term (based on monitoring data), it is not protective in the long-term because the ground water collection and treatment system is not operated or maintained effectively; and there appears to be a potential ground water migration area from the CCA plant which has not been properly evaluated/characterized.

Based on the Five-Year Review findings, the recommendations are:

1. Within six-months, meet with the ADEQ and the PRP's contractor to develop an approach to bring the ground water collection and treatment system back online – operational.
2. Within twelve-months, meet with the ADEQ and the PRP's contractor to develop the appropriate documents to conduct a supplemental remedial investigation in the vicinity of the CCA plant – conduct supplemental remedial investigation following document approvals.
3. Within twenty four-months, develop the appropriate decision document to address the EPA proposed risk levels, and the Technical Impracticability waiver document.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name (from WasteLAN): Mid-South Wood Products Superfund Site		
EPA ID (from WasteLAN): ARD092916188		
Region: 6	State: AR	City/County: Polk
SITE STATUS		
NPL Status: <input checked="" type="checkbox"/> Final <input type="checkbox"/> Deleted <input type="checkbox"/> Other (specify) Third Five-Year Review		
Remediation Status (choose all that apply): <input type="checkbox"/> Under Construction <input checked="" type="checkbox"/> Operating <input type="checkbox"/> Complete		
Multiple OUs?* <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Construction Completion Date: <u>09/28/89</u>
Has site been put into reuse? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
REVIEW STATUS		
Reviewing Agency: <input checked="" type="checkbox"/> EPA <input type="checkbox"/> State <input type="checkbox"/> Tribe <input type="checkbox"/> Other Federal Agency		
Author Name: Shawn Ghose, M.S., P.E./David Abshire, RPM		
Author Title: Remedial Project Manager		Author Affiliation: U.S. EPA, Region 6
Review Period:** <u>06/05/2007</u> to <u>09/13/2007</u>		
Date(s) of Site Inspection: <u>08/31/2007</u>		
Type of review: <input checked="" type="checkbox"/> Statutory <input type="checkbox"/> Policy <input type="checkbox"/> Post-SARA <input type="checkbox"/> Pre-SARA <input type="checkbox"/> NPL-Removal only <input type="checkbox"/> Non-NPL Remedial Action Site <input type="checkbox"/> NPL State/Tribe-lead <input type="checkbox"/> Regional Discretion		
Review Number: <input type="checkbox"/> 1 (first) <input type="checkbox"/> 2 (second) <input checked="" type="checkbox"/> 3 (third) <input type="checkbox"/> Other (specify)		
Triggering Action: <input type="checkbox"/> Actual RA On-site Construction at OU1 <input type="checkbox"/> Actual RA Start at OU # <input type="checkbox"/> Construction Completion <input checked="" type="checkbox"/> Previous Five-Year Review Report <input type="checkbox"/> Other (specify)_		
Triggering Action Date (from WasteLAN): <u>September 27, 2002</u>		
Due Date (Five Years After Triggering Action Date): <u>September 27, 2007</u>		

* "OU" refers to operable unit

** The review period refers to the period during which the five-year review was conducted.

Five-Year Review Summary Form

Issues/Deficiencies:

- The ground water treatment system is not undergoing proper operation and maintenance.
- The casing for monitoring well MW-11 is damaged.
- There exists a shallow and deeper ground water collection system; ADEQ has evaluated the existing ground water recovery and treatment system and found it to be ineffective for the existing fractured bedrock (deeper) aquifer – ADEQ proposes a technical impracticability waiver.
- In 1999, an ADEQ surface and subsurface soil sampling RA investigation revealed concentrations of chromium in exceedance of the current cleanup standard (1986 ROD).
- Following preliminary review of existing data, it appears a mini/supplemental remedial investigation may be required immediate to the CCA plant to determine the potential for subsurface sources and dissolved constituents to migrate past the existing french drain ground water capture system in that area, and if surface soils were contaminated within the period between the RA and the present.
- The Potentially Responsible Party's contractor stated that the CCA Plant no longer conducts CCA operations, but does continue to manage the lumber business.

Recommendations and Follow-up Actions:

- EPA intends to propose a decision document to:
 - a. Revise the soil remediation goals consistent with the anticipated land use for the site based on a 2007 risk evaluation; add PCP and Copper as COCs.
 - b. Partially shut down the existing ground water recovery and treatment system, for the deeper fractured aquifer, under a Technical Impracticability waiver, as suggested by ADEQ in its November 1999 report, to address item 3 in Findings Section above.
- A trained licensed operator is needed at the site in order to maintain the treatment facility and complete ground water remediation; the operator will also continue with O&M.
- MW-11 should be repaired.
- EPA has met with (September 12, 2007) and discussed the ADEQ concerns as outlined in the ADEQ November 1999 Remedial Action Investigation Report. The unresolved concerns will be addressed in the near future.
- Review all relevant existing data to determine the need for/extent of a Supplemental Remedial Investigation adjacent to the CCA plant to determine the potential for source and/or dissolved constituents to migrate past the existing french drain ground water collection system, and if soils are contaminated with CCA.
- Add copper and PCP to the COC list.
- Schedule:
 - 1) Within six-months, meet with the ADEQ and the PRP's contractor to develop an approach to bring the ground water collection and treatment system back online – operational.
 - 2) Within twelve-months, meet with the ADEQ and the PRP's contractor to develop the appropriate documents to conduct a supplemental remedial investigation in the vicinity of the CCA plant – conduct supplemental remedial investigation following document approvals.
 - 3) Within twenty four-months, develop the appropriate decision document to address the EPA proposed risk levels, and the Technical Impracticability waiver document.

Protectiveness Statement(s):

The capped Landfarm and Old Pond areas remedy at Mid-South is currently protective of human health and the environment because:

- The solidified material passed all treatment standards.
- The cap was constructed as designed and is maintained.
- Evaluation of groundwater levels, concentrations and recovery volumes in surrounding recovery and monitoring wells indicates that no infiltration into the capped material is occurring.

The ground water recovery and treatment system is considered to be currently protective in the short-term, because a no drilling and use restriction was placed on the property, and no evidence of offsite migration has been found. However, in order for the remedy to be protective in the long-term, the following actions need to be taken to assure long-term protectiveness:

- A trained ground water recovery and treatment operator must be hired to operate and maintain the system.

EPA and ADEQ will develop an approach to address the ground water treatment plant issues, and also evaluate the necessity/extent of a Supplemental Remedial Investigation to ensure long-term protectiveness

Long-term Protectiveness:

Long-term protectiveness of the remedial action will be verified by securing adequately trained personnel to operate and maintain the ground water collection and treatment system, to determine the effectiveness of the ground water capture system.

Long-term protectiveness is also assured through a restrictive covenant filed by Mid-South with the Polk County Clerk on September 25, 1989, to ensure that residential use, destroying the integrity of the cap, drilling into the contaminated aquifer, and use of ground water from the site are prohibited.

1.0 INTRODUCTION

The U.S. Environmental Protection Agency, Region 6 (EPA), in coordination with the Arkansas Department of Environmental Quality (ADEQ), conducted a five-year review of the remedial action (RA) implemented at the Mid-South Wood Products (Mid-South) Superfund site in Mena, Arkansas. The purpose of the five-year review is to determine if the remedy at the site is protective of human health and the environment. The Mid-South site comprises just one operable unit for soil and ground water. This is EPA's Third five-year review for the Mid-South Superfund site, and it addresses the entire site. The triggering action for this review was the completion of the second five-year review (report dated September 27, 2002). This review, for the 2002-2007 five-year period, was conducted from June through September 2007, and the methods, findings, conclusions, and recommendations from the review are documented in this report.

This review is required by statute. The EPA must implement five-year reviews consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). CERCLA §121(c), as amended, states:

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

NCP Part 300.430(f)(4)(ii) states:

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

Due to the fact that hazardous substances, pollutants, or contaminants remain at the Mid-South site above levels that allow for unrestricted use and unlimited exposure, a five-year review is required.

2.0 SITE CHRONOLOGY

**TABLE 1
CHRONOLOGY OF SITE EVENTS**

Date	Event
December 1, 1980	Site discovery
January 1, 1981	Preliminary assessment
January 1, 1981 to February 1, 1981	Site inspection
December 30, 1982	Proposed to the NPL
September 1, 1983	HRS package
September 8, 1983	Final listing on the NPL
September 30, 1983	NPL PRP search
September 23, 1983 to April 1984	Combined RI/FS
November 1985	Supplemental RI
April 1986	Final FS
November 14, 1986	Record of Decision
May 15, 1986 to December 31, 1987	RD/RA negotiations
June 30, 1986 to March 17, 1988	Consent decree negotiations
March 17, 1988	Lodged by DOJ
March 17, 1987 to March 24, 1988	PRP RD
May 24, 1988 to September 28, 1989	PRP RA
September 28, 1989	Construction Completion
May 17, 1990 to June 29, 1990	Removal assessment
December 21, 1992	Removal assessment
August 1, 1993 to June 16, 1997	First Five-Year Review Remedy Assessment
October 1998 to April 1999	ADEQ Remedial Action Investigation
January 1, 1995 to December 31, 1999	Mid-South Annual Report and Five-Year Evaluation

**TABLE 1 (Continued)
CHRONOLOGY OF SITE EVENTS**

Date	Event
January 1, 2001 to December 31, 2001	Mid-South Annual Report
June 16, 1997 to September 27, 2002	Second Five-Year Review
August 31, 2007	EPA – ADEQ Site Inspection

Notes:

ADEQ	Arkansas Department of Environmental Quality
B&F	B & F Engineering, Inc. (Mid-South consultant)
DOJ	U.S. Department of Justice
HRS	Hazard Ranking System
Mid-South	Mid-South Wood Products, Inc.
NPL	National Priorities List
PRP	Potentially responsible party
RA	Remedial action
RD	Remedial design
RI/FS	Remedial investigation and feasibility study

3.0 BACKGROUND

The following site background information presents the: (1) physical characteristics of the Mid-South site, including the location, history, geology/hydrogeology, and site hydrogeologic conditions; (2) initial response; (3) basis for taking response; and (4) contaminants of concern listed in the 1986 Record of Decision (ROD) for the site.

3.1 PHYSICAL CHARACTERISTICS

The Mid-South site covers approximately 57 acres in Polk County, Arkansas, in the western portion of the state. It is located between U.S. Highway 71 and State Highway 375 immediately southwest of the town of Mena (population 6,000). The site consists of an abandoned wood-treatment operation covering 20 acres on the southwest side and an active wood treatment operation covering 37 acres on the northeast side of the site. Wastes from three separate wood-preservative processes have been disposed of on the inactive portion of the site, including creosote compounds, pentachlorophenol (PCP), and chromated copper arsenate (CCA).

The Mid-South site and surrounding area have a rolling topography with a general surface elevation approximately 1,100 feet above mean sea level (surface relief of about 25 feet). The site and surrounding area are located in the Caddo Basin within the Ouachita Mountains physiographic sub-province, and are

bounded by the Fourche Mountains to the north and the Caddo and Cossatot Mountains to the south. The site is located on the northern flank of a broad syncline. The bedrock consists of multiple steeply dipping fractured beds, in a sequence of sandstones, shales, and sandstone and shale.

Ground water at the site occurs primarily in weathered bedrock and in fractured sandstone and shales. A major fracture zone on site is associated with a fault that trends through the site from west to east along the trace of the East Fork of Moon Creek. This fault is characterized by highly fractured shales and strikes northwest through the site, underneath the Old Pond Area. Ground water beneath the site is encountered at approximately 10 to 30 feet below ground surface (bgs) from Paleozoic Age bedrock; this bedrock contains no major aquifer, and ground water is derived principally from the secondary porosity of the rock (joints, fractures, and bedding planes). Ground water flow under the site is controlled primarily by topography—ground water flow is to the east and southeast on the eastern half of the site and to the west, south, and southwest on the western half of the site (gradient of 0.0002 foot per foot). Ground water flow is through a fractured rock regime with a downward flow gradient towards the thrust fault zone. A ground water high is observed in the monitoring well M-7 area with flow to the NE and to the SW.

3.2 LAND AND RESOURCE USE

The northeastern half of the site contained a wood treating operation that uses the CCA process; several years ago the CCA operations ceased, however, the facility continues to manage the lumber business. The primary land use near the site is agricultural and residential. Along both sides of State Highway 375 immediately north of the site are several residences on large lots, several small farms, two cemeteries, and a church. To the west of the site are several larger farms, including open pastures and wooded areas. The southern boundary of the site is formed by railroad tracks and U.S. Highway 71; there are several businesses and residences along both sides of U.S. Highway 71, as well as to the east of the site. Approximately 40 people reside/work on 18 properties adjacent to the site. There is no significant change in future land use expected.

The town of Mena and surrounding smaller towns obtain their drinking water from Ward Lake and Iron Forks Reservoir, which are located 2.5 miles north and 6 miles northeast of the site, respectively. The two surface water bodies provide Mena with a projected yield of 8.6 million gallons per day. The remainder of the rural water supply comes primarily from ground water, which occurs in Paleozoic Age bedrock. Approximately 5,700 people are served by drinking water wells within 1 mile of the site; however, rural residents located downgradient (north and northwest) of the site between the on-site source areas and the ground water discharge area along the East Fork of Moon Creek have been placed on the city water supply.

3.3 HISTORY OF CONTAMINATION

The site was originally developed by Nebraska Bridge Supply and Lumber Company as a wooden post and pole production facility in the late 1930s. In 1955, Nebraska Bridge Supply and Lumber Company, operating under the name of Three States Lumber Company, installed a pressure-treating system that preserved wood with creosote. In 1967, Edward Hines Lumber Company (Hines) purchased the plant and introduced PCP into the wood-treating operation. The pressure cylinders associated with the PCP and creosote wood treating activities were located in what is now referred to as the Old Plant site. Waste PCP and creosote were stored in an unlined impoundment (referred to as the Small Old Pond) adjacent to the Old Plant site; both the Old Plant site and Small Old Pond occupied approximately 10,000 square feet. The Old Pond—a larger unlined impoundment about 112,500 square feet in size that was located west of the Old Plant site—was later excavated to increase waste storage capacity. As the Old Pond filled with PCP and creosote waste, some of the liquid and sludge waste were deposited onto nearby land surfaces and mixed with the surface soil; these areas are now referred to as the North Land Farm (approximately 150,000 square feet) and South Land Farm (approximately 84,000 square feet). Sawdust, wood chips, and other wood wastes were deposited into a swale area (now called the Landfill Area) located west of the Old Plant and north of the Old Pond (Attachment A).

In 1977, Hines converted the Old Plant site into a CCA treatment facility. In September 1978, Hines sold the facility, and soon afterwards, the new owner formed the Mid-South Wood Products of Mena, Inc. At some point, Mid-South abandoned the original wood-treating facility and constructed a new CCA facility. Mid-South's former CCA operation is located adjacent to the Old Plant site; a pressure-treating cylinder and several aboveground storage tanks for storage of the CCA preservative solution remain onsite. Treated wood was allowed to drip dry on a concrete pad prior to storage on the property. Releases of arsenic and chromium have been detected adjacent to the plant and are attributed to uncontrolled surface water runoff.

Because the CCA wood treatment process was a closed-loop recycling system, and Mid-South had no intentions of using PCP or creosote in its operation, use of the Old Pond was discontinued in 1978. In 1980, Mid-South constructed a dike across the lower end of the Landfill Area to control runoff, which in turn, resulted in the formation standing water area now called Clear Lake.

During closure activities, the contents of the Old Pond were reportedly pumped from the pond and sprayed and tilled into the soil in the area now referred to as the North Land Farm. Some of the soil and

waste sludge mixture was placed back into the Old Pond, with the remainder of the soil-waste mixture remaining on the North Land Farm Area. The Old Pond area was then graded and covered with soil.

3.4 INITIAL RESPONSE

From 1980 through 1982, investigations triggered by a 1976 fish kill that occurred in Rock Creek and Mountain Fork River downstream of the Mid-South site determined that ground water (including nearby drinking water wells), surface water, and sediment near the site were contaminated with PCP, arsenic, and chromium. In December 1981, the Arkansas Department of Pollution Control and Ecology (ADPCE; predecessor to ADEQ) conducted a sampling investigation at the site and concluded that the contamination was attributable to Mid-South site operations. In 1982, the Mid-South site was added to the proposed NPL. The final listing date on the NPL was September 8, 1983.

The EPA identified Hines and Mid-South as potentially responsible parties (PRP) at the site, and on March 18, 1982, sent notice letters to the PRPs offering them an opportunity to conduct a remedial investigation (RI). On March 31, 1983, ADPCE issued an Administrative Order requiring that Hines and Mid-South, as Potentially Responsible Parties (PRPs), perform certain short-term RAs and submit a work plan for a full investigation of the site on a specified schedule. Since this schedule was not met, on December 17, 1983, ADPCE requested that EPA implement a remedial investigation/feasibility study (RI/FS) to develop alternative RAs for the site.

From 1983 to 1986, EPA conducted various investigations at the site. From January through April 1984, EPA conducted an RI/FS, which included on- and off-site investigations. In November 1985, EPA conducted a supplemental RI of the operational CCA plant; the FS was completed in April 1986. The potential health risks for the Mid-South site were based on possible contact with, or ingestion of, contaminated soils or ground water.

On April 17, 1986, EPA sent notice letters to Hines and Mid-South informing them of the completion of all RI/FS activities and of EPA's intent to begin the RA process. On September 9, 1986, EPA received a RA work plan from the PRPs and after some discussion, a revised work plan was received on October 7, 1986.

On November 14, 1986, EPA issued the ROD. Throughout much of 1987, a Consent Decree was negotiated between the parties and on May 16, 1988, the Consent Decree was entered in U.S. District Court, Western District of Arkansas. The ROD and subsequent remedial design (RD) called for excavation, consolidation, residuals solidification/stabilization, on-site disposal, clay capping, and ground

water recovery, treatment, and monitoring. Mid-South was also required to take any necessary measures to reduce contaminant run-off from the active CCA facility. The estimated capital cost of the remedy was approximately \$3.5 million, with Operation and Maintenance (O&M) costs estimated at \$153,500 annually.

3.5 BASIS FOR TAKING ACTION

Based on the data collected during the RI/FS activities, EPA determined that actual or threatened releases of hazardous substances from the Mid-South site, if not addressed by implementing the response action selected in the ROD, could present an imminent and substantial endangerment to public health, welfare, or the environment.

3.6 CONTAMINANTS OF CONCERN (COC)/CLEANUP ACTION LEVELS

The COCs are presented in Table 2. Only soil cleanup standards for arsenic, chromium, and carcinogenic polycyclic aromatic hydrocarbons (cPAH, including benzo[a]pyrene, benzo[a]anthracene, benzo[b]fluoranthene, benzo[k]fluoranthene, and chrysene) are specifically addressed in the 1986

**TABLE 2
CONTAMINANTS OF CONCERN**

Contaminant of Concern	NPDES Discharge Limitation for Treated Effluent (mg/L)	1986 ROD Soil Cleanup Action Level (ppm)	1989/1990 O&M Manual Ground Water Treatment Standard ^a (mg/L)
Arsenic	0.05	5.6	0.05 ^c
Chromium	0.05	19.4	0.05 ^c
Carcinogenic PAHs	--	3	--
Acenaphthene ^b	1.7	--	--
Benzo(a)anthracene	--	--	0.01 ^d
Benzo(b+k)fluoranthene	--	--	0.01 ^d
Benzo(a)pyrene	--	--	0.01 ^d
Chrysene	--	--	0.01 ^d
Fluoranthene ^b	3.98	--	--
Naphthalene ^b	2.30	--	--
Pentachlorophenol	2.02	--	0.2 ^e

Notes:

- a “Mid-South Superfund Site Remediation O&M Manual” well closure procedure (Attachment B)
 - b PAH identified in the NPDES permit but not in the 1986 ROD
 - c EPA maximum contaminant level established under the Safe Drinking Water Act (Attachment B)
 - d Analytical detection limit (Attachment B)
 - e EPA reference dose (Attachment B)
-

ROD. Treated effluent discharge standards and ground water treatment standards for arsenic, chromium, polycyclic aromatic hydrocarbons (PAH), and PCP were specifically addressed in the National Pollutant Discharge Elimination System (NPDES) permit for Outfall 001 and the EPA-approved 1989 O&M Manual, respectively.

The EPA proposes an appropriate decision document to change the 1986 soil cleanup action levels listed in Table 2 above. The proposed risk levels are based on an Industrial worker scenario (i.e., current risk based on landuse). The following Table 3 presents risk levels based on Region 6 screening levels; EPA proposes a risk of 5×10^{-5} .

TABLE 3

<u>EPA Soil screening numbers associated with different cancer risk levels</u>			
<u>for Industrial worker scenario.</u>			
	1×10^{-6}	1×10^{-4}	5×10^{-5}
Chemical	Soil Concentration (mg/kg)	Soil Concentration (mg/kg)	Soil Concentration (mg/kg)
Arsenic	1.8	180	90
Benzo(a)pyrene	0.23	23	11.5
Chromium VI	64*	6400	3200
PCP	10	1000	500

*If we assume 1 to 6 ratio between Chromium III the screening number is 450 mg/kg

3.7 CURRENT STATUS

Three site-monitoring programs currently exist to assure the effectiveness and efficiency of the site remedy; NPDES monitoring, periodic groundwater sampling of monitoring and recovery wells, and inspection and maintenance of the consolidation and capping facilities.

Monitoring wells on a five-year sampling schedule were sampled in 2001 and were due for sampling in

2006. Other analytical data for the five-year event were not collected in 2005 since the plant was not operational most of that year. Equipment replacement took place in the spring of 2006 and water treatment plant operations resumed for a short while. Water sampling was scheduled for the summer and took place in mid-August 2006. This report presents results of the three monitoring programs.

3.7.1 NPDES

Treated groundwater from the facility is discharged on the site at Outfall 001. The volume and quality of water discharged is monitored to verify compliance and to evaluate the effectiveness of the water-treatment system. During 2000 through September 2006, discharge was permitted under the expired NPDES permit number AR0041262, granted by the Arkansas Department of Environmental Quality (ADEQ). Currently an NPDES permit is not required for Superfund sites; however, monitoring is required.

Stormwater including previous Outfall 002 and stream monitoring stations SMS 1, 2, 3, and 4 is now covered under the General Storm Water Permit (ARR00A00). Monitoring requirements for Outfall 001 remained almost unchanged. The sampling frequency for acenaphthene, fluoranthene, and naphthalene changed; the sampling frequency was previously reduced from monthly to semi-annually. Copper analyses are no longer required. Table 4 presents current (1999) effluent limitations and monitoring requirements for Outfall 001.

3.7.2 COMPLIANCE WITH PERMITTED DISCHARGE LIMITS

Mid-South Superfund site is no longer required to have an NPDES permit. However, reports are submitted on a monthly basis to the ADEQ. Table 5 presents summaries for 2000-2005 of constituents exceeding permit limits for Outfall 001. In addition to the exceedences listed, other deficiencies in the discharge monitoring reports (i.e. incomplete data) occurred in August and September 2000; in 2001; January through June, September and October 2002; February through August, October and November 2003; February, April & June of 2004. No sampling was performed in November & December 2002; September & December 2003; May 2004 and from July 2004 through December 2005.

3.7.3 BIOMONITORING

Biomonitoring (Seven-Day Chronic Toxicity Testing for survival and reproduction using *Ceriodaphnia dubia*) on composite samples collected from Outfall 001 is required to be performed semiannually. Table 6 presents the results from these tests.

**TABLE 4
EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001**

Effluent Characteristic	Discharge Limitations					Monitoring Requirements	
	Mass (lbs/day)		Other Units			Frequency	Sample Type
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Daily Minimum		
Flow	N/A	N/A	N/A	N/A	N/A	Daily	Totalizer Meter
Carbonaceous Biochemical Oxygen Demand	5.4	9.0	15 mg/l	25 mg/l	N/A	Once/week	24-hr. comp.
Total Suspended Solids	5.4	9.0	15 mg/l	25 mg/l	N/A	Once/week	24-hr. comp.
Dissolved Oxygen (May-October)	N/A	N/A	5.0 mg/l	N/A	2.0 mg/l	Once/week	Grab
(November-April)			5.0 mg/l	N/A	2.0 mg/l	Once/week	Grab
Chemical Oxygen Demand	N/A	N/A	50 mg/l	N/A	75 mg/l	Once/week	24-hr. comp.
Oil and Grease	N/A	N/A	10 mg/l	N/A	15 mg/l	Once/week	Grab
Phenol, Total	N/A	N/A	2.56 mg/l	N/A	10.2 mg/l	Once/week	24-hr. comp.
Pentachlorophenol	N/A	N/A	1.01 mg/l	N/A	2.02 mg/l	Once/week	24-hr. comp.
Arsenic, total recoverable	N/A	N/A	N/A	N/A	0.05 mg/l	Twice/month	24-hr. comp.
Chromium, total recoverable	N/A	N/A	N/A	N/A	0.05 mg/l	Twice/month	24-hr. comp.
Acenaphthene	N/A	N/A	0.52 mg/l	N/A	1.7 mg/l	Semi-annual	24-hr. comp.
Fluoranthene	N/A	N/A	N/A	N/A	3.98 mg/l	Semi-annual	24-hr. comp.
Napthalene	N/A	N/A		N/A	2.30 mg/l	Semi-annual	24-hr. comp.
Chronic Biomonitoring	N/A	N/A	N/A	N/A	N/A	Semi-annual	24-hr. comp.
Ph	N/A	N/A	N/A	6 s.u.	9 s.u.	Once/week	Grab

TABLE 5
SUMMARY OF CONSTITUENTS
EXCEEDING PERMIT LIMITS FOR OUTFALL 001

<u>Month /Yr</u>	PARAMETERS			
	TSS (Mo Aver//daily max): 5.4 // 9.0 lbs/day 15 // 25 mg/l	PCP (Month average): 1.01 mg/l	DO (Month aver) 5.0 mg/l	Cr (Daily min) 0.05 mg/l
Feb 2000	7.65 // 13.21 lbs/day			
April 2000	6.76 lbs/day			
June 2000	10.3 // 14.8 lbs/day 34 // 34 mg/l			
Dec 2000	32 // 32 mg/l			
Feb 2002			6.84	
Mar 2002			6.73	
April 2002			6.8	
Sept 2002			6.7	
Oct 2002			6.8	
April 2003			6.8	
July 2003			6.8	
April 2004		3.6		
June 2004		3.6		
Feb 2006		3.6		



**TABLE 6
BIOMONITORING RESULTS FOR OUTFALL 001
2000-2005**

Month/Year	Survival		Reproduction	
	Pass	Fail	Pass	Fail
June 2000	X		X	
December 2000	No data		No data	
April 2001	X		X	
December 2001	X			X
June 2002	X		X	
December 2002	X		X	
June 2003	X			X
December 2003	No data		No data	
February 2004	X		X	
December 2004	No data		No data	
May 2005		X		X
December 2005	No data		No data	

3.7.4 DISCHARGES

Each recovery well is equipped with a discharge meter. Seven recovery wells are active, RW-1, 7, 8, 11, 15, 16 and 17. Recovery wells RW-2, 4, 6, 12, 13, 5, 10, 14, 5, 10, and 14 were closed between 1997 and 1998 (See Attachment 5 – RWs that did not show parameter concentrations above the minimum risk to human health were closed) RW-3 and 9 completed the on/off period during July 1999 (see Attachment 5). Mid-South requested to the EPA that these wells be closed. RW-16 and 17 were installed in 1998. Flow volumes from 2000 to 2005 for active recovery wells are presented in Table 7.

TABLE 7					
Recovery wells yearly flow volumes					
Well No.	2000	2001	2002	2003	2004/ 2005
RW-1	278,950	160,652	257,751	1,121,277	No data
RW-7	376,025	261,372	74,179	628,691	No data
RW-8	510,491	308,915	38,226	533,434	No data
RW-11	5,928,600	116,650	780,930	246,220	No data
RW-15	217,040	112,649	27,371	5,438,400	No data
RW-16	159	168,927	1,023	48,150	No data
RW-17	10,472	16,736	15,727	3,153	No data
Total	7,323,739.5	1,147,902	1,197,209	8,021,328	No data

Ground water is pumped from the recovery wells to the water-treatment system through a network of force mains. Each force main is equipped with its own discharge meter. The ground water from RW-15 is pumped to storage tanks at the CCA plant. The CCA plant used this water as make-up water for their CCA Solution.

The yearly mean flow for Outfall 001 is presented in Table 8.

TABLE 8	
Yearly Mean Flow for Outfall 001	
Year	Mean Flow (gpm)
2000	22.5
2001	4.8
2002	3.0
2003	3.8
2004-2006	No data

Water discharged from Outfall 001 travels west along an unnamed tributary of Rock Creek to Outfall 002. Outfall 002 was originally intended to monitor surface runoff from the Superfund site for potential

contaminants. However, contaminants from the sawmill area and old landfill flowed into Outfall 002. Therefore, storm water from the sawmill and old landfill areas is regulated under storm water permit #ARR00C126 effective September 1999. Additionally, since 1999 an NPDES permit is no longer needed for the Superfund Site.

3.7.5 Carbon Treatment System

The carbon treatment system consists of eight 2,000-pound canisters for the nonmetals contaminated groundwater and six 200-pound canisters for the metals contaminated groundwater from recovery well RW-15. Four canisters are in service for each system; two parallel lines of carbon canisters, each line containing two canisters in series. The other canisters are used as standby for placement into service when the lead canisters are spent. A system of discharge meters monitors flow volumes through the carbon canisters.

3.7.5.1 Nonmetals Treatment System

Historically, the carbon has shown effectiveness for approximately 9 to 10 million gallons. Table 9 presents the records of changes in the carbon canisters and the volume of water treated between 2001 and 2003. Last flow meter readings were reported in October 2003.

TABLE 9	
<u>Carbon Change</u>	<u>Volume Treated (gallons)</u>
Jan 30, 2001	5 million (as of October 31, 2003)

3.7.5.2 RW-15 Metals Treatment System

Groundwater from RW-15 is used in the CCA Plant when the plant is operating. A carbon treatment system installed in 1996 pre-treats groundwater from RW-15 before entering the storage tank and the nonmetals treatment system.

Ground water from RW-15 was pumped to the CCA plant during 2000, 2001, 2002 and 2003. Partial monthly discharge data was provided for only four months in the first half of 2004. No monthly discharge data or flow meter readings were received from 2005 to present. Water treatment plant pump replacements occurred in January 2001, February 2003, February 2004, spring 2005 and spring 2006.

3.7.6 Inspections and Maintenance

Inspections of the water-treatment facility resulted in both routine maintenance (such as cleaning and changing the filtration socks and backwashing the carbon canisters) and repairs (electrical and plumbing) while the plant was operational between 2000 and 2003.

B&F (PRP contractor) personnel visited the site on October 18, 2006. It appeared that the water treatment plant had not been operating and had just been turned on earlier that morning. This was confirmed later by Mr. Jimmy Dale Huff (president of Mid-South) who stated that the plant had been off for about a week prior to the visit. None of the flow meters/pressure gauges in carbon canisters, sock filters or the force main system were registering any readings (with the exception of the meter in the force main from RW-7 & RW-8). Mr. Huff stated that he did not know the last time water was pumped to the plant.

Capped areas appeared in good condition. Some of the areas outside the capped areas had high grass, such as around some of the monitoring/recovery well covers, along fence, ditch nearby RW-8.

3.7.7 Hazardous Waste Disposal

No hazardous waste materials were disposed in the five year review period.

3.7.8. Operational Status of the Groundwater Recovery and Treatment System

The major operational problem associated with the ground water recovery and treatment system has been in securing a trained operator for the facility. As stated in the previous five-year evaluation report, five different operators were employed at the facility during 1997 and two in 1998. None of these operators, including the current operator, meet the licensing requirements of the ADEQ for Class I Wastewater Treatment Operators, nor has the operator completed the training required by OSHA 29 CFR 1910.120. The amount of groundwater treated since 1999 is substantially less than in previous years. This decreased flow is primarily due to problems with operators and the inadequate cleaning of the treatment facilities.

Within the last five-six years the water treatment plant has required extensive repairs to continue operations. The system would operate for a short while before requiring repairs and replacement again. The continued absence of capable and committed personnel to operate the plant is a problem that has seen no improvement.

3.7.9 PCP Loading on Groundwater Treatment System

The calculated loading of PCP on the groundwater treatment system is presented in Table 10. The loading was based on the analytical data from the recovery wells and the gallons of water treated each calendar year. Average loadings were 144 and 8.72 lbs/year for the 1989-94 and 1995-1999 five-year periods respectively. The average five-year loading for this period is 33.25 pounds.

TABLE 10 PCP LOADING ON GROUNDWATER TREATMENT SYSTEM 2000-2005			
Year	Concentration (mg/l)	Gallons Per Year	Loading (lbs/year)
2000	0.56	7,323,739	34.19
2001	3.92	1,147,902	37.51
2002	1.79	1,197,209	17.87
2003	0.65	8,021,328	43.47
2004	0.16	No data	No data
2005	1.58	No data	No data
<u>Five-Year Average Loading Total</u>			33.25

3.7.10 GROUND WATER

3.7.10.1 Ground water Quality

Pentachlorophenol values reached a high peak of 18 mg/l for RW-8 in 2001, displaying a decreasing trend in subsequent years. PCP values have shown increasing trends since 1999 for RW-15 reaching high peak values of 12 & 23 mg/l for 2002 & 2006 respectively. Additionally, Arsenic and chromium concentrations reached high peak values of 320 & 580 mg/l in 2004 for RW-15.

Monitoring wells MW-10, 11, 12, 14, 15, 16, 18, 21, 22, M-8A, 4B, and 8B are to be sampled every five years as instructed in the 1995 Annual Report. These wells were sampled in 1996, 2001 & 2006. MW-

21 was inadvertently not sampled at the five-year event due 2005/6. Monitoring wells MW-17 and 19, M-17, IWB-170, and IWD remain on an annual sampling schedule. MW-17 and IWD remain on annual sampling only to monitor the facility for any possible migration of contaminants east and north, respectively.

Data from 2000-2006 for the monitoring wells indicate somewhat steady values in constituent concentrations for arsenic and chromium. Pentachlorophenol concentrations displayed somewhat decreasing trends for IWB-170; remaining at steady values for MW-17 IWD, MW-22, M -8A and M -4B. M-17 & MW-19 had high peak values in 2002 and 2003 respectively.

Steady low analyte concentration parameters for both IWD & MW-17 indicate that no migration of contaminants has occurred east or north of the facility over the last six years.

3.7.10.2 Maintenance of Capture Area

Ground water recovery at the site involves two types of recovery wells; namely, french drains and associated collector wells and drilled recovery wells. French drains are designed to intercept subsurface flow in the soil and at the soil/rock interface. The drilled recovery wells are completed in the deeper fractured rocks underlying the site.

A dramatic change in the pattern of ground water flow beneath the site was produced upon implementation of the ground water remediation program. The drilled recovery wells have a greater impact upon the ground water flow pattern than the french drain associated wells. Both types of wells contribute to the effectiveness of the remedial action measures and help to reduce local recharge to the ground water system. Data collected on the recovery well system to date indicate that the ground water remediation system is effective in removing contaminated ground water from the subsurface and intercepting contaminant plumes until approximately 2000. Information received from 2000 to 2003 seems to indicate that treatment plant has not been operated properly. No flow information was received for 2004 to present.

3.7.11 CONSOLIDATION AND CAPPING FACILITIES

3.7.11.1 Capped Area Measurement Monitoring

The frequency of surveys to monitor horizontal and vertical movement of the capped areas was established in the O & M Manual. A professional engineer (B&F) is required to check the two reference monuments along the top of each capped area and the cross-section control points every five years.

3.7.11.2 Capped Area Inspection and Maintenance

The Mid-South site operator did not report having performed capped area Inspections during 2000, 2001, 2002, 2004, 2005 or 2006. Site operator reported an inspection for the summer of 2003.

B & F Engineering, Inc. (PRP contractor) made observations of capped areas during May 2000, December 2001, February 2003 and October 2006. Inspections showed no evidence of cracking, settlement, erosion, side slope instability, ponding, damage from burrowing animals, or seepage. The drain pipe openings appeared to be in good condition and were free to drain. No excessive sediment deposits or erosion were observed on perimeter ditches. No barren areas in the vegetative cover were noted. Willow trees beginning to grow around the base of the Old Pond Cap were reported during some of the inspections.

B&F survey crew checked the capped areas for settlement on November 10, 2006. Horizontal distances and monument elevations for capped areas are recorded in Tables 11, and 12.

TABLE 11						
OLD POND CAPPED AREA MONUMENT ELEVATIONS						
DATE SURV.	"C"	"D"	"CC"	"DD"	"CCC"	"DDD"
29 DEC. 1993	1144.71	1143.77	1128.66	1129.98	1127.1	1128.48
04 JAN. 1995	1144.70	1143.77	1128.65	1129.96	1127.06	1128.48
* 12 JUL. 2000	1144.72	1143.78	1128.71	1130.03	1127.15	1128.48
10-Nov-06	1144.63	1143.72	1128.62	1129.94	1127.07	1128.43

TABLE 12						
NORTH LAND FARM, CAPPED AREA MONUMENT ELEVATIONS						
DATE SURV.	"A"	"B"	"AA"	"BB"	"AAA"	"BBB"
29 DEC. 1993	1164.28	1161.91	1132.82	1134.77	1121.58	1119.26
04 JAN. 1995	1164.27	1161.91	1132.82	1134.76	1121.58	1119.26
12 JUL. 2000	1164.25	1161.88	1132.83	1134.77	1121.58	1119.25
10-Nov-06	1164.21	1161.84	1132.82	1134.76	**	1119.26

3.7.12 ARSENIC AND CHROMIUM LEVELS

High levels of Arsenic and/or Chromium (Cr) exceeding the 1986 ROD criteria in the vicinity of the CCA plant and treated wood storage areas in 1994 were previously reported in the 1997 annual report. The 1997 soil sampling results indicated that the arsenic and chromium contamination is not attributable to the capped areas but to the CCA plant operations.

Arsenic and Chromium levels were reported high for RW-15 in 2003 & 2006, but especially high in 2004 when concentrations reached a peak of 320 and 580 mg/l respectively.

4.0 REMEDIAL ACTIONS

The following sections discuss the remedy selected; remedy implementation, and systems operations and Maintenance (O&M).

4.1 REMEDY SELECTION

The EPA signed the ROD for the Mid-South site on November 14, 1986. Remedial Action Objectives (RAO) were developed in order to aid in the development and screening of RA alternatives for the site. The RAOs for the Mid-South site are listed below:

- Minimize the threat to the public health from the ingestion of or contact with on-site contaminated soil.
- Minimize the threat to the public health from direct ingestion of shallow ground water, both on site and downgradient of the site.
- Minimize erosion of contaminated soil and off-site migration to protect public health and environmental quality.
- Minimize leaching of contaminants into surface water and ground water.
- Identify cost-effective alternatives for remediation of the site.

The selected remedy called for excavation, consolidation, residuals solidification/stabilization, on-site disposal, clay capping, and ground water recovery, treatment, and monitoring. The site PRPs were also required to take any necessary measures to reduce contaminant runoff from the active CCA facility.

In EPA's FS report, cleanup action levels were derived to limit exposure to arsenic, chromium, and cPAHs in contaminated soils. The 1986 ROD cleanup criteria called for action levels for arsenic and chromium to be set at any concentration that exceeds the range of background concentrations (specifically, greater than 5.6 parts per million [ppm] for arsenic and greater than 19.4 ppm for chromium). The cleanup requirements for cPAHs would be set at a lifetime cancer risk of 1×10^{-5} (3 ppm). [EPA is presently revising the cleanup criteria to incorporate more updated risk based levels.]

The components of the remedy documented in the ROD were:

- Excavation of all on-site and off-site contaminated soils containing concentrations of cPAHs, arsenic, and chromium above the RAO levels of 3 ppm, 5.6 ppm, and 19.4 ppm, respectively, followed by consolidation of the soils in the North Land Farm

- Contaminated soils consolidated in the North Land Farm Area would be graded and covered with a Resource Conservation and Recovery Act top-soil clay cap.
- Excavation of any free oil, liquid, or sludge found in the heavily contaminated areas of the Small Old Pond and Old Plant site, followed by solidification/stabilization (mixed with clay to immobilize wastes and improve compressive strength) and consolidation with soils in the North Land Farm.
- Any contaminated soil and free oil, liquid, or sludge found in the Old Pond Area were to undergo *in situ* stabilization followed by toxicity characteristic leaching procedure (TCLP) testing prior to capping the stabilized material in place.
- Installation of a ground water recovery and treatment system to include a series of French drains and a water treatment plant; no ground water cleanup levels were specified
- Installation of a ground water monitoring system
- PRPs were required to take any necessary measures to reduce the amount of contaminant runoff from the active CCA plant.
- Fencing and deed restrictions

4.2 REMEDY IMPLEMENTATION

After EPA approval of the PRP's RA work plan, remedial activities at the site began in May 1988.

On July 7, 1988, excavation of contaminated soil began in the South Landfarm; transported to the North Landfarm and capped. The oils, liquids, and sludges from the Small Old Pond and Old Plant areas were excavated, stabilized, and then consolidated with soils in the North Land Farm. Oils, liquids, and sludges from the Old Pond were excavated, stabilized, and then returned to the Old Pond where it was capped in place. The stabilized waste would undergo the following tests prior to consolidation in the North Land Farm:

- Paint filter testing to determine the liquid composition of the stabilized waste materials.
- Compressive strength testing to ensure the stabilized waste materials could support the cap.
- Results of TCLP testing were compared to regulatory levels for arsenic (5.0 milligrams per liter [mg/L]), chromium (5.0 mg/L), and PCP (3.6 mg/L) and used as a pass/fail criteria for the stabilized waste materials.

The excavated areas on site were backfilled with clean fill material, compacted, regraded to achieve proper drainage, and seeded to prevent soil erosion. By March 25, 1989, approximately 100,000 cubic yards of contaminated soil and wastes had been excavated, stabilized, and placed in the on-site capped areas.

A water treatment facility was constructed on site. A series of French drains and recovery wells were installed around the site to intercept the contaminated ground water and pump it to the water treatment facility.

Remedial activities were also performed at the then active CCA wood treatment facility, including constructing a roof over the drip pad, which is used to store freshly treated lumber and collect drippings of CCA solution. Other activities included cleaning out the old sump area beneath the treatment vessel; backfilling the sump area and replacing it with a steel-lined sump and gravity flow return line; cleaning out the treatment building sump; and installing a float-actuated pump in the treatment building.

4.3 SYSTEM OPERATIONS

The 1986 ROD required that the PRPs complete the following activities:

- Disposal of stabilized soils and wood treating wastes in on-site disposal units (North Landfarm Area and Old Pond Area)
- Installation and maintenance of a ground water recovery and treatment system to include a wastewater treatment plant (WWTP)

Due to the disposal of stabilized soils and wood treating wastes in on-site disposal units, maintenance to the disposal cell, disposal cell cap, and associated drainage ditches is one of Mid-South's on-going responsibilities. Maintenance and monitoring activities that sustain the design properties of the cell and monitor migration of contaminants include (1) regrading erosion scars, rills, or minor surface slumps in the cover and on the berm slopes; (2) cleaning out accumulated sediment and debris in drainage ditches; (3) reseeding the cover, as necessary; (4) inspecting the cover for settlement and regrade, as necessary; (5) inspecting the cover for damage and repair, as necessary; (6) surveying the cap settlement monuments; and (7) long-term ground water monitoring. Additionally, Mid-South is required to inspect the condition of the roads and the site fencing and repair as necessary.

4.3.1 Long-term Ground Water Monitoring

Monitoring activities were conducted for monitoring wells within the three distinct systems at the site: capped areas, the ground water recovery system, and the geologic fault zone. Monitoring activities were scheduled quarterly for the first year after completion (November 1989 to September 1990), semiannually

for year 2 (1991), and annually for years 3 to 5 (1992 - 1995). In 1996, monitoring wells with no history of contamination were converted from annual sampling status to 5-year sampling status with EPA approval. Monitoring wells MW-17 and IWD remain on an annual sampling schedule only for the purpose of monitoring for any possible migration of contaminants to the east and north of the site, respectively. The well closure procedure and shutoff criteria are presented in Attachment 5.

4.3.2 Ground Water Recovery and Treatment System

Ground water is pumped from the recovery wells through an oil-water separator and drained to a storage tank. The water is then pumped through fabric filters and the carbon treatment system. Treated effluent from the carbon canisters is collected in a single gravity pipe and is discharged to Outfall 001. The volume and quality of treated ground water discharged is monitored to verify compliance and to evaluate the effectiveness of the ground water treatment system.

After completion of the 1993 ground water monitoring event, recovery wells that did not show parameter concentrations above the minimum risk to human health were eligible to be evaluated for closure. In 1996, recovery wells that showed no contamination greater than minimum risk to human health (see Table 3.1 in Attachment 5) for at least 5 years became eligible for closure without further testing with EPA approval. Recovery wells that have no contamination greater than minimum risk to human health for a period of 4 years are eligible for the following on/off schedule (see Attachment 5) with EPA approval:

Pumping should discontinue at the closure candidate well(s) for a period of 3 months. The recovery well(s) should then be pumped for 3 months, then off for 3 months, and then pumped for 3 months. The well(s) shall be sampled and analyzed for the parameters listed in Table 3.1 (Attachment B) at the end of each of the on/off periods (four sampling events). If no contamination is detected greater than minimum risk to human health (specified in Table 3.1) during the on/off period, pumping of the well(s) may be discontinued with EPA approval. If contamination is detected, pumping shall resume until the well shows no contamination for four consecutive sampling events. At this time, the well becomes eligible for the above on/off schedule with EPA approval (Attachment 5 – Well Closure Criteria).

Seven recovery wells (RW-1, RW-7, RW-8, RW-11, RW-15, RW-16, and RW-17) are currently still active.

The major operational problem associated with the ground water recovery and treatment system has been in securing a trained operator for the facility; five different operators were employed at the facility during 1997 and two in 1998. None of these operators, including the current operator, meet the licensing

requirements of ADEQ for Class I Wastewater Treatment Operators, nor has the current operator completed the training required by the Occupational Safety and Health Administration Title 29, Code of Federal Regulations Part 1910.120. The amount of ground water treated in the last seven years is substantially less than in previous years. This decreased flow is primarily due to the problems with the operators and the inadequate cleaning of the treatment facilities.

4.3.3 Treated Ground Water Discharge

Since 1990, Mid-South has been required to conduct routine NPDES water quality criteria monitoring of discharge waters from Outfall 001, Outfall 002, and off-site stream monitoring stations (SMS) 1, 2, 3, and 4 (see Attachment 4, Watershed Map). In review of the NPDES draft permit (January 1999), it was proposed that storm water from the active CCA wood-treating facility be separated from that being generated at the Superfund site under a separate storm water permit. In February 1999, EPA determined that, under CERCLA 121(e), no federal, state, or local permit is required for the Superfund site while an RA is being conducted. Pursuant to this finding, the NPDES permit requirement was discontinued in August 1999; however, NPDES substantive requirements still apply.

Since water quality monitoring was initiated in 1990, concentrations of site COCs in discharge waters have exceeded permitted effluent limitations on very few occasions:

5.0 PROGRESS SINCE THE LAST FIVE-YEAR REVIEW

This is the third five-year review to be conducted for the Mid-South site. Although some of the recommendations in the second five-year review were implemented, several recommendations were not.

Recommendations in the 2002 five-year report were:

- EPA intends to propose a decision document to: (1) revise the soil preliminary remediation goals (PRGs) to levels consistent with anticipated land use for the site and (2) partially shut down the existing ground water recovery and treatment system in the vicinity of the Old Pond Area under a Technical Impracticability (TI) waiver. Data show that a TI waiver is appropriate.
- A trained licensed operator is needed at the site in order to maintain the treatment facility and complete ground water remediation.
- A secondary containment or storm water runoff collection system should be installed at the active plant.
- Monitoring well -11 and observation wells M-4A and M-4B should be properly secured. The hinged protective casing for monitoring well MW-11 should be repaired.
- EPA contractor will conduct an investigation of the site in near future to evaluate ADEQ concerns described in the November 1999 Remedial Action Investigation Report.

Of the previous 2002 five-year review recommendations, only the following was implemented

- Issue three above required a secondary containment system. As noted in the second five-year review: “several piles of CCA-treated lumber that were stockpiled on the ground surface in an outdoor storage area, which was located east of the CCA Treatment Building” have been removed. The CCA operations have ceased, all treated lumber, which in the past was placed on the ground, are no longer present.

The following issues are the incorporation of the remaining/non-implemented second five-review (2002) recommendations and the recent third five-year review recommendations:

- EPA intends to propose a decision document to: (1) revise the soil preliminary remediation goals (PRGs) to levels consistent with anticipated land use for the site and (2) partially shut down the existing ground water recovery and treatment system in the vicinity of the Old Pond Area under a Technical Impracticability waiver. Data show that a TI waiver is appropriate.
- A trained licensed operator is needed at the site in order to maintain the treatment facility and complete ground water remediation.
- MW-11 should be repaired.
- EPA has met with (September 12, 2007) and discussed the ADEQ concerns as outlined in the ADEQ November 1999 Remedial Action Investigation Report. The unresolved concerns will be addressed in near future.
- Review all relevant existing data to determine the need for a Supplemental Remedial Investigation immediate to the CCA plant to determine the potential for source and/or dissolved constituents to migrate past the existing french drain ground water collection system, and if soils are contaminated with CCA.
- Add PCP and Copper to the COC list.

6.0 FIVE-YEAR REVIEW PROCESS

Mid-South's third five-year review was led by Mr. Shawn Ghose, EPA Remedial Project Manager, with assistance from the ADEQ. The EPA notified Mid-South of the start of the five-year review process.

This five-year review consisted of a review of relevant documents, a review of standards, ground water monitoring data, interviews, and a site inspection conducted on August 31, 2007. The documents reviewed included: (1) 1986 ROD; (2) 1989 Interim Close-out Report; (3) RI/FS reports; (4)

Endangerment Assessment; (5) Second Five-Year Review Report (2002); (6) O&M Manual; and (7) Inspection and Monitoring Reports. Upon completion, the 2007 Third Five-Year Review Report will be made available at the information repository and a notice will be placed in the local newspaper.

6.1 ADMINISTRATIVE COMPONENTS / FIVE-YEAR REVIEW FINDINGS

The following sections present the findings of this five-year review.

6.2 INTERVIEWS

In accordance with the requirements of the five-year review guidance, EPA interviewed or contacted several key individuals in order to obtain their opinions with regard to issues associated with the site. During the site visit conducted on August 31, 2007, EPA interviewed Mr. Jim Huff, president of Mid-South; Mr George McKee, Mayor of the city of Mena; Mrs. Connie Polk, offsite resident; and Mr. Doyle Judkins, offsite business owner. Residents of other homes visited appeared to be reluctant to come to the door.

6.3 FIVE-YEAR REVIEW SITE INSPECTION

A site inspection was conducted on August 31, 2007, to assess the condition of the site and the protective measures employed to protect human health and the environment from the contaminants still present at the sites. Attendees included (1) Mr. Jim Huff of Mid-South, (2) USEPA (Shawn Ghose and David Abshire), 3) ADEQ (Dianna Kilburn, Rita Johnson and Jay Rich); and 4) B&F Engineering representative. The site visit report is provided in Attachment 2 and 3.

Visually, there were no signs or evidence of contamination at the site. EPA inspected the WWTP associated with the selected remedy for ground water contamination at the site. EPA based its evaluation of WWTP operations on B&F's recent annual site visit. Most of the observation and monitoring wells that were visually inspected were in good condition. The capped areas (North Land Farm Area and Old Pond Area) were well maintained.

During the 2002 site visit, the EPA contractor observed several piles of CCA-treated lumber that were stockpiled on the ground surface in an outdoor storage area, which was located east of the CCA Treatment Building. These stockpiles were removed prior to the 2007 site inspection. The CCA plant no longer uses the CCA operations, however, it does continue with the lumber business.

Based on these findings, B&F recommended that a trained licensed operator be hired for the site in order to maintain the system properly and operate it as closely as possible to the designed flow rate.

6.4 ARAR REVIEW

The 1986 ROD did not identify any specific applicable or relevant and appropriate requirements (ARAR) for the Mid-South site RA. However, cleanup criteria called for the action levels for arsenic and

chromium to be set at any concentration that exceeds the range of background concentrations (specifically, greater than 5.6 ppm for arsenic and greater than 19.4 ppm for chromium). The cleanup requirements for cPAHs were set at a lifetime cancer risk of 1×10^{-5} (3 ppm). The PRP's approved O&M Manual outlined the following cleanup requirements for ground water:

- 0.5 ppm for arsenic and chromium, based on EPA maximum contaminant levels established under the Safe Drinking Water Act.
- 0.20 ppm for PCP, based on the EPA reference dose.
- 0.01 ppm for benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, and chrysene, based on analytical detection limits.

Based on a review of naturally-occurring background levels for arsenic and chromium by EPA Region 6 in its Human Health Medium-specific Screening Levels Guidance (EPA 2001a) and on the occurrence of high values of arsenic in sediments worldwide (Nordstrom 2002), EPA's analysis of the existing data indicates that the background values for arsenic and chromium may be naturally high near the Mid-South site, and may actually exceed the 1986 ROD cleanup action levels. Per Title 40 Code of Federal Regulations 300.430(e)(2)(i)(A)(2), EPA has the authority to choose the concentration level for a specific COC that represents an excess cancer lifetime risk to an individual between 1 in 10,000 and 1 in 1,000,000. In December 2001, the EPA Region 6 Superfund risk assessment group calculated a level consistent with future land use of the site i.e. industrial (or preliminary remediation goals [PRG]) for the Mid-South site based on an excess cancer risk of 1 in 100,000 under an industrial scenario (EPA 2001b). The EPA intends to propose an appropriate decision document to revise the soil PRGs, based on a 1 in 100,000 excess cancer risk under an industrial scenario. In 2001 EPA intended to propose new PRG cleanup action levels presented in Table 13. However, EPA proposes to revise the action levels in Table 13 as outlined in Table 3 above in Section 3.6 "Contaminants of Concern/Cleanup Action Levels" section.

TABLE 13

1986 ROD CLEANUP ACTION LEVELS AND PROPOSED SOIL PRGS

Contaminant of Concern	1986 ROD Soil Cleanup Action Level (ppm)	Proposed Soil PRG^a (mg/kg)
Arsenic	5.6	38
Chromium	19.4	1,210
Carcinogenic PAHs	3 ^b	- -
Benzo(a)pyrene equivalents	- -	2.6 ^c

Notes:

- - Not applicable

a Soil PRGs (1 in 100,000 excess cancer risk for a industrial scenario) proposed by EPA for the upcoming decision document (EPA 2001).

b As defined in the 1986 ROD, carcinogenic PAHs include benzo(a)anthracene, benzo(b+k)fluoranthene, benzo(a)pyrene, and chrysene.

c Benzo(a)pyrene equivalents

Data show that well capture of contaminants in the deeper aquifer is impractical; therefore, EPA intends to propose a TI Waiver under the upcoming decision document to partially shut down the deep ground water treatment system in the vicinity of the Old Pond Area, based upon ADEQ's recommendation and data that show that the current system is not effective given the fractured hydrogeologic conditions that exist in this deep aquifer. In its November 1999 RA Investigation report, ADEQ recommended that the decision document include a TI ARAR Waiver with a natural attenuation determination for the ground water.

6.5 DATA REVIEW

A review of the inspection reports indicates that the present situation at the site remains protective; however, for long-term protectiveness, the treatment system must be brought back online with trained personnel.

The RAO to protect human health and the environment by preventing direct contact, ingestion, and migration of the wood-treating wastes and associated soils continues to be met by the intact caps (North Land Farm and Old Pond Areas). The caps were noted to be in good condition. In addition, the fence, gates, locks, and signs are in place and verified sound.

The RAO to prevent the potential for human exposure to contaminated ground water continues to be met. Ground water data indicated no radical change in COC concentrations. Analytical data from 1989 to most recent monitoring for untreated ground water indicate decreasing long-term trends in constituent concentrations in most of the active recovery wells. However, this trend may not continue if the treatment system is not reactivated based on RA operational requirements.

Since 2002, there have been some constituent discharge exceedances for Outfall 001, as listed in Table 5 above. Since water quality monitoring was initiated in 1989, concentrations of site COCs in discharge waters have exceeded permitted effluent limitations on very few occasions for Outfall 001 and Outfall 002, and there have not been any reported exceedances for any of the four Stream Monitoring Stations (SMSs). On the basis of effluent limitations not having been exceeded at the four off-site SMS monitoring points, it can be inferred that discharge waters from the Mid-South site have had no adverse impact on the ecology of the surrounding area. However, EPA plans to test for sediments in the near future to be sure that the site is not negatively impacting off-site areas by sediment discharge.

7.0 TECHNICAL ASSESSMENT

The following conclusions support the determination that the remedy at the Mid-South site is currently protective of human health and the environment.

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

- **Remedial Action Performance**—Capped areas appear to be functioning properly; ADEQ has evaluated the existing ground water recovery and treatment system data and found the system to be ineffective under the existing fractured hydrogeologic conditions, and EPA plans to partially shut down the ground water capture system under a TI waiver in the upcoming decision document.
- **System Operations/O&M**—O&M ground water monitoring activities are being conducted according to plan. Ground water is not being treated at a flow rate that approaches the design flow rate. A trained licensed operator is needed at the site in order to maintain the treatment facility and complete ground water remediation. Deficiencies in treated ground water discharge monitoring requirements have increasingly occurred since early 2001.
- **Cost of System Operations/O&M**—No information was available.
- **Opportunities for Optimization**—The monitoring well network appears to provide sufficient data to assess the quality of site ground water, and maintenance of the cap is sufficient to maintain its integrity. However, ground water is not being treated at a flow rate that approaches the design flow rate. A trained licensed WWTP operator is needed

at the site in order to maintain the treatment facility and complete ground water remediation. ADEQ has evaluated the existing ground water recovery and treatment system data and found the system to be ineffective under the existing fractured hydrogeologic conditions, and EPA plans to partially shut down the ground water collection system under a TI waiver in the upcoming decision document.

- **Early Indicators of Potential Issues** - None.
- **Implementation of Institutional Controls**—A restrictive covenant was filed by Mid-South with the Polk County Clerk on September 25, 1989, to ensure that residential use, destroying the integrity of the cap, drilling into the contaminated aquifer, and use of ground water from the site are prohibited. Restrictive Covenant was still in place as of the court house visit on August 31, 2007.

Question B: Are the assumptions used at the time of remedy selection still valid?

- **Changes in Standards and To Be Considered**—EPA intends to issue a decision document to revise the soil PRGs to levels consistent with anticipated future land use (for arsenic and chromium); to a risk of 5×10^{-5} , as outlined in Table 3 above
- **Changes in Exposure Pathways**—There are no changes that bear on the protectiveness of the remedy.
- **Changes in Toxicity and Other Contaminant Characteristics**—There are no changes that bear on the protectiveness of the remedy.
- **Changes in Risk Assessment Methodologies**—There are no changes that bear on the protectiveness of the remedy.
- **Expected Progress Towards Meeting RAOs**—The RAOs relating to contaminated wood-treating wastes have been met; however, soils will be reevaluated based on to-be-proposed risk levels. The EPA intends to amend the ROD and revise the soil PRGs to levels consistent with anticipated future industrial land use. ADEQ has evaluated the existing ground water recovery and treatment system data and found the system to be ineffective under the existing fractured hydrogeologic conditions, and EPA plans to propose partially shutting down the ground water collection system under a TI waiver in the upcoming decision document.

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

The EPA intends to further investigate surface and subsurface soils.

8.0 ISSUES AND DEFICIENCIES

Table 14 summarizes issues for the Mid-South site. The following issues were noted:

TABLE 14
ISSUES/DEFICIENCIES IDENTIFIED

Issue	Currently Affects Protectiveness? (Y/N)	Affects Future Protectiveness (Y/N)
The ground water treatment system is not undergoing proper operation and maintenance.	Y	Y
The casing for monitoring well MW-11 is damaged and needs repair.	N	N
There exists a shallow and deeper ground water collection system; ADEQ has evaluated the existing ground water recovery and treatment system and found it to be ineffective for the existing fractured bedrock (deeper) aquifer – ADEQ proposes a technical impracticability waiver.	N	N
In 1999, an ADEQ surface and subsurface soil sampling RA investigation revealed concentrations of chromium in exceedance of the current cleanup standard (1986 ROD).	Y	Y
Following preliminary review of existing data, it appears a mini/supplemental remedial investigation may be required at the CCA plant to determine the potential for subsurface sources and dissolved constituents to migrate past the existing french drain ground water capture system in that area, and if surface soils were contaminated within the period between the RA and the present.	Y	Y
The Potentially Responsible Party's contractor (B&F) stated to EPA that the CCA Plant no longer conducts CCA operations, but does continue to manage the lumber business.	N	N

9.0 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

Table 15 summarizes recommendations and follow-up actions for the Mid-South site.

TABLE 15

Issue	Recommendations/ Follow-up Actions	Responsible Party	Oversight Agency	Milestone Date	Affects Protectiveness (Y/N)	
					Current	future
The ground water treatment system is not undergoing proper operation and maintenance.	A trained licensed operator is needed at the site in order to maintain the treatment facility and complete ground water remediation.	Mid-South	EPA	2007	Y	Y
The casing for monitoring well MW-11 is damaged.	Repair MW-11.	Mid-South	EPA	2007	N	N
There exists a shallow and deeper ground water collection system; ADEQ has evaluated the existing ground water recovery and treatment system and found it to be ineffective for the existing fractured bedrock (deeper) aquifer. Data show that a TI waiver is appropriate.	Partially shut down the existing ground water recovery and treatment system, for the deeper fractured aquifer, under a TI waiver. Data show that a TI waiver is appropriate.	EPA	EPA	2007	Y	Y
In 1999, an ADEQ surface and subsurface soil sampling RA investigation revealed concentrations of chromium in exceedance of the current cleanup standard (1986 ROD).	Revise the soil remediation goals consistent with the anticipated land use for the site based on a 2007 risk evaluation; add PCP and Copper as COCs. An appropriate decision document will be required to document this change in cleanup levels.	EPA	EPA	2007	N	N

Issue	Recommendations/ Follow-up Actions	Responsible Party	Oversight Agency	Milestone Date	Affects Protectiveness (Y/N)	
					Current	future
Following preliminary review of existing data, it appears a mini/Supplemental Remedial Investigation may be required immediate to the CCA plant to determine the potential for subsurface sources and dissolved constituents to migrate past the existing french drain ground water capture system in that area, and if soils were contaminated within the period between the RA and the present.	EPA will review all relevant existing data to determine the need for/extent of a Supplemental Remedial Investigation adjacent to the CCA plant to determine the potential for source and/or dissolved constituents to migrate past the existing french drain ground water collection system, and if soils are contaminated with CCA.	EPA	EPA	2007	Y	Y
The Potentially Responsible Party's contractor (B&F) stated to EPA that the CCA Plant no longer conducts CCA operations, but does continue to manage the lumber business.	No recommendation.				N	N

10.0 PROTECTIVENESS STATEMENTS

The capped Landfarm and Old Pond areas remedy at Mid-South is currently protective of human health and the environment because:

1. The solidified material passed all treatment standards.
2. The cap was constructed as designed and is maintained.
3. Evaluation of groundwater levels, concentrations and recovery volumes in surrounding recovery and monitoring wells indicates that no infiltration into the capped material is occurring.

The ground water recovery and treatment system is considered to be currently protective in the short-term, because a deed-restriction for no drilling and use is in place, and no evidence of offsite migration has been found. However, in order for the remedy to be protective in the long-term, the following actions need to be taken to assure long-term protectiveness:

1. A trained ground water recovery and treatment operator must be hired to operate and maintain the system.

Pending EPA issuance of the upcoming decision document to increase the soil cleanup levels based on risk posed to an industrial worker, protective short-term objectives have been met and evaluation is continuing.

11.0 NEXT REVIEW

This is a site that requires ongoing five-year reviews. The next review will be conducted within the next 5 years, but no later than September 2012. The EPA intends to further investigate surface and subsurface sediments to corroborate the results of the 1999 ADEQ investigation during the next 5-year review period.

ATTACHMENT 1
LIST OF DOCUMENTS REVIEWED

DOCUMENTS REVIEWED

- Arkansas Department of Environmental Quality. 1999. Remedial Action Investigation Report, Mid-South Superfund Site, Mena, Arkansas. November 4.
- B & F Engineering, Inc. (B&F). 1989. Mid-South Superfund Site Remediation O&M Manual.
- B&F. 2000. Annual Report and Five-Year Evaluation, Mid-South Superfund Site, Mena, Arkansas, 1995 - 1999. February.
- B&F. 2002. Annual Report, Mid-South Superfund Site, Mena, Arkansas, January 1, 2001 to December 31, 2001. January.
- CH2M Hill Southeast, Inc. (CH2M Hill). 1984. Remedial Investigation Report, Mid-South Wood Products, Mena, Arkansas. October 24.
- CH2M Hill. 1985. Endangerment Assessment, Mid-South Wood Products, Mena, Arkansas. May 9.
- CH2M Hill. 1986a. Supplemental Remedial Investigation, Mid-South Wood Products, Mena, Arkansas. March 13.
- CH2M Hill. 1986b. Feasibility Study, Mid-South Wood Products, Mena, Arkansas. April.
- Keck, Mahin & Cate. 1991. Mid-South Site Trust Fund Operation and Maintenance Plan, Mena, Arkansas. September 11.
- Nordstrom, D. Kirk. 2002. Worldwide Occurrences of Arsenic in Groundwater. *Science*. Volume 296, pp. 2143-2145. June 21.
- U.S. Environmental Protection Agency (EPA). 1986. Record of Decision, Mid-South Wood Products, Mena, Arkansas. November 14.
- EPA. 1987. Settlement Agreement, Between the United States of America and Edward Hines Lumber Co., Inc., and Mid-South Wood Products of Mena, Inc. November 4.
- EPA. 1988. Consent Decree, United States of America v. Edward Hines Lumber Co. and Mid-South Wood Products of Mena, Inc. May 16.
- EPA. 1989. Superfund Site Interim Close Out Report, Mid-South Wood Products Site, Mena, Arkansas. September 28.
- EPA. 1997. First Five-Year Review Report, Mid-South Superfund Site, Mena, Arkansas. June 5.
- EPA. 2001a. EPA Region 6 Risk-based Human Health Medium-Specific Screening Levels. Dallas, TX. November. Internet address: [http://www.epa.gov/earth1r6/6pd/rcra c/pd-n/screen.htm](http://www.epa.gov/earth1r6/6pd/rcra%20c/pd-n/screen.htm).

DOCUMENTS REVIEWED (Continued)

- EPA. 2001b. Memorandum from Ghassan A. Koury, EPA, to Shawn Ghose, EPA, concerning response to risk assessment request for chromium, PNAs and arsenic for Mid-South Superfund Site. December 18.
- EPA. 2002. Mid-South Wood Products Superfund Site Update. August 6.
- EPA. 2002. Second Five-Year Review Report, Mid-South Superfund Site, Mena, Arkansas. September 27.

ATTACHMENT 2
SITE INSPECTION CHECKLIST

Mid-South Wood Products Mena, Arkansas Site 3rd Five-Year Review Site Inspection Checklist

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

I. SITE INFORMATION	
Site Name: Mid-South Wood Products	EPA ID: ARD092916188
City/State: Mena, Arkansas – Polk County	Date of Inspection: August 31, 2007
Agency Completing 5 Year Review: USEPA	Weather/temperature: Sunny, in the 80's
Remedy Includes: (Check all that apply) <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Landfill cover/containment <input checked="" type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input checked="" type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other: 	
Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached	
II. INTERVIEWS (Check all that apply)	
1. O&M site manager: Name: Jim L. Huff Title/Organization: President, Mid-South Wood Products Date: August 31, 2007 Phone Number: 479-394-1272 Interviewed: <input type="checkbox"/> at site <input checked="" type="checkbox"/> at office <input type="checkbox"/> by e-mail <u>Problems, suggestions:</u> <input checked="" type="checkbox"/> Additional report attached (if additional space required).	
2. O&M staff: Name: N/A Title/Organization: Date: Interviewed: <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone <u>Problems, suggestions:</u> <input type="checkbox"/> Additional report attached (if additional space required).	

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

Agency: ADEQ

Name: Ms. Dianna Kilburn

Title: Project Manager

Date: August 31, 2007

Phone Number: 501-682-0844 via e-mail

Problems, suggestions: Additional report attached (if additional space required).

Agency: City of Mena, Arkansas

Name: Mr. George McKee

Title: Mayor

Date: August 31, 2007

Phone Number: 479-394-4585 via meeting

Problems, suggestions: Additional report attached (if additional space required).

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

Resident:

Name: Mrs. Connie Polk - 2602 Highway 375, Mena, AR 71953

Date: August 31, 2007

Phone Number: via meeting

Problems, suggestions: Additional report attached (if additional space required).

Business Owner: Boyle's Widow Service at 2011 Hwy. 71S.

Name: Doyle Judkins

Title: Owner

COMMENTS:

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

1. O&M Documents

- | | | | |
|---|---|--|------------------------------|
| <input checked="" type="checkbox"/> O&M Manual | <input checked="" type="checkbox"/> Readily available | <input checked="" type="checkbox"/> Up to date | <input type="checkbox"/> N/A |
| <input checked="" type="checkbox"/> As-Built Drawings | <input checked="" type="checkbox"/> Readily available | <input checked="" type="checkbox"/> Up to date | <input type="checkbox"/> N/A |
| <input checked="" type="checkbox"/> Maintenance Logs | <input checked="" type="checkbox"/> Readily available | <input checked="" type="checkbox"/> Up to date | <input type="checkbox"/> N/A |

Remarks:

2. Health and Safety Plan Documents

- | | | | |
|--|---|--|------------------------------|
| <input checked="" type="checkbox"/> Site-Specific Health and Safety Plan | <input checked="" type="checkbox"/> Readily available | <input checked="" type="checkbox"/> Up to date | <input type="checkbox"/> N/A |
| <input checked="" type="checkbox"/> Contingency plan/emergency response plan | <input checked="" type="checkbox"/> Readily available | <input checked="" type="checkbox"/> Up to date | <input type="checkbox"/> N/A |

Remarks:

3. O&M and OSHA Training Records <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input type="checkbox"/> N/A <u>Remarks:</u>
4. Permits and Service Agreements <input type="checkbox"/> Air discharge permit <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Effluent discharge <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Waste disposal, POTW <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Other permits <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <u>Remarks:</u>
5. Gas Generation Records <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <u>Remarks:</u>
6. Settlement Monument Records <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input type="checkbox"/> N/A <u>Remarks:</u>
7. Groundwater Monitoring Records <input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input type="checkbox"/> N/A <u>Remarks:</u> Groundwater monitoring is sporadic, data is obtained from the PRPs contractor.
8. Leachate Extraction Records <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <u>Remarks:</u>
9. Discharge Compliance Records <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input type="checkbox"/> N/A <u>Remarks:</u>
10. Daily Access/Security Logs <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input type="checkbox"/> N/A <u>Remarks:</u>
IV. O&M Costs <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A
1. O&M Organization <input type="checkbox"/> State in-house <input type="checkbox"/> Contractor for State <input type="checkbox"/> PRP in-house <input checked="" type="checkbox"/> Contractor for PRP <input type="checkbox"/> Other:

2. O&M Cost Records

Readily available Up to date Funding mechanism/agreement in place
Original O&M cost estimate: Breakdown attached Not available

Total annual cost by year for review period if available

From (Date): To (Date): Total cost: Breakdown attached
January 1, 2002 December 31, 2002

From (Date): To (Date): Total cost: Breakdown attached
January 1, 2003 December 31, 2003

From (Date): To (Date): Total cost: Breakdown attached
January 1, 2004 December 31, 2004

From (Date): To (Date): Total cost: Breakdown attached
January 1, 2005 December 31, 2005

From (Date): To (Date): Total cost: Breakdown attached
January 1, 2006 July 31, 2006

Remarks: The Potentially Responsible Party is conducting the remedial action and O&M; costs are not provided to USEPA.

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

Describe costs and reasons:

V. ACCESS AND INSTITUTIONAL CONTROLS Applicable N/A

A. Fencing

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

Remarks:

B. Other Access Restrictions	
1. Signs and other security measures <input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A <u>Remarks:</u> Signs posted; additional signage may be appropriate. Fencing around both capped cells and treatment plant secure.	
C. Institutional Controls	
1. Implementation and enforcement	
Site conditions imply ICs not properly implemented: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A Site conditions imply ICs not being fully enforced: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A Type of monitoring (e.g., self-reporting, drive by): Frequency: daily Responsible party/agency: Mid-South Wood Products Contact: Name: Jim L. Huff Title: President Date: Phone Number: Reporting is up-to-date: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A Reports are verified by the lead agency: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A Specific requirements in deed or decision documents have been met: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Violations have been reported: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <u>Other problems or suggestions:</u> <input type="checkbox"/> Additional report attached (if additional space required).	
2. Adequacy <input checked="" type="checkbox"/> ICs are adequate <input type="checkbox"/> ICs are inadequate <input type="checkbox"/> N/A	
3.	
<u>Remarks:</u> Court House visit on August 31, 2007 - document is up-to-date.	
D. General	
1. Vandalism/trespassing <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No vandalism evident	
<u>Remarks:</u>	
2. Land use changes onsite <input type="checkbox"/> N/A	
<u>Remarks:</u> None. The use of CCA in Mid-South operations has ceased; Mid-South continues with the lumber portion of the business.	
3. Land use changes offsite <input type="checkbox"/> N/A	
<u>Remarks:</u> No change, offsite land use remains residential and commercial.	

VI. GENERAL SITE CONDITIONS

A. Roads

Applicable N/A

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

B. Other Site Conditions

Remarks:

VII. LANDFILL COVERS Applicable N/A

A. Landfill Surface

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

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

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

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

5. Vegetative Cover
 Cover properly established No signs of stress Grass Trees/Shrubs
Remarks:

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

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

8. Wet Areas/Water Damage Wet areas/water damage not evident
 Wet areas Location shown on site map Areal extent:
 Ponding Location shown on site map Areal extent:
 Seeps Location shown on site map Areal extent:
 Soft subgrade Location shown on site map Areal extent:
Remarks:

2. Gas Monitoring Probes <input type="checkbox"/> N/A <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs O&M <u>Remarks:</u>	
3. Monitoring Wells (within surface area of landfill) <input type="checkbox"/> N/A <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs O&M <u>Remarks:</u>	
4. Leachate Extraction Wells <input type="checkbox"/> N/A <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs O&M <u>Remarks:</u>	
5. Settlement Monuments <input type="checkbox"/> Located <input type="checkbox"/> Routinely surveyed <input type="checkbox"/> N/A <u>Remarks:</u>	
E. Gas Collection and Treatment <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1. Gas Treatment Facilities <input type="checkbox"/> N/A <input type="checkbox"/> Flaring <input type="checkbox"/> Thermal destruction <input type="checkbox"/> Collection for reuse <input type="checkbox"/> Good condition <input type="checkbox"/> Needs O&M <u>Remarks:</u>	
2. Gas Collection Wells, Manifolds and Piping <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs O&M <u>Remarks:</u>	
3. Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs O&M <u>Remarks:</u>	
F. Cover Drainage Layer <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1. Outlet Pipes Inspected <input type="checkbox"/> Functioning <input type="checkbox"/> N/A <u>Remarks:</u>	
2. Outlet Rock Inspected <input type="checkbox"/> Functioning <input type="checkbox"/> N/A <u>Remarks:</u>	
G. Detention/Sedimentation Ponds <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1. Siltation <input type="checkbox"/> Siltation evident <input type="checkbox"/> N/A Areal extent: Depth: <u>Remarks:</u>	
2. Erosion <input type="checkbox"/> Erosion evident <input type="checkbox"/> N/A Areal extent: Depth: <u>Remarks:</u>	

3. Outlet Works	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
Remarks:		
4. Dam	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
Remarks:		
H. Retaining Walls <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1. Deformations	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
Horizontal displacement:	Vertical displacement:	Rotational displacement:
Remarks:		
2. Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
Remarks:		
I. Perimeter Ditches/Off-site discharge <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1. Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
Areal extent:	Depth:	
Remarks:		
2. Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Vegetation does not impede flow
Areal extent:	Type:	
Remarks:		
3. Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
Areal extent:	Depth:	
Remarks:		
4. Discharge Structure	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
<input type="checkbox"/> Functioning	<input type="checkbox"/> Good Condition	
Remarks:		
VIII. VERTICAL BARRIER WALLS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1. Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
Areal extent:	Depth:	
Remarks:		
2. Performance Monitoring	<input type="checkbox"/> N/A	
<input type="checkbox"/> Performance not monitored		
<input type="checkbox"/> Performance monitored	Frequency: Approximately every 6 weeks	
<input type="checkbox"/> Evidence of breaching	Head differential:	
Remarks:		
IX. GROUNDWATER/SURFACE WATER REMEDIES <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A		

A. Groundwater Extraction Wells, Pumps, and Pipelines		<input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A
1. Pumps, Wellhead Plumbing, and Electrical		<input type="checkbox"/> N/A
<input checked="" type="checkbox"/> All required wells located <input type="checkbox"/> Good condition <input checked="" type="checkbox"/> Needs O&M <u>Remarks:</u>		
2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances		<input type="checkbox"/> N/A
<input checked="" type="checkbox"/> System located <input type="checkbox"/> Good condition <input checked="" type="checkbox"/> Needs O&M <u>Remarks:</u>		
3. Spare Parts and Equipment		<input type="checkbox"/> N/A
<input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires Upgrade <input type="checkbox"/> Needs to be provided <u>Remarks:</u> Spare parts were not evident in the WWTP building.		
B. Surface Water Collection Structures, Pumps, and Pipelines		<input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A
1. Collection Structures, Pumps, and Electrical		<input type="checkbox"/> N/A
<input type="checkbox"/> Good condition <input type="checkbox"/> Needs O&M <u>Remarks:</u>		
2. Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances		<input type="checkbox"/> N/A
<input type="checkbox"/> Good condition <input type="checkbox"/> Needs O&M <u>Remarks:</u>		
3. Spare Parts and Equipment		<input type="checkbox"/> N/A
<input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires Upgrade <input type="checkbox"/> Needs to be provided <u>Remarks:</u>		
C. Treatment System		<input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A
1. Treatment Train (Check components that apply)		
<input checked="" type="checkbox"/> Metals removal <input checked="" type="checkbox"/> Oil/water separation <input type="checkbox"/> Bioremediation <input type="checkbox"/> Air stripping <input checked="" type="checkbox"/> Carbon adsorbents <input type="checkbox"/> Filters (list type): <input type="checkbox"/> Additive (list type, e.g., chelation agent, flocculent) <input checked="" type="checkbox"/> Others (list): Fabric Filters <input type="checkbox"/> Good condition <input type="checkbox"/> Needs O&M <input type="checkbox"/> Sampling ports properly marked and functional <input type="checkbox"/> Sampling/maintenance log displayed and up to date <input type="checkbox"/> Equipment properly identified <input type="checkbox"/> Quantity of groundwater treated annually (list volume): <input type="checkbox"/> Quantity of surface water treated annually (list volume): <u>Remarks:</u> Needs O&M; system offline. System needs a licensed operator to maintain effectiveness.		
2. Electrical Enclosures and Panels (properly rated and functional)		<input type="checkbox"/> N/A
<input type="checkbox"/> Good condition <input type="checkbox"/> Needs O&M <u>Remarks:</u>		
3. Tanks, Vaults, Storage Vessels		<input type="checkbox"/> N/A
<input type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs O&M <u>Remarks:</u>		

4. Discharge Structure and Appurtenances <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs O & M <u>Remarks:</u>
5. Treatment Building(s) <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs Repair <input type="checkbox"/> Chemicals and equipment properly stored <u>Remarks:</u>
6. Monitoring Wells (pump and treatment remedy) <input type="checkbox"/> N/A <input type="checkbox"/> All required wells located <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input checked="" type="checkbox"/> Needs O&M <u>Remarks:</u>
D. Monitored Natural Attenuation <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A
1. Monitoring Wells (natural attenuation remedy) <input type="checkbox"/> N/A <input type="checkbox"/> All required wells located <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Needs O&M <u>Remarks:</u>
X. OTHER REMEDIES <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A
<p>If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.</p>
XI. OVERALL OBSERVATIONS
A. Implementation of the Remedy
<p>Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.)</p> <p>The remedial objective determined to be necessary at the Mid-South site and the effectiveness of the chosen remedies are as follows:</p> <ul style="list-style-type: none"> • Minimize the threat to the public health from the ingestion of or contact with on-site contaminated soil. • Minimize the threat to the public health from direct ingestion of shallow ground water, both on site and downgradient of the site. • Minimize erosion of contaminated soil and off-site migration to protect public health and environmental quality. • Minimize leaching of contaminants into surface water and ground water. • Identify cost-effective alternatives for remediation of the site.

B. Adequacy of O&M

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

Based on the August 31, 2007 site visit and document data, O&M of the ground water treatment system is not being conducted to the extent necessary to maintain regular operations.

C. Early Indicators of Potential Remedy Failure

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

There are no indicators that the remedy may be compromised; there is no indication of offsite migration. However, the system must be maintained and brought back into operations to maintain operations and protectiveness of the remedy.

ATTACHMENT 3
INTERVIEW RECORDS

Five-Year Review Interview Record Mid-South Wood Products, Mena, Arkansas		Interviewee: ADEQ (Dianna Kilburn) Phone: 501-682-0844 email:			
Site Name		EPA ID No.		Date of Interview	Interview Method
Mid-South Wood Products		EPA ID# ARD092916188		08/31/07	Onsite-ADEQ
Interview Contacts	Organization	Phone	Email	Address	
Shawn Ghose	EPA Region 6	214-665-6782	Ghose.shawn@epa.gov	6SF-AP 1445 Ross Ave Dallas, Texas 75202	
Interview Questions / ADEQ Concerns					
A meeting was held on September 12, 2007 to discuss ADEQ concerns for the remedy at the Mid-South Site.					
1. The Old Pond Landfill may allow infiltration and migration of leachate to the fractured bedrock aquifer below it.					
EPA Response: A study was conducted to address this concern. All documents reviewed stated that the Old Pond material was treated (solidification/stabilization) and passed all treatment standards. Review and evaluation of ground water information from monitor and recovery wells indicated that 1) mounding of the ground water table/potentiometric surface immediate to the Landfill did not occur; 2) recovery well different volumes indicating water was not moving from a saturated landfill; and 3) constituent concentrations were dramatically different from one recovery well to others.					
2. Arsenic concentrations in soil were greater than the 1986 ROD level.					
EPA Response: The 1986 levels are based on site levels; EPA is proposing a risk based cleanup level for all COCs, including the ADEQ requested constituent – PCP. An additional ADEQ concern is for wind-blown dust containing arsenic levels found in discrete areas of the site. EPA will show that these minor areas of contamination will not affect offsite receptors at risk levels.					
3. In the past, and post RA, it appeared that the CCA tanks immediate to the CCA operations had leaked and stained soils down-gradient of the tanks, an investigation should be conducted in this area.					
EPA Response: EPA is reviewing/evaluating data to determine the extent of a supplemental investigation in this area.					

4. There appears to be an area immediate to the CCA plant and between RW-15 and RW-6 which may allow subsurface migration of source and/or dissolved constituents down-gradient and past the french drain collection system.

Response: EPA is reviewing/evaluating data to determine the extent of a supplemental investigation in this area.

5. The ground water treatment plant has not operated effectively for some time, the system must have adequately trained personnel for the remedy to be effective.

EPA Response: EPA will work with the ADEQ to determine the most appropriate approach to address this issue.

- 6 Add PCP and Copper to the COC list.

EPA Response: EPA will add PCP and Copper to the COC list.

- 7 When the appropriate document is drafted, ADEQ disagrees with the proposed risk-based levels presented in Table 3 on Page 9. This table presents screening levels for an Industrial/Commercial worker scenario at a 5E-05 level. Unless a site is used solely for industrial purposes only (not commercial), it is the practice of ADEQ to use residential screening levels. Laboratory results from the ADEQ sampling event conducted in 1998 indicate several arsenic concentrations in soil exceed the residential screening level and background concentrations typically found in soils in Arkansas. Since several residents are located near the perimeter of the site (not commercial), ADEQ feels the proposed screening levels (e.g. industrial) may not be adequately protective of human health. ADEQ views commercial to residential standards because zoning considers daycare or adult care facilities as commercial.

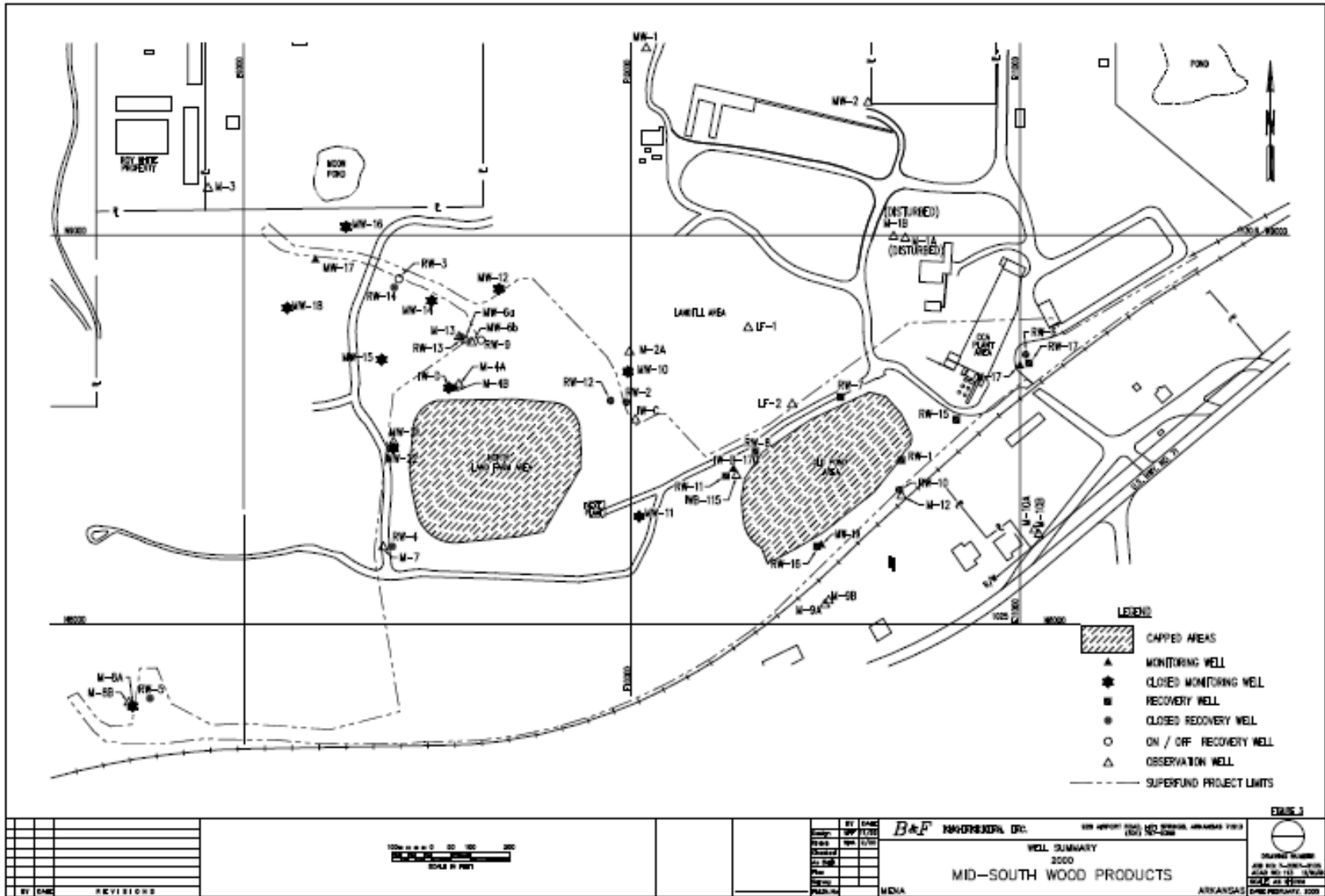
EPA Response: The intent of an industrial/commercial classification is to prevent residential use. However, with the ADEQ classification, it is proposed to classify the Mid-South site as industrial.

Five-Year Review Interview Record Mid-South Wood Products, Mena, Arkansas		Interviewee: Mayor George McKee Phone: 479-394-4585 email: McKeeMayor@sbcglobal.net			
Site Name		EPA ID No.		Date of Interview	Interview Method
Mid-South Wood Products		EPA ID# ARD092916188		08/31/07	Mena Office
Interview Contacts	Organization	Phone	Email	Address	
Shawn Ghose	EPA Region 6	214-665-6782	Ghose.shawn@epa.gov	6SF-AP 1445 Ross Ave Dallas, Texas 75202	
<p>Interview Questions / ADEQ Concerns</p> <p>A meeting was held on September 12, 2007 at the Mayor's office to discuss any issues/concerns the Mayor may have for the Mid-South Site.</p>					
<p>1. Mayor McKee stated he had not heard of any complaints or concern regarding the Mid-South site. He indicated however that he has been the mayor for less than 3 years. The town of Mena receives it's drinking water from a Lake more than 30 miles away</p> <p>EPA Response: EPA stated that any concerns he may have or may receive from the community can be directed to the site RPM – phone and email addresses were submitted to him.</p>					
<p>2. The Mayor was asked if he wanted any additional information on the site. He indicated that what ever information the EPA thought may be relevant would be appreciated.</p> <p>EPA Response: EPA indicated that a six-page summary and additional information on the chemicals present at the site would be made available to him in the near future.</p>					
<p>3. The Mayor was not aware of how risk was applied to a site such as Mid-South.</p> <p>EPA Response: EPA discussed the risk assessment approach and how that value was based on a particular receptor in a residential, commercial or industrial setting.</p>					

Five-Year Review Interview Record Mid-South Wood Products, Mena, Arkansas		Interviewee: Mrs. Connie Polk Phone: email:			
Site Name		EPA ID No.		Date of Interview	Interview Method
Mid-South Wood Products		EPA ID# ARD092916188		08/31/07	Residence
Interview Contacts	Organization	Phone	Email	Address	
Shawn Ghose	EPA Region 6	214-665-6782	Ghose.shawn@epa.gov	6SF-AP 1445 Ross Ave Dallas, Texas 75202	
Interview Questions / ADEQ Concerns					
<p>1. Mrs Polk was asked if she had any complaints or concerns for the Site. She had not had any concerns regarding the site. However she was concerned about high incidence of cancer among her church group.</p> <p>EPA Response: RPM advised her to contact Arkansas Public Health department to see if any epidemiological studies are called for. RPM also discussed the general EPA responses at the site.</p>					

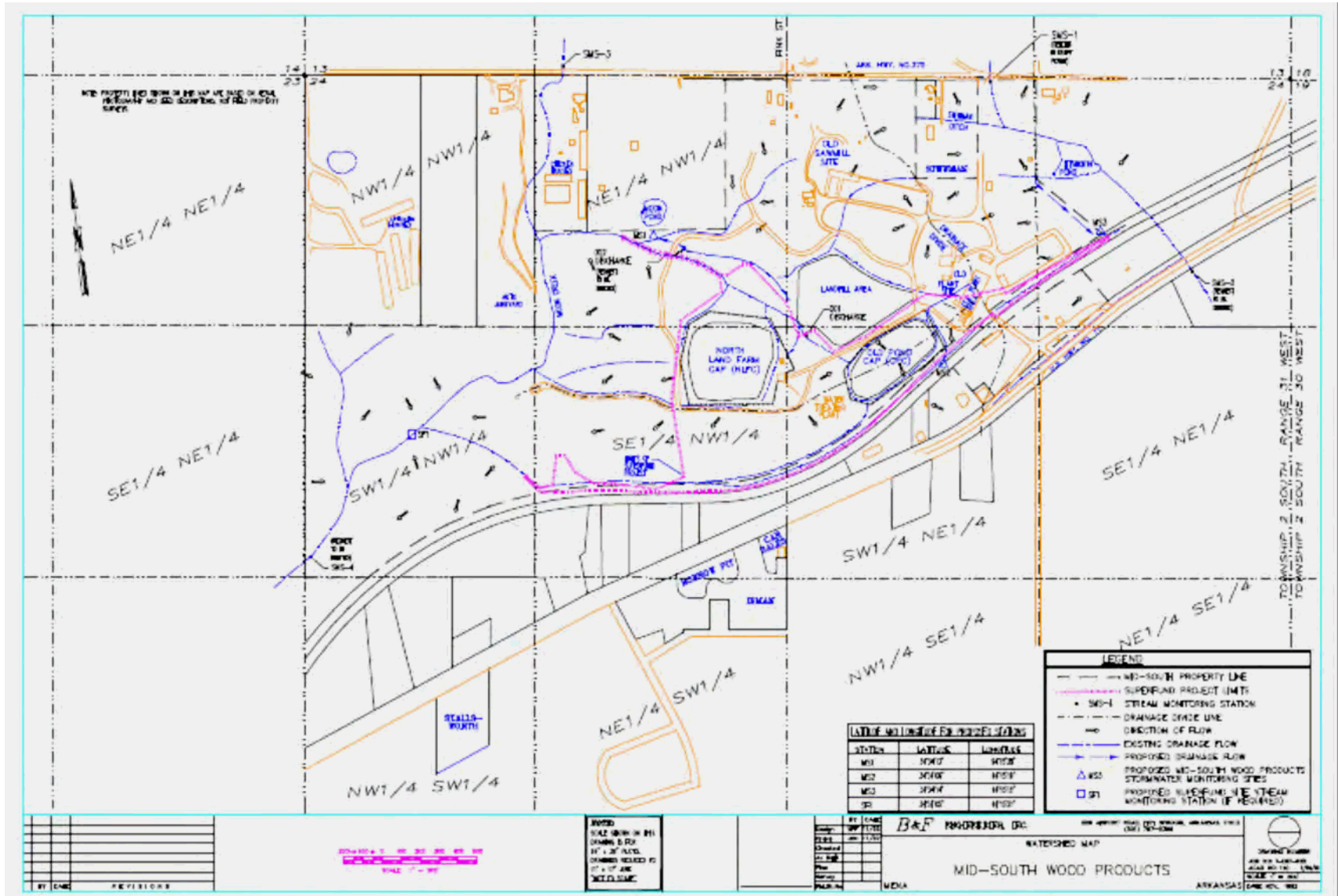
Five-Year Review Interview Record Mid-South Wood Products, Mena, Arkansas		Interviewee: Mr. Doyle Judkins Phone: email:			
Site Name		EPA ID No.		Date of Interview	Interview Method
Mid-South Wood Products		EPA ID# ARD092916188		08/31/07	Hwy 71S
Interview Contacts	Organization	Phone	Email	Address	
Shawn Ghose	EPA Region 6	214-665-6782	Ghose.shawn@epa.gov	6SF-AP 1445 Ross Ave Dallas, Texas 75202	
Interview Questions / ADEQ Concerns					
<p>1. The RPM interviewed the closest business to the site - Boyle's Window Service at 2011 Hwy. 71S. Mr. Doyle Judkins (owner) had no concerns or complaints about the superfund site. Mr. Judkins stated that all the buildings/establishments along Hwy 71S were businesses and were connected to city water.</p> <p>1. EPA Response: EPA asked if Mr. Judkins required any information on the Site; Mr. Judkins declined.</p>					

ATTACHMENT 4
LOCATION MAPS



WELL LOCATIONS

A-24



WATERSHED MAP

ATTACHMENT 5
WELL CLOSURE CRITERIA

3.0 CLOSURE PROCEDURE

- 3.0.a The objective of the groundwater recovery and treatment system is to remove all creosote, PCP, and CCA related contaminants from the site's groundwater system. The groundwater recovery system was designed based on the best information available at the time of remedial design. Additional information regarding the characteristics of the site's groundwater may be obtained from the operation and evaluation of the recovery and monitoring system. Alterations to the groundwater system may be recommended periodically based on this additional information. Before an alteration is made in the system or operation of the system, a proposal shall be presented to and approved by the EPA.
- 3.0.b Concentrations of parameters presented in Table 3.1 were established in 1989 to determine the remediation effectiveness and thereby the appropriate time for recovery well closure.

PARAMETER	MIN. RISK TO HUMAN HEALTH (mg/l)	MIN. DETECTION LIMIT (mg/l)
Pentachlorophenol	0.2 ⁽¹⁾	0.0074
Benzo(a)anthracene	0.01 ⁽²⁾	0.01
Benzo(a)pyrene	0.01 ⁽²⁾	0.01
Benzo(b+k)fluoranthene	0.01 ⁽²⁾	0.01
Chrysene	0.01 ⁽²⁾	0.01
Arsenic	0.05 ⁽³⁾	0.05
Chromium	0.05 ⁽³⁾	0.007

⁽¹⁾ U.S. EPA Reference Dose

⁽²⁾ Analytical Detection Limit

⁽³⁾ MCL per 40 CFR 264.94

- 3.0.c The rationale was based on a promulgated standard or an official criterion, MCL or RfD established by EPA for non carcinogens.
- 3.0.d After completion of the 1993 groundwater monitoring, recovery wells that did not show parameter concentrations above the minimum risk to human health were eligible to be evaluated for closure. In 1996, recovery wells that showed no contamination greater than minimum risk to human health (specified in Table 3.1) for at least five years became eligible for closure without further testing with approval from the EPA. Recovery wells, RW-2, 4, 6, 12, and 13 were closed February 1, 1997.

- 3.0.e Recovery wells which have no contamination greater than minimum risk to human health for a period of four years are eligible for the following on/off schedule with approval from the EPA.

Pumping should discontinue at the closure candidate well(s) for a period of three months. The recovery well(s) should then be pumped for three months, then off for three months, and then pumped for three months. The well(s) shall be sampled and analyzed for the parameters listed in Table 3.1 at the end of each of the on/off periods (four sampling events). If no contamination is detected greater than minimum risk to human health (specified in Table 3.1) during the on/off period, pumping of the well(s) may be discontinued with the approval of the EPA. If contamination is detected, pumping shall resume until the well shows no contamination for four consecutive sampling events. At this time the well becomes eligible for the above on/off schedule with approval from the EPA.

- 3.0.f The recovery well closure schedule as described in the 1989/90 O & M Manual includes one year of quarterly sampling prior to the year of on/off sampling as described above. The purpose of the quarterly sampling was to check for possible seasonal variations in contamination. However, the sampling history of the wells indicates that the wells have been sampled during each season. Therefore, quarterly sampling for the purpose of checking seasonal variations in contamination should not be necessary.

- 3.0.g In 1996, monitoring wells with no history of contaminants were converted from annual sampling status to five year sampling status with approval from the EPA.

- 3.0.h An evaluation of the water sample analysis from monitoring wells within the three distinct systems at the site: capped areas, the groundwater recovery system and the geologic fault zone will determine if the groundwater within each system has the attained cleanup standard. The monitoring wells associated with each system are defined in Appendix E, "Monitoring Well Sampling and Analysis Plan." The method of evaluating attainment of clean-up standards is described in "Methods for Evaluating the Attainment of Cleanup Standards Volume 2: Groundwater" (EPA, July 1992). This method, recommended by the EPA for the Mid-South site, utilizes monitoring wells that have a history of contamination but currently appear to meet site attainment criteria. Data collection is initiated after all the recovery wells within a groundwater recovery system are closed and the groundwater system is in steady state, as defined by this method. Following data collection, a statistical procedure from the "Methods for Evaluating the Attainment of Cleanup Standards Volume 2: Groundwater" is utilized to verify that the monitoring wells are at or below the specified clean-up criteria. If attainment is not achieved, a schedule for sampling is initiated with periodic statistical determinations conducted until attainment is reached.

ATTACHMENT 6
THIRD FIVE-YEAR REVIEW PHOTOS



Photo 1: Oil-Water separator within wastewater treatment plant (WWTP)



Photo 2: Storage and Overflow tanks north of (WWTP)



Photo 3: Chromated Copper Arsenate (CCA) treatment cylinder and storage tanks



Photo 4: MWs 4A & 4B; North Landfarm area in background



Photo 5: Standing on Old Pond capped area; note WWTP in distance and landfarm capped area; note perimeter security fence, which encircles Old Pond; fence also encircles Landfarm capped area



Photo 6: Activated carbon canisters and fabric filters on south side of WWTP



Photo 7: Landfill area



Photo 8: Former South Landfarm area

ATTACHMENT 7

COURTHOUSE DOCUMENT
INSTITUTIONAL CONTROLS

RESTRICTIVE COVENANT

That MID-SOUTH WOOD PRODUCTS OF MENA, INC., an Arkansas Corporation, imposes, as a restrictive covenant upon the lands described in this document, and no other lands owned by the said MID-SOUTH WOOD PRODUCTS OF MENA, INC., a restrictive covenant, and the land described herein shall be subjected to this covenant in the event of any conveyance which may hereinafter occur regarding title to the lands described in this instrument, and such restrictive covenant shall be in accordance with the terms and conditions contained herein.

That the lands to be subjected to said restrictive covenant are in Polk County, Arkansas, and are more particularly described as follows, to-wit:

A PART OF THE EAST HALF (E 1/2) OF THE NORTHWEST QUARTER (NW 1/4) AND PART OF THE WEST HALF (W 1/2) OF THE NORTHEAST QUARTER (NE 1/4) OF SECTION 24, TOWNSHIP 2 SOUTH (T2S), RANGE 31 WEST (R31W), OF THE FIFTH PRINCIPAL MERIDIAN IN POLK COUNTY, ARKANSAS, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHWEST CORNER OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER (NE 1/4 NW 1/4) OF SAID SECTION 24; RUN THENCE SOUTH 89° 18' 56" EAST 715.02 FEET ALONG THE SOUTH LINE OF SAID NORTHEAST QUARTER OF THE NORTHWEST QUARTER (NE 1/4 NW 1/4) TO THE POINT OF BEGINNING OF THE TRACT OF LAND HEREIN DESCRIBED: THENCE NORTH 0° 44' 15" EAST 361.34 FEET; THENCE SOUTH 66° 16' 20" EAST 663.00 FEET; THENCE SOUTH 25° 50' 20" EAST 286.33 FEET; THENCE NORTH 60° 07' 28" EAST 520.26 FEET; THENCE SOUTH 66° 07' 11" EAST 303.32 FEET; THENCE NORTH 65° 27' 05" EAST 48.63 FEET; THENCE NORTH 40° 57' 02" EAST 196.75 FEET; THENCE NORTH 57° 59' 14" EAST 180.92 FEET; THENCE SOUTH 28° 43' 50" EAST 29.17 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY (50 FEET FROM CENTERLINE) OF THE KANSAS CITY SOUTHERN RAILROAD CO.; THENCE SOUTHWESTERLY ALONG THE NORTHERLY RIGHT OF WAY OF SAID RAILROAD 1185 FEET TO A POINT THAT IS SOUTH 49° 31' 38" WEST 1182.39 FEET FROM THE LAST DESCRIBED POINT; THENCE NORTH 25° 21' 08" WEST 167.12 FEET; THENCE SOUTH 89° 14' 12" WEST 812.09 FEET; THENCE SOUTH 3° 42' 38" EAST 413.19 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY (50 FEET FROM CENTERLINE) OF THE KANSAS CITY SOUTHERN RAILROAD; THENCE WESTERLY ALONG SAID NORTHERLY RIGHT OF WAY TO A POINT THAT IS SOUTH 87° 31' 20" WEST 669.11 FEET FROM THE LAST DESCRIBED POINT; THENCE NORTH 1° 52' 36" WEST 263.80 FEET; THENCE NORTH 88° 10' 03" EAST 20.00 FEET; THENCE SOUTH 3° 02' 11" EAST 152.42 FEET; THENCE SOUTH 87° 47' 33" EAST 590.41 FEET; THENCE NORTH 0° 44' 15" EAST 766.91 FEET TO THE POINT OF BEGINNING; CONTAINING 17.82 ACRES, MORE OR LESS.

That the restrictive covenant to be imposed upon the land herein described and no other shall be in form as follows:

- (1) The land herein described has been used to manage hazardous waste as defined by the Resource Conservation and Recovery Act, 42 U.S.C. Subsection 6904(5), and hazardous substances as defined by the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Subsection 9601;

RESTRICTIVE COVENANT
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- (2) Use of the land herein described, in a manner which would disturb the integrity of the final cover, or any component of the containment or treatment system, or the function of the land herein described monitoring system is prohibited under 40 C.F.R. Subsection 264.117, unless the United States Environmental Protection Agency regional administrator determines that the disturbance is necessary to the proposed use of the property and will not increase the potential hazard to human health or the environment, or is necessary to reduce a threat to human health or the environment; and,
- (3) A survey plat, of the lands herein described, together with a record of the type, location, and quantity, if known, of the hazardous waste disposed of within the land herein described which is required by 40 C.F.R. Subsection 264.119 has been filed with the local zoning authority, the Arkansas Department of Pollution Control and Ecology and the United States Environmental Protection Agency regional administrator.

This restrictive covenant is imposed as of this 25th day of September, 1989.

MID-SOUTH WOOD PRODUCTS OF
MENA, INC.

BY [Signature]
JIM HUFF, President

BY [Signature]
JIM HICKS, Secretary

STATE OF ARKANSAS)
) SS
COUNTY OF GARLAND)

ACKNOWLEDGMENT

BE IT REMEMBERED, that on this day appeared before me, the undersigned, a Notary Public duly commissioned and acting within and for the County and State aforesaid JIM HUFF and JIM HICKS, to me well known to be the President and Secretary, respectively, of MID-SOUTH WOOD PRODUCTS OF MENA, INC., whose names are subscribed to the foregoing Corporate Warranty Deed as Grantors, and acknowledged that they had, in their respective capacities and on behalf of said Corporation, executed same for the considerations and purposes therein mentioned and set forth.

WITNESS my hand and seal as such Notary Public on this 25th day of Sept., 1989.

Margaret G. Albert
NOTARY PUBLIC

My Commission Expires:

3-26-90

CERTIFICATE OF RECORD

STATE OF ARKANSAS }
COUNTY OF POLK } ss.

I, Linda K. Jones, Circuit Clerk and Ex-Officio Recorder for the County aforesaid, do hereby certify that the annexed and foregoing instrument of writing was filed for record in my office on the 25th day of Sept., 1989, A.D., at 3:10 o'clock P. M., and the same is now duly recorded with the acknowledgements and certificates thereon, in Vol. M-215 of Misc. Record, Page 515-517.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said court this 25th day of Sept., 19 89

Linda K. Jones
Circuit Clerk and Ex-Officio Recorder.
By Marcy Heron, D. C.