OLD MIDLAND PRODUCTS SUPERFUND SITE

YELL COUNTY, ARKANSAS

SECOND FIVE-YEAR REVIEW REPORT

May 2006

Prepared By:
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8001 National Drive
Little Rock, Arkansas

Prepared For:
Environmental Protection Agency, Region VI
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Statement of Protectiveness

The implemented remedy is protective of human health and the environment, it has attained and maintained Federal and State requirements that are applicable or relevant, and it has been cost effective. The remedy has satisfied EPA's policy and preference for remedies that employ treatment which permanently and significantly reduce toxicity, mobility, or volume of hazardous substances. Finally, it has been determined that the source control remedy utilized permanent solutions and alternative treatment technologies to the maximum extent practicable.

Tammie Hynum	4/26/06
Tammie Hynum, Interim Chief Hazardous Waste Division, ADEQ	Date

Determination of Protectiveness

It has been determined that the remedy for the Old Midland Products Superfund Site is protective of human health and the environment, and will remain so provided the action items identified in the Second Five-Year Review Report are addressed as described within.

Pamela Phillips, Acting	5/31/06
Sam E. Coleman, P.E., Director Superfund Division, USEPA, Region 6	Date

CONCURRENCE SIGNATURES

Clark McWilliams	4/11/06	M. Gary Miller	4/28/06
Clark McWilliams, P.E. Project Manager, ADEQ	Date	M. Gary Miller, P.E. Remedial Project Manager, USEPA	Date
	4/11/06		4/28/06
Kin Siew, P.E. Engineering Supervisor, ADEQ	Date	Gus Chavarria, Chief Arkansas/Texas Program Section	Date
Tom Ezell	April 19/2006	John R. Hepola	5/1/06
Tom Ezell Inactive Sites Branch Manger, ADEQ	Date	John Hepola, Chief Arkansas/Texas Branch	Date
Amy Salinas	5/11/06		05/30/06
Amy Salinas Office of Regional Counsel	Date	Mark Peycke, Chief Superfund Branch, Off. of Regional Counsel	Date
		Pamela Phillips	5/31/06
Claudia Hubbard, Writer Editor Superfund Division	Date	Pamela Phillips, Deputy Director Superfund Division, USEPA, Region 6	Date

Second Five-Year Review Report

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List of Acronyms

ADEQ	Arkansas Department of Environmental Quality (formerly ADPC&E)
ADPC&E	Arkansas Department of Pollution Control and Ecology
ARARs	Applicable or Relevant and Appropriate Requirements
bgs	below ground surface
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
DNAPL	Dense Non-Aqueous Phase Liquid
EPA	United States Environmental Protection Agency
HSWA	Hazardous and Solid Waste Act
HRS	Hazard Ranking System
LNAPL	Light Non-Aqueous Phase Liquids
MCL	Maximum Contaminant Level
mg/L	milligrams-per-liter
MNA	Monitored Natural Attenuation
NAPL	Non-Aqueous Phase Liquid
NCP	National Contingency Plan
ng/L	nanograms-per-liter
NPL	National Priorities List
O&M	Operation and Maintenance
OERR	Office of Emergency and Remedial Response
OMPS	Old Midland Products Site
OUs	Operable Units
PCP	Pentachlorophenol
PNA	Polynuclear Aromatics Compounds
ppm	parts per million
PRP	Potentially Responsible Party
RAOs	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
Report	Second Five-Year Review Report
RI/FS	Remedial Investigation/Feasibility Study
RD/RA	Remedial Design/Remedial Action
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
Site	Old Midland Products Superfund Site
TBC	"to be considered" (elements of a remedy selection)
TI	Technically Impracticable
TIO	Technology Innovation Office (USEPA)
ug/L	micrograms-per-liter
USACE	Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Services
WWTP	Wastewater Treatment Plant

Executive Summary

Pursuant to Section 121(c) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or "Superfund"), 42 United States Code (USC) 9621(c), the second five-year review of the remedy at the Old Midland Products Site (OMPS or "Site") located in Ola, Yell County, Arkansas, was completed in February 2006. The results of the five-year review indicate that the remedy completed to-date is protective of human health and the environment in the short term; however, for the remedy to be protective in the long term, follow-up actions need to be taken. Overall, the remedial actions performed appear to be functioning as designed, and the Site has been maintained appropriately.

On March 24, 1988, the Environmental Protection Agency (EPA), with concurrence from the State, and in accordance with CERCLA, 42 USC §9601, issued the Record of Decision(ROD) for OMPS. The ROD required the remediation of two Site components: source control and groundwater. The source areas included contaminated soils, sediments, and lagoon water and sludges. The selected remedy for the Site established target cleanup goals for the soil, sediments, and groundwater. This second five-year review again assesses the selected remedy to evaluate its protectiveness.

The source control remedy of incineration and backfill was completed in 1993. Operation and maintenance (O&M) of the source control remedy has been performed since that time. The operation and maintenance activities have consisted of cap management with vegetation and weed control. Adequate and healthy vegetation has been maintained on the Site.

Since the completion of the source control remedy the operation of the groundwater remedy has also been performed. The contaminated groundwater has been extracted, treated, and discharged onsite.

During the second five-year review period the implemented source control remedy and the on-going groundwater remedy were reviewed and assessed for protectiveness. The current operations are considered protective; however, institutional controls are necessary to provide long term protectiveness. The only issue concerns the long term operation of the groundwater remedy. The pump and treat remedy has been operating ten (10) years and its effectiveness has been considered marginal. The pump and treat system has performed well, but the remedy technology has not performed too efficiently. At the time of groundwater remedy selection, in 1988, pump and treat technology was the common solution for contaminated groundwater. However, years of experience, at OMPS and numerous other sites, has revealed pump and treat technology on fractured rock subsurface conditions does not efficiently remove contaminants and is marginally effective in removing non-aqueous phase liquids (NAPL) like the ones found at OMPS. EPA and ADEQ are in the process of amending the ROD. In an Amended Proposed Plan, issued in June 2005, EPA and ADEQ proposed an amended remedy for the public review and comment. The Amended Proposed Plan includes a technical impractability (TI) waiver and long term monitored natural attenuation (MNA) with institutional controls (ICs). This remedy amendment has not been finalized; therefore, this second five-year review addresses only the existing implemented remedy.

Five-Year Review Summary Form		
SITE IDENTIFICATION		
Site name (from WasteLAN): Midland Products		
EPA ID (from WasteLAN): ARD980745665		
Region: EPA Region 6	State: Arkansas	City/County: Ola/Yell County
SITE STATUS		
NPL Status: ☒Final ☐Deleted ☐Other (specify):		
Remediation status (choose all that apply): ☐ Under Construction ☒ Operating ☐ Complete		
Multiple OUs? ☐Yes ☒No	Construction completion date: December 12, 1993	
Has site been put into reuse? ☐ Yes ☒ No (Portions of the site)		
REVIEW STATUS		
Reviewing agency: ☒ EPA ☐ State ☐ Tribe ☐Other Federal Agency:		
Author: Arkansas Department of Environmental Quality		
Review period: March 2001 through February 2006		
Date(s) of site inspection: February 23, 2006		
Type of review: ☐Statutory ☒ Policy ☒Post-SARA ☐Pre-SARA ☐NPL-Removal only ☐Non-NPL Remedial Action Site ☐NPL State/Tribe-lead ☐Regional Discretion		
Review number: ☐1 (first) ☒2 (second) ☐ 3 (third) ☐Other (specify):		
Triggering action: ☐Actual RA Onsite Construction ☐Actual RA Start ☐Construction Completion ☒Previous Five-Year Review Report ☐Other (specify):		
Triggering action date (from WasteLAN): 03/05/2001 (Date of 1st FYR)		
Due date (five years after triggering action date): 03/05/2006		

Five-Year Review Summary Form

Issues:

Operation and maintenance (O&M) activities continue for the source control elements of the remedial action. The incinerator ash remains covered with no rodent burrows or significant surface erosion. Even though the remedy did not require an engineered protective cap over the ash, the existing cover is stable and provides a base for the vegetative growth. Active groundwater remediation (pump-and-treat) is ongoing at the Site, and based on the data review, site inspections, interviews and technical assessment, it appears the remedy is functioning as intended by the decision documents. However, even with the remedy functioning, the groundwater remedial goals will likely not be achieved within a reasonable time period. A proposed remedial alternative of monitored natural attenuation with a onsite technical impractability area has been presented.

Recommendations and Follow-up Actions:

ADEQ will continue to monitor the Site and the cover over the incinerator ash. ADEQ will continue to operate the pump-and treat system until an amended ROD is in-place, at which time the State will implement the new RD/RA. Institutional controls are needed to prevent exposure to contaminated groundwater.

Protectiveness Statement(s):

The remedy implemented for the OMPS is considered protective of human health and the environment in the short term, but institutional controls (ICs) are needed to ensured long term protectiveness. The contaminated soils, sediments and sludges of the Site were addressed through onsite incineration. Contaminated groundwater is extracted by the Site recovery wells and treated in the onsite wastewater treatment plant prior to discharge to the surface. Continued O&M will ensure that the selected remedy remains protective.

Other Comments:

The Site is in good condition. The vegetation cover is well established and the grounds are maintained throughout the year. The Site is secured with fencing and locks, and signs are posted. Improvements to the site following an optimization study conducted by the USEPA's, Technology Innovation Office (TIO) have resulted in safer and more effective groundwater extraction and treatment and reduced pump-and-treat costs.

Second Five-Year Review Report
Old Midland Products Site

Section 1.0
Introduction

The Arkansas Department of Environmental Quality (ADEQ) has conducted a five-year review of the Remedial Action implemented at the Old Midland Products Superfund Site for the period 2001 through February 2006. The Old Midland Products Site (or "Site") is located near Ola, Arkansas in Yell County. This is the Second Five-Year Review for the Site. The purpose of a five-year review is to determine whether the remedy at a site remains protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in five-year review reports. In addition, five-year review reports identify issues found during the review, if any, and recommendations to address them. This Second Five-Year Review Report (Report) documents the results of the review for this site, conducted in accordance with EPA guidance on five-year reviews.

EPA guidance on conducting five-year reviews is provided by OSWER Directive 9355.7-03BP, Comprehensive Five-Year Review Guidance (EPA, June 2001). This replaces and supersedes all previous guidance on conducting five-year reviews. Guidance provided in the document has been incorporated into the Second Five-Year Review performed for the site.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 United States Code (USC) §9601 et seq. and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 Code of Federal Regulations (CFR) 300 et seq., call for five-year reviews of certain CERCLA remedial actions. EPA policy also calls for a five-year review of remedial actions in some other cases. The statutory requirement to conduct a five-year review was added to CERCLA as part of the Superfund Amendments and Reauthorization Act of 1986 (SARA), P.L. 99-499. The EPA classifies each five-year review as either 'statutory' or 'policy' depending on whether it is being required by statute or is being conducted as a matter of policy. As specified by CERCLA and the NCP, statutory reviews are required for sites where, after remedial actions are complete, hazardous substances, pollutants, or contaminants will remain onsite at levels that will not allow for unrestricted use or unrestricted exposure. The Second Five-Year Review for OMPS has been classified as a policy review because the objective of the ROD is to allow unrestricted use and exposure following successful completion of the remedial action.

This is the second five-year review for OMPS; the first review was completed in March 2001. The triggering action for the first five-year review at OMPS is the date of the start of the Remedial Action (RA) for the Site (March 1991). The triggering action for all subsequent five-years reviews is the signature date of the previous five-year review.

Section 2.0
Site Chronology

A chronology of significant site events and dates is included in Table 1, provided at the end of the report text. Sources of this information are listed in Attachment 2, Documents Reviewed.

Section 3.0
Background

This section describes the physical setting of the Site, including a description of the land use, resource use, and environmental setting. This section also describes the history of contamination associated with the Site, the initial response actions taken at the Site, and the basis for each of the initial response actions. Remedial actions performed subsequent to the initial response actions at the Site are described in Section 4.

3.1 Physical Characteristics

The OMPS consists of 37.75 acres, and is located in Yell County, Arkansas as shown on Figure 1, about one-half mile east of the City of Ola, which has a population of approximately 1,200. The Site is bordered by Highway 10 to the south and extends north to Old Highway 10. A right-of-way for the Little Rock and Western Railway passes through the northern portion of the Site. Ola Mountain rises up to an elevation of 450 feet just south of the Site, which is on a flat area with a uniform gentle slope (2-3%) toward the north-northwest.

The Site includes two parcels as follows: first, an area of about 2.75 acres which included the wood treatment building and the waste impoundments; and, second, an area about 35 acres which surrounds the first parcel and extends between the right-of-way for Highway 10 and Old Highway 10.

The OMPS is topographically divided into three drainage sections - a western section, an eastern section, and a section around the former treatment works and lagoons. In general, these sections average from a 2.5% slope at the southern end of the Site to a very flat boggy area at the northern end. The entire runoff from the Site converges in a clearly defined drainage channel located approximately in the center of the northern portion of the Site. The channel passes through a culvert under the Little Rock and Western Railroad tracks and then northwesterly under Old Highway 10 and on to Keeland Creek located down slope a short distance. Keeland Creek subsequently flows through the Petit Jean River State Wildlife Management Area and then into the Arkansas River about 25 miles from the Site.

3.2 Land and Resource Use

The area immediately surrounding the Site boundary is a mixture of residential, farming, and transportational type activities. To the east of the Site is a small piece of open land used for grazing farm animals. The Little Rock and Western Railroad track cuts through the northern third of the Site and runs in a general east to west direction. The north, northeastern portion of the Site (north of the railroad track) is somewhat overgrown and surrounded by shrub brush and small tress. It has not been utilized since the Site remediation work was conducted. Old Highway 10, the north boundary of the Site, is occupied by houses and trailer houses. Immediately to the west and bordering the Site is a residential home and a small portion of farmland. South and across Highway 10, which is the southern extent of the Site, a partially wooded hill rises toward a residential and small farm area. To the far west of the Site and bordering the woods is a residential house with several other homes located even further to the west. On a larger scale the land surrounding the Site includes the City of Ola at one-half mile and a large wood mill at one-quarter mile to the west with the Petit Jean River Wildlife management Area about three-quarters of a mile north.

According to the 1982 Census of Agriculture, about thirty four percent (34%) of Yell County was farmland. In the local area the majority of the farmland is used for raising livestock and poultry. Forestland makes up sixty eight (68%) of the county with sawmills and pulpwood yards scattered throughout the area. Major wood products produced include lumber, crossties, roof trusses, wood turnings, custom cabinetry, and hardwood furniture stock. Yell County has over three thousand (3000) ponds and large reservoirs. The ponds are primarily used in the farming industry and the local large reservoirs were constructed years ago for flood control. Today these large reservoirs provide sport fishing and recreation opportunities for the area.

According to the 2000 Census, approximately 1,900 people live within a four-mile radius of the Site. The Site vicinity is predominantly rural; however; the majority of the people do not live on farms. The types of employment reflect the town of Ola's inclusions rather than the rural nature of the area. Census data indicates about four percent (4%) of the population are tied to farming, forestry, fishing and mining industries. Fifty percent (50%) are employed in retail and manufacturing, and fourteen percent (14%) are employed in the health services. Transportation, entertainment, and educational services comprise the remaining employment types.

A large percent of the area residents receive their water from public and private utilities. Prior to the remedial action about four percent (4%) of the area residents used private water wells. There are two private water wells located within one-quarter mile of the Site. Although the offsite residential wells were not contaminated, the nearest residence, located just to the west of the Site, was hooked up to the public water system. These wells have been routinely sampled throughout the remedy construction and implementation, and are still not contaminated by the Site. The water well at the nearest residence is currently used only for outside purposes (i.e., watering plants and animals). The other nearby residence has not hooked onto the available public water supply. The private well at this residence has been used off-and-on for potable purposes, and currently, it is again being used for human consumption.

3.3 History of Contamination

OMPS is known to have been in operation from 1969 to 1979 as a wood preserving plant. However, EPA aerial photos indicate that the sawmill may have been in operation as early as 1960. Former Site facilities included several buildings used to house two sawmills, a wood preserving treatment plant, waste/product storage lagoons, and water treatment settling lagoons. Operations included treating wood with creosote and pentachlorophenol (PCP) to preserve the wood from bacterial and insect damage. The treated wood was allowed to dry in open areas to the east and west of the former lagoons and treatment building. Effluent from the treatment process containing PCP and polynuclear aromatic compounds (PNAs) was discharged into the former lagoons using a moveable discharge pipe. Pond overflows occurred with drainage to the intermittent stream west of the lagoons. Contaminated sediments migrated to and within the onsite intermittent stream. In addition, operation of the lagoons resulted in contamination of the shallow groundwater onsite with an organic liquid phase and an associated dissolved organic phase.

3.4 Initial Response

The OMPS was inspected and investigated by the Arkansas Department of Pollution Control and Ecology (ADPC&E) and EPA beginning in 1981, and continued through the Remedial Design/Remedial Action (RD/RA) work. Prior to the final listing of the Site on the National Priority List (NPL), ADPC&E and EPA conducted about a dozen or so sampling events and inspections. Due to the past waste handling/storage practices at the Site and the nature of the waste present, extensive contamination was documented in and around the old lagoon and treatment area. Site drainage resulted in migration of contaminated sediments to the onsite intermediate drainage way. Access to the Site was restricted, limiting the direct contact threat to public health, but migration of contaminants via groundwater and surface water sediments presented a future risk to public health and the environment.

Even though the contaminants on the Site present a public health and environmental concern, neither an emergency nor removal response action was warranted by EPA or requested by the State. The EPA proposed the Site to the National Priorities List (NPL) on October 15, 1984, and the Site was finalized on the NPL effective July 10, 1986. CERCLA Remedial Investigation/Feasibility Study (RI/FS) work was initiated very soon after the final NPL listing.

3.5 Basis for Taking Action

ADPC&E contracted and managed the RI/FS work between 1986 and 1988. The purpose of the RI was to assess the nature, degree and extent of contamination resulting from past activities at the Site and to evaluate the specific risks to human health and the environment. The FS identified and evaluated the proposed remedial alternatives to mitigate the risks.

Pentachlorophenol was the most widespread contaminant at the Site followed by polynuclear aromatic compounds. The PCP and PNA compounds were prevalent in surface and subsurface soils, drainage way sediments, surface and ground waters, and in the sediments and fluids of the old lagoons. Soil contamination was limited to the area around the old lagoons and treatment building. The vertical extent was determined to generally be about three feet, but much deeper underneath the lagoons. The groundwater contamination within the upper forty (40) feet of soil/rock was limited to an area of non-aqueous phase liquid in the shallower depths, approximately twenty (20) feet deep.

A public health assessment was conducted by selecting indicator chemicals of concern for the Site, assessing the fate and transport of these indicator chemicals and then evaluating the regulatory guidelines and health hazards associated with the chemicals. PCP and PNA compounds were selected as the indicator chemicals. The health assessment concluded that the

Site represented a potential future risk to public health and the environment if no actions were implemented to mitigate such risks. The existing light non-aqueous phase liquid (LNAPL) plume in the shallow groundwater and the leaching contaminants from the lagoon sediments represented the primary risk.

Section 4.0 Remedial Actions

The Second Five-Year Review specifically addresses actions taken at OMPS. This section provides a description of the remedial objectives, selection, and implementation at OMPS. It describes the initial source control remedy and the ongoing operation and maintenance (O&M) activities performed. It also describes the groundwater remedial action and its overall progress. The ADEQ is managing the groundwater RA activities.

4.1 Remedy Selection

On March 24, 1988, the EPA executed a declaration selecting the remedial alternative which included onsite thermal destruction (i.e. incineration) of contaminated soils, sludges and sediments (i.e., source control) as well as accelerated extraction and carbon absorptive treatment of the groundwater (a.k.a., pump-and-treat). A copy of the ROD is included in Attachment 5.

The rationale for the selection of the onsite incineration was based upon the alternative being protective and cost-effective, and also the alternative being able to attain applicable or relevant and appropriate Federal and State standards. The source control alternative utilized a permanent solution and a treatment technology that reduced contaminant mobility, toxicity, and volume to the maximum extent practicable.

The remedy selected and presented in the ROD was developed to satisfy the following six remedial action objectives (RAOs):

- Thermal destruction of contaminants in surface soils.
- Thermal destruction of contaminants in sediments.
- Thermal destruction of contaminants in sludges.
- Cleanup of surface water and groundwater to levels that are protective of human health and the environment.

The ROD included the following cleanup levels:

- Source Control: 1 ppm for PCP (including soils, sediments, and sludges)
- Groundwater: 0.2 mg/L for PCP and 28 ng/L for PNA.

The soils, sludges, and sediments were addressed to a level of 1 part-per-million (ppm) PCP. This level was derived from the Arkansas Water Quality Regulation #2, which had been determined the most stringent existing regulation. That level was expected to remediate the site to a $1x10^{-6}$ incremental increased cancer risk (standard EPA regulatory and guidance criteria) for remedy selection. This cleanup level was verified through sampling and analysis during the remedial action excavation activities. The total PCP soil cleanup level of 1 ppm was deemed sufficiently stringent so that coexisting PNA contaminants would be removed to concentrations well below those that would present any significant threat to the public health or the environment.

The groundwater extraction and treatment remedy was outlined in the ROD as requiring two cleanup level criterions: the maximum contaminant level (MCL) goal of 0.2 milligrams-per-liter (mg/L) for PCP, and the 1×10^{-5} increased cancer risk concentration of 28 nanograms-per-liter (ng/L) for PNAs, from the EPA's Ambient Water Quality Criteria. The cleanup level monitoring has been conducted through regularly scheduled groundwater sampling and analysis activities.

4.2 Remedy Implementation

The Remedial Design (RD) was accomplished by IT Corporation (Houston, TX) and The Mehlburger Firm (Little Rock, AR) during 1988 and 1989 under a contract with ADPC&E. The design included detailed remedial action specifications for the selected remedy of onsite incineration and groundwater extraction and treatment. The RD was funded by ADPC&E and EPA under a cooperative agreement.

The procurement of the remedial action contractor was conducted in 1990 by the competitive bidding method of procurement. Chemical Waste Management, Inc. (Houston, TX) won the incineration and groundwater treatment project. The RA award and Notice to Proceed were issued in early 1991.

The Site remedy included the excavation to a depth of about twenty (20) feet below ground surface (bgs), in some places, and onsite incineration (i.e., source control). It also included the extraction and treatment of the contaminated groundwater (a.k.a. pump-and-treat). The source control remedial action began in 1991 with the decontamination and/or demolition of the existing man-made facility structures and process equipment. Non-incinerable items were sent to a hazardous waste disposal landfill in Louisiana. The incinerator and its ancillary facilities were constructed onsite adjacent to the excavation area. Following the incinerator construction and trial burns to determine the appropriate operating parameters, excavation and incineration of contaminated soils, sludges, and sediments began in June 1992. The production burn ended in May 1993 with over 100,000 tons processed. Dismantling of the incineration facility continued through August 1993 concurrently with the backfill and final grading operations. Site cleanup, including the site seeding, was conducted in October and November 1993. The ash resulting from incineration of the contaminated soil was backfilled at the Site and covered with a minimum of six (6) inches of clay and three (3)inches of topsoil.

Prior to backfilling the ash onsite, a one-foot layer of gravel fill material and six-inches of sub-base material (to prevent migration of the ash material into the gravel layer) was placed on the underlying weathered shale at the base of the deeper excavation areas. The purpose of the gravel fill was to enhance groundwater flow to the recovery wells. Five (5) recovery wells, including RW-2, RW-3, RW-6, RW-7, and RW-8, and one monitoring well, MW-16s, penetrated the gravel fill layer. An oily sheen and creosote odor was observed during the drilling of these wells after reaching the water saturated zone.

The groundwater recovery wells were installed in 1993 and began operation in January 1994. Figure 2 shows the location of the Site wells. The existing groundwater recovery system includes eight (8) extraction wells that together recover approximately ten (10) gallons per minute and a small amount of free product in addition to dissolved phase PCP and PNAs. The wells were installed in below grade vaults, which are constructed of steel reinforced concrete. The wells include stainless steel risers and screens. The pump system at each recovery well vault consists of a pump, a controller, a control line, an air supply line, a liquid discharge line, and a meter. All extraction pumps are connected to cables allowing them to be set at various depths. A dual containment pipeline system was constructed to carry recovered groundwater and oils to the onsite wastewater treatment plant (WWTP). The main recovery line header extends approximately 430-feet from the vicinity of the recovery wells to the WWTP.

The WWTP includes an oil/water separator (for removing light oils), pumps, bag filters, granular activated carbon filters, effluent holding tanks, and a control system. The dual containment pipe from the recovery wells delivers groundwater to the oil/water separator. The oil/water separator was designed to remove LNAPL, but more DNAPL is recovered at the Site. Thus, the oil/water separator functions more as a settling tank and as an influent/equalization tank. When the oil/water separator is full, the plant pumps turn on, sending the stored water through the treatment plant. The influent pumps send the raw water to the bag filters for solids removal. The water is then processed through two granular activated carbon filters for dissolved organics removal and then sent to the effluent holding tank. The ultimate water disposal is to the onsite drainage way.

In January 1999, after approximately five years of operation, the groundwater extraction and treatment was shut down, and in July 1999 a monitoring program began to determine if significant rebounding of PCPs and PNAs would occur in the recovery wells. The rebound occurred, and the system was restarted in September 2000 and continues operating today.

4.3 Operations and Maintenance (O&M)

The source control remedy (i.e., the excavation and incineration of contaminated soils, sediments and sludges) was completed in late 1993 and vegetation was established over the covered incinerator ash materials. The cover initially exhibited some minimal erosion. However, these areas were repaired, and the vegetative cover has become well established and remains stable and secure. Since that time, the Site grounds have been maintained in order to ensure the protectiveness of the source control remedy. Site ground cover maintenance has included mowing and trimming of the vegetative cover, weed control, fertilize application, and reseeding barren areas. The site fencing has also been maintained in order to reduce site access and subsequent potential for vandalism.

ADEQ provides for the source control O&M as it continues today. The initial annual source control O&M activities cost about four thousand ($4000) dollars and has increased to about six thousand five hundred ($6500) dollars since 1993, which is around a three percent (3%) increase per year. There have been no implementation problems and no significant variations from the work since it began. Comparatively, the operational costs of the groundwater pump and treat remedy initially cost about $180,000. Through optimization and some limited reduction in site operations that cost has been reduced to about $150,000 per year.

The groundwater extraction system was installed in 1993 as part of the groundwater remedial action that still continues today. During the operational period of the system there have been some maintenance costs associated with extraction pumps and WWTP components. The maintenance of the groundwater remedial action is contracted as part of the operation of the pump and treat remedy. Itemized maintenance costs are not available. However, it is known that major components of the WWTP and extraction system have not needed to be replaced. There have been a few pumps and air compressors that have required more than routine maintenance, but that has been part of the overall contract for operations and maintenance of the system.

Full groundwater O&M of the system is planned to begin after a federal statutory limit of ten (10) years is reached in mid-2006. At that time, ADEQ will fund all of the O&M costs associated with the site, both source control and groundwater.

4.4 Progress Since Initiation of Remedial Action

The RA contract was awarded in March 1991 and work began immediately. The onsite incineration of the contaminated soils, sediment and sludges was completed in May 1993. The source control remedy was anticipated to be a "walk-away" remedy, and it achieved cleanup levels for unrestricted land use. The cover placed upon the backfilled incinerator ash has been maintained in order to prevent disturbance and subsequent surface water runoff of the ash material which would potentially impact surface water mineral quality. Chlorides, sulfates and total dissolved solids could possibly increase in the surface water to a level of concern for the ecology, particularly the aquatic habitat.

As a result of the incineration of the contaminated soils, sediments and sludges, a source of contamination that affects the nearby community of Ola has been removed. The cleanup will reduce future contamination of the shallow groundwater which could impact the nearby wildlife refuge. The source control remedy remains functional and protective of human health and the environment.

The groundwater remedial action began in 1994 and continues today. Aqueous and non-aqueous phase contaminants have been extracted and treated prior to discharge. During the Remedial Investigation (RI), it was calculated that the groundwater movement was toward the north, northwest at about 20 to 30 feet per year.

In January 1999, after approximately five years of operation, the Site was shutdown, and in July 1999 a monitoring program began to determine if significant rebounding of PCPs and PNAs would occur in the recovery wells. Rebound of contaminant concentrations did occur at about the same concentrations as before, and the system was restarted in September 2000 and continues operating today. Table 2 is a summary of analytical results over the past several years.

Reviewing the groundwater analytical results over the past ten (10) years reveals that the pump and treat system has been effective in removing some of the contamination. The data shows the average PCP concentration in the recovery wells has trended slightly downward from approximately 1.2 mg/L to approximately 0.1 mg/L. Using the more recent recovery well data it appears that about seven (7) of the eight (8) recovery wells could meet the ROD goal of 0.2 mg/L for PCP. At the beginning of the pump and treat remedial effort only two (2) of the recovery wells met the ROD goals.

The PNA concentrations have not revealed a positive remedial impact. From all the recovery well groundwater data it can be illustrated that the average PNA concentration has fluctuated significantly with perhaps a slight trend downward. Generally, the PNA concentrations at the beginning of the pump and treat were on the order of about 5 mg/L. The recent data indicates a general overall PNA concentration of approximately 1.5 mg/L in the recovery wells. However, the concentrations in most of the recovery wells still fluctuate significantly. In one of the wells, after the 1999 rebound period, concentrations were on the order of 2 to about 10 mg/L. Then over a couple of months, the concentrations increased to a maximum reported concentration of 1057 mg/L in the data collected in August 2004. That same recovery well exhibited a PNA concentration of 6.6 mg/L in August 2005. Only one (1) of the recovery wells has exhibited a consistent downward contamination trend.

During the operation of the pump and treat system the groundwater movement has been controlled, and the contamination around the recovery wells has not expanded. The contamination remains about 150 feet from the property boundary.

Section 5.0
Progress Since Last Five-Year Review

The first five-year review of the OMPS was completed in March 2001. The findings of the first five-year review, the status of recommendations and follow-up actions, the results of implemented actions, and the status of any other issues are described in the following sections.

5.1 Protectiveness Statements from the First Five-Year Review

The first five-year review report concluded the remedial actions implemented at OMPS were protective of human health and environment. The report also stated that the remedy was consistent with the NCP, 40 CFR Part 300, which requires a remedy to effectively mitigate and minimize threats to, and provide adequate protection of public health, welfare and the environment.

The first five year review report concluded no future source control remedial actions were required or anticipated at that time. The completed source control remedial action was considered permanent.

The groundwater pump and treat remedy implementation established and maintained adequate protection of public health, welfare, and the environment. The groundwater movement was controlled during the pump and treat operation and some contamination has been extracted. General groundwater movement and thus groundwater contamination is slow, and has not reached the property boundaries.

The first five-year review report concluded the groundwater remedy was consistent with the NCP, 40 CFR Part 300, and during the implementation it had effectively mitigated and minimized threats to the public welfare, and the environment.

5.2 First Five-Year Review Recommendations and Follow-up Actions.

The first five-year review report concluded the remedy was functioning and remained adequate to protect the public health and the environment. However, the future of the groundwater remedial work remained questionable at that time. During the scheduled eighteen (18) months of only groundwater monitoring (1999 - 2000), the groundwater cleanup criteria were reviewed to determine the current day appropriate applicability of the remediation standards (i.e., the use of the MCLs as cleanup criteria). The cleanup criteria was determined to remain applicable and it was retained. In any outcome of the groundwater future actions, it was recommended that the site be continually monitored and maintained until the groundwater remedial effort is complete and a final resolution of the site future has been decided.

After the eighteen (18) months of no pump-and-treat work and only groundwater monitoring, it was readily apparent the contaminant concentrations rebounded quickly. In fact, for a short period of time the concentrations became significantly higher than during the pump-and-treat. However, after the system was restarted and the groundwater was again being extracted, the contaminant concentrations returned to approximately their previous levels.

The first five-year review report concluded the continual maintenance and monitoring will provide additional opportunities for reviews and observations in order to safeguard against possible disturbance of the remedy. It was also viewed as to allow for a more appealing site and promotion ability for the redevelopment and future land use.

5.3 Status of Recommended Actions

This section describes the current status of the implemented first five-year review report recommendations.

The source control actions of the overall site remedy required no follow-up actions from the first five-year review. Therefore, the source control remedial action has and continues to function as designed and constructed. ADEQ has continued the monitoring of the cap over the incinerator ash and will continue to do so.

The groundwater remedial action began in 1994 and has continued since that time, except for the extended intentional shutdown in 1999 and 2000 for monitoring rebound of contaminant levels. After the restart of the pump-and-treat work the system has performed well with only routine maintenance and some capital expenditures, such as rebuilding air compressor pumps.

The use and applicability of the MCL groundwater remedial cleanup criteria at this Site is under review as a part of the forthcoming amendment to the ROD. The amended ROD will address applicability, relevance, and appropriateness using MCL criteria at OMPS.

5.4 Other Actions and Progress

In 2000, the federal Office of Solid Waste and Emergency Response outlined a commitment to optimize the Fund-lead pump and treat groundwater systems around the country. To fulfill this commitment, the EPA Technology Innovation Office (TIO) and the Office of Emergency and Remedial Response (OERR), through a nationwide project, assisted the ten EPA Regions in evaluating their Fund-lead operating pump-and-treat remedial groundwater systems. It was also a part of a larger effort by TIO to provide EPA Regions with various means for optimizations, including screening tools for identifying sites likely to benefit from optimization tools.

OMPS was chosen based on initial screening of the pump-and-treat systems managed by EPA and discussions with EPA staff. A team of federal staff consisted of employees from the EPA TIO, OERR, GeoTrans (a contractor for TIO), and the Army Corps of Engineers. The team visited the site in February 2001 to review the site status and the treatment system conditions and operations. In June 2001 a report, entitled "Remediation System Evaluation - Midland Products Superfund Site", was issued by GeoTrans which described their reviews and recommendations.

Recommendations, at that time, to reduce life-cycle costs included the following:

> The current operations contract was broad and included unnecessary financial risk for the contractors. As a result, the lump sum bids to operate the system are higher than necessary. The scope of future bids should be reduced to focus only on plant operation, and risks, such as equipment replacement and carbon absorption unit change-out, should be handled as priced options in the contract. It was concluded that this would reduce overall cost of the Site .
>
> The current sampling program for the treatment plant effluent was deemed to be too extensive and it was recommended to reduce the frequency of sampling.

Numerous other operational items were also reviewed and optimization comments and recommendations were issued by the team.

During the following months ADEQ implemented the majority of the recommended optimizations suggested by TIO. The subsequent procurement of a contractor for the operation and maintenance of the pump-and-treat system included capital cost exclusion provisions. The capital exclusion provisions reduce the risk to the contractor and thereby reduced the cost of the lump sum operation and maintenance contract. During that same period of time the WWTP effluent sample frequency was reduced to a level that still provided adequate information about the water being discharge to the local drainage way. Overall costs of the groundwater pump and treat remedial action were reduced without losing effectiveness of the remedy.

A follow-up contact was made by TIO in 2003 and the implemented optimization actions were reviewed. Most all of the recommendations had been implemented for a period of time; therefore, their effectiveness was easily reflected in current site status and costs. The follow-up contact summary dated October 15, 2003 states that the pump-and-treat system continued to operate as expected.

Section 6.0
Five-Year Review Process

The second five-year review for OMPS has been conducted in accordance with the EPA's Comprehensive Five-Year Review guidance dated 2001. Interviews were conducted with relevant parties, a site inspection was conducted, and applicable data and documents covering the period of the review were evaluated. The activities conducted as part of this review and specific findings are described in the following paragraphs.

6.1 Administrative Components

The five-year review for this site was initiated by ADEQ when EPA notified ADEQ the second five-year review was upcoming A public notice announcing initiation of the five-year review was published in the local area newspaper. The review team was led by the ADEQ Project Manager (PM) for this site, Mr. Clark McWilliams/ Hazardous Wasted Division/ Inactive Sites Branch. The components of the review included community involvement, document review, data review, a site inspection, interviews, and development of this Second Five-Year Review Report, as described in the following paragraphs.

6.2 Community Notification and Involvement

A public notice announcing the initiation of the five-year review was published in the Yell County Record on February 1, 2006. Upon signature, the Second Five-Year Review Report will be placed in the information repositories for the Site, including the Two Rivers School District in Plainview, Arkansas, the ADEQ office in Little Rock, Arkansas, and the EPA Region 6 office in Dallas, Texas. A notice will then be published in the Yell County Record to summarize the findings of the review and announce the availability of the report at the information repositories. A copy of the public notice initiating the five-year review process is provided as Attachment 1.

6.3 Document Review

This second five-year review for the Site included a review of relevant site documents, including decision documents, the preliminary closeout report, the First Five-Year Review Report, O&M plans, sampling and investigation reports, and related monitoring data, as well as other relevant documents. Documents reviewed are listed in Attachment 2.

6.4 Data Review

Data collected as part of the remedial investigation conducted in the late 1980s were reviewed as part of this second five-year review. In addition, data collected as part of the operation and maintenance of the source control and groundwater remedial action, including water level measurements, influent and effluent WWTP concentrations, and recovery well contaminant concentration were reviewed. Operational data, such as volume of groundwater and NAPL extracted, treated, and discharged, was also reviewed as part of the second five -year review. Finally, offsite groundwater sampling was reviewed.

Based on the data collected and evaluated during the RI in the late 1980s, it was determined that the soils contamination was limited to the area of the lagoons and wood treatment building and probably the soil beneath the lagoons. The area under the lagoons was not sampled so as to preclude any further vertical migration of contaminants due to RI activities. The aerial extent of contamination was determined to be approximately 190,000 square feet. The vertical extent was generally considered one to three feet, but beneath the lagoons the vertical extent may extend to fourteen (14) feet.

The RA field work began in 1991 and ended in 1993. The RA work revealed that the contaminated soils extended deeper beneath the lagoons than previously anticipated. The contaminated soils were excavated and incinerated. The total project incinerated volume was 102,000 tons, which was more than twice the original estimate

The groundwater investigation was limited to the upper forty (40) feet as specified in the RI work plan. Although the shallow groundwater was contaminated, the RI sampling and analysis showed no detectable contaminants at a depth of forty (40) feet. It was stated in the RI that occurrence of heavier than water non-aqueous phase liquids was possible. It was determined that shallow groundwater contamination was limited to an aerial extent of about 24,000 square feet and 450,000 gallons. The current groundwater remedial action has treated about 12 million gallons of contaminated groundwater. The current groundwater conditions are presented as a data table illustrated in Table 2.

EPA has drafted an amendment to the ROD for the groundwater because the continuing presence of high contaminant levels indicate the remediation goal of restoring the aquifer to drinking water standards will take a very long time utilizing the existing system. The Amended Proposed Plan included the creation of a zone of contaminated groundwater at the Site and considered it technically impracticable (TI) to restore the groundwater to drinking water standards. The Amended Proposed Plan also included a monitored natural attenuation (MNA) component that provides for long term monitoring of the contaminated groundwater.

6.5 Site Inspection

A site inspection was conducted on February 23, 2006. The inspection was conducted by ADEQ Project Manager, Clark McWilliams, ADEQ Inactive Sites Branch Engineering Supervisor, Kin Siew, and EPA Remedial Project Manager, Gary Miller. The purpose of the inspection was to assess the current site conditions as they relate to the protectiveness of the existing remedy. The site inspection checklist is included as Attachment 3. The site inspection included an inspection of the capped incinerator ash area, an inspection of the site fencing and a review and inspection of the groundwater extraction and treatment system.

The capped incinerator ash areas of the Site were observed to be in good condition. No erosion or non-vegetated areas were noted. The vegetation on the capped area was complete and thick. The vegetation has been mowed as part of the annual maintenance of the source control remedy.

The chain link fence that surrounds the Site was observed to be in good condition. No significantly damaged areas were noted. Some vegetation has encroached onto the fence in certain areas and some fallen trees and tree limbs have damaged to top rail of the fence in a few places. However, the fence was still very much intact and functioning. The fence weed control is part of the annual site ground maintenance for the source control remedy.

The existing groundwater monitoring and recovery wells along with the piezometers were located during the site inspection. All wells were observed to be in good repair. All protective bollards around the wells were also in good condition. All wells, recovery and monitoring wells, have keyed-alike locks for easier access. The in-ground recovery well vaults were observed, and their general conditions were noted as being good. No poor conditions which would require immediate attention were observed.

The WWTP began treating groundwater in 1994 and has operated since that time except for a period of about eighteen (18) months. The groundwater extraction was intentionally halted during that period of time in order to measure the contaminant concentration rebound in the recovery wells. The WWTP has performed exceptionally well over the years with routine maintenance. Capital costs items such a air compressor rebuilding and computer replacement have been the high cost items. General maintenance items such as smaller pump repair/replacement, instrumentation probes replacements, and water meters have been a few of the lower cost items.

The extraction system also began in 1994. The air operated pumps were designed and controlled based upon water levels in each recovery well measured by an air pressure method. The wells and pumps were designed to maximize drawdown of the contaminated groundwater. In 1998 the recovery well pumps were all replaced with used pumps of a design that also used water levels in the wells to trigger the pump action. However, unlike the previous wells these newer well pumps contain a float valve that actuate the air pump operation. These well pumps have been operating without significant problems since their installation. Water meters within the recovery well vaults are operating, but have been an area of continued routine maintenance. The rotary design of the meters and the contamination which travels through them have continuously required special attention and maintenance .

6.6 Interviews

During the course of the five-year review, interviews were conducted with persons involved with the Site. The people interviewed included:

- Mr. Earl Jamison - local school district superintendent (the property is owned by the district)
- Mrs. Phyllis West - area resident adjacently east of the site
- Ms. Marena Neeley - area resident adjacently west of the Site
- Ms. Joe Ann Marshal - area resident north and west of the Site

In general , the interviews noted work at the Site was going well without problems. The site grounds maintenance of the source control remedy was commented upon as performed well with no major concerns. The same was indicated for the Site groundwater remedial action work associated with the pump and treat. The community has not expressed any concerns regarding the Site or its ongoing operations.

The Interview Record Forms which document the issues discussed during the interviews are provided as Attachment 4.

Section 7.0
Technical Assessment

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

7.1 Questions A: Is the Remedy Functioning as Intended by the Decisions Document?

The document that details the remedial decisions for the Site is the March 1988 ROD. The source control (incineration) portion of the RA is complete. The site is now under source control O&M and active groundwater remedial action. The cap material over the incinerator ash is in good condition, and the site is secure and well posted. Based upon the data reviews, site inspections, and interviews, it appears the OMPS source control remedy is functioning as intended by the ROD. The groundwater remedy is also functioning as intended by the ROD, but the remedial goal of achieving restoration has not been, and not likely to be, accomplished. EPA and ADEQ are in the process of amending the ROD.

<u>Opportunities for optimization:</u> The source control RA was implemented with the intention of having minimal O&M and little or no land use restrictions. This RA has accomplished those goals. The site required little O&M and optimization of it is not necessary.

On the other hand, the groundwater RA remains active and functional. In early 2000 the federal Office of Solid Waste and Emergency Response, through the Technology Innovation Office (TIO) and the Office of Emergency and Remedial Response (OERR), assisted EPA Region 6 in evaluating this Fund-lead operating pump-and-treat remedial groundwater system. It was part of a larger effort by TIO to provide the EPA Regions with various means for optimizations, including screening tools for identifying sites likely to benefit from optimization tools.

Through this evaluation of the pump-and-treat operations, opportunities for making the system more effective and efficient were investigated and implemented. During the following months ADEQ implemented the majority of the recommended optimizations suggested by the TIO. The subsequent procurement of a contractor for the operation and maintenance of the pump and treat system included capital cost exclusion provisions. The capital exclusion provisions reduce the risk to the contractor and thereby reduced the cost of the lump sum operation and maintenance contract. During that same period of time the WWTP effluent sample frequency was reduced to a level that still provided adequate information about the water being discharge to the local drainage way. Overall costs of the groundwater pump and treat remedial action were reduced without losing effectiveness of the remedy.

Indications of Potential Remedy Problems: The source control RA has performed effectively and functionally, and throughout the past several years, since RA construction completion, there have been very minimal problems. Early on, after the RA construction, some minor erosion occurred in one particular area of the cap over the incinerator ash. This occurred before the vegetations could become established . However, this was promptly repaired and since then the vegetative cover has been complete and thick over the entire area.

The groundwater RA work continues today and has operated as intended in the ROD. However, the remedial goal of groundwater restoration has not been achieved. Although, the pump and treat work has extracted contaminated groundwater and removed a significant volume of the contamination, the overall length of time to achieve the remedial goals of restoration has been determined to be too long for the technology being used at the Site. Furthermore the technology and science of groundwater remediation has matured to understand that light and heavy organic contamination in fractured geological structures cannot practicably be recovered. Therefore, a change in the groundwater remedial action is being pursued and a change is the ROD has been proposed.

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

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

Changes in Exposure Pathways, Toxicity, and Other Contaminant Characteristics: There have been no changes in exposure pathways for OMPS since the completion of the first five-year review. In addition, no new contaminants or routes of exposure have been identified for the Site as part of this five-year review.

Changes in ARARs: Superfund remedial actions are required to meet all Federal standards that are determined to be legally applicable or relevant and appropriate requirements (ARARs) under Section 121(d)(2)(A) of CERCLA, as amended by SARA. In addition, all State ARARs enforced by ADEQ, which are equal to or more stringent than Federal regulations and laws, must be met.

ARARs for the Site were identified in the ROD. This five-year review for the Site includes identification of and evaluation of changes in the ROD-specified ARARs to determine whether such changes may affect the protectiveness of the selected remedy. The ARARs identified by the ROD for OMPS included contaminant and action specific requirements. These ARARs are described below.

Contaminant Specific Requirements:
PCP = 200 ug/L - Safe Drinking Water Act (SDWA), a maximum contaminant level goal, (40 CFR 19),
PNAs = 28 ng/L - 1(10-5) cancer risk level from Ambient Water Quality Criteria (AWQC) (Clean Water Act), and Arkansas Water Regulation #2 - protection of aquatic life.

Action Specific Requirements:
Resource Conservations and Recovery Act (RCRA standards for owners and operators of hazardous waste treatment, storage and disposal facilities (40 CFR 264, 268 and 265), and
Hazardous and Solid Waste Act (HSWA 3004M).
Clean Air Act (CAA) National Emissions Standards for Hazardous Air Pollutants (40 CFR 53,60,61)

The source control remedy has been completed at the Site and the groundwater remedial action continues. Since a portion of the overall remedial action has been completed, some of the ARARs listed above are no longer applicable to the Site remediation. The ARARs no longer applicable or relevant and appropriate would include the HSWA and CAA action specific requirements. The HSWA (criteria for land application of solid wastes) is no longer applicable because the incinerator ash has been backfilled. Likewise the CCA (criteria for air emissions) are no longer applicable because the incineration work has been completed and there are no remedy related emissions to consider. Should additional construction activities occur in the future, these criteria may become applicable or relevant and appropriate again.

Interpretation, Changes, and Revisions to Guidances and Regulations: ADEQ and the Federal regulations have not been revised to the extent that the effectiveness of the remedy at the Site would be called into question; although, there have been some minor changes. The groundwater MCL for PCP has changed from 0.2 mg/L to 1.0 ug/L. The groundwater remedial action has not achieved the 0.2 mg/L as originally presented in the 1988 ROD; so, the new regulation of lowering the MCL had no real impact to the remedial action.

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

Examples of other information that might call into question the protectiveness of the remedy include potential future land use changes in the vicinity of the Site or other unexpected changes in the site conditions or exposure pathways. During the last five years the land owner pursued the development of a portion of the Site for ball fields. Funding for the development did not materialize and the ball fields were not constructed. Redevelopment of the Site is possible and the remedy is protective of the human health and the environment in part because the area is served by a public water supply. However, groundwater access is unrestricted which could potentially result in unlimited exposure. Therefore, institutional controls are needed, and they are included in the Amended Proposed Plan for the Site. Such institutional controls are needed for future protectiveness at the Site.

7.4 Summary of the Technical Assessment

The technical assessment, based on the data review, the site inspection, the technical evaluation, and the interviews indicate that the remedial actions selected for OMPS generally appear to have been implemented as intended by the decision document. The source control remedy has performed as intended by the ROD. The groundwater remedy has also operated as intended by the ROD, but the length of time for the pump and treat has been long and EPA and the State will amend the groundwater remedy.

Updates and optimizations of the pump-and-treat operations have improved the performance of the system since completion of the first five-year review. Specifically, the pump changes and sampling frequency have reduced the cost while maintaining adequate operational information to monitor the system. Also, consistent data collection activities, schedules and procedures have provided a better understanding of site conditions and remedy performance.

There have been no observed changes in the physical conditions at the Site that would affect the protectiveness of the remedy. The ARARs for the Site have been observed and met, and there have been no known changes in the exposure routes, toxicity values, or significant changes in cleanup levels that would affect the remedy. Implementation of institutional controls for groundwater use is needed to prevent exposure and to provide for long term protectiveness of the remedy at the Site.

Section 8.0
Issues

The source control RA O&M activities are ongoing at the Site as well as the groundwater RA. Based on the data reviews, site inspections, interviews, and technical assessment, it appears the remedy is functioning as intended by the ROD.

There were no identified adverse impacts to the soil covering the incinerator ash, and the vegetation was observed to be healthy and thick. The groundwater pump-and-treat system is operating as expected, but the overall remedial cleanup level has not been achieved. Therefore, EPA has drafted an amendment to the remedy. To ensure continued protectiveness, the operations and maintenance of the Site will continue. No major issues were identified as part of this five-year review for the period covering March 2001 through February 2006.

Section 9.0
Recommendations and Follow-up Actions

The source control remedy achieved cleanup levels for unrestricted land use as outlined in the ROD. In addition, the source control remedy remains functional and protective of human health and the environment. The cap placed upon the backfilled incinerator ash is vegetated and has been maintained in a thick and healthy condition. The area remains stable and secure.

The source control remedy was anticipated to be a "walk-away" remedy as stated in the ROD. On the other hand, the ultimate outcome of the groundwater remediation effort could not be determined at the time the ROD was written. However, after ten (10) years of operating the groundwater pump-and-treat remedial effort, some evaluations can be determined. The future of the groundwater remedial effort will be presented in an amended ROD sometime in the near future. In the interim, the site fence remains intact and is maintained to prevent access of unauthorized personnel.

The remedy is functioning and remains adequate to protect the public health and the environment in the short term. Institutional controls should be implemented. The future of the groundwater remedial work remains somewhat questionable at this time. In any outcome of the groundwater future actions, it is recommended that the site be continually monitored and maintained until the groundwater remedial effort is complete and a final resolution of the site future has been decided. Table 3 summarizes these recommendations with additional information concerning agencies' responsibilities and milestones dates.

The ongoing and continuing maintenance and monitoring will provide additional opportunities for reviews and observations in order to safeguard against possible disturbance or destruction of the remedy. It will also allow for a more appealing site and promote the redevelopment and future land use.

Section 10.0
Protectiveness Statement

The remedy implemented for OMPS is considered protective of human health and the environment in the short term; however, for the remedy to be protective in the long term, follow-up actions need to be taken. Institutional controls need to be implemented and the groundwater remedy amended. Waste and contaminated soils, sediments and sludges were addressed through onsite incineration. The Site is secured by a chain linked fence in good condition with an access gate which remains locked. Contaminated groundwater is contained on the Site, extracted and treated by the WWTP. The WWTP effluent is discharged to an onsite surface water drainage way. Continued source control remedy O&M and continued groundwater RA will ensure that the selected remedy remains protective. Because the completed source control RA and the current groundwater pump-and-treat is consider protective for the short-term, the overall remedy for the Site is considered to be protective. However, in order for the remedy to be remain protective for the long term, institutional controls (ICs) are needed. ICs are included in the Amended Proposed Plan for the Site.

Section 11.0
Next Review

The next five-year review, the third for this Site, should be completed on or before May 2011. This review should occur whether or not, in the interim, the Site has been deleted from the NPL.

It is EPA's policy that the five -year review requirement is independent of and unaffected by the process or outcome of NPL deletion.

TABLE 1
Chronology of Site Events
Second Five-Year Review
Old Midland Products Site - Ola, Arkansas

Event	Lead Agency F = Federal S = State	Date
Initial Discovery	F	July 1, 1981
Preliminary Assessment/Site Inspection	F	August 1982
Hazard Ranking System Package	F	November 1, 1982
Proposed for the NPL	F	October 15, 1984
Early Enforcement Actions Against PRPs for Investigation Work	F	Sept. 1984 to April 1986
Final Listing on NPL	F	June 10, 1986
Information Repository Established	F	April 9, 1987
Removal Assessment	F	February 1988
Record of Decisions	F	March 24, 1988
Remedial Investigation/ Feasibility Study	S	March 1985 to March 1988
More Enforcement Action Against PRPs for Remediation Work	F	June 1988 to Feb. 1989
Remedial Design	S	June 1988 to March 1990
Remedial Action	S	March 1991 to March 1996 (substantial completion of source control work) November 1993 to present (groundwater extraction and treatment)
Source Control Operation and Maintenance	S	March 1996 to present
First Five Year Review	S	March 2001

TABLE 2
Summary of Groundwater Results

Sample Location	Sample ID	Sample Date	PCP (mg/L)	Carbazole (mg/L)	Total Organic Carbon (mg/L)	Ace-naphthene (mg/L)	Ace-naphthalene (mg/L)	Anthracene (mg/L)	Benzo (a) anthracene (mg/L)	Benzo (b) fluor-anthene (mg/L)	Benzo (k) fluor-anthene (mg/L)	Benzo (g, h, i) perylene (mg/L)	Benzo (a) pyrene (mg/L)	Chrysene (mg/L)	Dibenzo (a, h) anthracene (mg/L)	Fluor-anthene (mg/L)	Fluorene (mg/L)	Ideno (1,2,3-cd) pyrene (mg/L)	Naphthalene (mg/L)	Phen-anthrene (mg/L)	Pyrene (mg/L)	Total PNA (mg/L)
RW-1	GW-881	07/19/99	7.990	3.020	20.5	35.700	885.000	14.900	7.340	3.180	1.240	<0.400	2.290	6.460	<0.400	41.400	24.000	<0.400	24.200	77.500	22.100	1145.310
	GW-929	10/29/99	24.000	13.600	3060	206.000	<4.000	70.500	28.800	12.900	<4.000	8.760	11.000	24.800	<4.000	137.000	127.000	11.800	164.000	436.000	123.000	1361.560
	GW-967	01/25/00	<200	13.400	3320	207.000	<40	60.400	29.600	37.300	<40	<40	37.600	25.600	<40	179.000	143.000	<40	185.000	413.000	129.000	1446.500
	GW-1010	04/25/00	3.690	3.960	1,470	45.400	0.861	13.800	6.560	2.700	0.994	0.989	2.020	6.360	0.850	48.700	32.400	1.070	37.500	92.600	22.200	315.004
	GW-1050	07/27/00	14.500	7.460	223	79.700	2.020	37.300	16.400	6.030	2.140	4.310	3.530	14.300	3.810	81.700	82.400	4.700	78.100	151.000	79.900	647.340
	GW-1201	01/31/01	3.910	0.062	<10	0.413	0.010	0.075	0.023	0.009	0.006	<0.002	0.007	0.023	<0.002	0.106	0.226	<0.002	0.810	0.419	0.013	2.139
	GW-1243	07/30/01	2.280	0.283	15.5	1.780	0.422	0.596	0.265	0.130	0.053	<0.020	0.082	0.245	<0.020	1.530	1.230	0.023	1.850	3.420	1.080	12.707
	GW-1328	08/28/02	2.100	0.170	9.9	0.340	<0.020	0.044	<0.020	<0.020	<0.020	<0.020	<0.050	<0.020	<0.020	0.067	0.170	<0.020	1.500	0.270	0.048	2.439
	GW-1268	03/05/03	1.300	0.110	14.0	0.780	0.014	0.190	0.085	0.030	0.027	<0.010	0.026	0.076	<0.010	0.560	0.530	<0.010	0.960	1.200	0.470	4.948
	GW1337	08/27/03	1.400	0.160	18.0	0.990	<0.020	0.210	0.088	0.028	0.040	<0.020	<0.050	0.090	<0.020	0.550	0.550	<0.020	2.000	1.300	0.430	6.276
	GW-1311	02/25/04	1.200	<0.200	20	8.300	<0.200	2.800	1.300	0.400	0.490	<0.200	<0.500	1.200	<0.200	8.200	5.900	<0.200	6.700	18.000	5.300	58.590
	GW1381	08/24/04	<20.0	12.0	71	150.0	<4.0	51.0	25.0	8.2	9.9	<4.0	<10.0	23.0	<4.0	150.0	110.0	<4.0	130.0	300.0	100.0	1057.1
	GW1443	02/21/05	<5.0	2.2	33	36.0	<1.0	12.0	5.7	1.9	<1.0	<1.0	<3.0	5.4	<1.0	34.0	27.0	<1.0	28.0	72.0	23.0	245.0
	GW1512	08/22/05	0.300	0.068	9.8	1.1	<0.040	0.34	0.18	0.090	0.092	0.082	<0.10	0.2	0.052	1.0	0.73	0.056	0.052	2.0	0.66	6.634
RW-2	GW-882	07/19/99	9.390	2.970	32.4	26.000	0.731	12.200	6.540	2.780	1.120	<0.4	2.010	5.790	<0.4	2.760	19.500	0.834	19.600	78.100	18.600	196.565
	GW-930	10/29/99	<0.010	<0.005	<10	0.238	0.004	0.062	0.054	0.039	0.015	0.011	0.028	0.053	0.006	0.206	0.119	0.013	0.005	0.335	0.128	1.315
	GW-968	01/25/00	<200	<100	20.4	169.000	<40	48.100	24.800	<40	<40	<40	<40	19.900	<40	143.000	119.000	<40	130.000	341.000	102.000	1096.800
	GW-1011	04/25/00	0.009	<0.005	<10	0.056	<0.002	0.005	0.003	<0.002	<0.002	<0.002	<0.002	0.002	<0.002	0.013	0.022	<0.002	0.003	<0.002	0.021	0.125
	GW-1051	07/27/00	<0.010	0.033	<10	0.138	0.005	0.049	0.020	0.008	0.003	0.006	0.006	0.017	<0.002	0.085	0.121	0.006	0.088	0.277	0.116	0.944
	GW-1202	01/31/01	0.051	0.042	<10	0.321	0.008	0.027	0.003	<0.002	<0.002	<0.002	<0.002	0.002	<0.002	0.021	0.128	<0.002	0.021	0.146	0.023	0.700
	GW-1244	07/30/01	0.132	<0.005	14.3	0.272	0.003	0.015	0.003	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	0.034	0.127	<0.002	0.005	0.137	0.022	0.621
	GW-1329	08/28/02	0.130	0.082	3.5	0.360	0.006	0.023	<0.002	<0.020	<0.020	<0.020	<0.050	<0.002	<0.002	0.027	0.140	<0.002	0.440	0.240	0.013	1.249
	GW-1269	03/05/03	0.054	0.084	3.4	0.800	0.010	0.170	0.094	0.035	0.025	<0.010	0.028	0.086	<0.010	0.590	0.510	<0.010	0.260	1.200	0.420	4.228
	GW1338	08/27/03	0.076	0.140	5.5	0.530	<0.010	0.090	0.034	0.012	0.015	<0.010	<0.030	0.034	<0.010	0.240	0.280	<0.010	0.920	0.650	0.170	2.975
	GW-1312	02/25/04	0.078	0.075	5.0	0.270	0.0055	0.028	0.009	0.004	0.003	<0.002	<0.005	0.009	<0.002	0.066	<0.002	<0.002	0.390	<0.002	0.042	0.8257
	GW1382	08/24/04	0.110	0.120	6.2	0.290	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.050	<0.020	<0.020	0.037	0.130	<0.020	0.880	0.170	0.022	1.5290
	GW1444	02/21/05	<0.1	0.160	8.7	0.650	<0.020	0.099	0.041	<0.020	<0.020	<0.020	<0.050	0.039	<0.020	0.260	0.350	<0.020	1.30	0.70	0.180	3.6190
	GW1513	08/22/05	<0.050	0.130	4.6	0.290	<0.010	0.022	<0.010	<0.010	<0.010	<0.010	<0.030	<0.010	<0.010	0.033	0.130	<0.010	0.57	0.16	0.019	1.2240
RW-3	GW-883	07/19/99	6.210	2.090	24.2	16.400	<0.4	6.970	4.000	1.450	0.601	<0.4	1.100	3.120	<0.4	18.600	11.800	<0.4	14.700	29.100	12.600	120.441
	GW-931	10/29/99	<0.010	0.012	<10	0.095	<0.002	0.019	0.012	0.008	0.003	<0.002	0.006	0.012	<0.002	0.067	0.043	<0.002	0.003	0.093	0.034	0.395
	GW-969	01/25/00	<10	1.110	198	18.000	<2	5.250	2.410	1.930	<2	<2	2.070	2.350	<2	15.800	12.000	<2	15.600	36.600	11.400	123.410
	GW-1012	04/25/00	<0.100	<0.050	<10	0.308	<0.020	0.134	0.075	0.038	<0.020	0.064	0.033	0.079	<0.020	0.370	0.250	0.054	0.036	0.656	0.170	2.266
	GW-1052	07/27/00	<0.010	<0.005	<10	0.081	<0.002	0.068	0.043	0.018	0.006	0.007	0.013	0.038	0.005	0.135	0.089	0.008	0.003	0.377	0.198	1.089
	GW-1203	01/31/01	0.020	<0.005	<10	0.048	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.004	0.018	<0.002	0.009	0.013	0.006	0.101
	GW-1245	07/30/01	<0.010	<0.005	<10	0.053	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.013	0.020	<0.002	0.008	0.002	0.007	0.106
	GW-1330	08/28/02	<0.010	0.010	2	0.065	<0.002	0.016	<0.002	<0.020	<0.020	<0.020	<0.050	<0.002	<0.002	0.028	0.042	<0.002	0.024	0.098	0.013	0.286
	GW-1270	03/05/03	0.020	<0.002	1.8	0.014	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	0.0058	<0.002	<0.002	<0.002	<0.002	0.020
	GW1339	08/27/03	<0.010	0.028	1.5	0.120	0.0027	0.015	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	0.030	0.059	<0.002	0.100	0.084	0.015	0.426
	GW-1313	02/25/04	<0.010	0.011	1.3	0.070	0.0029	0.005	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	0.015	0.028	<0.002	0.053	0.031	0.008	0.2124
	GW1383	08/24/04	<0.010	0.022	1.3	0.110	<0.002	0.0072	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	0.018	0.052	<0.002	0.010	0.046	0.0091	0.2523
	GW1445	02/21/05	<0.010	0.0042	1.9	0.046	<0.002	0.0021	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	0.0068	0.016	<0.002	0.019	0.006	0.004	0.0999
	GW1514	08/22/05	<0.010	0.013	1.7	0.061	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	0.010	0.017	<0.002	<0.002	<0.002	0.0056	0.0936

Note: Vaules less than quantitation limits are assumed to be zero for the "Total PNAs" calculation.

TABLE 2
Summary of Groundwater Results

Sample Location	Sample ID	Sample Date	PCP (mg/L)	Carbazole (mg/L)	Total Organic Carbon (mg/L)	Ace-naphthene (mg/L)	Ace-naphthalene (mg/L)	Anthracene (mg/L)	Benzo (a) anthracene (mg/L)	Benzo (b) fluor-anthene (mg/L)	Benzo (k) fluor-anthene (mg/L)	Benzo (g, h, i) perylene (mg/L)	Benzo (a) pyrene (mg/L)	Chrysene (mg/L)	Dibenzo (a, h) anthracene (mg/L)	Fluor-anthene (mg/L)	Fluorene (mg/L)	Ideno (1,2,3-cd) pyrene (mg/L)	Naphthalene (mg/L)	Phen-anthrene (mg/L)	Pyrene (mg/L)	Total PNA (mg/L)
RW-4	GW-884	07/19/99	4.190	1.430	78.4	12.900	<0.4	4.640	2.020	0.835	<0.4	<0.4	0.706	1.880	<0.4	13.800	8.870	<0.4	12.700	21.600	7.140	87.091
	GW-932	10/29/99	<1.000	0.622	<10	10.500	<0.200	3.460	1.650	0.706	0.361	<0.200	0.481	1.270	<0.200	6.930	6.440	<0.200	7.260	22.000	7.510	68.568
	GW-970	01/25/00	<1.000	<0.500	16.9	0.528	<0.200	0.393	0.308	0.246	<0.200	<0.200	0.240	0.302	<0.200	1.610	0.476	<0.200	<0.200	1.780	1.150	7.033
	GW-1013	04/25/00	<0.010	<0.005	<10	0.067	0.003	0.008	0.015	0.008	0.004	0.008	0.008	0.015	<0.002	0.052	0.023	0.008	<0.002	0.024	0.028	0.270
	GW-1053	07/27/00	<0.100	<0.050	<10	0.049	<0.020	<0.020	0.065	0.039	<0.020	0.047	0.030	0.065	<0.020	0.216	<0.020	0.050	<0.020	0.090	0.243	0.893
	GW-1204	01/31/01	<0.100	0.011	<10	0.113	0.003	0.011	0.003	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	0.014	0.044	<0.002	<0.002	0.054	0.021	0.265
	GW-1246	07/30/01	<0.0109	<5.45	15.2	0.190	0.005	0.022	0.005	0.003	<0.00218	<0.00218	<0.00218	0.005	<0.00218	0.050	0.100	<0.00218	<0.00218	0.109	0.032	0.522
	GW-1331	08/28/02	<0.010	<0.002	5.4	0.053	<0.002	0.003	<0.002	<0.020	<0.020	<0.020	<0.050	<0.002	<0.002	0.014	0.019	<0.002	0.004	0.010	0.010	0.113
	GW-1271	03/05/03	<0.010	<0.002	4.6	0.120	0.0042	0.0031	0.0025	<0.002	<0.002	<0.002	<0.005	0.0026	<0.002	0.0170	0.028	<0.002	0.0020	<0.002	0.0083	0.188
	GW1340	08/27/03	<0.010	0.0024	8.2	0.071	0.0026	0.0071	0.0063	0.0038	0.0034	<0.002	<0.005	0.0070	<0.002	0.027	0.025	<0.002	0.0046	0.018	0.025	0.201
	GW-1314	02/25/04	<0.010	<0.002	3.9	0.032	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	0.005	0.009	<0.002	<0.002	<0.002	0.003	0.0481
	GW1384	08/24/04	<0.010	<0.020	7.8	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.050	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
	GW1446	02/21/05	<0.010	<0.002	9.4	0.053	0.0032	0.021	0.022	0.010	0.0092	0.0029	0.0092	0.021	<0.002	0.10	0.021	0.0032	<0.002	0.085	0.071	0.4317
	GW1515	08/22/05	<0.010	<0.002	4.4	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	0.0035	<0.002	<0.002	<0.002	<0.002	<0.002	0.0035
RW-5	GW-898	07/21/99	<0.010	<0.005	14.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-933	10/29/99	<0.100	<0.050	14.5	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
	GW-971	01/25/00	<0.010	<0.005	14.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1014	04/25/00	<0.010	<0.005	<10	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003
	GW-1054	07/27/00	<0.010	<0.005	<10	0.004	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.004
	GW-1247	07/30/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1332	08/28/02	<0.010	<0.002	4	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1272	03/05/03	<0.010	<0.002	2.1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1341	08/27/03	<0.010	<0.002	2.3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1315	02/25/04	<0.010	<0.002	1.3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1385	08/24/04	<0.010	<0.002	1.1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1447	02/21/05	<0.010	<0.002	1.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1516	08/22/05	<0.010	<0.002	5.5	0.0056	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	0.0023	<0.002	<0.002	<0.002	<0.002	0.0079
RW-6	GW-899	07/21/99	<0.010	<0.005	<10	<0.002	0.018	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.008	0.008	<0.002	0.005	0.004	0.007	0.052
	GW-935	10/29/99	<0.010	<0.005	<10	0.0412	<0.002	0.005	0.006	0.005	<0.002	<0.002	0.003	0.006	<0.002	0.022	0.021	<0.002	0.014	0.010	0.015	0.148
	GW-972	01/25/00	<0.010	<0.005	<10	0.0312	<0.002	0.002	0.002	0.003	<0.002	<0.002	0.003	<0.002	<0.002	0.007	0.016	0.003	0.007	0.004	0.004	0.083
	GW-1015	04/25/00	<0.010	<0.005	<10	0.0561	0.003	0.004	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.004	0.030	<0.002	0.019	0.022	0.003	0.142
	GW-1055	07/27/00	<0.010	<0.005	<10	0.0309	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	0.022	<0.002	0.011	0.015	0.004	0.084
	GW-1205	01/31/01	<0.010	<0.005	<10	0.0182	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.004	0.013	<0.002	0.003	0.013	0.005	0.059
	GW-1248	07/30/01	<0.010	<0.005	<10	0.009920	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	0.006	<0.002	<0.002	0.003	<0.002	0.023
	GW-1333	08/28/02	<0.010	<0.002	<1	0.0042	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	0.002	0.003	<0.002	<0.002	0.005	<0.002	0.015
	GW1273	03/05/03	<0.010	<0.002	<1	0.0082	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	0.0048	<0.002	<0.002	0.0034	<0.002	0.016
	GW1342	08/27/03	<0.010	<0.002	<1	0.0055	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	0.0021	0.0040	<0.002	<0.002	0.0050	<0.002	0.017
	GW-1316	02/25/04	<0.010	<0.002	<1.0	0.0045	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	0.0031	<0.002	<0.002	<0.002	<0.002	0.0076
	GW1386	08/24/04	<0.010	<0.002	<1.0	0.004	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	0.0032	<0.002	<0.002	0.0024	<0.002	0.0096
	GW1448	02/21/05	<0.010	<0.002	<1.0	0.0037	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	0.0029	<0.002	<0.002	0.0032	<0.002	0.0098
	GW1517	08/22/05	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002

Note: Vaules less than quantitation limits are assumed to be zero for the "Total PNAs" calculation.

TABLE 2

Summary of Groundwater Results

Sample Location	Sample ID	Sample Date	PCP (mg/L)	Carbazole (mg/L)	Total Organic Carbon (mg/L)	Ace-naphthene (mg/L)	Ace-naphthalene (mg/L)	Anthracene (mg/L)	Benzo (a) anthracene (mg/L)	Benzo (b) fluor-anthene (mg/L)	Benzo (k) fluor-anthene (mg/L)	Benzo (g, h, i) perylene (mg/L)	Benzo (a) pyrene (mg/L)	Chrysene (mg/L)	Dibenzo (a, h) anthracene (mg/L)	Fluor-anthene (mg/L)	Fluorene (mg/L)	Ideno (1,2,3-cd) pyrene (mg/L)	Naphthalene (mg/L)	Phen-anthrene (mg/L)	Pyrene (mg/L)	Total PNA (mg/L)
RW-7	GW-900	07/21/99	<20	<10	12.8	60.40	<4	25.900	11.500	5.450	<4.000	<4.000	4.300	9.800	<4.000	87.300	45.700	<4.000	20.300	143.000	43.100	456.750
	GW-936	10/29/99	<20.000	<10.000	160	97.80	<4.000	44.900	17.900	<4.000	<4.000	<4.000	<4.000	17.400	<4.000	67.300	72.200	<4.000	23.200	238.000	86.500	665.200
	GW-973	01/25/00	<2.000	0.289	118	10.90	<0.400	5.170	2.460	1.400	0.478	<0.400	1.070	2.280	<0.400	13.100	9.170	0.673	1.800	24.700	9.190	82.391
	GW-1016	04/25/00	<0.100	<0.050	18.9	0.819	0.015	0.373	0.200	0.084	0.038	0.073	0.065	0.181	<0.020	0.790	0.663	0.070	0.224	2.230	0.444	6.268
	GW-1056	07/27/00	<0.100	<0.050	<10	0.0598	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.060
	GW-1206	01/31/01	0.102	<0.005	<10	0.154	0.006	0.014	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.015	0.072	<0.002	0.036	0.051	0.019	0.365
	GW-1249	07/30/01	<0.0107	<0.00535	<10	0.132	0.005	0.010	0.004	<0.00214	<0.00214	<0.00214	<0.00214	0.003	<0.00214	0.031	0.057	<0.00214	<0.00214	0.054	0.021	0.317
	GW-1334	08/28/02	*<0.020*	*0.011*	*3.6*	*0.220*	*0.007*	*0.062*	*0.033*	*0.015*	*0.012*	*0.008*	*0.013*	*0.034*	*<0.004*	*0.180*	*0.140*	*0.007*	*<0.004*	*0.290*	*0.140*	1.161
	GW-1274	03/05/03	<0.010	0.0043	3.7	0.082	<0.002	0.0052	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	0.013	0.032	<0.002	0.014	0.030	0.0092	0.185
	GW1343	08/27/03	<0.010	<0.002	4.5	0.059	0.0021	0.0020	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	0.010	0.015	<0.002	<0.002	<0.002	0.0073	0.095
	GW-1317	02/25/04	<0.010	0.006	3.6	0.072	0.0025	0.0048	0.0033	<0.002	<0.002	<0.002	<0.005	0.003	<0.002	<0.002	0.022	<0.002	0.0049	0.020	0.0120	0.1448
	GW1387	08/24/04	<2.0	<0.40	9.2	6.6	<0.40	2.7	1.5	0.580	0.590	<0.40	<1.0	1.4	<0.4	7.9	5.3	<0.4	1.5	14.0	5.60	47.67
	GW1449	02/21/05	<0.010	0.0068	2.5	0.083	0.0022	0.0041	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	0.00720	0.033	<0.002	0.0036	0.017	0.0044	0.1545
	GW1518	08/22/05	<0.010	0.011	2.2	0.073	<0.002	0.0044	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	0.0075	0.028	<0.002	<0.002	0.012	0.0044	0.1293
RW-8	GW-901	07/21/99	<20	<10	80	172.000	<4	64.000	25.500	13.400	5.310	<4	7.750	24.000	<4	173.000	123.000	<4	89.600	365.000	150.000	1212.560
	GW-937	10/29/99	<200.000	<100.000	890	787.000	<40.000	324.000	125.000	<40.000	<40.000	<40.000	<40.000	127.000	<40.000	524.000	522.000	<40.000	385.000	1760.000	579.000	5133.000
	GW-974	01/25/00	<200.00	28.400	4560	662.000	<40.000	247.000	109.000	73.500	22.000	<40.000	62.200	106.000	<40.000	649.000	499.000	<40.000	327.000	1400.000	459.000	4615.700
	GW-1017	04/25/00	<10.000	<5.000	25.4	7.250	<2.000	2.890	<2.000	<2.000	<2.000	<2.000	<2.000	<2.000	<2.000	7.610	5.250	<2.000	3.820	15.400	4.520	46.740
	GW-1057	07/27/00	0.159	0.146	30.8	1.330	<0.002	0.822	0.345	0.118	0.043	0.027	0.092	0.304	0.012	1.300	1.440	0.031	1.020	2.700	1.510	11.095
	GW-1207	01/31/01	0.172	<0.050	<10	0.442	<0.020	0.138	0.055	0.022	<0.020	<0.020	<0.020	0.054	<0.020	0.288	0.282	<0.020	0.210	0.712	0.280	2.483
	GW-1250	07/30/01	*0.077*	*0.006*	<10	*0.121*	*0.003*	*0.007*	<0.00228	<0.00228	<0.00228	<0.00228	<0.00228	<0.00228	<0.00228	*0.012*	*0.048*	<0.00228	*0.011*	*0.024*	*0.008*	*0.232*
	GW-1335	08/28/02	<0.010	0.023	2.4	0.160	<0.002	0.015	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	0.026	0.074	<0.002	0.023	0.084	0.017	0.399
	GW-1275	03/05/03	<0.010	0.0063	2.0	0.220	0.0029	0.015	0.0055	<0.002	<0.002	<0.002	<0.005	0.0052	<0.002	0.040	0.0970	<0.002	0.0440	0.1100	0.0290	0.569
	GW1344	08/27/03	<0.010	0.027	2.3	0.160	0.0032	0.011	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	0.022	0.077	<0.002	0.017	0.065	0.013	0.368
	GW-1318	02/25/04	<0.010	0.020	1.9	0.150	0.0025	0.150	0.0032	<0.002	<0.002	<0.002	<0.005	0.003	<0.002	0.024	0.056	<0.002	0.015	0.049	0.014	0.4869
	GW1388	08/24/04	<0.020	0.036	5.7	0.330	0.0062	0.034	0.0053	<0.004	<0.004	<0.004	<0.010	0.0048	<0.004	0.046	0.190	<0.004	0.230	0.220	0.028	1.0943
	GW1450	02/21/05	<0.010	0.021	1.2	0.140	<0.002	0.009	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	0.012	0.053	<0.002	0.010	0.034	0.0073	0.2653
	GW1519	08/22/05	<0.050	0.054	10	0.440	<0.010	0.088	0.032	0.012	0.011	<0.010	<0.030	0.036	<0.010	0.190	0.250	<0.010	0.220	0.470	0.120	1.8690
MW-1S	GW-893	07/21/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-902	10/26/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-943	01/18/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-976	04/19/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1018	07/24/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1091	01/23/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1220	07/30/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1307	08/26/02	<0.010	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	MW-1S	03/27/03	<0.010	<0.002	1.3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1345	08/26/03	<0.010	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1319	02/24/04	<0.010	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1389	08/24/04	<0.010	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1451	02/21/05	<0.010	<0.002	5.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1520	08/22/05	<0.010	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002

Note: Vaules less than quantitation limits are assumed to be zero for the "Total PNAs" calculation.

TABLE 2
Summary of Groundwater Results

Sample Location	Sample ID	Sample Date	PCP (mg/L)	Carbazole (mg/L)	Total Organic Carbon (mg/L)	Ace-naphthene (mg/L)	Ace-naphthalene (mg/L)	Anthracene (mg/L)	Benzo (a) anthracene (mg/L)	Benzo (b) fluor-anthene (mg/L)	Benzo (k) fluor-anthene (mg/L)	Benzo (g, h, i) perylene (mg/L)	Benzo (a) pyrene (mg/L)	Chrysene (mg/L)	Dibenzo (a, h) anthracene (mg/L)	Fluor-anthene (mg/L)	Fluorene (mg/L)	Ideno (1,2,3-cd) pyrene (mg/L)	Naphthalene (mg/L)	Phen-anthrene (mg/L)	Pyrene (mg/L)	Total PNA (mg/L)
MW-1D	GW-894	07/21/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-903	10/26/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-944	01/18/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-977	04/19/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1019	07/24/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1092	01/23/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1221	07/30/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1308	08/26/02	<0.010	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1277	03/03/03	<0.010	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1346	08/26/03	<0.010	<0.002	1.6	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1320	02/24/04	<0.010	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1390	08/25/04	<0.010	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1452	02/21/05	<0.010	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1521	08/22/05	<0.010	<0.002	2.3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
MW-3S	GW-863	07/15/99	2.780	<0.050	19.9	0.060	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.100	0.035	<0.020	0.034	0.046	0.059	0.334
	GW-904	10/26/99	2.000	<0.005	820	0.258	<0.002	0.105	0.109	0.100	0.049	<0.002	0.067	0.115	<0.002	0.743	0.252	0.022	0.140	0.487	0.578	3.025
	GW-965	01/20/00	1.290	<0.050	24.3	0.392	<0.020	0.115	0.155	0.078	0.033	0.054	0.040	0.165	<0.020	0.654	0.330	<0.020	0.086	0.756	0.725	3.583
	GW-1002	04/24/00	1.920	<0.050	24.4	0.445	<0.020	0.135	0.133	0.069	0.027	0.073	0.040	0.142	0.072	0.641	0.426	0.064	0.150	0.913	0.386	3.717
	GW-1042	07/26/00	<0.011	<0.0055	<10	0.053	<0.0022	0.007	0.008	0.004	<0.0022	<0.0022	0.003	0.008	<0.0022	0.028	0.039	<0.0022	0.079	0.061	0.031	0.322
	GW-1116	01/25/01	1.840	<0.050	28.4	1.150	<0.020	0.341	0.347	0.150	0.061	0.050	0.077	0.355	0.032	1.880	0.732	0.057	0.177	2.060	0.928	8.398
	GW-1223	07/30/01	0.757	<0.005	<10	0.104	<0.002	0.075	0.038	0.020	0.012	0.003	0.011	0.035	<0.002	0.152	0.084	0.003	0.041	0.170	0.135	0.881
	GW-1309	08/26/02	0.650	<0.008	15	0.088	<0.008	0.026	0.023	0.010	0.009	<0.008	<0.020	0.023	<0.008	0.130	0.099	<0.008	0.032	0.220	0.095	0.755
	MW-3S	03/04/03	0.890	<0.010	5.7	0.200	0.017	0.190	0.120	0.047	0.047	0.010	0.035	0.120	<0.010	0.700	0.260	0.011	0.087	1.100	0.650	3.594
	GW1347	08/26/03	0.530	<0.008	4.8	0.100	<0.008	0.017	0.017	<0.008	<0.008	<0.008	<0.020	0.019	<0.008	0.086	0.093	<0.008	0.029	0.190	0.076	0.627
	GW1321	02/24/04	0.970	<0.020	9.6	0.220	<0.020	0.079	0.065	0.026	0.020	<0.020	<0.050	0.064	<0.020	0.380	0.310	<0.020	0.051	0.910	0.310	2.435
	GW1391	08/25/04	0.320	<0.020	7.4	0.210	<0.020	0.085	0.051	<0.020	0.020	<0.020	<0.050	0.050	<0.020	0.310	0.320	<0.020	0.045	0.810	0.210	2.111
	GW1453	02/22/05	0.530	<0.020	12	0.190	<0.020	0.063	0.048	0.024	0.024	<0.020	<0.050	0.051	<0.020	0.280	0.270	<0.020	0.038	0.670	0.200	1.858
	GW1522	08/23/05	0.910	<0.040	10	0.420	<0.040	0.170	0.110	0.043	0.048	<0.040	<0.100	0.140	<0.040	0.770	0.480	<0.040	0.072	1.700	0.440	4.393
MW-3D	GW-864	07/15/99	0.154	<0.050	<10	1.240	0.026	0.376	0.153	0.080	0.025	<0.020	0.051	0.158	<0.020	0.867	0.858	<0.020	1.040	2.330	0.612	7.815
	GW-906	10/26/99	<0.010	0.007	13.8	0.678	0.027	0.200	0.133	0.057	0.268	<0.002	0.042	0.158	<0.002	0.647	0.479	<0.002	0.580	1.210	0.372	4.611
	GW-966	01/20/00	<0.100	<0.050	24	1.500	0.038	0.498	0.259	0.132	0.052	0.031	0.091	0.238	<0.020	1.470	1.190	0.040	0.457	3.020	0.998	10.014
	GW-1008	04/24/00	0.018	<0.005	<10	0.546	0.020	0.082	0.031	0.012	0.006	<0.002	0.009	0.030	<0.002	0.137	0.299	<0.002	0.525	0.523	0.126	2.346
	GW-1044	07/26/00	<0.010	<0.005	<10	0.085	0.002	0.008	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.005	0.047	<0.002	0.266	0.059	0.007	0.479
	GW-1117	01/25/01	0.134	<0.050	<10	0.921	0.025	0.244	0.097	0.045	<0.020	<0.020	0.033	0.093	<0.020	0.423	0.671	<0.020	0.380	1.370	0.541	4.844
	GW-1225	07/30/01	<0.100	<0.050	<10	0.518	<0.020	0.113	0.050	<0.020	<0.020	<0.020	<0.020	0.040	<0.020	0.258	0.336	<0.020	0.440	0.620	0.168	2.543
	GW-1310	08/27/02	<0.100	<0.020	6.3	0.830	0.025	0.230	0.087	0.038	0.031	0.021	<0.050	0.086	<0.020	0.540	0.550	<0.020	1.000	1.300	0.390	5.128
	MW-3D	03/27/03	<0.100	<0.020	6.0	1.100	0.028	0.350	0.150	0.055	0.058	<0.020	0.050	0.140	<0.020	0.900	0.830	<0.020	1.200	2.200	0.580	7.641
	GW1348	08/26/03	<0.040	0.031	3.5	0.470	0.0093	0.039	0.011	<0.008	<0.008	<0.008	<0.020	0.012	<0.008	0.073	0.180	<0.008	0.550	0.310	0.059	1.713
	GW1322	02/24/04	<0.050	0.027	2.9	0.440	<0.010	0.082	0.031	0.011	0.012	<0.010	<0.030	0.032	<0.010	0.190	0.250	<0.010	0.560	0.540	0.130	2.278
	GW1392	08/25/04	<0.010	<0.002	2.1	0.310	0.0081	0.020	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	0.021	0.130	<0.002	0.330	0.140	0.012	0.971
	GW1454	02/22/05	<0.040	0.035	6.0	0.330	<0.008	0.050	0.018	<0.008	<0.008	<0.008	<0.020	0.018	<0.008	0.120	0.190	<0.008	0.460	0.320	0.083	1.589
	GW1523	08/23/05	<0.040	0.035	1.9	0.270	<0.008	0.026	<0.008	<0.008	<0.008	<0.008	<0.020	<0.008	<0.008	0.040	0.130	<0.008	0.420	0.170	0.023	1.079

Note: Vaules less than quantitation limits are assumed to be zero for the "Total PNAs" calculation.

TABLE 2
Summary of Groundwater Results

Sample Location	Sample ID	Sample Date	PCP (mg/L)	Carbazole (mg/L)	Total Organic Carbon (mg/L)	Ace-naphthene (mg/L)	Ace-naphthalene (mg/L)	Anthracene (mg/L)	Benzo (a) anthracene (mg/L)	Benzo (b) fluor-anthene (mg/L)	Benzo (k) fluor-anthene (mg/L)	Benzo (g, h, i) perylene (mg/L)	Benzo (a) pyrene (mg/L)	Chrysene (mg/L)	Dibenzo (a, h) anthracene (mg/L)	Fluor-anthene (mg/L)	Fluorene (mg/L)	Ideno (1,2,3-cd) pyrene (mg/L)	Naphthalene (mg/L)	Phen-anthrene (mg/L)	Pyrene (mg/L)	Total PNA (mg/L)
MW-5S	GW-865	07/14/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-908	10/26/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-945	01/18/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-978	04/19/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1020	07/24/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1093	01/23/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1259	07/31/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1311	08/27/02	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1280	03/04/03	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1349	08/26/03	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1323	02/24/04	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1393	08/26/04	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1455	02/22/05	<0.010	<0.002	**4.1**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1524	08/23/05	<0.010	<0.002	**1.0**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
MW-8S	GW-866	07/14/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-909	10/27/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-946	01/18/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-979	04/19/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1021	07/24/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1094	01/23/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1228	07/30/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1312	08/27/02	<0.010	<0.002	1.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	MW-8S	03/04/03	<0.010	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1350	08/26/03	<0.010	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1324	02/24/04	<0.010	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1394	08/26/04	<0.010	<0.002	**1.0**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1456	02/22/05	<0.010	<0.002	**3.7**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1525	08/23/05	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
MW-8D	GW-867	07/14/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-910	10/27/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-947	01/18/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-980	04/19/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1022	07/24/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1095	01/23/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1229	07/30/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	MW-8D	08/27/02	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	MW-8D	03/04/03	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1351	08/26/03	<0.010	<0.002	<1.0	**0.0034**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.0031**	<0.002	**0.007**
	GW1325	02/24/04	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1395	08/26/04	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1457	02/22/05	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1526	08/23/05	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002

Note: Vaules less than quantitation limits are assumed to be zero for the "Total PNAs" calculation.

TABLE 2
Summary of Groundwater Results

Sample Location	Sample ID	Sample Date	PCP (mg/L)	Carbazole (mg/L)	Total Organic Carbon (mg/L)	Ace-naphthene (mg/L)	Ace-naphthalene (mg/L)	Anthracene (mg/L)	Benzo (a) anthracene (mg/L)	Benzo (b) fluor-anthene (mg/L)	Benzo (k) fluor-anthene (mg/L)	Benzo (g, h, i) perylene (mg/L)	Benzo (a) pyrene (mg/L)	Chrysene (mg/L)	Dibenzo (a, h) anthracene (mg/L)	Fluor-anthene (mg/L)	Fluorene (mg/L)	Ideno (1,2,3-cd) pyrene (mg/L)	Naphthalene (mg/L)	Phen-anthrene (mg/L)	Pyrene (mg/L)	Total PNA (mg/L)
MW-9S	GW-868	07/14/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-911	10/27/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-948	01/19/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-983	04/19/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1023	07/25/00	<0.011	<0.0055	<10	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
	GW-1096	01/23/01			<10																	
	GW-1200	01/31/01	<0.010	<0.005		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1230	07/31/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1314	08/27/02	<0.010	<0.002	**2**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1283	03/04/03	<0.010	<0.002	**1.2**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1352	08/26/03	<0.010	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1326	02/25/04	<0.010	<0.002	11	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1396	08/26/04	<0.010	<0.002	**3.8**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1458	02/23/05	<0.010	<0.002	**13**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1527	08/23/05	<0.010	<0.002	**5.6**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
MW-9D	GW-869	07/14/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-913	10/27/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-949	01/19/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-985	04/19/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1024	07/25/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1097	01/23/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1231	07/31/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1315	08/27/02	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1284	03/04/03	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1353	08/26/03	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1327	02/25/04	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1397	08/26/04	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1459	02/23/05	<0.010	<0.002	**4.0**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1528	08/23/05	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
MW-10S	GW-870	07/14/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-915	10/27/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW950	01/19/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-981	04/19/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1025	07/25/00	<0.011	<0.0055	<10	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
	GW-1098	01/23/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1232	07/31/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1316	08/28/02	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1285	03/04/03	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1354	08/26/03	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1328	02/25/04	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1398	08/27/04	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1460	02/23/05	<0.010	<0.002	**4.3**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1529	08/23/05	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002

Note: Vaules less than quantitation limits are assumed to be zero for the "Total PNAs" calculation.

TABLE 2
Summary of Groundwater Results

Sample Location	Sample ID	Sample Date	PCP (mg/L)	Carbazole (mg/L)	Total Organic Carbon (mg/L)	Ace-naphthene (mg/L)	Ace-naphthalene (mg/L)	Anthracene (mg/L)	Benzo (a) anthracene (mg/L)	Benzo (b) fluor-anthene (mg/L)	Benzo (k) fluor-anthene (mg/L)	Benzo (g, h, i) perylene (mg/L)	Benzo (a) pyrene (mg/L)	Chrysene (mg/L)	Dibenzo (a, h) anthracene (mg/L)	Fluor-anthene (mg/L)	Fluorene (mg/L)	Ideno (1,2,3-cd) pyrene (mg/L)	Naphthalene (mg/L)	Phen-anthrene (mg/L)	Pyrene (mg/L)	Total PNA (mg/L)
MW-10D	GW-871	07/14/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-916	10/27/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.003**	<0.002	**0.003**
	GW-941	11/22/99	<0.011	<0.0055	<10	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
	GW-951	01/19/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-982	04/19/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1026	07/25/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1099	01/23/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1233	07/31/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1317	08/28/02	<0.010	<0.002	<1.0	**0.005**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	0.003	**0.004**	<0.002	<0.002	<0.002	<0.002	**0.011**
	GW-1286	03/04/03	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1355	08/26/03	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1329	02/25/04	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1399	08/27/04	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1461	02/23/05	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1530	08/23/05	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
MW-12S	GW-872	07/14/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-917	10/27/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-953	01/19/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-986	04/20/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1028	07/25/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1100	01/24/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1234	07/30/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1318	08/27/02	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1287	03/03/03	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1336	08/26/03	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1330	02/25/04	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1400	08/27/04	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1462	02/24/05	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1531	08/25/05	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
MW-16S	GW-873	07/14/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-918	10/28/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-955	01/19/00	**0.066**	**0.074**	<10	**2.710**	**0.020**	**0.788**	**0.320**	**0.065**	**0.029**	**0.014**	**0.047**	**0.152**	**0.007**	**2.390**	**1.860**	**0.016**	**2.460**	**5.520**	**1.780**	**18.178**
	GW-987	04/20/00	<0.100	<0.050	<10	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
	GW-1031	07/26/00	<0.011	<0.0055	<10	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
	GW-1101	01/24/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1235	07/31/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1319	08/28/02	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	**0.003**	<0.002	<0.002	<0.002	<0.002	**0.002**	**0.005**
	MW-16S	03/04/03	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1357	08/27/03	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1331	02/26/04	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1401	08/30/04	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1463	02/24/05	<0.010	<0.002	**5.5**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1532	08/25/05	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002

Note: Vaules less than quantitation limits are assumed to be zero for the "Total PNAs" calculation.

TABLE 2
Summary of Groundwater Results

Sample Location	Sample ID	Sample Date	PCP (mg/L)	Carbazole (mg/L)	Total Organic Carbon (mg/L)	Ace-naphthene (mg/L)	Ace-naphthalene (mg/L)	Anthracene (mg/L)	Benzo (a) anthracene (mg/L)	Benzo (b) fluor-anthene (mg/L)	Benzo (k) fluor-anthene (mg/L)	Benzo (g, h, i) perylene (mg/L)	Benzo (a) pyrene (mg/L)	Chrysene (mg/L)	Dibenzo (a, h) anthracene (mg/L)	Fluor-anthene (mg/L)	Fluorene (mg/L)	Ideno (1,2,3-cd) pyrene (mg/L)	Naphthalene (mg/L)	Phen-anthrene (mg/L)	Pyrene (mg/L)	Total PNA (mg/L)
MW-17S	GW-874	07/15/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-919	10/28/99	<0.010	<0.005	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.002**	<0.002	<0.002	**0.003**	<0.002	**0.005**
	GW-956	01/16/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.007**	<0.002	<0.002	**0.015**	**0.003**	**0.025**
	GW-988	04/20/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1029	07/25/00	<0.011	<0.0055	<10	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
	GW-1102	01/24/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1336	07/31/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.003**	**0.002**	<0.002	**0.006**
	GW-1320	08/28/02	**0.031**	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	0.003	<0.002	0.003	0.008	0.002	**0.017**
	MW-17	03/04/03	**0.017**	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.0024**	<0.002	**0.0024**
	GW1358	08/27/03	**0.016**	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	**0.0023**	<0.002	<0.002	<0.002	<0.002	**0.0023**
	GW1332	02/26/04	<0.010	<0.002	**1.9**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	**0.0051**	<0.002	<0.002	**0.0076**	<0.002	**0.0127**
	GW1402	08/30/04	<0.010	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	**0.0036**	<0.002	<0.002	**0.0037**	<0.002	**0.0073**
	GW1464	02/24/05	**0.012**	<0.002	**5.5**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	**0.0062**	<0.002	<0.002	**0.0097**	<0.002	**0.0159**
	GW1533	08/25/05	**0.014**	<0.002	<1.0	**0.0028**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	**0.008**	<0.002	<0.002	**0.013**	<0.002	**0.0238**
MW-18S	GW-895	07/21/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-920	10/28/99	<0.010	<0.005	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-957	01/20/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.006**	<0.002	<0.002	**0.006**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.011**
	GW-990	*04/20/00*	*<0.010*	*<0.005*	*<10*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*
	GW-1032	07/26/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1103	01/24/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1237	07/31/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1321	08/28/02	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	**0.003**	<0.002	<0.002	<0.002	<0.002	<0.002	**0.003**
	MW-18S	03/27/03	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1359	08/27/03	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1333	02/26/04	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1403	08/30/04	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1465	02/24/05	<0.010	<0.002	**4.5**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1534	08/25/05	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
MW-18D	GW-896	07/21/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-921	10/28/99	<0.010	<0.005	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-958	01/20/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-991	04/20/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1033	07/26/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1104	01/24/01			<10																	
	GW-1239	07/31/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1322	08/28/02	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	***0.003***	<0.002	<0.002	<0.002	<0.002	<0.002	***0.003***
	MW-18D	03/04/03	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1360	08/27/03	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1334	02/26/04	<0.010	<0.002	**1.2**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1404	08/30/04	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1466	02/24/05	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1535	08/25/05	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002

Note: Vaules less than quantitation limits are assumed to be zero for the "Total PNAs" calculation.

TABLE 2
Summary of Groundwater Results

Sample Location	Sample ID	Sample Date	PCP (mg/L)	Carbazole (mg/L)	Total Organic Carbon (mg/L)	Ace-naphthene (mg/L)	Ace-naphthalene (mg/L)	Anthracene (mg/L)	Benzo (a) anthracene (mg/L)	Benzo (b) fluor-anthene (mg/L)	Benzo (k) fluor-anthene (mg/L)	Benzo (g, h, i) perylene (mg/L)	Benzo (a) pyrene (mg/L)	Chrysene (mg/L)	Dibenzo (a, h) anthracene (mg/L)	Fluor-anthene (mg/L)	Fluorene (mg/L)	Ideno (1,2,3-cd) pyrene (mg/L)	Naphthalene (mg/L)	Phen-anthrene (mg/L)	Pyrene (mg/L)	Total PNA (mg/L)
MW-19S	GW-877	07/15/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.002**	<0.002	<0.002	<0.002	**0.002**	<0.002	**0.004**
	GW-923	10/28/99	<0.010	<0.005	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-960	01/20/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-992	04/20/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1034	07/26/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1105	01/24/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1240	07/31/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1323	08/28/02	<0.010	<0.002	<1	**0.005**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	**0.003**	**0.007**	**0.005**	**0.003**	<0.002	**0.008**	**0.005**	**0.035**
	MW-19S	*03/04/03*	*<0.010*	*<0.005*	*<1*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.005*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*
	GW1361	08/27/03	<0.010	<0.002	**1.4**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	**0.0037**	**0.0021**	<0.002	<0.002	<0.002	**0.0034**	**0.009**
	GW1335	02/26/04	<0.010	<0.005	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1405	08/31/04	<0.010	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1467	02/25/05	<0.010	<0.002	**5.6**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1536	08/26/05	<0.010	<0.002	**1.1**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
MW-19D	GW-878	07/15/99	<0.100	<0.050	<10	**0.276**	<0.020	**0.213**	**0.125**	**0.049**	**0.032**	<0.020	**0.042**	**0.110**	<0.020	**0.654**	**0.258**	<0.020	<0.020	**0.673**	**0.414**	**2.846**
	GW-925	10/28/99	<0.010	<0.005	<1	**0.006**	<0.002	**0.005**	**0.019**	**0.010**	**0.003**	<0.002	**0.007**	**0.017**	<0.002	**0.084**	**0.002**	<0.002	<0.002	**0.007**	**0.076**	**0.237**
	GW-961	01/20/00	<0.010	<0.005	<10	**0.007**	<0.002	**0.031**	**0.074**	**0.032**	**0.017**	<0.002	**0.024**	**0.076**	**0.006**	**0.362**	**0.008**	**0.010**	<0.002	**0.055**	**0.244**	**0.945**
	GW-994	04/20/00	<0.010	<0.005	<10	**0.013**	<0.002	<0.002	**0.006**	**0.003**	<0.002	<0.002	**0.002**	**0.005**	<0.002	**0.029**	**0.003**	<0.002	<0.002	<0.002	**0.022**	**0.083**
	GW-1035	07/26/00	<0.010	<0.005	<10	**0.013**	<0.002	**0.004**	**0.017**	**0.009**	**0.003**	**0.005**	**0.006**	**0.017**	<0.002	**0.093**	**0.003**	**0.005**	<0.002	**0.006**	**0.067**	**0.249**
	GW-1106	01/24/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1224	07/31/01	<0.010	<0.005	<10	**0.040**	<0.002	**0.016**	**0.012**	**0.007**	**0.006**	<0.002	**0.005**	**0.012**	<0.002	**0.050**	**0.030**	<0.002	<0.002	**0.031**	**0.037**	**0.245**
	GW-1324	08/28/02	<0.010	**0.002**	<1	**0.052**	<0.002	**0.013**	**0.005**	**0.002**	**0.003**	**0.002**	<0.005	**0.006**	<0.002	**0.034**	**0.037**	**0.002**	<0.002	**0.031**	**0.024**	**0.212**
	MW-19D	03/04/03	<0.010	<0.002	**1.1**	**0.061**	<0.002	**0.017**	**0.012**	**0.0044**	**0.0037**	<0.002	<0.005	**0.012**	<0.002	**0.067**	**0.039**	<0.002	<0.002	**0.031**	**0.052**	**0.299**
	GW1362	08/27/03	<0.010	<0.002	<1	**0.036**	<0.002	**0.010**	**0.0023**	<0.002	<0.002	<0.002	<0.005	**0.0024**	<0.002	**0.018**	**0.026**	<0.002	<0.002	**0.0041**	**0.016**	**0.115**
	GW1336	02/26/04	<0.010	<0.002	<1	**0.019**	<0.002	**0.0059**	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	**0.012**	**0.013**	<0.002	<0.002	**0.0042**	**0.008**	**0.062**
	GW1406	08/31/04	<0.010	<0.002	**2.4**	**0.008**	<0.002	**0.0040**	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	**0.0071**	**0.0047**	<0.002	<0.002	<0.002	**0.0045**	**0.028**
	GW1468	02/25/05	<0.010	<0.002	**6.4**	**0.019**	<0.002	**0.0072**	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	**0.014**	**0.015**	<0.002	<0.002	**0.0057**	**0.0091**	**0.070**
	GW1537	08/26/05	<0.010	<0.002	**<1.0**	**0.0071**	<0.002	**0.003**	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	**0.0073**	**0.0052**	<0.002	<0.002	**0.0025**	**0.0037**	**0.0288**
MW-20S	GW-879	07/15/99	<0.010	<0.005	<10	**0.039**	<0.002	**0.017**	**0.006**	**0.003**	<0.002	<0.002	**0.002**	**0.006**	<0.002	**0.036**	**0.035**	<0.002	<0.002	**0.047**	**0.028**	**0.218**
	GW-926	10/28/99	<0.010	<0.005	<1	**0.003**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.005**	<0.002	<0.002	<0.002	<0.002	**0.005**	**0.013**
	GW-962	01/20/00	<0.010	<0.005	<10	**0.005**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.005**	**0.003**	**0.003**	<0.002	<0.002	**0.007**	**0.006**	**0.028**
	GW-997	04/24/00	<0.010	<0.005	<10	**0.002**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.004**	<0.002	<0.002	<0.002	**0.029**	**0.003**	**0.038**
	GW-1037	07/26/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1109	01/25/01	**0.030**	<0.005	<10	**0.023**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.013**	<0.002	**0.022**	**0.003**	**0.003**	**0.064**
	GW-1241	07/31/01	**0.011**	<0.005	<10	**0.018**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.003**	**0.009**	<0.002	**0.004**	**0.003**	<0.002	**0.037**
	GW-1328	08/28/02	<0.010	<0.002	<1	**0.021**	<0.002	**0.005**	**0.004**	**0.003**	**0.003**	**0.008**	<0.005	**0.004**	<0.002	**0.014**	**0.014**	**0.007**	**0.005**	**0.007**	**0.012**	**0.104**
	MW-20S	03/04/03	**0.032**	**0.003**	<1	**0.061**	**0.0025**	**0.0052**	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	**0.0098**	**0.038**	<0.002	**0.025**	**0.014**	**0.0083**	**0.164**
	GW1363	08/27/03	**0.022**	<0.002	**1.1**	**0.026**	<0.002	**0.0027**	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	**0.0044**	**0.017**	<0.002	<0.002	**0.0071**	**0.0036**	**0.061**
	GW1337	02/27/04	<0.010	<0.002	<1	**0.016**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.0021**	**0.008**	<0.002	<0.002	<0.002	<0.002	**0.026**
	GW1407	08/31/04	**0.095**	**0.0036**	**1.5**	**0.045**	<0.002	**0.0034**	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	**0.0029**	**0.027**	<0.002	<0.002	**0.015**	<0.002	**0.093**
	GW1469	02/25/05	**0.021**	**0.0027**	**5.9**	**0.065**	**0.0022**	**0.0086**	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	**0.0092**	**0.051**	<0.002	<0.002	**0.024**	**0.0054**	**0.1654**
	GW1538	08/26/05	**0.022**	<0.002	**1.1**	**0.030**	<0.002	**0.0028**	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	**0.0045**	**0.019**	<0.002	<0.002	**0.005**	**0.0022**	**0.0635**

Note: Vaules less than quantitation limits are assumed to be zero for the "Total PNAs" calculation.

TABLE 2
Summary of Groundwater Results

Sample Location	Sample ID	Sample Date	PCP (mg/L)	Carbazole (mg/L)	Total Organic Carbon (mg/L)	Ace-naphthene (mg/L)	Ace-naphthalene (mg/L)	Anthracene (mg/L)	Benzo (a) anthracene (mg/L)	Benzo (b) fluor-anthene (mg/L)	Benzo (k) fluor-anthene (mg/L)	Benzo (g, h, i) perylene (mg/L)	Benzo (a) pyrene (mg/L)	Chrysene (mg/L)	Dibenzo (a, h) anthracene (mg/L)	Fluor-anthene (mg/L)	Fluorene (mg/L)	Ideno (1,2,3-cd) pyrene (mg/L)	Naphthalene (mg/L)	Phen-anthrene (mg/L)	Pyrene (mg/L)	Total PNA (mg/L)
MW-20D	GW-897	07/21/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-928	10/28/99	<0.010	<0.005	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-928	10/28/99	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-995	04/24/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1041	07/26/00	<0.011	<0.0055	<10	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
	GW-1113	01/25/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1242	07/31/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.004**	<0.002	<0.002	<0.002	**0.002**	**0.029**	**0.036**
	GW-1328	08/28/02	<0.010	<0.002	<1	**0.004**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	**0.003**	**0.003**	**0.004**	**0.003**	<0.002	<0.002	**0.006**	**0.003**	**0.025**
	MW-20D	03/04/03	<0.010	<0.005	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1364	08/27/03	<0.010	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1338	02/27/04	<0.010	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1408	08/31/04	<0.010	<0.002	<1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1470	02/25/05	<0.010	<0.002	**4.4**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1539	08/26/05	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Neely	GW-975	01/25/00	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1121	01/25/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1261	07/31/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1326	08/27/02	<0.010	<0.002	**1.6**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1296	03/03/03	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1365	08/27/03	<0.010	<0.002	**2.0**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1339	02/25/04	<0.010	<0.002	**2.5**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1409	08/24/04	<0.010	<0.002	**3.6**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1471	02/22/05	<0.010	<0.002	**1.7**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1540	08/23/05	<0.010	<0.002	**4.9**	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Barnes	GW-976	1/25/2000	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1122	1/25/2001	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1260	07/31/01	<0.010	<0.005	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1327	08/27/02	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW-1297	03/03/03	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1366	08/27/03	<0.010	<0.002	**5.5**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1340	02/25/04	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	GW1410	08/24/04	<0.010	<0.002	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	—	02/22/05	Not Sampled - The property was vacant and there was no power to the well pump.																			
	—	08/23/05	Not Sampled - The property was vacant and there was no power to the well pump.																			

Note: Vaules less than quantitation limits are assumed to be zero for the "Total PNAs" calculation.

TABLE 3
Recommendations and Follow-up Actions
Second Five-Year Review
Old Midland Products Site - Ola, Arkansas

Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Follow-up Actions: Affects Protectiveness (Y/N)	
				Current	Future
Implement Institutional Controls (ICs)	ADEQ	EPA	09/30/2006	Y	Y
Continue to Monitor Source Control and Groundwater Remedies	ADEQ	EPA	03/2011	Y	Y
Continue to Maintain Source Control and Groundwater Remedies	ADEQ	EPA	03/2011	Y	Y

FIGURE 1
Site Location Map
Second Five-Year Review
Old Midland Products Site - Ola, Arkansas

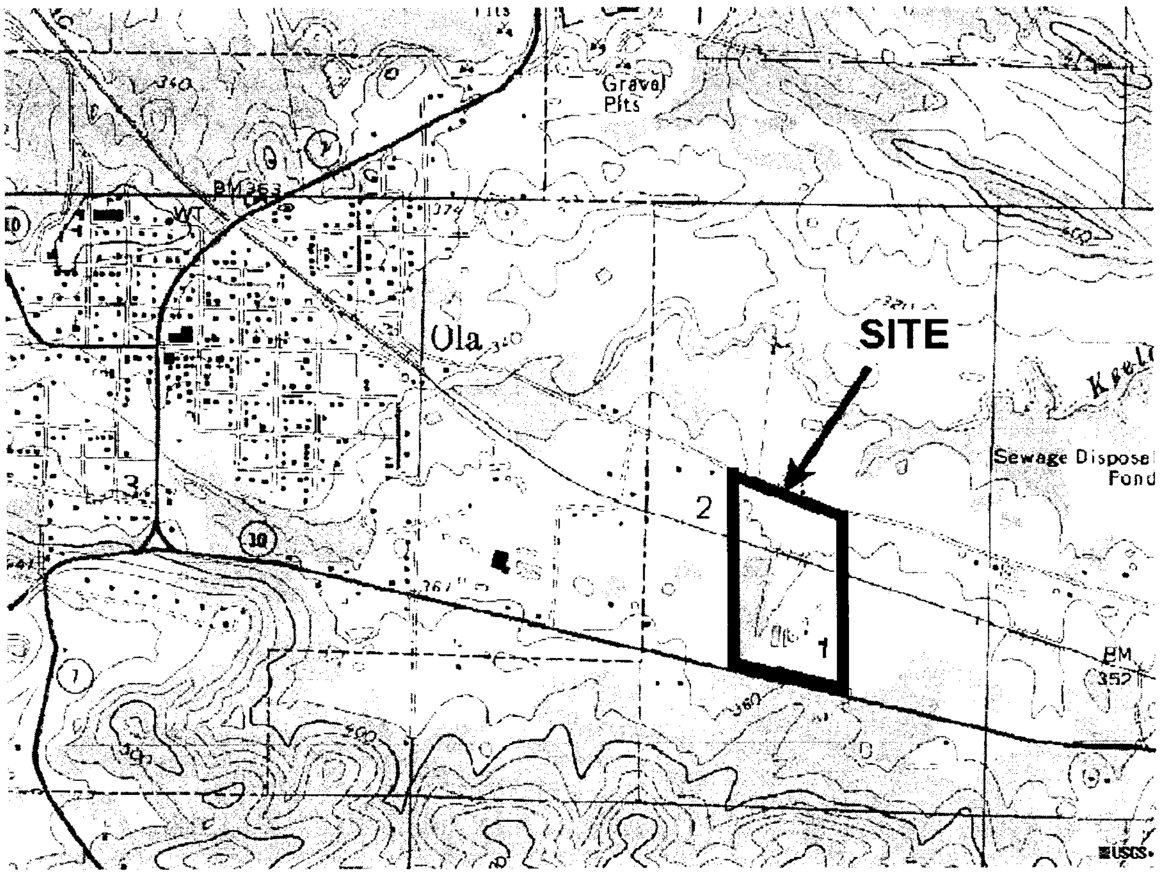
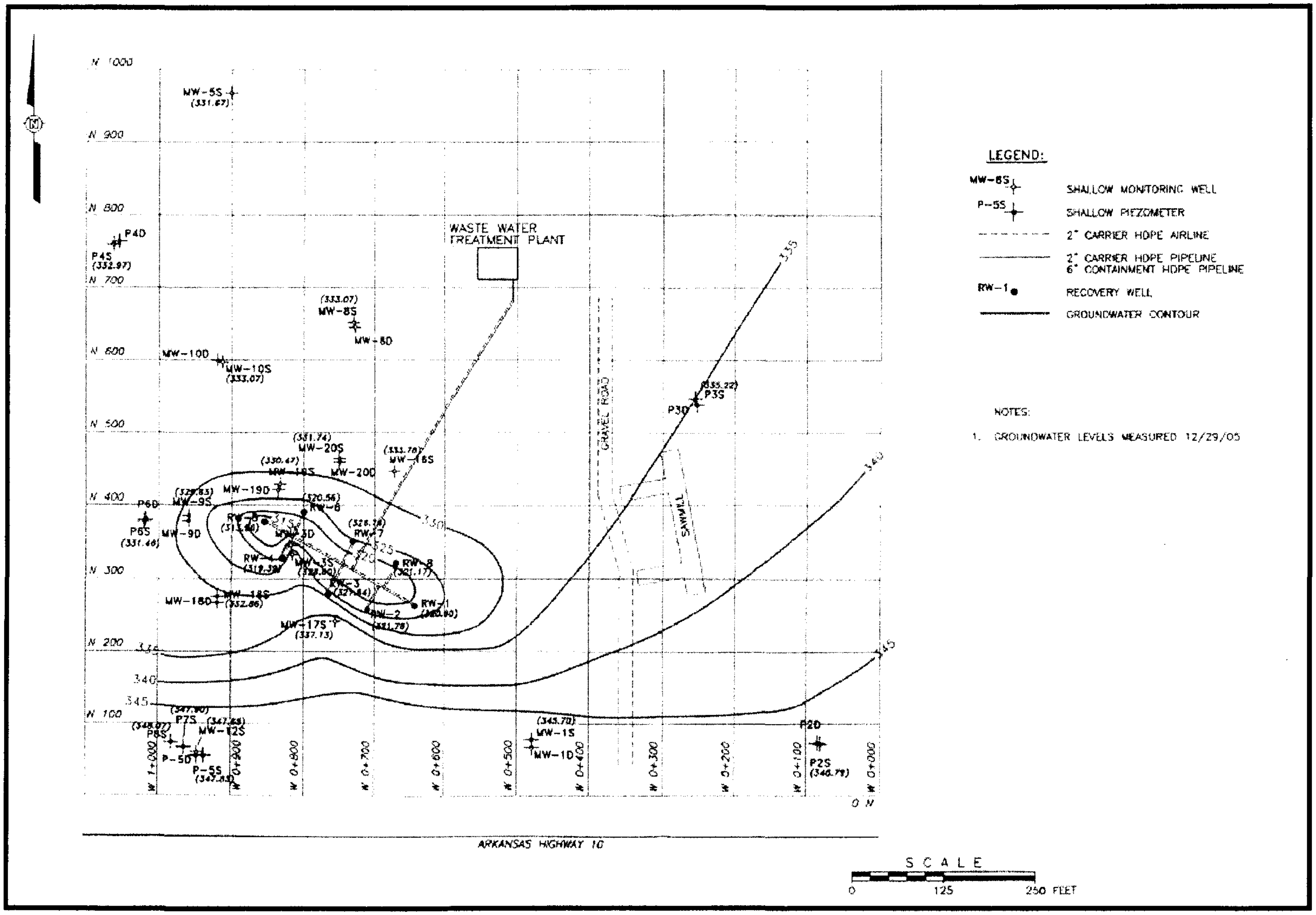


FIGURE 2
Recovery and Monitoring Well Locations
Second Five-Year Review
Old Midland Products Site - Ola, Arkansas



ATTACHMENT 1
Public Notice
Second Five-Year Review
Old Midland Products Site - Ola, Arkansas

ADEQ
ARKANSAS
Department of Environmental Quality

MIDLAND PRODUCTS SUPERFUND SITE
PUBLIC NOTICE
Arkansas Department of Environmental Quality
Conducts Second Five-Year Review of Site Remedy
January 2006

The Arkansas Department of Environmental Quality (ADEQ) is conducting the Second Five-Year Review of the remedial action for the Midland Products Superfund Site in Ola, Yell County, Arkansas. The review will evaluate the ability of the remedy, which consists of a ground water pump-and-treat system, to protect public health and the environment.

Once completed, the results of the Second Five-Year Review will be made available to the public at the following information repository:

Two Rivers School District
Attn: Earl E. Jamison, Jr.
307 West Hill Street
Ola, Arkansas 75253
(479) 489-5251

For more information about the Site, contact Clark McWilliams, ADEQ Project Manager, at (501) 682-0850 or by e-mail at mcwilliamsc@adeq.state.ar.us. Information about the Midland Products Site also is available on the Internet at www.epa.gov/region6/superfund.

ATTACHMENT 2
Documents Reviewed
Second Five-Year Review
Old Midland Products Site - Ola, Arkansas

Arkansas Department of Environmental Quality (ADEQ), *Five Year Review, Old Midland Products Site,* May 1999

International Technology Corporation, (contractor for ADPC&E), *Final Report, Remedial Investigation, Old Midland Products Site,* October 1987

International Technology Corporation (contractor for ADPC&E), *Remedial Action Report, Construction Phase, Old Midland, Products Site,* May 31, 1996

GeoTrans, Inc., (contractor of USEPA, Technology and Innovation Office), *Remediation System Evaluation , Midland Products Superfund Site,* June 4, 2001

Shaw Environmental, Inc., (contractor for ADEQ), *Monthly Operation and Maintenance Report #42, Former Old Midland Products Site,* August 2005

United States Environmental Protections Agency (EPA), *Comprehensive Five-Year Review Guidance*, EPA540-R-01-007, June 2001

United States Environmental Protection Agency (EPA), *Record of Decision, Old Midland Products, USEPA, Region 6,* March 24, 1988

United States Environmental Protection Agency (EPA), *Superfund Record of Decision Amendment, Old Midland Products, Yell County, Arkansas (draft),* February 2006

ATTACHMENT 3

Site Inspection Checklist

Second Five-Year Review
Old Midland Products Site - Ola, Arkansas

Old Midland Products Superfund Site
Ola, Yell County, Arkansas
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:** Old Midland Products Superfund Site	**EPA ID:** ARD980745665
City/State: Ola, Yell County, Arkansas	**Date of Inspection:** February 23, 2006
Agency Completing 5 Year Review: ADEQ	**Weather/temperature:** Pc to Clr; 40-60 degrees F.

Remedy Includes: (Check all that apply)

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

Attachments: ■ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M :**
Name: Mike Houghton
Title: Site Grounds Maintenance Contractor
Date: 2/28/06
Interviewed: ☐ at site ☐ at office ■ by phone Phone Number. 479-970-3654
Problems, suggestions: ☐ Additional report (if additional space required).

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

2. **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: Two Rivers School District
Contact:
Name: Mr. Earl Jamison
Title: Superintendent
Date: 2/23/06
Phone Number: 501-272-3113
Problems, suggestions: ______________ ☐ Additional report attached (if additional space required)

Agency:
Contact:
Name:
Title:
Date:
Phone Number:

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

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

Local Resident: Located adjacently east of the Site.
Contact:
Name: Mrs. Phyllis West
Address: 22887 E. Hwy. 10, Ola, AR
Date: 2/22/06
Phone Number: 479-489-5896
Interview Record Forms are provided elsewhere in the Second Five-Year Review Report.

Local Resident: Located adjacently east of the Site
Contact:
Name: Ms. Marena Neeley
Address: 22401 E. Hwy 10, Ola, AR
Date: 2/23/06
Phone Number: 479-489-5488
Interview Record Forms are provided elsewhere in the Second Five-Year Review Report.

Local Resident: Located ¼ mile north, northwest of Site property boundary.
Contact:
Name: Ms. Joe Ann Marshal
Address: 318 Deltic Timber Rd., Ola, AR
Date: 2/23/06
Phone Number: 479-489-5380
Interview Record Forms are provided elsewhere in the Second Five-Year Review Report.

OLD MIDLAND PRODUCTS SUPERFUND SITE
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III. ONSITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. O&M Documents			
■ O&M Manuals	■Readily available	■ Up to date	☐ N/A
■ As-Built Drawings	■Readily available	■ Up to date	☐ N/A
■ Maintenance Logs	■Readily available	■Up to date	☐ N/A
Remarks:			
2. Health and Safety Plan Documents			
■ Site-Specific Health and Safety Plan	■ Readily available	☐ Up to date	☐N/A
☐ Contingency plan/emergency response plan	☐ Readily available	☐ Up to date	☐N/A
Remarks:			
3. O&M and OSHA Training Records	■ Readily available	■ Up to date	☐ N/A
Remarks:			
4. Permits and Service Agreements			
☐ Air discharge permit	☐ Readily available	☐ Up to date	■ N/A
■ Effluent discharge	■ Readily available	■Up to date	☐ N/A
☐ Waste disposal, POTW	☐ Readily available	☐ Up to date	■ N/A☐
Other permits	☐ Readily available	☐ Up to date	■ N/A
Remarks:			
5. Gas Generation Records	☐ Readily available	☐ Up to date	■ NA
Remarks:			
6. Settlement Monument Records	☐ Readily available	☐ Up to date	■ N/A
Remarks:			
7. Groundwater Monitoring Records	■ Readily available	■ Up to date	☐ N/A
Remarks: Analytical records are contained in the Second Five-Year Review Report			
8. Leachate Extraction Records	☐ Readily available	☐ Up to date	■ N/A
Remarks:			
9. Discharge Compliance Records	☐ Readily available	☐ Up to date	■ N/A
Remarks:			
10. Daily Access/Security Logs	■ Readily available	☐ Up to date	☐ N/A
Remarks:			

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IV. O&M Costs ■ Applicable ❑ N/A

1. **O&M Organization**
❑ State in-house ■ Contractor for State (Source Control Remedy O&M Only)
❑ PRP in-house ❑ Contractor for PRP
❑ Other:

2. **O&M Cost Records**
■ Readily available ■ Up to date ❑ Funding mechanism/agreement in place
❑ Breakdown attached (described in report)

Total annual cost by year for review period if available

From (Date): Jul'00 To (Date): Jun'05 Total cost: $32,800 ❑ Breakdown attached ($6,560 per year)

From (Date): Jul'05 To (Date): Jun'06 Total cost: $8,350 ❑0 Breakdown attached

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

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

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

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

V. ACCESS AND INSTITUTIONAL CONTROLS ■ Applicable ❑ N/A

A. **Fencing**

1. **Fencing damaged** ❑ Location shown on site map M Gates secured ❑ N/A
Remarks: Site fencing and gate are in good condition - .no signs of vandalism.

B. **Other Access Restrictions**

1. **Signs and other security measures** ❑ Location shown on site map ❑ N/A
Remarks: Signs are present at regular intervals along fence; in good condition and were readily visible.

C. **Institutional Control** :

1. Implementation and enforcement

Site conditions imply ICs not properly implemented: ❑ Yes ❑ No ■ N/A
Site conditions imply ICs not being fully enforced: ❑ Yes ❑ No ■ N/A
Type of monitoring (e.g, self-reporting, drive by): Site visits and quarterly groundwater monitoring visits
Frequency:
Responsible party/agency: ADEQ
Contact:
Name: Clark McWilliams
Title: Engineer PE, Inactive Sites Branch
Date:
Phone Number: 501-682-0850
Reporting is up-to-date: ❑ Yes ❑ No ■ N/A
Reports are verified by the lead agency: ❑ Yes ❑ No ■ N/A
Specific requirements in deed or decision documents have been met: ❑ Yes ❑ No ■ N/A
Violations have been reported: ❑ Yes ❑ No ■N/A
Other problems or suggestions: ❑ Additional report attached (if additional space required).

2. **Adequacy** ❑ ICs are adequate ❑ ICs are inadequate ■ N/A
Remarks:

D. **General**

1. **Vandalism/trespassing** ❑ Location shown on site map ■ No vandalism evident
Remarks:

2. **Land use changes onsite** ■ N/A
Remarks:

3. **Land use changes offsite** ■ N/A
Remarks:

VI. GENERAL SITE CONDITIONS

A. Roads: ■ Applicable ❑ N/A

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

B. Other Site Conditions :

Remarks: Site appears to be in good condition. Vegetative cover is heavy and well established predominantly with Bermuda and Johnson grass, and limited weed growth. There were no trees or scrub brush with deep root systems within the capped area.

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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: surface
   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: r

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

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

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

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

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

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

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

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

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

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

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

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

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D. **Cover Penetrations;**			❑ Applicable	❑ N/A.
1. **Gas Vents**				❑ NIA
❑ Active	❑ Passive	❑ Routinely sampled		
❑ Properly secured/locked		❑ Functioning	❑I Good condition	
❑ Evidence of leakage at penetration		❑ Needs O& M		
Remarks:				
2. **Gas Monitoring Probes**				❑ N/A
❑ Routinely sampled				
❑ Properly secured/locked		❑ Functioning	❑ Good condition	
❑ Evidence of leakage at penetration		❑ Needs O&M		
Remarks:				
3. **Monitoring Wells** (within surface area of landfill)				❑ N/A
❑ Routinely sampled				
❑ Properly secured/locked		❑ Functioning	❑ Good condition	
❑ Evidence of leakage at penetration		❑ Needs O&M		
Remarks:				
4. **Leachate Extraction Wells**				❑ N/A
❑ Routinely sampled				
❑ Properly secured/locked		E Functioning	N Good condition	
❑ Evidence of leakage at penetration		❑ Needs O&M		
Remarks:				
5. **Settlement Monuments**	❑ Located	❑ Routinely surveyed		❑ N/A
Remarks:.				
E. **Gas Collection and Treatment**			❑ Applicable :	❑ N/A
1. Gas Treatment Facilities				❑ N/A
❑ Flaring	❑ Thermal destruction	❑ Collection for reuse		
❑ Good condition	❑ Needs O& M			
Remarks:				
2. **Gas Collection Wells, Manifolds and Piping**				❑ N/A
❑ Good condition	❑ Needs O& M			
Remarks:				
3. **Gas Monitoring Facilities (e.g.,** gas monitoring of adjacent homes or buildings)				❑ N/A
❑ Good condition	❑ Needs O& M			
Remarks:				

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F. **Cover Drainage Layer** ❑ Applicable ❑ N/A

1. **Outlet Pipes Inspected** ❑ Functioning ❑ N/A
Remarks:

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

G. **Detention/Sedimentation-Ponds** ❑ Applicable ❑ N/A

1. **Siltation** ❑ Siltation evident ❑ N/A
Areal extent: Depth:
Remarks:

2. **Erosion** ❑ Erosion evident ❑ N/A
Areal extent: Depth:
Remarks:

3. **Outlet Works** ❑ Functioning ❑ N/A
Remarks:

4. **Dam** ❑ Functioning D WA
Remarks:

H .....**Retaining Walls** ❑ Applicable ❑ N/A

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

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

I. **Perimeter Ditches/Off Site Discharge** ❑ Applicable ❑ N/A

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

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

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

4. **Discharge Structure** ❑ Location shown on site map ❑ N/A
❑ Functioning ❑ Good Condition
Remarks:

VIII. VERTICAL BARRIER WALLS ❑ Applicable ■ N/A

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

2. **Performance Monitoring** ❑ N/A
❑ Performance not monitored
❑ Performance monitored Frequency:
❑ Evidence of breaching Head differential:
Remarks:

IX. GROUNDWATER/SURFACE WATER REMEDIES ■ Applicable ❑ N/A

A. Groundwater Extraction Wells, Pumps; and Pipelines ■ Applicable. ❑.N/A.::

1. **Pumps, Wellhead Plumbing, and Electrical**
■ All required wells located ■ Good condition ❑ Needs O& M
Remarks: Groundwater remediation continues.

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

3. **Spare Parts and Equipment**
■ Readily available ■ Good condition
❑ Requires Upgrade ❑ Needs to be provided
Remarks:

B. Surface Water Collection Structures, Pumps, and Pipelines ❑ Applicable ■ NA

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

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances** ❑ N/A
❑ Good condition ❑ Needs O& M
Remarks:

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

C. Treatment System ■ Applicable ❑ N/A

1. **Treatment Train** (Check components that apply)
❑ Metals removal ■ Oil/water separation ❑ Bioremediation
❑ Air stripping ■ Carbon adsorbers
❑ Additive (list type, e.g., chelation agent, flocculent)
❑ Others (list): Reverse Osmosis Plant
■ Good condition ❑ Needs O&M
■ Sampling ports properly marked and functional
■ Sampling/maintenance log displayed and up to date
■ Equipment properly identified
■ Quantity of groundwater treated annually (list volume):
❑ Quantity of surface water treated annually (list volume):
Remarks:
■ Filters (list type): pressurized bag filters

2. **Electrical Enclosures and Panels** (properly rated and functional) ❑ N/A
■ Good condition ❑ Needs O& M
Remarks:

3. **Tanks, Vaults, Storage Vessels** ❑ N/A
■ Good condition ❑ Proper secondary containment ❑ Needs O&M
Remarks:

4. **Discharge Structure and Appurtenances** ❑ N/A
■ Good condition ❑ Needs O& M
Remarks:

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5. **Treatment Building(s)** ❑ N/A
■ Good condition (esp. roof and doorways) ❑ Needs Repair
■ Chemicals and equipment properly stored
Remarks:

6. **Monitoring Wells (pump and treatment remedy)** ❑ N/A
■ All required wells located ■ Properly secured/locked ■ Functioning
■ Good condition ❑ Needs O&M ■ Routinely sampled
Remarks:

D Monitored Natural Attenuation ... ❑ Applicable ■ N/A

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

X. OTHER REMEDIES ❑ Applicable ■ N/A

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

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

The objectives of the remedy were to protect against physical contact with the contaminated soils, sediments and sludges, to reduce further health risks from ingestions of contaminated groundwater, and to protect uncontaminated groundwater for future use by minimizing migration of contaminants. This was accomplished by implementing a source control remedy of thermal destruction (incineration) of contaminated soils, sediment and sludges and backfilling the ash onsite, then installing and operating a pump-and-treat groundwater system. Construction of the source control remedy was officially completed in 1996.

Based on observations made during the site visit, the remedy appears to be functioning as designed.

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.

The source control O&M primarily includes the grounds maintenance of the Site. Vegetations is mowed, trimmed and fertilized. Weeds are trimmed or poisoned. The chain link fence is monitored for damage and repaired as necessary. These activities are essential to the protectiveness of the remedial action. All of the activities were being performed adequately and no negative observations were noted during the site inspection.

C. Early Indicators of Potential Remedy Failure

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

None observed

D. Opportunities for Optimization

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

Overall source control O&M optimization is not considered at the time. Groundwater remedy change is being considered ..

Site Inspection Team Roster		
Personnel	**Representing**	**Phone Number**
Gary Miller, P.E.	US EPA Region 6	214-665-8318
Kin Siew	ADEQ	501-682-0855
Clark McWilliams	ADEQ	501-682-0850

ATTACHMENT 4
Interview Record Forms
Second Five-Year Review
Old Midland Products Site - Ola, Arkansas

Interview Documentation Form

The following is a list of individual interviewed for this five-year review. See the attached contact record(s) for a detailed summary of the interviews.

Name	Title/Position	Organization	Date of Interview
Mr. Earl Jamison	Superintendent	Two Rivers School District (owner of the Site)	02/24/2006
Mrs. Phyllis West	-	Local Resident (adjacently east)	02/23/2006
Ms. Marena Neeley	-	Local Resident (adjacently west)	02/23/2006
Ms. Joe Ann Marshall	-	Local Resident (1/4 mile north, northwest of Site)	02/23/2006

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Second Five-Year Review Interview Record Old Midland Products Ola, Arkansas	Interviewee: Mr. Earl Jamison, Superintendent Two Rivers School District 510 West Main Plainview, AR (479) 272-3113

Site Name	**EPA ID** No.	**Date of Interview**	**Interview Method**
Old Midland Products Site	EPA ID# ARD980745665	2/24/06	Telephone

Interview Contacts	**Organization**	**Phone**	**Email**	**Address**
Clark McWilliams.	ADEQ	501-682-0850	mcwilliamsc@adeq.state.ar.us	8001 National Drive Little Rock, AR 72209
Gary Miller	EPA	501-665-8318	miller.gary@epa.gov	1445 Ross Ave. Dallas, TX 75204

Interview Questions (Please address the period since the first five-year review was completed in March 2001)

1. From your perspective, what effect have remedial actions at the site had on the surrounding community since completion of the first five-year review in March 2001? Are you aware of any community concerns regarding the site or its operation and administration?

Response: Mr. Jamison indicated that little to no effects have been observed in the surrounding community. Likewise, little or no community concerns have be expressed. Groundwater contamination and its impact to the area has been only an occasional and passing topic .

2. Have there been routine communications or activities conducted by your office regarding the site since the first five-year review? If so, please describe purpose and results.

Response: Mr. Jamison indicated there has not been routine communications conducted by the school district and there has really been no need to conducted such routine communications. The school district does address and answer the occasional questions received from the local community.

3. Are you aware of any events, incidents, or activities that have occurred at the site since the first five-year review, such as dumping, vandalism, trespassing, or emergency response from local authorities? If so, please give details.

Response: Mr. Jamison was not aware of any unauthorized site activities at the Site over the past five years.

4. Since the first five-year review have there been any complaints, violations, or other incidents related to the site that required a response by your office? If so, please summarize the events and result.

Response: Accept for the occasional general questions from the community, the school district has not responded to any incidents related to the Site according to Mr. Jamison..

5. Have there been any changes in state environmental standards since the last five-year review which may call into question the protectiveness or effectiveness of the remedial action.

Response: Mr. Jamison was not aware of any changes in State environmental standards that would call into question the protectiveness of the remedial action.

6. Have there been opportunities to optimize the operation, maintenance, or sampling efforts since the first five-year review? Please describe the changes and resultant or desired cost savings or improved efficiency.

Response: N/A

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7. Do you feel well-informed about the site's condition and status since the first five-year review?

Response: Mr. Jamison felt that the school district has been well informed about the Site's condition and status.

8. Do you have any comments, suggestions, or recommendations regarding the remedy for the site or its operation and administration since the first five-year review?

Response: Mr. Jamison did not have any comments, suggestions or recommendations regarding the remedy..

OLD MIDLAND PRODUCTS SUPERFUND SITE
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Second Five-Year Review Interview Record Old Midland Products Ola, Arkansas			Interviewee: Mrs. Phyllis West (resident adjacently east of the Site) 22887 E. Hwy. 10 Ola, AR (479)489-5896		
Site Name		**EPA ID** No.		**Date of Interview**	**Interview Method**
Old Midland Products Site		EPA ID# ARD980745665		02/23/06	Telephone
Interview Contacts	**Organization**	**Phone**	**Email**	**Address**	
Clark McWilliams.	ADEQ	501-682-0850	mcwilliamsc@adeq.state.ar.us	8001 National Drive Little Rock, AR 72209	
Gary Miller	EPA	501-665-8318	miller.gary@epa.gov	1445 Ross Ave. Dallas, TX 75204	

Interview Questions (Please address the period since the first five-year review was completed in March 2001)

1. From your perspective, what effect have remedial actions at the site had on the surrounding community since completion of the first five-year review in March 2001? Are you aware of any community concerns regarding the site or its operation and administration?

Response: Mrs. West did not indicate that there had been any effects from the remedial action on the surrounding community over the past five years. Mrs. West did not know of any community concerns relating to the Site.

2. Have there been routine communications or activities conducted by your office regarding the site since the first five-year review? If so, please describe purpose and results.

Response: N/A

3. Are you aware of any events, incidents, or activities that have occurred at the site since the first five-year review, such as dumping, vandalism, trespassing, or emergency response from local authorities? If so, please give details.

Response: Mrs. West was not aware of any unauthorized events or incidents at the Site over the past five years.

4. Since the first five-year review have there been any complaints, violations, or other incidents related to the site that required a response by your office? If so, please summarize the events and result.

Response: N/A

5. Have there been any changes in state environmental standards since the last five-year review which may call into question the protectiveness or effectiveness of the remedial action.

Response: N/A

6. Have there been opportunities to optimize the operation, maintenance, or sampling efforts since the first five-year review? Please describe the changes and resultant or desired cost savings or improved efficiency.

Response: N/A.

OLD MIDLAND PRODUCTS SUPERFUND SITE
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7. Do you feel well-informed about the site's condition and status since the first five-year review?

Response: Mrs. West felt that she had been reasonably informed about the Site's conditions and status over the past five years. .

8. Do you have any comments, suggestions, or recommendations regarding the remedy for the site or its operation and administration since the first five-year review?

Response: Mrs. West commented that the Site fence had been better maintained over the past five years and questioned whether the site could be used for grazing farm animals.

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Second Five-Year Review Interview Record Old Midland Products Ola, Arkansas	Interviewee: Ms. Marena Neeley (resident adjacently west of the Site) 22401 E. Hwy. 10 Ola, AR (479) 489-5488

Site Name	EPA ID No.	Date of Interview	Interview Method
Old Midland Products Site	EPA ID# ARD980745665	02/23/06	In person

Interview Contacts	Organization	Phone	Email	Address
Clark McWilliams.	ADEQ	501-682-0850	mcwilliamsc@adeq.state.ar.us	8001 National Drive Little Rock, AR 72209
Gary Miller	EPA	501-665-8318	miller.gary@epa.gov	1445 Ross Ave. Dallas, TX 75204

Interview Questions (Please address the period since the first five-year review was completed in March 2001)

1. From your perspective, what effect have remedial actions at the site had on the surrounding community since completion of the first five-year review in March 2001? Are you aware of any community concerns regarding the site or its operation and administration?

Response: Ms. Neeley indicated that very little effects have been made on the surrounding community because the remedial action is not highly visible nor an active business impact on the local area. Ms. Neeley was not aware of any community concerns.

2. Have there been routine communications or activities conducted by your office regarding the site since the first five-year review? If so, please describe purpose and results.

Response: N/A

OLD MIDLAND PRODUCTS SUPERFUND SITE
SECOND FIVE-YEAR REVIEW REPORT, INTERVIEW RECORD FORMS

3. Are you aware of any events, incidents, or activities that have occurred at the site since the first five-year review, such as dumping, vandalism, trespassing, or emergency response from local authorities? If so, please give details.

Response: Ms. Neeley was not aware of any incidents on the Site since the last five-year review.

4. Since the first five-year review have there been any complaints, violations, or other incidents related to the site that required a response by your office? If so, please summarize the events and result.

Response: N/A

5. Have there been any changes in state environmental standards since the last five-year review which may call into question the protectiveness or effectiveness of the remedial action.

Response: N/A

6. Have there been opportunities to optimize the operation, maintenance, or sampling efforts since the first five-year review? Please describe the changes and resultant or desired cost savings or improved efficiency.

Response: N/A

OLD MIDLAND PRODUCTS SUPERFUND SITE
SECOND FIVE-YEAR REVIEW REPORT, INTERVIEW RECORD FORMS

7. Do you feel well-informed about the site's condition and status since the first five-year review?

Response: Ms. Neeley indicate she felt well informed about the Site's conditions since the last five-year review.

8. Do you have any comments, suggestions, or recommendations regarding the remedy for the site or its operation and administration since the first five-year review?

Response: Ms. Neeley had no comments, suggestions or recommendations.

OLD MIDLAND PRODUCTS SUPERFUND SITE
SECOND FIVE-YEAR REVIEW REPORT, INTERVIEW RECORD FORMS

Second Five-Year Review Interview Record Old Midland Products Ola, Arkansas		Interviewee: Ms. Joe Ann Marshall (Resident about ¼ mile northwest of site) 318 Deltic Timber Road Ola, AR (479) 489-5380		
Site Name		**EPA ID** No.	**Date of Interview**	**Interview Method**
Old Midland Products Site		EPA ID# ARD980745665	02/23/06	In person

Interview Contacts	**Organization**	**Phone**	**Email**	**Address**
Clark McWilliams.	ADEQ	501-682-0850	mcwilliamsc@adeq.state.ar.us	8001 National Drive Little Rock, AR 72209
Gary Miller	EPA	501-665-8318	miller.gary@epa.gov	1445 Ross Ave. Dallas, TX 75204

Interview Questions (Please address the period since the first five-year review was completed in March 2001)

1. From your perspective, what effect have remedial actions at the site had on the surrounding community since completion of the first five-year review in March 2001? Are you aware of any community concerns regarding the site or its operation and administration?

Response: Ms. Marshall indicated that she did not know of any effects to the surrounding community during the last five years. Ms. Marshall was not aware of any community concerns regarding the Site.

2. Have there been routine communications or activities conducted by your office regarding the site since the first five-year review? If so, please describe purpose and results.

Response: N/A

3. Are you aware of any events, incidents, or activities that have occurred at the site since the first five-year review, such as dumping, vandalism, trespassing, or emergency response from local authorities? If so, please give details.

Response: Ms. Marshall was not aware of any incidents that have occurred at the Site since the last five year review.

4. Since the first five-year review have there been any complaints, violations, or other incidents related to the site that required a response by your office? If so, please summarize the events and result.

Response: N/A

5. Have there been any changes in state environmental standards since the last five-year review which may call into question the protectiveness or effectiveness of the remedial action.

Response: N/A

6. Have there been opportunities to optimize the operation, maintenance, or sampling efforts since the first five-year review? Please describe the changes and resultant or desired cost savings or improved efficiency.

Response: N/A

7. Do you feel well-informed about the site's condition and status since the first five-year review? **Response:** Ms. Marshall felt well informed about the Site since the last five -year review.
8. Do you have any comments, suggestions, or recommendations regarding the remedy for the site or its operation and administration since the first five-year review? **Response:** Ms. Marshall had no comments, suggestions, or recommendations concerning the Site.

ATTACHMENT 5
Record of Decision
Second Five-Year Review
Old Midland Products Site - Ola, Arkansas

E:\OLD-MID\1988 Midland ROD.pdf

DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Old Midland Products, Yell County, Arkansas

STATEMENT OF PURPOSE

This decision document presents the selected remedial action for this site developed in accordance with Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the National Contingency Plan (40 CFR Part 300).

The State of Arkansas has concurred on the selected remedy. (Letter attached)

STATEMENT OF BASIS

This decision is based upon the administrative record for the Old Midland Superfund Site [index attached]. The attached index identifies the items which comprise the administrative record upon which the selection of a remedial action is based.

DESCRIPTION OF THE SELECTED REMEDY

The major components of the selected remedy include:

- o On-site thermal destruction of the contaminated surface soils, lagoon sludges, and drainageway sediments. The soils, sludges, and sediments will be cleaned to a level of 1 ppm total pentachlorophenol (PCP).
- o Placement of the clean ash on the site. Covering the ash with a vegetated soil layer.
- o Collection and onsite treatment, using carbon adsorption, of the contaminated lagoon water and groundwater.

DECLARATION

The selected remedy is protective of human health and the environment, attains Federal and State requirements that are applicable or relevant and appropriate and is cost-effective. The remedy satisfies the statutory preference for remedies that employ treatment which permanently and significantly reduces the toxicity, mobility, or volume of hazardous substances as their principle element. Finally it is determined that this remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable.

March 24, 1988
Date

Robert E. Layton Jr.
Robert E. Layton Jr., P.E.
Regional Administrator

SUMMARY OF REMEDIAL ALTERNATIVE SELECTION

OLD MIDLAND PRODUCTS SITE

YELL COUNTY, ARKANSAS

MARCH 1988

EXECUTIVE SUMMARY

The abandoned Old Midland Products site is located near the city of Ola, Arkansas in Yell County. From 1969 to 1979 a creosote and pentachlorophenol wood preserving plant and sawmill were operated at the site.

Investigations show contamination present in surface soils, lagoon sludges, and on-site drainageway sediments. The lagoon area, used to store spent treatment fluid, broached an underlying clay formation into the weathered shale. This facilitated localized groundwater contamination with a lighter-than-water oil phase.

Several potential remedies were evaluated against the requirements of the Superfund Amendments and Reauthorization Act of 1986. After presenting proposed remedies for public review, EPA has selected the options entailing on-site incineration of contaminated soils, sediments, and sludges; and an accelerated pumping and treating of the contaminated groundwater.

Summary of Remedial Alternative Selection
Old Midland Products Site
Yell County, Arkansas
February, 1988

I. SITE LOCATION AND DESCRIPTION

The Old Midland Products site is an abandoned creosote and pentachlorophenol wood preserving plant and sawmill located near Ola, Arkansas in Yell County (Figure 1). The site borders the north right-of-way of Highway 10 and extends north to the southern right-of-way of Old Highway 10. The site is flat (2-3% slope) with a total area of about 37 acres. Areas of concern include 7 process lagoons and a treatment building. The process lagoons range in area from 125 to 7200 square feet with depths from 3.5 feet to 6 feet (See Figure 1). Most surface runoff is to an on-site intermittent stream. The stream flows into the Petit Jean Wildlife Management Area about three-fourths of a mile downstream. Repeated tests show that the wildlife management area is not significantly affected, if at all, by the site.

Site History

Old Midland Products is known to have been in operation from 1969 to 1979 as a wood preserving plant. However, the Environmental Protection Agency (EPA) aerial photos indicate that the sawmill might have been in operation as early as 1960. Operations included treating wood with creosote and pentachlorophenol (PCP) to preserve the wood from bacterial and insect degradation. The chemicals were generally forced into the wood under pressure resulting in the release of lignin and tannin based chemicals from the wood. The treated wood was probably allowed to dry in open areas to the east and west of the lagoons and treatment building. Effluent from the treatment process containing PCP and polynuclear aromatic compounds (PNAs) were discharged into Lagoons 1 or 3 (see figure 1) and other lagoons via a moveable discharge pipe. Pond overflows have occurred with drainage to the intermittent stream west of the lagoons.

The land, originally owned by the Old Midland Products Company, was sold in 1979 to the Plainview-Ola Economic Trust Inc. The First State Bank of Plainview is the lien holder for the Old Midland Products Co.

On December 10, 1983, the site was ranked by EPA and the Arkansas Department of Pollution Control and Ecology (ADPCE) for consideration as a Superfund site. Based on hazards posed by the lagoons and contaminated soils the site was included on the second update of the National Priorities List on July 16, 1984 with a Hazard Ranking Score of 30.77.

Geology/Hydrogeology

The site is in the center of the Arkansas Valley and the Ouachita Mountains regions. Geology of Yell County is dominated by outcrops of the lower and middle Atoka Formation of the Pennsylvanian Age. The Atoka

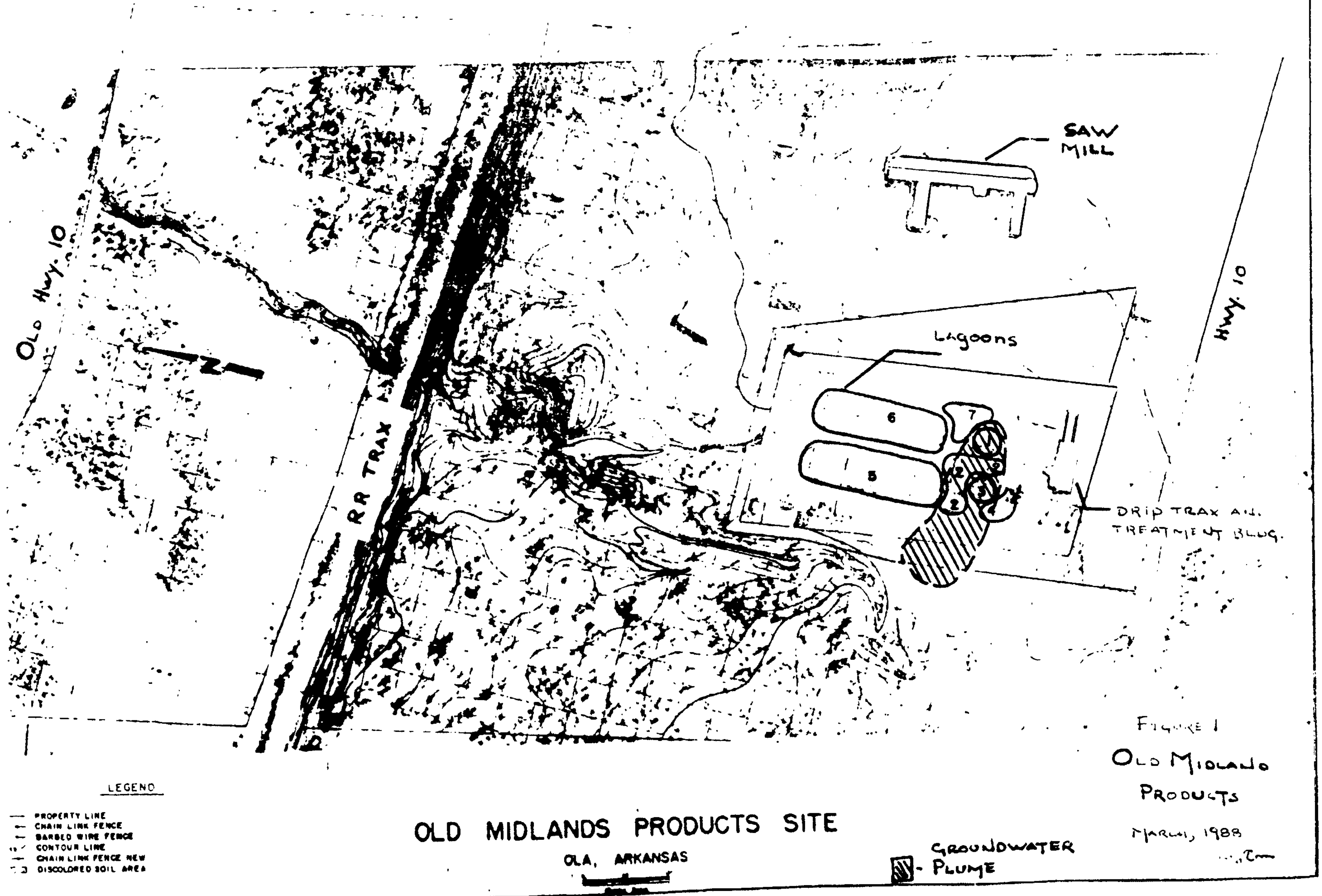

FIGURE 1
OLD MIDLAND PRODUCTS
MARCH, 1988

Formation consists primarily of interbedded gray/black shale and brownish gray sandstone and siltstone. In the site vicinity the Atoka Formation may be several thousand feet thick, with the shale constituting about three-fourths of the thickness. The upper forty feet of soil/rock at the site contain (in order of descending depth) silty clay down to about 15 feet, a layer of iron nodules less than 6" thick and a layer of weathered shale about 20 feet thick. Below these layers an unweathered or slightly weathered (but fractured) shale goes down thousands of feet.

The weathered and unweathered shale layers represent a single water bearing zone. Groundwater in the area occurs under Artesian conditions and flows through fractures, faults, bedding planes and weatered zones. The shallowest water producing intervals occur in the weathered shale at depths of 15 to 20 feet in a zone 3 to 5 feet thick.

The weathered shale, as well as the surface topography, slope to the north-northwest. The hydraulic gradient slopes to the northwest with a magnitude of 0.02 to 0.34 feet/foot. In general, groundwater movement follows the general slope of the area water table. However, the contaminant plume initially flows against this slope (see figure 1), apparently following a fold, fault or channel, then is redirected to follow the general water table of the area.

Five local water supply wells have been identified within 1500 feet of the site. Well depths range from 80 to almost 300 feet. These five wells, and the city of Ola water well, were sampled. The results showed those wells were free from site related contaminants. The closest well is located approximately 450 feet west-northwest of the lagoons at a reported depth of 80 feet. The water bearing zone is then classified as being a potential source of water for beneficial use (Class II B). Remediation levels will reflect such.

Remedial Investigation Results

A remedial investigation (RI) was conducted at the Old Midland Products site from April 1985 to November 1987. During the RI, samples were collected from soil, sediments, sludges, air, surface water and ground water to characterize the contamination, define the extent of contamination and estimate the volume of contamination present at the site. In addition, data were collected to characterize the hydrogeology, hydrology, demography, and ecology of the site and area to allow assessment of potential contaminant migration and risk to public health and the environment.

During the RI, four deep (40 feet) and eight shallow (20 feet) groundwater monitoring wells were installed. Six deep (40 feet) and eight shallow (20 feet) piezometers were installed to monitor groundwater elevations and hydraulic gradients. Soil boring samples were collected during the installation of the monitoring wells and piezometers and at 2 additional 40 feet deep holes and 9 additional 18 foot deep holes.

Three exploratory trenches approximately 20 feet deep were dug a total of 540 linear feet to further characterize the site's shallow geology. Permeability was measured with 23 in-situ falling head tests and 15 laboratory falling head tests. Twenty-one soil particle size analyses were performed. Sludge and water samples from each of the seven lagoons, 22 sediment samples from the intermittent stream, 37 groundwater samples, 72 soil boring samples, and 138 surface/subsurface soil samples were all chemically analyzed. An air analysis station was placed onsite and was used to monitor site meteorological conditions for one year. A pumping and recovery test was completed on the shallow groundwater bearing zone.

A lagoon sludge stabilization test was completed and carbon treatability tests were performed on lagoon water and groundwater.

Findings of the Remedial Investigation

Pentachlorophenol (PCP) is the most widespread contaminant at the site followed by polynuclear aromatics (PNAs). Chlorinated dibenzo dioxins and furans are present in the more concentrated wastes (such as lagoon sludges and nonaqueous phase liquid). However, the established clean up levels would treat them sufficiently. Trace levels of aromatic hydrocarbons were also detected, although of limited spatial extent and at concentrations that present no significant health or environmental threats.

PCP was present in surface (0"-6") soil, subsurface (6-12") soil, deeper soil (down to water bearing zone), drainageway sediments, surface water, groundwater; lagoon sediments, and lagoon fluids. PNAs were detected in surface soil, subsurface soil, deeper soil, drainageway sediments, ground water, lagoon sediments, and lagoon fluids.

Table 1 presents the maximum PCP concentrations observed and the maximum concentration of a specific PNA observed per media.

Soil contamination is limited to the area around the lagoons and treatment building and the soil beneath the lagoons. Drainageway sediments were contaminated at concentrations from 1 to 10 ppm PCP from near the northwest perimeter of the lagoon area downstream to south of Old Highway 10, an estimated distance of 1,680 feet. No significant contamination was observed in offsite drainageway sediments.

Groundwater contamination is limited to the shallow ground water. Contamination appears to be made up of a lighter-than-water nonaqueous phase liquid, that covers an estimated area of 24,000 square feet. Under static, nonpumping conditions most of the groundwater contamination is within the upper 20 feet of soil/rock. No indications of deeper contamination were observed. Figure 2 illustrates the estimated areal extent of groundwater contamination.

There is estimated to be approximately 9,000 to 21,000 cubic yards of contaminated soil. The range is due to the uncertainty in depth of contamination beneath the lagoons. There are approximately 850 cubic yards of contaminated drainage sediments. Approximately 450,000 gallons of groundwater are contaminated, as are about 620,000 gallons of lagoon fluids. The contaminated lagoon sludges measure approximately 2,770 cubic yards.

Table 1. Maximum Detected Concentrations (in parts per million)

MEDIA	MAXIMUM PCP	MAXIMUM PNAs
Surface soil (0-6 in)	790	14,000
Subsurface soil (6-12 in)	690	220
Deeper soil (1-20 ft)	0.32	270
Drainageway sediment	9.5	6.6
Surface water	0.012	not found
Groundwater, oil phase	12,000	5,100
Lagoon sludges	5,900	38,000
Lagoon fluids	0.6	2.2

NOTE: PNAs refers to a wide variety of compounds. Some, such as phenanthene, are not harmful. Some, such as benzo(a)anthracene, are carinogenic.

Potential Impact of Site Contaminants on Human Health and the Environment

The environmental fate and transport of PNAs and PCP was assessed based on the physical and chemical characteristics of these contaminants and the geological and topographical characteristics of the site.

PNAs, due to their low water solubility (thus non-leachable), high octanol/water partition coefficient, high soil adsorption coefficients, and resistance to oxidation or hydrolysis make them highly immobile in soils. Their low vapor pressure indicates they will not volatilize. Therefore, migration of PNAs is expected to be extremely limited.

There is little information on the transport of PCP through the environment. The compound has a low vapor pressure and therefore is not likely to volatilize readily. It is slightly soluble in water and adsorbs to sediments and soil, and therefore may be transported by soil and drainageway sediments.

The site presents potential current and future risks to public health and the environment if no actions are implemented. The lighter-than-water nonaqueous phase liquid plume in the shallow groundwater, direct contact with surface contaminants and the leaching of contaminants from lagoon sediments into the groundwater represent the primary risks. These risks can be mitigated through treatment of contaminated soils, lagoon liquids, sludges, and contaminated groundwater.

II. ENFORCEMENT

The enforcement goal for the EPA is to have those parties responsible for the site contamination pay for the cleanup of the site. At least one Potential Responsible Party (PRP) has been identified and the Agency presently is searching for additional parties. Any PRPs would be notified that they may undertake or participate in the chosen remedy. If they decline involvement in the remedial action, EPA will fund the design and implementation of the selected remedy. A cost recovery enforcement action will be pursued at a later date.

III. COMMUNITY RELATIONS HISTORY

Initial community interest in the Old Midland Products site was high, due in part to the cost of the remedial investigation/feasibility study and the length of time before actual cleanup could begin. Approximately 35 people attended a public meeting in May 1986. Both EPA and the Arkansas Department of Pollution Control and Ecology explained the Superfund process, outlined the activities planned for the remedial investigation, and responded to the citizen's concerns.

Upon completion of the feasibility study a public notice was released on November 16, 1987. This notice summarized the various alternatives, highlighted the proposed plan, announced the public comment period of November 27 through December 31, 1987, and invited the public to a meeting on December 9. Media coverage of this notice appeared in the

Dardanell Post-Dispatch, Arkansas Gazette, and Arkansas Democrat. A fact sheet was mailed to 85 area residents, local officials, and interested citizens. Extra copies of all relevant documents are available in the Yell County Courthouse, and Ola Community Center. Posters announcing the public meeting were sent to all area businesses, churches, and the Community Center.

Approximately 20 people attended the public meeting on December 9th. There was no opposition expressed at the meeting or during the comment period to EPA's proposed plan for onsite incineration and accelerated recovery wells. Responses to the questions/comments received during the comment period are outlined in Appendix A entitled Responsiveness Summary.

IV. ALTERNATIVES EVALUATION

A. Evaluation Criteria

Section 121(a) through (f) of the Superfund Amendments and Reauthorization Act (SARA) contains factors which EPA must consider in selecting a remedy for a Superfund site. Section 121(b)1 of SARA states a preference for certain items: EPA is directed to look at alternative treatment technologies, the final selection is a remedial activity which is protective of human health and the environment. "Remedial actions in which treatment which permanently and significantly reduces the volume, toxicity, or mobility of the hazardous substance as a principal element, are to be preferred over remedial actions not involving such treatment. The offsite transport and disposal of hazardous substances or contaminated materials without such treatment should be the least favored alternative remedial action where practicable treatment technologies are available."

These factors, as well as other criteria used during the evaluation of alternatives, are discussed below:

1. Consistency with Other Environmental Laws - Compliance with ARARs

   In determining appropriate remedial actions at Superfund sites, consideration must be given to the requirements of the various Federal and state environmental laws, in addition to CERCLA as amended by SARA. Primary consideration is given to attaining applicable or relevant and appropriate Federal and State public health and environmental regulations and standards, commonly referred to as ARARs (Applicable or Relevant and Appropriate Regulations). While many State and Federal laws may not be legally applicable to the proposed remedy, they must be evaluated to determine if the whole, or a portion, are relevant and appropriate.

2. Reduction of Toxicity, Mobility or Volume

   The degree to which alternatives employ treatment that reduces toxicity, mobility, or volume must also be assessed. Relevant factors are:

- o The treatment processes the remedies employ and materials they will treat;
- o The amount of hazardous materials that will be destroyed or treated;
- o The degree of expected reduction in toxicity, mobility, or volume;
- o The residuals that will remain following treatment, considering the persistence, toxicity, mobility, and propensity for bioaccumulation of such hazardous substances and their constituents.

3. <u>Short-term Effectiveness</u>

The short-term effectiveness of alternatives must be assessed considering appropriate factors among the following:

- o Magnitude of reduction of existing risks;
- o Short-term risks that might be posed to the community, workers, or the environment during implementation of an alternative including potential threats to human health and the environment associated with excavation, transportation, and redisposal or containment;
- o Time until full protection is achieved.

4. <u>Long-term Effectiveness and Permanence</u>

Alternatives are assessed for the long-term effectiveness and permanence they afford along with the degree of certainty that the remedy will prove successful. Factors considered are:

- o Magnitude of residual risks in terms of amounts and concentrations of waste remaining following implementation of a remedial action, considering the persistence, toxicity, mobility, and propensity for bioaccumulation of such hazardous substances and their constituents;
- o The degree to which the treatment is irreversible;
- o Type and degree of long-term management required, including monitoring and operation and maintenance;
- o Potential for exposure of human and environmental receptors to remaining waste considering the potential threat to human health and the environment associated with excavation, transportation, redisposal, or containment;

- o Long-term reliability of the engineering and institutional controls, including uncertainties associated with land disposal of untreated wastes and residuals;
- o Potential need for replacement of the remedy.

5. Implementability

The ease or difficulty of implementing the alternatives are assessed by considering the following types of factors:

- o Degree of difficulty associated with constructing the technology;
- o Expected operational reliability of the technologies;
- o Need to coordinate with and obtain necessary approvals and permits (e.g., NPDES, dredge and fill permits for off-site actions) from other offices and agencies;
- o Availability of necessary equipment and specialists;
- o Available capacity and location of needed treatment, storage, and disposal services.

6. Cost

The types of costs that should be assessed include the following:

- o Capital cost;
- o Operation and maintenance costs;
- o Net present value of capital and O & M costs;
- o Potential future remedial action costs.

7. Community Acceptance

This assessment examines:

- o Components of the alternatives that the community supports;
- o Features of the alternatives about which the community has reservations;
- o Elements of the alternatives which the community strongly opposes.

8. State Acceptance

Evaluation factors include assessments of:

- o Components of the alternatives the State supports;
- o Features of the alternatives about which the State has reservations;
- o Elements of the alternatives under consideration that the State strongly opposes.

9. Overall Protection of Human Health and the Environment

Following the analysis of the remedial options against individual evaluation criteria, the alternatives are assessed from the standpoint of whether they provide adequate protection of human health and the environment considering the multiple criteria.

B. Description of Alternatives

Based on appearance and past site operations, the following structures will be treated as contaminated with PCP and/or PNAs: yard offices A and B, storage trailer, maintenance shop, wood storage shed, treatment building, tanks A through E, and portions of the interior of the sawmill.

All these contaminated areas are addressed by this Record of Decision. The conditions at the site dictated looking at alternatives to address the site as two problems: (1) source control-cleaning the surface soils, drainageway sediments, and lagoon water and sludges; (2) ground water.

In conformance with EPA regulation, 40 CFR Part 300, also known as the National Contingency Plan, the universe of possible applicable technologies was screened to determine whether they might be appropriate for this site. (See the Feasibility Study for details of this evaluation). This set of possible technologies was then screened based on existing site wastes and conditions, and their ability to minimize long term threat to human health and the environment. The protection of workers working onsite was also considered. This process highlighted 23 available technologies. Then, from these 23 possible technologies, six source control and five groundwater alternatives were chosen for more detailed evaluation and comparison with respect to the nine remedy selection criteria outlined above. The source control and groundwater remedies were evaluated separately but they will be implemented concurrently.

Certain actions are common to all alternatives. For example, all existing monitor wells, peizometers and water wells on the site were assumed to be plugged and abandoned for cost estimating purposes except for monitor well MW-1s. This well will be retained to provide an upgradient well for post-remediation monitoring. The remedial action and any possible future use of the site would present a risk of damaging the wells. Plugging and abandonment of the wells will eliminate the risk of damage to the integrity of the well seal and casing with the consequent risk of contamination of the aquifer through the damaged well.

C. <u>SOURCE CONTROL ALTERNATIVES</u>

As part of the source control alternatives, a carbon adsorption treatment system will be used for decontaminating the liquid wastes for all alternatives except alternative I, which does not include any treatment, and alternative VI, which recommends using UV/ Ozonation.

The recovered oil from the oil-water separator will be sent to a hazardous waste incinerator. The carbon will either be regenerated or disposed of as residue from hazardous waste treatment unit.

<u>ALTERNATIVE I, NO ACTION</u> - This alternative consists primarily of restricting public access to the contaminated areas and monitoring the site. The existing fence would be maintained and warning signs would be installed. The site monitoring will involve periodic air and groundwater sampling and analysis. This action would continue for at least 30 years.

<u>ALTERNATIVE II, CONTAINMENT</u> - This alternative involves in-situ solidification of lagoon wastes; excavation of drainageway sediments, solidification of drainage sediments if necessary, and placement of drainage sediments in lagoons; then construction of a surface cap designed to meet all pertinent regulations and statutes. Approximately 998,000 gallons of contaminated stormwater runoff during construction and 620,000 gallons of lagoon liquids, would be collected, treated, and discharged. Any liquid discharges would be sent to the onsite stream. The discharged water would conform to applicable or relevant and appropriate standards.

<u>ALTERNATIVE III, ONSITE LANDFILL</u> - Since there is adequate space available, a landfill could be located on site. The landfill would have protective top and bottom liners which satisfy all requirements and are protective of human health and the environment. The site wastes (surface soils, sediments, and sludges) would be stabilized then placed in the landfill. The lagoon liquids would be collected, treated, and discharged. The discharged water would conform to applicable or relevant and appropriate standards.

<u>ALTERNATIVE IV, ONSITE BIOLOGICAL TREATMENT</u> - Alternative IV involves onsite biotreatment of wastes using a combination of a liquid/solids contact reactor and land treatment technologies. The reactor would be used for the concentrated wastes (lagoon sediments) and landfarming would be applied to the less contaminated soils and drainageway sediments. An integral part of this remedial action would be securing a waiver to the RCRA Land Ban as it impacts the proposed landfarming operation. The lagoon liquids would be collected, treated and discharged. The discharged water would conform to applicable or relevant and appropriate standards. This action could require monitoring for up to 30 years.

<u>ALTERNATIVE V, ONSITE INCINERATION</u> - Alternative V is composed of bringing to the site a transportable incinerator to destroy the wastes. All soils, sediments and sludges contaminated with greater than 1 ppm PCP, would be treated and returned to the site, as an ash. The ash will be tested to insure it meets the clean-up standards described on

page 6. As with all source control remedies, except no action, the lagoon liquids will be collected, treated and discharged. The discharged water would conform to applicable or relevant and appropriate standards. This action would take two years to implement.

ALTERNATIVE VI, ONSITE INCINERATION WITH ULTRAVIOLET/OZONATION - Same remedy as alternative V but using UV/Ozonation as the water treatment system instead of carbon adsorption. It was initially felt UV/Ozonation could be a more cost-effective water treatment alternative. Now it is projected to be similar in effectiveness to Alternative V. This action could take for up to seven years to implement.

D. GROUNDWATER ALTERNATIVES

ALTERNATIVE 1, NO ACTION - Includes only groundwater monitoring. No remedial actions would be implemented to address groundwater contamination. This action would be continued for at least 30 years.

ALTERNATIVE 2, CONTAINMENT - This alternative consists of constructing a soil-bentonite slurry wall barrier to such depth that the wall surrounds the plume. A surface cap would also be constructed to cover the contaminated surface area.

ALTERNATIVE 3, RECOVERY WELLS - MINIMAL PROGRAM - This alternative includes installation of two recovery wells, completed to depths of just below the oil phase. The groundwater treatment system would include an oil-water separator and a carbon adsorption system which would treat the water. The cleanup is estimated to take between 5-10 years.

ALTERNATIVE 4, RECOVERY WELLS - ACCELERATED PROGRAM - This remedy is the same as Alternative 3 but proposes four wells instead of two. The accelerated program reduces cleanup time from 5-10 years to 1-5 years.

ALTERNATIVE 5, FRENCH DRAIN - The french drain and sump would be constructed on the downgradient edge of the plume. At the sump discharge there would be an oil-water separator with a carbon adsorption unit. This method could take up to 30 years. This is expected to be less effective than alternatives 3 and 4 in recovering the oil phase because of the reduced ability to draw down contaminants to the french drain.

E. EVALUATION OF ALTERNATIVES

The degree that the remedial alternatives meet the nine selection criteria described earlier is contained in Table 2. The following symbols were assigned to compare remedial selection criteria:

+ Alternative would exceed a criterion in comparison to other alternatives.

0 Alternative achieves selection criteria.

\- Special efforts will be necessary in the design of the remedy to meet the selection criterion.

( ) Blank indicates no discernable opinion.

1. COMPLIES WITH ARARs (i.e., meets or exceeds applicable or relevant and appropriate Federal and state requirements)

SOURCE CONTROL

The no action remedy was rated "-" because it does not meet the intent of the RCRA and Superfund requirements for remediation of a hazardous waste site. Containment can meet requirements, but it would likely be ineffective due to the fractured site geology. Containment was given "0". The National Contingency Plan provisions to respond to a threat of release are not satisfied by this remedy. The onsite landfill was rated "-" because the existing levels of dioxins and furans possibly exceed the allowable land disposal concentrations for this waste. According to contemporary laboratory and literature data, biological treatment is uncertain for these particular wastes. Thus, the rating is ( ).

Incineration was rated the highest for this criterion (+) because in addition to exceeding all relevant or applicable and appropriate environmental regulations, this alternative most effectively meets the intent of SARA for permanently addressing the site contaminants.

GROUNDWATER

No action would not attain ARARs and would not reduce existing contamination and thus received a "-". Containment was given a "-" because the subsurface geology would prevent it from achieving the ARARs. The two pumping alternatives were given "+" due to their ability to achieve the specified clean up levels. The french drain was given a "-" because it is not expected to be able to attain clean up levels within the plume.

2. REDUCES MOB., TOX., VOL. (i.e., Reduces the Mobility, Toxicity, or Volume of Waste)

SOURCE CONTROL

No action was rated "-" for mobility, toxicity, and volume reduction because it does nothing to address any of the stated criteria. Containment was rated "-" for mobility reduction due to the fractured subsurface geology. Percolation would be reduced but with negligable impact on the subsurface flow. Containment would not reduce the toxicity of the waste, thus it received a "-" for toxicity reduction. The contaminated volume would not decrease, therefore containment receives a "-" for volume reduction.

Onsite landfill was rated "0" for mobility reduction because this alternative could reduce percolation and thus the mobility of contaminants; for reduction of toxicity and volume the landfill alternative was rated "-" because neither of these are reduced. Onsite biological treatment, due to the relative uncertainity associated with this remedy for reducing the toxicity of these wastes, was given a "-". (Mobility might be reduced with the biotreatment alternative, and so) received a "+". Volume would not reduced since there would be soil addition, thus it received a "-". The thermal destruction alternatives (with carbon adsorption and UV/ Ozonation) were given ratings of "+" due to the complete destruction achieved by these remedies. For both remedies, mobility, toxicity, and volume would be reduced. Thus, all three categories for both alternatives were rated positively.

GROUNDWATER

No action was given a "-" because there would be no reduction of mobility, toxicity, or volume. Containment was given "-" ratings since the fractured subsurface geology would render the slurry walls ineffective for reducing mobility, toxicity, or volume.

The two pump and treat methods were given "+" ratings because they reduce the mobility, toxicity and volume of the plume. The french drain would not be as effective due to the reduced ability to draw the contaminants down to the french drain, thus it was given "0" for all three categories.

3. SHORT TERM EFFECTIVENESS

SOURCE CONTROL

No action leaves contaminated seeps and waste exposed to the public, thus the no action rated "-". The simple containment remedy (Alt. 2) was judged capable of being designed to present essentially no risk to workers or residents. It would reduce direct contact threats but would not address groundwater problems. It received a neutral rating "0". Onsite landfilling was also assigned a "0" because although the handling would require additional attention, standard safety precautions would adequately protect the site workers. Onsite biotreatment was assigned a "-" because of the uncertainty of the ability of this technology to be effective. The on-site thermal treatment options were assigned a single "0" because potential risks can be prevented through careful design and standard safety precautions.

GROUNDWATER

No action and containment received negative ratings ("-"). No action would do nothing to address site risks. Based on the subsurface geology, containment would not be effective. The minimal pump and treat was given a "0" because, although better than the first two alternatives, it is not as effective in the short term as the accelerated program. The accelerated program would be most effective in the short term, thus it received a "+". The french drain alternative received a "0" rating. This alternative would be marginally effective in the short term.

4. LONG TERM EFFECTIVENESS

SOURCE CONTROL

No action will do nothing to reduce long term risks to human health and the environment thus received a rating of "-". Containment is rendered ineffective due to the subsurface geology thus it receives a "-". Onsite landfilling leave the waste in place, the toxicity is not reduced, and the volume is increased, these alternatives therefore each merited a "-". Uncertainties with the ability of biotreatment to treat the site specific wastes lead to a "-". Because of the added assurance of complete destruction of the waste with thermal destruction technology, those remedies were rated "+".

GROUNDWATER

No action would have no long term effectiveness, therefore it received a "-". Containment would be ineffective in the long term due to the fractured subsurface geology, thus it also received a "-". Minimal pumping and treatment will be effective in the long term, thus it received a "+". The accelerated pump and treat program would be the most effective and received a "+". The effectiveness of the french drain system is seriously questionable, thus received a "-".

5. IMPLEMENTABILITY

SOURCE CONTROL

No action alternative is easy to implement, it receives a "+". Containment is implementable, as is the landfill. They both received "0". Biotreatment would require more attention during design than other remedies to ensure implementability (acquiring a waiver to the Land Ban) and was therefore given "-". The thermal destruction alternatives are both implementable, they both received a "0".

GROUNDWATER

No action is easy to implement and received a "+". Containment is implementable and receives a "0". The two pump and treat methods are implementable and received "0". The french drain is not practical to implement because the depth required broaches the current water bearing zone, it received a "-".

6. COST

Estimated costs for each alternative are summarized in Table 2.

7. COMMUNITY ACCEPTANCE

From prior meetings and correspondence, it is evident that local residents want something done about the problem (i.e. not the "no action" remedy). Thermal destruction, without UV/Ozonation, was the only source control remedy that the community discussed and accelerated pumping and treatment was the only ground water remedy discussed. These were both accepted by the community, therefore they merited a "0". Ratings for all other remedies are left blank.

8. STATE ACCEPTANCE

The State (Arkansas Department of Pollution Control and Ecology) has concurred with the onsite incineration and accelerated pump and treatment for groundwater. These, therefore, received a "+". The other remedies were judged to be less desirable, they receive "0".

9. Overall Protection of Human Health and the Environment

SOURCE CONTROL

Due to the health threat posed by untreated waste remaining on-site, the no action, containment, and landfill alternatives received a rating of "-". The uncertainities associated with biotreatment lead to a rating of "-". The thermal destruction remedies received the highest rating of "+", because they result in elimination of the organic contaminants. The thermal treatment unit would be designed to meet RCRA standards. Destruction of the organic contamination will reduce the potential for human exposure.

GROUNDWATER

No action is not protective and receives a "-". The subsurface geology is fractured such that containment would be rendered ineffective; thus, containment received a "-". The two recovery well programs receive "+" because these are the most effective in addressing the contamination. Since the effectiveness of the french drain is questioned, its protection is questioned. It receives a "-".

V. PROPOSED REMEDY: V. ONSITE THERMAL DESTRUCTION OF CONTAMINATED SOILS, SLUDGES, AND SEDIMENTS and 4. ACCELERATED PUMP AND TREATMENT OF THE GROUNDWATER.

Considering the current and potential site hazards, and also taking into account the unique hydrogeology of the site, EPA selects and ADPCE concurs with the above remedy. This remedy consists of: excavating the contaminated drainageway sediments and surface soils, dewatering the lagoons and removing the sludges, then thermally treating and destroying these wastes. The air emissions of the thermal destruction unit will be monitored to ensure safe operation. The systems will be designed to meet all ARARs. Soils with greater than 1 ppm PCP will be excavated and incinerated. A sampling strategy will be developed during the Remedial Design phase of the project to ensure attainment of this soil cleanup level. Treated water will achieve two cleanup levels: the maximum contaminant level goal of 0.2 mg/l for PCP; the 1×10^{-5} increased cancer risk concentration of 28 ng/l for PNAs. The contaminated groundwater will be pumped and the oil will be separated from the water. The water will be treated with carbon adsorption and the oil will be recycled if possible. If it is not possible to recycle the groundwater will be pumped and the oil will be separated from the oil it will be thermally destroyed. The "spent" carbon will be disposed of appropriately. The site air and groundwater will be monitored to ensure that an adequate cleanup has been completed.

Rationale

This alternative is protective and cost-effective, and attains applicable or relevant and appropriate Federal and state standards. It utilizes permanent solutions and treatment technologies that reduce contaminant mobility, toxicity, and volume to the maximum extent practicable.

The value of this remedy is three-fold: the acceptance and cooperation of all parties; relatively low cost for permanent treatment; finally thermal destruction would allow for a walk-away remedy.

Cleanup Level

The soils, sludges, and sediments will all be addressed to a level of 1 ppm PCP. This level is derived from the Arkansas Water Quality Regulation # 2, which has been determined to be the most stringent existing regulation. Attached is a letter from ADPCE stating that this regulation has been sufficiently promulgated and consistently enforced. This level is expected to clean the site to a $1x10^{-6}$ incremental cancer risk level. It is planned to excavate at least 13,000 cubic yards of soils, sludges, and sediments. This clean-up level will be verified with periodic sampling during excavation. This sampling scenario will be further delineated in the Remedial Design phase of the project.

The total PCP cleanup level of 1 ppm is sufficiently stringent so that coexisting PNA contaminants will be destroyed to concentrations well below those that present any significant threat to the public health or environment. The PNA clean-up level achieved is expected to exceed cleanup levels at Superfund sites where PNAs are the main contaminant of concern.

The lagoon water and the groundwater will be treated to two clean-up levels: For PCP, a health based goal of 0.2 mg/l, established by the Safe Drinking Water Act; for PNAs the 1×10^{-5} cancer risk level, from EPA's Ambient Water Quality Criteria. It is estimated that 1.07 million gallons of lagoon water and groundwater will have to the pumped and treated. This volume verification will also be outlined in the Remedial Design phase.

The reasons for elimination of the other remedies are as follows:

SOURCE CONTROL

ALTERNATIVE I, NO ACTION - This alternative is not protective of public health and the environment. It meets neither the intent of RCRA nor SARA.

ALTERNATIVE II, CONTAINMENT - Due to the site subsurface geology, a slurry wall, and thus this alternative, is rendered ineffective. The underlying formation is weathered and fractured shale. The cost associated with this alternative is high compared to its level of protection.

ALTERNATIVE III, ONSITE LANDFILL - This remedy is not permanent treatment and is not "walk away". It does not provide long term protection and would require perpetual operation and maintenance. The cost relative to alternative V is high considering the level of protection for the environment and public health offered by Alternative III. Since this is considered regulated waste, compliance with the RCRA Land Disposal Restrictions is required. Use of a landfill violates the Land Ban, therefore this remedy is rejected.

ALTERNATIVE IV, ONSITE BIOLOGICAL DEGRADATION - The effectiveness of this alternative is questionable. Because of the uncertainity associated with this alternative, and the high cost, which includes a contingency for process failure, this alternative was viewed as less attractive than the proposed action. The cost savings is not significant compared to the uncertainity in the technology.

ALTERNATIVE VI, ONSITE THERMAL DESTRUCTION WITH UV/OZONATION - This is the same remedy as Alternative V except the water would be treated with UV/Ozonation instead of carbon adsorption. It was initially thought that UV/Ozonation could be a more effective water treatment alternative; this was, however, found not to be the case. Since the UV/Ozonation costs were estimated to be higher than those for carbon adsorption, the selected alternative is preferred.

GROUNDWATER

ALTERNATIVE 1, NO ACTION - Same as no action above.

ALTERNATIVE 2, CONTAINMENT - Same as containment above.

ALTERNATIVE 3, PUMP AND TREAT, MINIMAL - This is the same as alternative 4, the selected alternative, but at a greater cost and more time since this remedy only utilizes two pumps.

ALTERNATIVE 5, FRENCH DRAIN - Installation may not be practical due to the depth required by the system. This depth is lower than the artesian head of the water bearing zone. This alternative is also less effective at reducing mobility, toxicity, and volume than alternative 4 and it is more expensive.

Consistency with the National Contingency Plan (NCP) and the Provisions of the Superfund Amendments and Reauthorization Act of 1986 (SARA)

The proposed remedy provides adequate protection of public health, welfare, and the environment. This alternative is also consistent with the National Contingency Plan (NCP), in 40 CFR 300.68(H)(2)(iv) and (vi), (Federal Register, 1985) which requires:

(iv) An assessment of each alternative in terms of the extent to which it is expected to effectively mitigate and minimize threats to and provide adequate protection of public health, welfare and the environment.
(vi) An analysis of any adverse environmental impacts, methods for mitigating these impacts, and costs of mitigation.

Additionally, the long-term effectiveness factors cited in SARA Section §121(b)(1) were addressed. These include:

A) The long-term uncertainties associated with land disposal;

B) The goals, objectives, and requirements of the Solid Waste Disposal Act;

C) The persistence, toxicity, mobility, and propensity to bioaccumulate of site hazardous substances and their constituents.

D) Short- and long-term potential for adverse health effects from human exposure;

E) Long-term maintenance cost;

F) The potential for future remedial action costs if the remedial action in question were to fail; and

G) The potential threat to human health and the environment associated with excavation, transportation, and redisposal, or containment.

Operation and Maintenance (O&M)

Site operation and maintenance will include a 1 year groundwater and air monitoring and analysis program.

Future Actions

No future remedial actions are anticipated after completion of the proposed remedy. The selected remedial action is considered permanent. If, however, significant unforeseen off-site contamination occurs as a result of the site, appropriate remedial measures will be taken. As stated under the O&M section, the site will be monitored for 1 year to ensure the reliability of the implemented remedial action.

Remedial Action Schedule

Approve Remedial Action (sign ROD)	March 1988
Complete Enforcement Negotiations	July 1988
Obligate Funds to Begin Remedial Design (assuming the PRPs do not take over)	July 1988
Complete Design	October 1989
Obligate Funds to Start Remedial Action	October 1989
Complete Remediation (Depending on ground water clean-up)	April 1991

TABLE 2

COMPARISON OF REMEDIAL ALTERNATIVES

OLD MIDLAND SUPERFUND SITE

SOURCE CONTROL

ALTERNATIVES	COMPLIES WITH ARARS	REDUCES			EFFECTIVENESS		IMPLEMENT-ABILITY	COST $(MIL)	ACCEPTANCE		OVERALL PROTECT'N
		MOB.	TOX.	VOL.	SHORT TERM	LONG TERM			COMMUNITY	STATE	
I. NO ACTION	-	-	-	-	-	-	+	$0.5	-	-	-
II. CONTAINMENT	0	-	-	-	0	-	0	$3.4		0	-
III. ONSITE LANDFILL	-	0	-	-	0	-	0	$6.0		0	-
IV. ON-SITE BIOLOGICAL TREATMENT	+	-	-	-	-	-	-	$9.5		0	-
V. ON-SITE INCINERATION	+	+	+	+	0	+	0	$10.3	+	+	+
VI. ON-SITE INCINERATION UV/OZONATION	+	+	+	+	0	+	0	$10.8		0	+

TABLE 2 (Continued)

COMPARISON OF REMEDIAL ALTERNATIVES

OLD MIDLAND SUPERFUND SITE

GROUNDWATER

ALTERNATIVES	COMPLIES WITH ARARS	REDUCES			EFFECTIVENESS		IMPLEMENT-ABILITY	COST $(MIL)	ACCEPTANCE		OVERALL PROTECT'N
		MOB.	TOX.	VOL.	SHORT TERM	LONG TERM			COMMUNITY	STATE	
I. NO ACTION	-	-	-	-	-	-	+	$0.5	-	-	-
II. CONTAINMENT	-	-	-	-	-	-	0	$0.5		0	-
III. PUMP & TREAT MINIMAL	+	+	+	+	0	+	0	$1.7		0	+
IV. PUMP & TREAT ACCELERATE	+	+	+	+	+	+	0	$1.4	+	+	+
V. FRENCH DRAIN	-	0	0	0	0	-	-	$2.9		0	-

TABLE 3

SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE ENVIRONMENTAL REQUIREMENTS

STATUTE	REGULATION	REMEDIAL ALTERNATIVES						
		No Action	Containment	Onsite Landfill	Bio-Treatment	Onsite Incineration	Recovery Wells	French Drain
Resource Conservation & Recovery Act (RCRA)	a) Operation of hazardous waste storage/treatment facilities (40 CFR 264)	R	R	R	R	R	R	R
	b) Hazardous waste land disposal ban (40 CFR 268)	NA	NA	R	R	R	NA	NA
	c) Incineration regulations (40 CFR 265)	NA	NA	NA	NA	NA	NA	NA
Clean Water Act	Water quality (40 CFR 19)	NA	R	R	R	R	R	R
Clean Air Act	Emissions to air (40 CFR 53,60,61)	NA	NA	NA	NA	R	NA	NA
Occupational Safety and Health Act (OSHA)	Protection standards for workers (29 CFR 1910)	A	A	A	A	A	A	A

KEY

A - Applicable requirement
R - Relevant and appropriate requirement
NA - Not an ARAR

TABLE 3 (continued)

SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE ENVIRONMENTAL REQUIREMENTS

STATUTE	REGULATION	REMEDIAL ALTERNATIVES						
		No Action	Containment	Onsite Landfill	Bio-Treatment	Onsite Incineration	Recovery Wells	French Drain
Arkansas Water Quality Regulation #2	Protection of Aquatic Life	NA	R	R	R	R	R	R
National Environmental Protection Act	Environmental Impact Survey	NA	R	R	R	R	R	R
Superfund Amendments and Reauthorization Act	National Contingency Plan	A	A	A	A	A	A	A
Hazardous and Solid Waste Act	Land Application of Waste (HSWA 3004M)	NA	NA	R	R	R	R	R

KEY

A - Applicable requirement
R - Relevant and appropriate requirement
NA - Not an ARAR

STATE OF ARKANSAS
DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY
8001 NATIONAL DRIVE, P.O. BOX 9583
LITTLE ROCK, ARKANSAS 72209

PHONE: (501) 562-7444

March 21, 1988

RECEIVED
EPA REGION VI
88 MAR 23 PM 2:02
HAZARDOUS WASTE MGMT. DIV.

Dr. Allyn M. Davis, Director
Hazardous Waste Management Division (6H)
U.S. EPA, Region VI
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Dear Dr. Davis:

RE: Old Midland Products Co.
Record of Decision (ROD)

I received the draft ROD for the Old Midland Superfund site under your transmittal letter of February 23, 1988, which requested our concurrence with the proposed remedy. This letter serves notice of our concurrence with the proposed remedy which includes on-site thermal destruction of contaminated soils, sludges, and sediments and accelerated pumping and treatment of the groundwater.

However, one issue which we feel deserves additional investigation regards Comment #2 in the Responsiveness Summary-Section II. As stated in EPA's response, we did perform more sampling to the north of Old Highway 10 and in areas of Keeland Creek above and below the confluence of Keeland Creek and the ditch draining from the site. While the results indicate that the constituents of concern do not exist above the ROD limits of concern, we feel that additional investigation in this area is justified during the Remedial Design Phase. We would propose that remaining funds from the original Remedial Investigation funding allocation be used to further document the existence or nonexistence of significant levels of contaminant migration from the Old Midland site. The funds remaining should be adequate for this purpose and would be implemented concurrently with the Remedial Design Phase.

Should you have any questions in this regard, please call my staff or me at (501) 562-7444. We look forward to the success of this project.

Sincerely,

Paul Means

Paul Means
Director

PM:fw:davismidland

cc: Mike Bates, ADPC&E

Responsiveness Summary

Old Midland Products
Ola, Arkansas

This Community Relations Responsiveness Summary has been prepared to provide written responses to comments submitted regarding the proposed plan of action at the Old Midland Wood Products hazardous waste site. The summary is divided into two sections:

Section I. Background of Community Involvement and Concerns. This section provides a brief history of community interest and concerns raised during the remedial planning activities at the Old Midland site.

Section II. Summary of Major Comments Received. The comments (both oral and written) are summarized and EPA's responses are provided.

I. Background of Community Involvement

In June 1984, the National Campaign Against Toxic Hazards listed the Old Midland Products site as a candidate for Superfund action. Three months later, in September 1984, Representative James Florio of New Jersey listed the Ola site among those he said posed a public hazard. The local press (the Yell County Record and the Dardanelle Post Dispatcher) and the statewide newspapers (the Arkansas Gazette and the Arkansas Democrat) gave some coverage to the events at the site. Compared to other Superfund sites in the State, the coverage was modest.

Community interviews were conducted by the Arkansas Department of Pollution Control and Ecology (ADPC&E) and an approved Community Relations Plan was released in August 1985. On May 8, 1986, ADPC&E held a public meeting at the Ola Community Center. The purpose of the meeting was to announce the start of the remedial investigation. About 35 residents attended and voiced their concerns regarding the lengthy Superfund process and requested that the surface contamination be removed immediately. An information bulletin addressing the citizens' concerns was mailed by EPA shortly after the meeting.

II. Summary of Major Comments Received

The press release and Proposed Plan fact sheet announcing the public comment period and the public meeting was issued on November 16, 1987. The comment period began on November 27 and ended December 31, 1987. A public meeting was held with 20 area residents and local officials on December 9 at the Ola Community Center to explain the results of the remedial investigation and to outline the various alternatives presented in the Feasibility Study. Twenty people from the area attended the meeting, and six residents made oral statements or asked questions. Written comments or questions were received from an additional citizen.

The residents and local officials do not oppose the proposed plan of onsite incineration/carbon adsorption and (accelerated) recovery wells. Several people expressed an interest in a permanent remedy that would allow the site to be reused.

During the public comment period, there were comments/questions regarding the following:

Comment #1:

What is the proposed timetable for the proposed remedy?

EPA response: Once the remedy is selected, the engineering designs or blueprints for the actual remedy will be developed. This is expected to take about 18 months. Estimated time for the groundwater cleanup is from one to five years, due to the uncertainty of the existing conditions and pumping ability. The incineration process should take about 18 months also. Groundwater treatment and incineration would take place simultaneously.

Comment #2

Several years ago, a hard rain and subsequent flood caused water from the site to overflow past the railroad tracks and Old Highway 10 into Keeland Creek. The trees along the creek died. What samples were taken in this area and will it be cleaned up also?

EPA response: Trace amounts of the contaminants from Old Midland were found on the south side of Old Highway 10, and soil samples were taken further north of Old Highway 10. The Arkansas Department of Pollution Control and Ecology has further sampled the area in question.

Based on the comments expressed at the public meeting, additional offsite samples were collected. This sampling event included Keeland Creek all the way down to the Petit Jean Wildlife Management Area. Based on the results of this sampling, there is currently no significant downstream migration.

Comment #3

Was an Environmental Impact Statement prepared as required by the National Environmental Policy Act (NEPA)?

EPA response: Not as a separate document. The Remedial Investigation report, Feasibility Study report and Record of Decision incorporate the NEPA requirements.

Comment #4

Low level toxic chemicals may be present in the discharge water during cleanup and these chemicals could affect the Santa Fe Ridge Waterfowl Area. Because of the higher accumulative retention for ducks and other wildlife, the chemicals could enter the foodchain or endanger the area's habitat. Will EPA monitor the waterfowl and other wildlife during cleanup?

EPA response: No monitoring of the wildlife is planned. The water discharged from the site will be treated to meet drinking water standards which will not pose a threat to area ducks or other wildlife.

Comment #5

The Santa Fe Ridge Waterfowl Area provides habitat needs of wintering waterfowl until nesting migration begins in March, when the impoundment is drained. Will EPA reduce or minimize water discharges into Keeland Creek during the October-March period?

EPA response: It is not anticipated that the amount of water discharged into Keeland Creek will harm the needs of any wildlife.

Comment #6

Can the Dardanelle Library be included as an official repository for the Old Midland site?

EPA response: Yes. Copies of the remedial investigation/feasibility study have been placed in the Dardanelle Library and the library will continue to receive documents regarding Old Midland.

Comment #7

Once the cleanup is completed, can the property be used for production and/ or will it be returned to the owners?

EPA response: Site clean-up goals are to reduce contaminant concentration to 1 part per million total pentachlorophenol for the treated surface soils. This is estimated to allow people to participate in any activities on the site for 70 years and have only a 1 in 100,000 chance of contracting cancer.

EPA remedial actions do not consider future land use. EPA has not taken title to the property and has not considered how the property will be used, pending completion of the remedial action. The owners, however are among those "potentially responsible parties" that will be offered the opportunity to execute the chosen remedy under court decree. If EPA and ADPC&E fund the clean-up, those funds can be recovered from the land owners.

Comment #8

Only a small portion of the property is contaminated. Could the "new mill" area which is not contaminated be used now or while the cleanup is in process?

EPA response: No, the "new mill" area is currently projected as the location for the thermal destruction system.

DOCUMENT DATE: 8-1-85
DOCUMENT TYPE: Sampling Analysis Data
ORIGINATOR:
ORIGINATOR AFFILIATION: Spectrix Corporation
RECIPIENT: Pat Hammack, ESD
RECIPIENT AFFILIATION: U.S. Environmental Protection Agency Region VI
DESCRIPTION: Organics Analysis Data Sheets
NUMBER OF PAGES:
DOCUMENT NUMBER:

DOCUMENT DATE: 8-85
DOCUMENT TYPE: Work Plan
ORIGINATOR: Gary Martin, Doice Hughes
ORIGINATOR AFFILIATION: Arkansas Department of Pollution Control & Ecology
RECIPIENT: Jim Peronto
RECIPIENT AFFILIATION: U.S. Environmental Protection Agency Region VI
DESCRIPTION: Final Work Plan for Old Midland Products Co.
NUMBER OF PAGES: 71
DOCUMENT NUMBER:

DOCUMENT DATE: 1-13-86
DOCUMENT TYPE: Sampling Analysis Data
ORIGINATOR:
ORIGINATOR AFFILIATION: R. F. Weston, Inc.
RECIPIENT: Pat Hammack, ESD
RECIPIENT AFFILIATION: U.S. Environmental Protection Agency Region VI
DESCRIPTION: Organic Analysis Data Sheets, Case No. 5445
NUMBER OF PAGES: 223
DOCUMENT NUMBER:

DOCUMENT DATE: 6-5-86
DOCUMENT TYPE: Correspondence
ORIGINATOR: Dick Whittington
ORIGINATOR AFFILIATION: U.S. Environmental Protection Agency Region VI
RECIPIENT: Senator Stanley Ross
RECIPIENT AFFILIATION: Arkansas Senate
DESCRIPTION: Fact Sheet, Cost Proposal, Old Midland Products
NUMBER OF PAGES: 5
DOCUMENT NUMBER:

DOCUMENT DATE: 7-2-86
DOCUMENT TYPE: Intra-Agency
ORIGINATOR: Jim Peronto
ORIGINATOR AFFILIATION: U.S. Environmental Protection Agency Region VI
RECIPIENT: Steve Gilrein
RECIPIENT AFFILIATION: U.S. Environmental Protection Agency Region VI
DESCRIPTION: Record of Meeting - Onsite Audit of Lab
NUMBER OF PAGES: 3
DOCUMENT NUMBER:

DOCUMENT DATE: 7-10-86
DOCUMENT TYPE: Sampling and Analysis Plan
ORIGINATOR: Dennis Reece
ORIGINATOR AFFILIATION: IT Corporation
RECIPIENT: Gary Martin
RECIPIENT AFFILIATION: Arkansas Department of Pollution Control and Ecology
DESCRIPTION: Site Investigation/Feasibility Studies, Old Midland Products Co. Site
NUMBER OF PAGES: 91
DOCUMENT NUMBER:

DOCUMENT DATE: 7-15-86
DOCUMENT TYPE: Correspondence - Interagency
ORIGINATOR: Jim Peronto
ORIGINATOR AFFILIATION: U.S. Environmental Protection Agency Region VI
RECIPIENT: Doice Hughes
RECIPIENT AFFILIATION: Arkansas Department of Pollution Control and Ecology
DESCRIPTION: Followup Comment on Old Midland Products
NUMBER OF PAGES: 4
DOCUMENT NUMBER:

DOCUMENT DATE: 9-9-86
DOCUMENT TYPE: Sampling and Analysis Plan
ORIGINATOR: Dennis Reece
ORIGINATOR AFFILIATION: IT Corporation
RECIPIENT: Gary Martin
RECIPIENT AFFILIATION: Arkansas Department of Pollution Control and Ecology
DESCRIPTION: Quality Assurance Project Plan RI/FS
NUMBER OF PAGES: 78
DOCUMENT NUMBER:

DOCUMENT DATE: 10-87
DOCUMENT TYPE: Remedial Investigation Report - Vol I of II
ORIGINATOR: Dennis Reece
ORIGINATOR AFFILIATION: IT Corporation
RECIPIENT: Doice Hughes
RECIPIENT AFFILIATION: Arkansas Department of Pollution Control and Ecology, and U.S. Environmental Protection Agency Region VI
DESCRIPTION: Final Report, Remedial Investigation, Volume II
NUMBER OF PAGES:
DOCUMENT NUMBER:

DOCUMENT DATE: 10-87
DOCUMENT TYPE: Remedial Investigation Report - Vol II of II
ORIGINATOR: Dennis Reece
ORIGINATOR AFFILIATION: IT Corporation
RECIPIENT: Doice Hughes
RECIPIENT AFFILIATION: Arkansas Department of Pollution Control and Ecology, and U.S. Enviromental Protection Agency Region VI
DESCRIPTION: Final Report, Remedial Investigation, Volume 1
NUMBER OF PAGES:
DOCUMENT NUMBER:

DOCUMENT DATE: 10-87
DOCUMENT TYPE: Feasibility Study
ORIGINATOR: Dennis Reece
ORIGINATOR AFFILIATION: IT Corporation
RECIPIENT: Doice Hughes
RECIPIENT AFFILIATION: Arkansas Department of Pollution Control and Ecology, and U.S. Environmental Protection Agency Region VI
DESCRIPTION: Final Report, Feasibility Study
NUMBER OF PAGES:
DOCUMENT NUMBER:

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