FIRST FIVE-YEAR REVIEW
FOR THE
MOUNTAIN PINE PRESSURE TREATING SUPERFUND SITE
PLAINVIEW, YELL COUNTY, TEXAS

September 2010

Prepared by:

REGION 6
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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FIRST FIVE-YEAR REVIEW REPORT
Mountain Pine Pressure Treating Superfund Site
EPA ID No. ARD049658628
Plainview, Yell County, Arkansas

This memorandum documents the U.S. Environmental Protection Agency's (EPA's) performance of the Mountain Pine Superfund Site First Five-Year Review (FYR) Report under Section 121(c) of the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9621(c).

Background

The Mountain Pine Site is an abandoned wood-treating facility located on the southwestern edge of Plainview, Arkansas. The 95-acre property consists of 45 acres of timberland and 50 acres of grassland, and is bordered on the north by State Highway 28, on the east by the City of Plainview, on the south by grass and woodlands, and on the west by Sunlight Bay Road. The Site consists of three abandoned facilities: (1) the Plainview Lumber Company (PLC), located in the northern area of the Site, which operated from 1965 to 1986 as a raw and treated-wood lumber yard; (2) the Mountain Pine Pressure Treating chromated copper arsenate (CCA) and pentachlorophenol (PCP) plants, located in the central area of the Site, which operated from 1965 to 1981; and (3) the new CCA Treatment Plant (new CCATP), located in the eastern area of the Site, which operated from 1980 to 1986 followed by a brief period in the summer of 1989.

The EPA signed the Record of Decision (ROD) on September 29, 2004. The selected remedy for the Site, included excavation of the contaminated soils and sediments exceeding the remedial goals, treatment of the contaminated soils and sediments through a stabilization/solidification mixing process, and return of the treated material to the excavated locations. The selected remedy was a comprehensive approach for the Site that addressed all current and potential future risks caused by the soils and sediments affected by the prior wood preserving treatment process. Institutional controls will also be implemented to ensure future redevelopment of the Site is consistent with the long-term management of the treated waste at the Site and the acceptable risk levels remaining in the on-site soils.

The EPA issued an Explanation of Significant Differences (ESD) for the Mountain Pine Superfund Site on July 21, 2005, to document a change in the performance levels that still met the remedial action goals that were specified in the ROD for the Site. The treatment goal specified in the ROD required a reduction of 90% to 99% in the concentration or mobility of individual Contaminants of Concern (COCs). Based on information from the treatability studies conducted prior to the time that the ROD was written, the performance levels selected in the ROD were 500 ug/l for PCP and 20 ug/l for arsenic using the Synthetic Precipitation Leaching Procedure (SPLP) method. These levels represented a reduction of 94% and 95% in mobility for arsenic and PCP, respectively. During full scale excavation and treatment of the Recovery Holding Pond (RHP) and the Spray Evaporation Pond (SEP) materials, concentrations of PCP and arsenic were encountered at higher levels than those used in the treatability studies, which were used to set the performance levels in the ROD. Therefore, the performance goals of 500ug/l for PCP and 20 ug/l for arsenic were found to be impractical to be achieved and no longer represented reduction levels of 94% and 95%, respectively. Since higher contaminant levels were encountered at the Site during Remedial Action activities, it was necessary to revise the performance goals for the Site.

In order to meet the treatment goal specified in the ROD, the contaminated materials was tested using the SPLP analyses before and after treatment to ensure that the Remedial Action activities achieved a reduction of 90% to 99% in mobility of both pentachlorophenol and arsenic. Specific concentrations were not used to determine the success of the treatment process. The average leachate concentration for the treated material in the RHP and the SEP was used to achieve the reduction in mobility of 90% to 99% as specified in the ROD. The success of reducing the mobility of the contaminants by 90% to 99% was determined as a single mass of treated material for the RHP and the SEP separately; and the methodology for treating the SEP and the RHP was also different.

All the contaminated sediment in the SEP was treated at once with three reagents selected in the ROD (cement, ferrous sulfate and granular activated carbon). The ratios of the reagents were adjusted in the field based on new treatability studies. After adequate mixing, the treated material was spread out into 100 by 100 feet grids, one foot deep. Composite samples of each grid were collected and analyzed using the SPLP method, and compared to the average of all the untreated material in the SEP. The reductions of all samples were then averaged to ensure that an average reduction of at least 90% has been achieved.

The methodology for treating the RHP consisted of treating individual batches (approximately 300 cubic yards) of contaminated material with the four reagents selected in the ROD (cement, ferrous sulfate, granular activated carbon, and lime). The ratios of the reagents for the RHP were also adjusted based on new treatability studies performed in the field. Each batch of material from the RHP was analyzed using the SPLP method before and after treatment to determine the percent reduction of mobility of the contaminants. The average of all the percent reductions of mobility for all the batches was 93.3%, which resulted in a successful treatment process.

The ESD also modified the leachability testing procedure regarding the curing time of the treated materials. The 2004 ROD states that the performance goals of reducing the mobility of the treated materials between 90 to 99% would be met at the 28-day period. In general, about 70-85% of leachability reduction was projected to occur after 7 days, about 90-95 % was projected to occur after 14 days, and some additional reduction was expected to occur after day 28. In the ESD, the testing time for meeting the mobility reduction was based on the laboratory results after a 7 day curing time. This revised curing time in the ESD was used in the field to determine the treatment success, which resulted in a more conservative and protective remedy; since statistically, a greater reduction in mobility is expected to be achieved with time. This change allowed site remediation to proceed at an accelerated rate, and facilitated a much more efficient utilization of the contractor's time.

Summary of Third Five-Year Review Findings

This FYR includes the following components: (1) document review, (2) data review, (3) applicable or relevant and appropriate requirements (ARARs) review, (4) site inspection, and (5) interviews.

This FYR includes a review of relevant decision documents, implementation documents, remedy performance documents, operation and maintenance documents, and legal documents. The review included, but was not limited to, the (1) RI/FS and addendum; (2) ROD; (3) ESD; (4) Remedial Action Report; and (5) Groundwater Monitoring Reports.

During this FYR, the following issues are noted:

- There are no compliance monitoring standards established for groundwater at the site.
- The measured concentrations of arsenic and PCP have increased and exceeded drinking water MCLs in the UWBZ and LWBZ during the period covered by the review.
- The HHRA in the ROD does not address the groundwater contamination in the LWBZ as it currently exists.

- There are no identified ARARs for groundwater for the site.
- The ROD does not address the groundwater COCs identified in the review period.
- The areal extent of the groundwater contamination is unknown.
- Water wells near the site could be impacted by site groundwater contamination.
- There are no warning signs posted at the waste cell caps.
- Reporting limits for some sample analyses are above constituent MCLs.
- The institutional controls at the site do not meet the requirements set forth in the ROD.

Determinations

I have determined that the remedy for the Mountain Pine Pressure Treating Superfund Site is protective of human health and the environment because the waste has been removed or solidified/stabilized, capped, and is protected from erosion. Because the completed remedial actions and monitoring program for the Mountain Pine site are considered protective for the short term, the remedy for the site is protective of human health and the environment and will continue to be protective if the recommendations identified in this report are addressed.

Pamela Phillips, Acting
Samuel Coleman, P.E.
Director
Superfund Division
U.S. Environmental Protection Agency Region 6

Sept 23, 2010
Date

RECOMMENDATIONS AND FOLLOW-UP ACTIONS
MOUNTAIN PINE PRESSURE TRESTING SUPERFUND SITE

Issue	Recommendations and Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Follow-up Actions Affect Long-Term Remedy Protectiveness (Yes/No)
There are no compliance monitoring standards established for groundwater at the site.	**Consider establishing compliance monitoring standards for groundwater at the site.** These standards would be used to evaluate whether contaminant leaching is occurring from the stabilized soils and sediments at an unacceptable rate.	EPA	EPA	Within the next fiscal year	No
The measured concentrations of arsenic and PCP have increased and exceeded drinking water MCLs in the UWBZ and LWBZ during the period covered by the review.	**Consider conducting additional monitoring and evaluation of the UWBZ and LWBZ to ensure compliance with the RAOs for the site.** Consideration should be given to the installation of additional monitoring wells in the vicinity of the waste burial cells to provide additional information on possible contaminant leaching from the waste cells. Additional monitoring and evaluation may allow identifying the source of the LWBZ contamination and the development of a post-ROD assessment criteria or a remedy, which would aid in ensuring the continued protectiveness of the remedy.	EPA	EPA	Within the next fiscal year	No
The HHRA in the ROD does not address the groundwater contamination in the LWBZ as it currently exists.	**Consider review of the HHRA at the site using current site groundwater conditions.** The higher post-RA concentrations of arsenic and PCP in the LWBZ may result in a higher risk associated with potential groundwater use at the site than that presented in the ROD, which may require a modification of the remedial goals at the site.	EPA	EPA	Prior to the next Five Year Review.	No

Issue	Recommendations and Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Follow-up Actions Affect Long-Term Remedy Protectiveness (Yes/No)
There are no identified ARARs for groundwater for the site.	**Consider a new review of ARARs for groundwater at the site.** There has been an increase in observed contamination in the LWBZ since the completion of the RA, and there were no groundwater specific ARARs identified in the ROD which address current conditions at the site. The state of Arkansas considers all groundwater potable, and drinking water standards established in the Safe Drinking Water Act are applicable ARARs for groundwater at the site.	EPA	EPA	Prior to the next Five Year Review	No
The ROD does not address the groundwater COCs identified in the review period.	**Consider re-evaluating the ROD to address the COCs identified during the next review period.** Prepare a ROD Amendment if the HHRA re-evaluation indicates a remedy for groundwater restoration is required, or an Explanation of Significant Differences to the ROD if only groundwater monitoring is required.	EPA	EPA	Within 1 year of submittal of this report	No
The areal extent of the groundwater contamination is unknown.	**Consider installing additional monitoring wells down-gradient of monitoring wells MW-107 and MW-119; and evaluate the extent and off-site migration potential of groundwater contamination.** Although the City of Plainview owns the portion of the site remediated during the RA and groundwater is not being used at that portion of the site, there is a potential for off-site migration and well contamination.	EPA	EPA	After evaluating the off-site wells.	Yes

RECOMMENDATIONS AND FOLLOW-UP ACTIONS
MOUNTAIN PINE PRESSURE TREATING SUPERFUND SITE (concluded)

Issue	Recommendations and Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Follow-up Actions Affect Long-Term Remedy Protectiveness (Yes/No)
Water wells near the site could be impacted by site groundwater contamination.	**Evaluation of water wells near the site, to determine if they have been impacted by the site groundwater contamination.** The wells may be drawing water from the same geologic unit that forms the contaminated LWBZ at the site. A review of the boring logs of these existing wells should be performed prior to the next Five Year Review, to determine if these wells are hydraulically connected.	ADEQ	EPA	Within 1 year of submittal of this report.	Yes
There are no warning signs posted at the waste cell caps.	**Post warning signs at the perimeter of the waste cell caps.**	ADEQ	EPA	Within 1 year of submittal of this report.	No
Reporting limits for some sample analyses are above constituent MCLs.	**Use reporting limits less than the MCL for PCP in the sample analyses if possible.**	ADEQ	EPA	As soon as deemed appropriate.	No
The institutional controls at the site do not meet the requirements set forth in the ROD.	**Implement institutional controls to provide notice of site conditions and ensure appropriate site development.** The institutional controls would 1) alert prospective purchasers that hazardous substances are present at the site and explain the actions taken to address the site contamination; and, 2) ensure future site development is consistent with the industrial/commercial human health exposure scenario (i.e., non-residential usage) that is the basis for the soil cleanup goals for PCP and arsenic.	City of Plainview	EPA	Within 1 year of submittal of this report.	Yes

CONCURRENCES

FIVE-YEAR REVIEW
Mountain Pine Pressure Treating Superfund Site
EPA ID# ARD049658628

By: _____ Date: 9/14/10
Philip H. Allen, P.E., U.S. EPA
Remedial Project Manager
Arkansas-Texas Superfund Section

By: _____ Date: 9/21/10
Carlos Sanchez, U.S. EPA
Chief, Arkansas-Texas Superfund Section

By: _____ Date: 9/23/10
Jake Piehl, U.S. EPA
Office of Regional Counsel

By: _____ Date: 09/23/10
Mark A. Peycke, U.S. EPA
Chief, Superfund Branch, Office of Regional Counsel

By: _____ Date: 9/21/10
Charles Faultry, U.S. EPA
for Associate Director, Superfund Remedial Branch

By: _____ Date: 9/23/10
Pamela Phillips, U.S. EPA
Deputy Division Director, Superfund Division

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Attachments

List of Acronyms

ACM	Asbestos Containing Materials
ADEQ	Arkansas Department of Environmental Quality
ADPC&E	Arkansas Department of Pollution Control and Ecology
ARARs	Applicable or Relevant and Appropriate Requirements
bgs	below ground surface
HHRA	Human Health Risk Assessment
CCA	Chromated Copper Arsenate
CCATP	Chromated Copper Arsenate Treatment Plant
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Contaminants of Concern
COPC	Chemical of Potential Concern
ELCR	Expected Lifetime Cancer Risk
EPA	Environmental Protection Agency
ESD	Explanation of Significant Differences
GAC	Granular Activated Carbon
HHRA	Human Health Risk Assessment
HI	Hazard Index
LWBZ	Lower Water Bearing Zone
MCL	Maximum Contaminant Level
mg/l	milligrams per liter
MPPT	Mountain Pine Pressure Treating
msl	mean sea level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&F	Operational and Functional
O&M	Operation and Management
OSWER	Office of Solid Waste and Emergency Response
PCDD	Polychlorinated Dibenzo-p-dioxin
PCDF	Polychlorinated Dibenzofuran
PCP	Pentachlorophenol
PLC	Plainview Lumber Company
PRG	Preliminary Remediation Goals
ppb	parts per billion
ppt	parts per trillion
RAO	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
RD/RA	Remedial Design/Remedial Action
RHP	Recovery Holding Pond
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SEP	Spray Evaporation Pond
SPLP	Synthetic Precipitation Leaching Procedure
TBC	To Be Considered
TEQ	Toxic Equivalency
TPH/DRO	Total Petroleum Hydrocarbons/Diesel Range Organics
USACE	United States Army Corps of Engineers
UWBZ	Upper Water Bearing Zone
µg/L	micrograms per liter

Executive Summary

The first Five-Year Review of the Mountain Pine Pressure Treating Superfund Site located in Plainview, Yell County, Arkansas was completed in August 2010. The results of the Five-Year Review indicate that the remedy completed to date is currently protective of human health and the environment. Overall, the remedial actions performed appear to be functioning as designed, and the site has been maintained appropriately. No issues were identified which could impact the current protectiveness of the remedy; however, several issues were identified that require further consideration to ensure the continued long-term protectiveness of the remedy.

The ROD for the site was signed in September 2004. Because the ROD was signed after the Superfund Amendments and Reauthorization Act (SARA) in 1986, and because hazardous substances remain onsite above levels that allow for unlimited use and unrestricted exposure, performance of the Five-Year Review for the Mountain Pine site is required by statute.

Remediation of the Mountain Pine site has been handled through an emergency time critical removal action, and a Remedial Action (RA). The emergency removal action was conducted to address the imminent threat of release of hazardous substances to the environment. The Removal Action included removal and treatment of liquids and solidification of 2,500 cubic yards of sludge materials with kiln dust and rice hulls to restrict mobility. The Removal Action also included the removal of hazardous materials from onsite tanks.

The Remedial Action was defined by the Record of Decision (ROD) and modified by the Explanation of Significant Differences (ESD). During the RA the solidification/stabilization of approximately 10,000 cubic yards of soil and sludge in the Recovery Holding Pond (RHP) and approximately 1400 cubic yards of sediment in the Spray Evaporation Pond (SEP) was accomplished by treatment with cement, calcium oxide, ferrous sulfate, and granular activated carbon. Also, approximately 1,000,000 gallons of water were treated with sodium hypochlorite, granular activated carbon, and activated alumina. The RA for the site was executed from March 2005 to September 2005. Operation and maintenance of the site is ongoing and is being conducted by the Arkansas Department of Environmental Quality (ADEQ).

The remedy for the Mountain Pine site is protective of human health and the environment because the waste has been removed or solidified/stabilized, and is protected from erosion. In addition to continuing site operations, maintenance and monitoring; the following actions are recommended for consideration during the next Five Year Review, to determine if these issues need to be addressed:

No.	Recommendations/Follow-up Actions	Party Responsible	Oversite Agency	Follow-up Actions: Affects Protectiveness (Y/N)	
				Current	Future
1.	**Consider establishing compliance monitoring standards for groundwater at the site**. These standards would be used to evaluate whether contaminant leaching is occurring from the stabilized soils and sediments at an unacceptable rate.	EPA	EPA	N	Potential Impact
2.	**Consider conducting additional monitoring and evaluation of the UWBZ and LWBZ to ensure compliance with the RAOs for the site.** Consideration should be given to the installation of additional monitoring wells in the vicinity of the waste burial cells to provide additional information on possible contaminant leaching from the waste cells. Additional monitoring and evaluation may allow identifying the source of the LWBZ contamination and the development of a post-ROD assessment criteria or a remedy, which would aid in ensuring the continued protectiveness of the remedy.	EPA	EPA	N	Potential Impact
3.	**Consider review of the HHRA at the site using current site groundwater conditions.** The higher post-RA concentrations of arsenic and PCP in the LWBZ may result in a higher risk associated with potential groundwater use at the site than that presented in the ROD, which may require a modification of the remedial goals at the site.	EPA	EPA	N	Potential Impact
4.	**Consider a new review of ARARs for groundwater at the site.** There has been an increase in observed contamination in the LWBZ since the completion of the RA, and there were no groundwater specific ARARs identified in the ROD which address current conditions at the site. The state of Arkansas considers all groundwater potable, and drinking water standards established in the Safe Drinking Water Act are applicable ARARs for groundwater at the site.	EPA	EPA	N	Potential Impact
5.	**Consider re-evaluating the ROD to address the COCs identified during the next review period.** Prepare a ROD Amendment if the HHRA re-evaluation indicates a remedy for groundwater restoration is required, or an Explanation of Significant Differences to the ROD if only groundwater monitoring is required.	EPA	EPA	N	Potential Impact

No.	Recommendations/Follow-up Actions	Party Responsible	Oversite Agency	Follow-up Actions: Affects Protectiveness (Y/N)	
				Current	Future
6.	**Consider installing additional monitoring wells down-gradient of monitoring wells MW-107 and MW-119; and evaluate the extent and off-site migration potential of groundwater contamination.** Although the City of Plainview owns the portion of the site remediated during the RA and groundwater is not being used at that portion of the site, there is a potential for off-site migration and well contamination.	EPA	EPA	N	Potential Impact
7.	**Evaluation of water wells near the site, to determine if they have been impacted by the site groundwater contamination.** The wells may be drawing water from the same geologic unit that forms the contaminated LWBZ at the site. A review of the boring logs of these existing wells should be performed prior to the next Five Year Review, to determine if these wells are hydraulically connected.	ADEQ	EPA	N	Potential Impact
8.	**Post warning signs at the perimeter of the waste cell caps.**	ADEQ	EPA	N	Potential Impact
9.	**Use reporting limits less than the MCL for PCP in the sample analyses if possible.**	ADEQ	EPA	N	Potential Impact
10.	**Implement institutional controls to provide notice of site conditions and ensure appropriate site development.** The institutional controls would 1) alert prospective purchasers that hazardous substances are present at the site and explain the actions taken to address the site contamination; and, 2) ensure future site development is consistent with the industrial/commercial human health exposure scenario (i.e., non-residential usage) that is the basis for the soil cleanup goals for PCP and arsenic.	City of Plainview	EPA	N	Potential Impact

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Five Year Review Summary Form

SITE IDENTIFICATION

Site name *(from WasteLAN)*: Mountain Pine Pressure Treating Superfund Site

EPA ID *(from WasteLAN)*: ARD049658628

Region: EPA Region 6 | **State:** Arkansas | **City/County:** Plainview/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:** September 28, 2005

Has site been put into reuse? ☒ YES ☐ NO

Only a portion of the site has been put into reuse.

REVIEW STATUS

Lead agency: ☒ EPA ☐ State ☐ Tribe ☐ Other Federal Agency _____

Author name: EPA Region 6, with support from USACE Tulsa District

Review period: March 2005 to March 2010

Date(s) of site inspection: October 14, 2009

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)*: March 15, 2005

Due date *(five years after triggering action date)*: March 15, 2010

Issues:

1. There are no compliance monitoring standards established for groundwater at the site.
2. The measured concentrations of arsenic and PCP have increased and exceeded drinking water MCLs in the UWBZ and LWBZ during the period covered by the review.
3. The HHRA in the ROD does not address the groundwater contamination in the LWBZ as it currently exists.
4. There are no identified ARARs for groundwater for the site.
5. The ROD does not address the groundwater COCs identified in the review period.
6. The areal extent of the groundwater contamination is unknown.
7. Water wells near the site could be impacted by site groundwater contamination.
8. There are no warning signs posted at the waste cell caps.
9. Reporting limits for some sample analyses are above constituent MCLs.
10. The institutional controls at the site do not meet the requirements set forth in the ROD.

Five Year Review Summary Form

Recommendations and Follow-up Actions: Recommended further actions include continuing site operations, maintenance and monitoring as currently defined. In addition, the following actions are recommended.
1. Establish compliance monitoring standards for groundwater at the site.
2. Conduct additional monitoring and evaluation of the UWBZ and LWBZ to ensure compliance with the RAOs for the site.
3. Re-evaluate the HHRA at the site using current site groundwater conditions.
4. Identify ARARs for groundwater at the site with a ROD amendment, if applicable.
5. Re-evaluate the ROD to address the COCs identified in the review period.
6. Establish additional monitoring wells down-gradient of monitoring wells MW-107 and MW-119, and evaluate the extent and off-site migration potential of groundwater contamination.
7. Evaluate water wells near the site to determine if they have been impacted by the site groundwater contamination.
8. Post warning signs at the perimeter of the waste cell caps.
9. Use reporting limits less than the MCL for PCP in the sample analyses if possible.
10. Implement institutional controls to provide notice of site conditions and ensure appropriate site development.

Protectiveness Statement(s): The remedy for the Mountain Pine site is protective of human health and the environment because the waste has been removed or solidified/stabilized, capped, and is protected from erosion. The remedy has mitigated surface exposure of soil COCs to potential human health and environmental receptors. Because the completed remedial actions and monitoring program for the Mountain Pine site are considered protective for the short term, the remedy for the site is protective of human health and the environment, and will continue to be protective.

1.0 Introduction

The purpose of a Five Year Review is to determine how well an existing remedial action is operating in order to protect human health and the environment, and to identify any problems or concerns that are or may in the future affect the protectiveness of the remedy. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) call for Five-Year Reviews of certain remedial actions. The 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 (SARA) of 1986. The Environmental Protection Agency (EPA) classifies each Five-Year Review as either statutory or policy depending on whether it is being required by statute or is being conducted as a matter of policy. The Five-Year Review for the Mountain Pine site is required by statute.

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 unlimited use or unrestricted exposure. Statutory reviews are required for such sites if the ROD was signed on or after the effective date of SARA. CERCLA §121(c), as amended by SARA, states:

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

Under the NCP, the Code of Federal Regulations (CFR) states, in 40 CFR §300.430(f)(4)(ii):

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

The Record of Decision (ROD) for the Mountain Pine Pressure Treating Superfund Site was signed on September 29, 2004, to address contaminated soils, sediment and surface water. The Five-Year Review for the Mountain Pine site is required by statute because the ROD for the site was signed in 2004, after the effective date of SARA, and because materials remain onsite above levels that allow for unlimited use and unrestricted exposure. Because the Mountain Pine site is a Superfund site, the EPA has regulatory authority. The triggering action for this review is the date the construction of the remedy began; March 15, 2005. This is the first Five-Year Review for the Mountain Pine site and was conducted for the period of March 2005 through March 2010 by the U.S. Army Corps of Engineers, Tulsa District, on behalf of EPA Region 6.

2.0 Site Chronology

A chronology of events and dates is included in **Table 1**, provided at the end of the report.

3.0 Background

This section describes the physical setting of the site, a description of the land and resource use, and the environmental setting. This section also describes the history of contamination associated with the site, the initial response actions taken, and the basis for each action.

3.1 Physical Characteristics

The Mountain Pine Pressure Treating, Inc. Superfund site is in Plainview, Yell County, Arkansas, approximately 60 miles northwest of Little Rock, Arkansas. The site is an abandoned wood-treating facility located on the southwestern edge of Plainview, Arkansas. The geographic center of the Mountain Pine site is Latitude 34°59'00" North and Longitude 93°18'12" West. The 95-acre property consists of 45 acres of timberland and 50 acres of grassland, and is bordered on the north by State Highway 28, on the east by the City of Plainview, on the south by grass and woodlands, and on the west by Sunlight Bay Road (**CH2M HILL, 2002**). **Figure 1** shows an aerial view of the site. **Figure 2** shows the site location.

The area of the site addressed in the remedial action encompasses approximately 19.44 acres. The remediated site is now covered with grass and is partially enclosed by a fence. The site contains two waste burial cells covered with soil and grass, and has 19 groundwater monitoring wells. **Figure 3** shows a plan view of the Mountain Pine site, and the location of the monitoring wells.

Topography at the site is relatively flat, with gentle east-to-west slopes. Surface water drains toward the western and eastern edges of the site, toward the perennial Porter Creek on the west and Prairie Creek on the east, which both eventually enter Nimrod Lake. Nimrod Lake is the sole source of drinking water for the City of Plainview. It serves as a recreational and commercial fishing area and contains several sensitive environments, including wildlife refuges and wetlands. The site elevation is approximately 385 feet above mean sea level (msl). Previous investigation documents indicate that the site is not located within a 100-year floodplain (**CH2M Hill 2002**).

Three primary geologic units were identified beneath the site: (1) silty clay to clayey alluvium, (2) weathered shale, and (3) competent shale. The alluvium occurs in the top 10 to 15 feet of the site and consists of undifferentiated silty clay, silt, and clay. In general, the top 6 to 9 feet of silty clay was moist to

very moist and sometimes saturated during the remedial investigation (RI). Grey weathered shale was encountered below 15 to 18 feet. The weathered shale was saturated at some locations and often displayed features, including bedding planes, that are likely conduits for groundwater. A distinct sand and clayey sand unit is present at several locations within the lower portions of the unit. The shale unit underlying the weathered shale was generally dry and fractured. The specific contact between weathered and unweathered shale was unclear, but generally occurred between 21 and 37 feet below ground surface (bgs) (**CH2M Hill 2002**).

During the RI, saturated conditions were encountered in two geologic units at the site: the silty clay in the alluvial zone, and in portions of the weathered and competent shale. These two horizons were labeled as the upper water-bearing zone (UWBZ) and the lower water-bearing zone (LWBZ). The UWBZ was approximately 5 feet thick and occurred between 4 and 9 feet bgs. The LWBZ consists of the lower portions of the weathered shale unit, including the sand to clayey sand horizon in the weathered shale or at its base (**CH2M Hill 2002**). **Figure 4** shows a generalized hydrogeologic profile for the site. **Figures 5 and 6** show groundwater elevations in the LWBZ and UWBZ in April 2003, and the locations of the monitoring wells at the site.

3.2 Land and Resource Use

Population estimates from the latest available census data approximate the population of Plainview and Yell County to be 718 and 18,356, respectively. Approximately 1,700 people in residential, commercial/industrial, public travel, and public use areas are typically present within one mile of the site. The nearest residences are located directly adjacent to the site to the northeast, and additional residences are located across State Highway 28 to the north of the site. There are also two public schools approximately 1.5 miles east of the site on State Highway 28 (**CH2M HILL, 2002**).

The area surrounding the site to the north and east is predominantly residential. To the west and south of the site, the area outside the city limits is predominantly rural, with scattered residences. Approximately 0.75 mile to the south of the site is Nimrod Lake Recreation Area. According to the City of Plainview, the zoning for the former facility will be limited to industrial and/or commercial use (**CH2M HILL, 2002**). Part of the former site north of the Recovery Holding Pond (RHP) waste cell is now fenced off separately from the rest of the site, and is used as a steel fabrication plant. The City of Plainview owns and maintains the site.

3.3 History of Contamination

The site consists of three abandoned facilities: (1) the Plainview Lumber Company (PLC), located in the northern area of the site, which operated from 1965 to 1986 as a raw and treated-wood lumber yard; (2) the Mountain Pine Pressure Treating chromated copper arsenate (CCA) and pentachlorophenol (PCP) plants, located in the central area of the site, which operated from 1965 to 1980; and (3) the new CCA Treatment Plant (new CCATP), located in the eastern area of the site, which operated from 1980 to 1986 followed by a brief period in the summer of 1989.

The Mountain Pine Pressure Treating, Inc. (MPPT) facility began operations in 1965 as a subsidiary of the PLC. The Mountain Pine facility operated from 1965 to 1981 and used two wood preserving processes at the facility, including PCP and CCA. The facility initially treated lumber with PCP and creosote. PCP granules were mixed on-site with diesel oil, and pressure was used to force the mixture into the lumber while inside a treatment cylinder. In the late 1970s, the process was transitioned to a CCA treatment process with an addition to the PCP plant on its northern side. The treated wood was removed from the cylinders and allowed to dry on a drip pad. Excess PCP or CCA from the drying wood flowed down the drip pad toward the Recovery Holding Pond (RHP). An oil-water separator at the edge of the RHP allowed recovery of the oil for reuse in the process. The RHP was designed to receive up to 2,000 gallons of wastewater in 24-hour period. When the RHP became full, the excess liquid was pumped to the Spray Evaporation Pond (SEP).

In 1980, the new CCATP wood treating facility was built to the east of the existing facility. After construction of the new CCATP, the PCP plant was no longer used. The new CCATP operated from 1980 to 1986 and used a closed-loop system whereby the excess CCA solution from the drip tracks flowed back toward a sump located under the treatment cylinder. The collected liquid from the sump was pumped back into a tank for reuse in the treatment process. The new CCATP appears to have been fully self-contained and did not utilize the existing wastewater treatment facilities (**EPA, 2004**).

3.4 Initial Response

After the Hazardous Waste Management Regulations were promulgated under the Resource Conservation and Recovery Act (RCRA) in May 19, 1980, MPPT notified EPA and the Arkansas Department of Pollution Control and Ecology (ADPC&E, predecessor to ADEQ) that it was an existing facility engaged in treatment and storage of waste type K001. This waste is defined as the bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote or

PCP. MPPT submitted its RCRA Part A permit application on November 14, 1980, giving notice that it stored PCP and creosote in two surface impoundments.

Groundwater monitoring requirements under RCRA at Title 40 Code of Federal Regulations (CFR) 265 Subpart F were implemented in 1981 when the facility installed four monitoring wells. Three separate groundwater sampling events were conducted between October 1981 and August 1982; all results were below the Safe Drinking Water Act (SDWA) standards. Groundwater monitoring ceased after MPPT filed for bankruptcy in September 1982. PLC continued to operate the new CCATP after this date.

EPA conducted compliance inspections in February 1984 and again in January 1985. As a result of the inspections, PLC was found in violation of RCRA regulations, which included inadequate groundwater monitoring, dikes without protective coverings, lack of operating records, lack of closure plan, lack of financial assurances, lack of contingency plan, no personnel training program, no inspection log, inadequate warning signs, no waste analysis plan, and no revised Part A application. In March 1985, EPA issued a RCRA compliance order to PLC and assessed a $57,050 penalty. In November 1985, ADPC&E terminated PLC's interim status to operate. Although a settlement was reached between EPA and PLC in June 1986, PLC was unable to pay a financial penalty. Therefore, EPA issued an order in October 1986 requiring closure of the RHP and SEP in accordance with RCRA regulatory standards. PLC declared bankruptcy without closing the impoundments. EPA subsequently completed a RCRA facility assessment in July 1987 that identified 23 solid waste management units and eight areas of concern.

Heavy rains in November 1987 caused the RHP to breach its dike, releasing water and suspected PCP. An EPA site assessment in November 1987 reported that rainfall had caused the RHP to overflow into the drainage ditch that enters Porter Creek. A layer of oil contaminated by PCP was floating on wastewater that contained PCP and CCA in the RHP. The SEP was also close to overflowing with arsenic - contaminated wastewater. In addition, the new CCATP basins were observed to have overflowed into Porter Creek.

EPA initiated a time-critical removal action on December 11, 1987, that was completed on April 13, 1988. The action was undertaken in response to an imminent threat to human health and the environment posed by the overflowing RHP. Oils were skimmed from the water surface in the RHP, and the water was treated and discharged to the drainage ditch with eventual discharge into adjacent Porter Creek. As a result of the action, 4,011,550 gallons of contaminated water were treated using sand and activated carbon beds and released to Porter Creek; 6,000 cubic yards of sludge and 5,000 cubic yards of contaminated soil were solidified using kiln dust and rice hulls and capped with soil; and 30,000 gallons of CCA treating fluid were disposed of at an off-site permitted facility.

A second removal response was initiated on August 30, 1990. Because of the heavy rains in the area and the threat of off-site migration from the CCA plant, the concrete pit area required immediate pumpdown and storage of CCA-contaminated waters. The removal action consisted of two phases; the first involved dewatering two on-site concrete containment areas and temporary storage of the liquids on site in four oil-field "frac" tanks. The second phase consisted of properly disposing of the liquids at an off-site facility. These actions were completed and the removal action was closed on February 5, 1991.

EPA remobilized to the site in March 1994 to remove dioxin-containing waste from an on-site treatment cylinder. The waste was drummed and disposed of at an off-site disposal facility.

The EPA published a proposed rule on April 23, 1999, to add the Mountain Pine Pressure Treating site to the National Priorities List (NPL) of Superfund sites. The site was added to the NPL in a final rule published on July 22, 1999 (**EPA, 2004**).

3.5 Summary of Basis for Taking Action

The purpose of the response actions conducted at the Mountain Pine site was to protect public health and welfare, and the environment from releases or threatened releases of hazardous substances from the site. Remedial actions taken at the site were deemed necessary based on the results of the human health risk assessment (HHRA) presented in the RI/FS Report for the Mountain Pine site. The EPA evaluated the risks for potential ingestion, inhalation and dermal exposure of contaminants of concern (COCs) in soil, sediment, and surface water and groundwater. Arsenic and PCP were the principal constituents of the two treatment liquids used during wood treating operations at the site and were the two primary COCs selected for evaluation in the human health risk assessment for the surface water, soils and sediments. The carcinogenic risk to future industrial workers from exposure to site-wide surface water and sediment (principally found in the SEP and drainage ditch), and to surface soil in selected process areas or waste management areas exceeded the EPA's acceptable risk range of $1x10^{-4}$ and $1x10^{-6}$. The noncarcinogenic risk to future industrial workers from exposure to site-wide surface water and sediment (principally found in the SEP and drainage ditch), and to surface soil in selected process areas or waste management areas around the SEP area and in the RHP at depths greater than 2 feet exceeded the EPA's acceptable hazard index (HI) of 1. The UWBZ is not considered a potential drinking water source for purposes of the HHRA. The LWBZ was considered a potential drinking water source in the HHRA. No carcinogenic Chemicals of Potential Concern (COPCs) were identified in LWBZ groundwater above MCLs and, therefore, no associated Expected Lifetime Cancer Risks (ELCRs) were estimated in the HHRA. The groundwater HI estimates (from 2 to 4.6) for future residential adults and children were above the threshold of concern, were due to the high levels of iron and manganese within

the LWBZ. The presence of iron and manganese in groundwater (and iron in soil) is likely due to local soil conditions, and no remedial goal was established for groundwater in the ROD (**CH2M HILL, 2002**).

4.0 Remedial Actions

This section provides a description of the remedy objectives, selection, and implementation. It also describes the ongoing Operation and Management (O&M), and the overall progress made at the Mountain Pine site since the completion of the remedial action.

The 2004 ROD selected remedy for the site included the excavation of the contaminated soils and sediments exceeding the remedial goals, treatment of the contaminated soils and sediments through a stabilization/solidification mixing process, return of the treated material to the excavated locations, and capping of the waste cells. The ROD also provided for treatment and discharge of surface water from the SEP and the CCA catch basin, and the placement of institutional controls on the site. The remedy specified in the ROD includes the placement of an institutional control on the site property, such as a property easement or other appropriate mechanism, to protect human health and prevent accidental exposure through the following actions: 1) alert prospective purchasers that hazardous substances are present at the site and explaining the actions taken to address the site contamination; 2) document the restricted activities that would interfere with or adversely affect the integrity or protectiveness of the remedy implemented at the site; and, 3) ensure future site development is consistent with the industrial/commercial human health exposure scenario (i.e., non-residential usage) that is the basis for the soil cleanup goals for PCP and arsenic.

4.1 Remedy Objectives

Remedial action objectives (RAOs) were developed for the Mountain Pine site for those COCs that pose a carcinogenic risk above EPA's target cancer risk range or non-carcinogenic hazard to human health and the environment based on site-specific risk calculations. RAOs are also defined such that Applicable or Relevant and Appropriate Requirements (ARARs) are met. The Remedial Action Objectives were developed based on the following:

- The reasonable anticipated land use scenario is based on the future redevelopment of this vacant site for industrial or commercial use, consistent with the City of Plainview redevelopment plans;
- Potential ecological risks will not be a factor because the future planned industrial use will likely not support an ecological habitat.

The remedial action objectives for this site were:

- Prevent direct contact, ingestion, and inhalation of surface and subsurface soils that exceed human health based levels, based on industrial and construction worker scenarios, for the chemicals of concern arsenic and PCP;
- Prevent off-site migration of arsenic and PCP to surface water and wetland sediments that exceed human and ecological based levels for the chemicals of concern; and,
- Prevent or minimize potential leaching of PCP and arsenic from the soils to the groundwater.

4.2 Remedy Selection

The remedy specified in the ROD for the site included the excavation of the contaminated soils and sediments exceeding the remedial goals, treatment of the contaminated soils and sediments through a stabilization/solidification mixing process, return of the treated material to the excavated locations, and capping of the waste cells. The selected remedy was a comprehensive approach for this site that addressed all current and potential future risks caused by the soils and sediments impacted by the prior wood preserving treatment process. Institutional controls were also to be implemented to ensure future redevelopment of the site is consistent with the long-term management of the treated waste at the site and the acceptable risk levels remaining in the on-site soils.

The major components of this remedy were:

- Stabilization and solidification of the contaminated soils and sediment exceeding the remedial goals for PCP and arsenic in the following areas of the facility: 1) the former RHP, 2) the SEP, 3) the on-site drainage ditch, and, 4) two separate hot-spots in the surface soil. The soil and sediment were treated and returned to the excavated locations without further consolidation except for the material removed from the drainage ditch;
- Construction of a soil cover over the treated areas and seeding of the area to control erosion;
- Demolition of the former process buildings and other ancillary buildings and structures to obtain access to all of the contaminated soils; asbestos abatement was required prior to the demolition of select structures to prevent the release of fibers into the atmosphere; with the building debris being disposed at either an on-site or off-site location;
- Treatment and discharge of surface water from the SEP and other areas to the on-site drainage ditch with eventual discharge to Porter Creek;
- Placement of an institutional control on the site property, such as a property easement or other appropriate mechanism, to protect human health and prevent accidental exposure through the following actions: 1) alert prospective purchasers that hazardous substances are present at the site and explaining the actions taken to address the site contamination; 2) document the restricted activities that would interfere with or adversely affect the integrity or protectiveness of the remedy implemented at the site; and, 3) ensure future site development is consistent with the

industrial/commercial human health exposure scenario (i.e., non-residential usage) that is the basis for the soil cleanup goals for PCP and arsenic; and,

- Operation and maintenance of the site following treatment including a groundwater monitoring program to evaluate potential leaching from the treated waste material.

The remedial cleanup goals for this site specified in the ROD were 287 mg/kg for arsenic and 130 mg/kg for PCP in soil and sediment. The areal extent of soil and sediment exceeding the remedial cleanup goals was approximately 160,300 ft^2, or 3.7 acres. The performance goals were 20 µg/L for arsenic and 500 µg/L for PCP in the leachate concentration extracted from the treated waste sample (following a 28 day curing period) using the Synthetic Precipitation Leaching Procedure (SPLP) method, and a reduction of the mobility of the COCs by 90 to 99 percent. An allowance was made for 20 percent of the samples collected from the treated oily sludge material to exceed the SPLP performance standards by a factor of two times, and 10 percent of the samples to exceed the standard by a factor of five times, while not relaxing the average for all samples treated (**EPA, 2004**).

During the initial phases of the Remedial Action concentrations of PCP and arsenic were encountered at a higher concentration than those used in the treatability studies, which were used to set the performance levels in the ROD, and it was determined to be impracticable to achieve the performance goals of 500 µg/L for PCP and 20 µg /L for arsenic. In July 2005 an Explanation of Significant Differences (ESD) revising the ROD-specified remedy was issued by EPA. The ESD removed the performance goals for absolute concentration limits for PCP and arsenic in the SPLP leachate, and modified the leachability testing procedure regarding the curing time of the treated materials. The 2004 ROD stated that the performance goals of reducing the mobility of the treated materials between 90 to 99 percent would be met at the 28-day period. In the ESD, the testing time for meeting the mobility reduction was modified to be based on the laboratory results after a 7 day curing time. Before and after treatment SPLP leachate mobility was required to be a minimum of 90 percent average reduction (**EPA, 2005**).

4.3 Remedy Implementation

The selected remedy involved the excavation and solidification/stabilization of the soils and sediments that were contaminated with either PCP or arsenic above the cleanup criteria. The treatment process as specified in the ROD consisted of excavating the contaminated materials, immobilizing the material with additives, and returning the treated material to the excavated areas. During the RD, the EPA contractor conducting the design concluded that this process could result in noncompliance with land disposal restrictions (40 CFR 268). After consultation with EPA and the ADEQ, it was determined that the waste could not be treated ex situ but that it could be treated in on-site treatment pads within the area of contamination and returned to the excavations and still be considered in situ treatment. This method was

incorporated into the remedial design (RD) and was used during the remedial action (RA). An estimated 970,000 gallons of contaminated surface water was to be treated to meet Arkansas Department of Environmental Quality (ADEQ) and EPA criteria and discharged. Asbestos containing materials (ACM) associated with the treatment tanks and buildings were also to be removed.

The RD for the site was completed in March 2005, and during the week of March 17, 2005, work began in the abatement of ACM found at the site. The following ACM were identified and removed from the site:

- Outside Horizontal Chemical Holding Tanks
  - 1,800 ft^2 of tank insulation
  - 1,200 ft^2 of contaminated soil
- Chemical Processing Building
  - 3,000 ft^2 of contaminated area on the floor and on horizontal and vertical surfaces
  - 600 ft^2 of tank insulation
- Kiln Building
  - 8,000 ft^2 of kiln mastic (friable) on walls and ceilings
  - 2,000 ft^2 of contaminated soil

The ACM was loaded into lined dump trucks, covered, and transported off site for disposal. ACM disposal was completed April 15, 2005.

A 500,000-gallon modular storage tank (Modutank) was constructed on site and was used to store wastewater and storm water runoff that accumulated in excavations before being treated and discharged. Water from the SEP, RHP excavation, and CCA catch basin was pumped into this tank as needed. Calgon Carbon Corporation (Calgon) provided a water treatment system. Before entering the wastewater treatment unit, the water was filtered to remove sediment to prevent clogging of the unit. A sodium hypochlorite solution was then injected to convert the arsenic from As^{+3} to As^{+5}. The water was then piped to a skid-mounted treatment system composed of two vessels in series. The lead vessel of the skid-mounted treatment contained 10,000 pounds of granular activated carbon (GAC), and the lag vessel contained 15,000 pounds of activated alumina for arsenic removal. The treated water was discharged to the south drainage ditch.

Surface water in the SEP was the predominant source of contaminated water during the RA. The total volume of water treated from the SEP was estimated to be 870,000 gallons. Additionally, an estimated 100,000 gallons of surface water were contained in the CCA catch basin. Discharge criteria were obtained from the ADEQ.

After testing the water treatment system, the first batch of treated water was found to meet all the discharge criteria except for sulfate. Although the first treated batch did not meet ADEQ discharge criteria for sulfate, it did meet EPA's secondary drinking water standard for sulfate, and the water was discharged. After the first batch of water had been discharged from the Modutank, additional water was pumped into the Modutank from the SEP and the CCA catch basin. Based on the results from the first batch, the water was treated through the water treatment system and then discharged without awaiting sample results. Discharge of the second batch began on May 31, 2005. Influent and effluent samples were collected on June 1, 2005. Sample analytical results were received on June 6, 2005, and indicated that the water exceeded the allowable concentration for arsenic (301 µg/L in the effluent compared with 130 µg/L allowed). Since the batch had already been discharged, soil samples were collected from the discharge ditch and analyzed. All sediment samples were below the allowable limit for the site (287 mg/kg).

Once the SEP and CCA catch basins were pumped out, little water management was required until July 2005. During the week ending July 24, 2005, approximately 3 inches of rain fell at the site. This rain required that water be pumped from the RHP to the Modutank. Approximately 76,000 gallons of this rainfall runoff was used to hydrate the soil treatment reagents, with the rest being treated and discharged. In order to maintain the project schedule, the treated water was discharged after the organic constituents' laboratory analysis of the effluent samples were received and found to be below the discharge criteria. The results for the other parameters were received after the discharge was completed and indicated that the concentrations of sulfate and total dissolved solids (383 mg/L and 860 mg/L) exceeded the discharge criteria of 250 mg/L for sulfates and 500 mg/L for total dissolved solids.

By September 7, 2005, all the site surface water had been treated. Approximately 1 million gallons of water were removed from the SEP, the CCA catch basin, and the RHP, treated, and discharged to the south drainage ditch or was placed on the soil stockpile prior to treatment. The Modutank was disassembled and sediment was removed from the tank and placed on the last soil treatment pile. Media from the Calgon unit was disposed of off-site in a hazardous waste landfill.

Additional soil and sediment samples were collected and analyzed in April and May 2005 to better refine the areas and volumes of soil and sediment that exceeded the criteria. In mid May, excavation and treatment of contaminated soils began in the RHP. In late May 2005, it was evident after the first 16 RHP batches were treated that the treatment regimen would not effectively reduce the leachability of contaminated soils to the levels prescribed in the ROD. Concentrations of PCP and arsenic were encountered at a higher concentration than those used in the treatability studies, which were used to set the performance levels in the ROD, and it was determined to be impracticable to achieve the performance goals of 500 µg/L for PCP and 20 µg /L for arsenic. In July 2005 an ESD revising the ROD-specified remedy was issued by EPA. The ESD removed the performance goals for absolute concentration limits

for PCP and arsenic in the SPLP leachate, and modified the leachability testing procedure regarding the curing time of the treated materials.

During the course of excavation and treatment of the soils and sediments, additional treatability studies were conducted in an attempt to reduce the leachability of the contaminants. Six field treatability studies were conducted from May 27 to June 24, 2005. Four treatability studies were conducted for contaminated soils in the RHP and two were conducted for contaminated soils in the SEP. During these treatability studies, contaminated soils were mixed with varying percentages of reagents and then analyzed for arsenic and PCP using the SPLP. The final adopted treatment regimen for the RHP was 12 percent by weight cement, 4 percent by weight ferrous sulfate, 4 percent by weight GAC, and 12 percent by weight calcium oxide. The final adopted treatment regimen for the SEP was 5 percent by weight cement, 8 percent by weight ferrous sulfate, and 4 percent by weight GAC.

In the treatment of the excavated soil from the RHP, four treatment pads were constructed with ditches and silt fence used to prevent soil runoff from the pads. Each pad was approximately 100 feet by 100 feet. Excavated soil from the RHP was placed on the pads, and cement, ferrous sulfate and GAC reagents and water were added. Soil and reagents were mixed on the treatment pads using heavy equipment. In an effort to speed the soil treatment process, some soil was also treated in a hydration pit excavated next to the RHP. The material was sampled before treatment, allowed to cure for 7 days after treatment, then resampled and analyzed by SPLP. The average reduction in PCP concentrations was 93.6 percent and in arsenic was 94.3 percent. Treated soil from the RHP was returned to the RHP excavated area and compacted with a bulldozer. In September 2005 treatment of soil in the RHP was completed and clean soil was placed over the treated material.

On May 31, 2005, work began consolidating the sediment in the SEP in the western portion of the SEP, including sediment from the arsenic hot spot and the central drainage ditch that had been placed in the SEP. Sediment was consolidated using bulldozers to scrape the sediment from the clay bottom. The reagents were distributed and mixed into the sediments between June 27 and June 30, 2005. On July 5, the mixed sediments were spread out, and on July 14 and 15, a road stabilizer was used to remix the reagents and sediments. An untreated sample was taken from a composite sample that had previously been collected for the treatability studies. This sample was analyzed for arsenic by SPLP to compare with the treated sample results to verify that 90 percent reduction had been achieved. All of the samples met the 90 percent reduction criterion; the average reduction in the concentration in the leachate was 98.6 percent. On August 11 and 12, 2005, clean topsoil was spread over the treated material. The final inspection of the site was conducted on September 27, 2005 (**Tetra Tech, 2006**).

The estimated total volume of treated material from each of the contaminated areas was:

- Arsenic hot spot 16 yd^3
- Central drainage ditch 47 yd^3
- SEP 1,200 yd^3
- RHP 7,750 yd^3

4.4 Operations and Maintenance

At the completion of the RA at the site, a groundwater monitoring program was to be implemented to evaluate potential leaching from the treated waste material. EPA and ADEQ conducted operational and functional (O&F) activities at the site from September 2005 to June 2008. These O&F activities included sampling groundwater monitoring wells at the site, and inspecting the site for evidence of erosion, damage to wells, and the integrity of the gate and warning signs.

Since June 2008, ADEQ has been responsible for conducting long term O&M and groundwater monitoring at the site. O&M requirements involve maintaining, repairing, and replacing monitoring wells as necessary. It also includes inspecting the site for erosion of the RHP and SEP caps and taking remedial measures as necessary. Currently, ADEQ periodically inspects the monitoring wells and waste cell caps at the site, and the City of Plainview mows the grass covered areas of the site, including the waste cell caps, with a brush hog. Groundwater levels and samples are measured and collected semi-annually at the site, and ADEQ analyzes the samples and evaluates the data.

Total O&F costs for the site from October 2005 to June 2008 were $66,653, or $2,020 per month. O&M costs from July 2008 to June 2009 were $11,072, or $923 per month. The City of Plainview did not provide their costs for mowing the site, but the ROD estimated these costs at $600 per year. O&M costs estimated for the site in the ROD were $100,800 per year, or $8,400 per month. The actual O&M costs are substantially less than the ROD estimate.

5.0 Five-Year Review Process

This Five-Year Review has been conducted in accordance with the EPA's Comprehensive Five-Year Review Guidance (**EPA, 2001**). The Five-Year Review for this site was initiated by the EPA which tasked the U.S. Army Corps of Engineers to perform the technical components of the multidisciplinary review. The scheduled completion date for this review was March 2010; five years after the commencement of the remedial action. Interviews were conducted with relevant parties; a site inspection was conducted;

applicable data and documentation covering the period of the review were evaluated. The findings of the review are described in the following sections.

5.1 Community Involvement

A public notice announcing initiation of the Five-Year Review was published in the Yell County Record on October 7, 2009. Upon signature, the Five-Year Review will be placed in the information repositories for the site, including Plainview City Hall, the ADEQ office in North Little Rock, Arkansas, and the EPA Region 6 office in Dallas, Texas. A notice will 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 initial public notice is provided as **Attachment 7** to this report.

5.2 Document Review

This Five-Year Review included a review of relevant site documents, including decision documents, construction and implementation reports, quarterly and annual reports, and related monitoring data. Documents that were reviewed are listed in **Attachment 1**.

5.3 Data Review

Groundwater sampling data collected as part of site investigations conducted in 2000 and 2003, and as part of the long-term monitoring program from 2007-2009, were reviewed. The results of this data review are discussed in the following paragraphs. An inventory of water wells located near the Mountain Pine site is also presented.

Arsenic and PCP were the principal constituents of the two treatment liquids used during wood treating operations at the site, and were the two primary COCs specified in the remedial action objectives in the ROD. Chromium and diesel fuel were also constituents of the wood treatment processes used at the site. Post RA groundwater monitoring includes PCP, arsenic, chromium and total petroleum hydrocarbons/diesel range organics (TPH/DRO). The analytical results for PCP, arsenic chromium and TPH/DRO detected in monitoring wells in the UWBZ and LWBZ are provided in **Attachment 6**. **Figures 5 and 6** show the location of the monitoring wells in the LWBZ and UWBZ.

At the time of the ROD, the UWBZ was contaminated with PCP and arsenic above health based criteria, but was not considered a potential drinking water source or a likely source of contaminant to the LWBZ. The LWBZ was considered a potential drinking water source. The low level contamination of the LWBZ was believed to be due to natural conditions in the area, and no remedial actions were needed to address groundwater. Concentrations of PCP and arsenic at some monitoring wells in the UWBZ were higher than drinking water standards, but due to the low yield and high dissolved solids content, the UWBZ was not considered a potential drinking water source for purposes of the HHRA. Due to the lack of significant

amounts of water observed in some monitoring wells in the UWBZ, and the lack of observed interaction between the UWBZ and LWBZ during well development, the RI concluded that there was a lack of significant migration potential for groundwater within or from the UWBZ. Contaminated groundwater in the UWBZ was not considered a likely source of contamination to the LWBZ because the downward contaminant migration appeared to be attenuated by the presence of a discontinuous clay layer separating the two water bearing zones, and the presence of an upward gradient from the LWBZ to the UWBZ. During the RI, groundwater sampling indicated the presence of metals, including arsenic, slightly above background but below health based criteria in the LWBZ. PCP was not detected in the LWBZ. No carcinogenic COPCs were identified in the LWBZ above MCLs, and no ELCR was computed for groundwater. The computed groundwater HI estimates from 2 to 4.6 were above the level of concern due to high levels of iron and manganese. The high levels of iron and manganese were believed to be due to local soil conditions.

The ROD did not specify groundwater remediation goals, and drinking water standards were not specified as an ARAR for the site. There are no established groundwater compliance monitoring standards for the site. However, the prevention or minimization of potential leaching of PCP and arsenic from the soils to the groundwater was listed as a remedial action objective. In the state of Arkansas all groundwater is considered potable, so that drinking water standards are appropriate groundwater quality criteria when evaluating the potential leaching of PCP and arsenic from soils to the groundwater. In this five-year review, MCLs established under the Safe Drinking Water Act were used to evaluate water quality samples in the UWBZ and LWBZ. The drinking water MCL for PCP is 1 µg/L, 10 µg/L for arsenic, and 0.1 mg/L for chromium. Concentration graphs for arsenic and PCP are presented in **Attachment 5**. No groundwater samples exceeded the MCL for chromium. The ADEQ screening level for TPH/DRO is 0.4 mg/L and all measurements were below the detection limit of 0.200 mg/L. Post-RA concentrations of arsenic and PCP were also compared to those measured in the RI to assist in identifying trends in the data.

Twenty-four monitoring wells have operated at times at the site from 1981 to the present. Four wells were installed in 1981 as part of RCRA monitoring of the site. Sixteen wells were installed in 2000 during the initial RI, and an additional four wells were installed as part of the RI Addendum in 2003. Five wells installed in 2000 were plugged and abandoned in 2005 during the RA. These wells were in the area of the former RHP, four wells from the UWBZ, and one from the LWBZ. **Table 2** is a list of the monitoring wells at the site and the time periods in which they operated.

UWBZ: Concentrations of arsenic and PCP in all the monitoring wells in the UWBZ are shown in **Attachment 5-1** for arsenic and **Attachment 5-2** for PCP. Prior to the RA, the highest concentrations of arsenic and PCP were in wells MW-110, MW-111, and MW-113, which were located in or adjacent to the

former RHP. These three wells were plugged and abandoned during the RA, when the soils in the former RHP were excavated, stabilized and returned to the excavation, so that there are no post-RA measurements at these well sites. **Attachments 5-3 and 5-4** show the measured concentrations of arsenic and PCP for the monitoring wells in the UWBZ that have had measured concentrations above the MCLs since the completion of the RA. **Attachment 5-3** shows that concentrations of arsenic increased above the MCL shortly after the RA at MW-114 and MW-119, probably due to the disturbance of the contaminants in the SEP and former RHP, but have since declined, with only MW-114 showing concentrations above the MCL at the last sampling. **Attachment 5-4** shows PCP concentrations exceeded the MCL only at MW-108 and MW-119 post RA. MW-108 had one measurement slightly above the MCL, in June 2006. MW-119 has had one measurement above the MCL, a concentration of 7 µg/L, from the sample taken in May 2009. The UWBZ appears to be discontinuous in some areas of the site, and at the time some of the samples were taken, some wells have had insufficient water to obtain a sample. Wells MW-108 and MW-119 were not sampled during the RI due to insufficient water in the wells, so that no comparison can be made of pre-RA conditions to current conditions. Monitoring wells MW-108, MW-114 and MW-119 have all had insufficient water to sample at times, and low water conditions at these wells may be influencing the measured concentrations at the times they were sampled. Although concentrations of arsenic did show elevated levels at two monitoring wells shortly after the RA, and the most recent measurement of PCP at MW-119 shows an increase over previous measurements, it does not appear that there is significant contaminant leaching occurring in the stabilized waste cells.

LWBZ: Concentrations of arsenic and PCP in the monitoring wells in the LWBZ are shown in **Attachment 5-5** for arsenic, and **Attachment 5-6** for PCP. Prior to the RA, arsenic was detected below health based criteria, and PCP was undetected. **Attachments 5-7 and 5-8** show the measured concentrations of arsenic and PCP at monitoring well MW-107, the only well in the LWBZ with measured concentrations above MCLs post-RA. The April 2007 sample measured 27.1 µg/L for arsenic, but all samples taken since then have been below detection limits and are below the MCL for arsenic. The maximum measured PCP concentration of 61.3 µg/L was from the October 2007 sample. Measured concentrations of PCP have decreased in each sampling event since, with the most recent sample, May 2009, having a PCP concentration of 3.53 µg/L. All samples from MW-107 since April 2007 have exceeded the MCL for PCP, while only the May 2007 sample exceeded the MCL for arsenic. Levels of PCP and arsenic in the LWBZ have increased to levels above drinking water MCLs during the period covered during this review. This indicates that the discontinuous clay layer believed to be separating the LWBZ from the UWBZ may have been sufficiently breached during the RA to allow groundwater in the more highly contaminated UWBZ to enter the LWBZ, or possibly that water from the UWBZ is entering the LWBZ through a monitoring well borehole.

Water Well Inventory: A water well inventory of wells located near the Mountain Pine site was obtained from a water well database maintained by the Arkansas Water Well Construction Commission, made internet accessible by the USGS (**USGS, 2010**). A water well inventory developed during the RI shows an additional five wells located near the site, designated as residential wells, which do not appear in the USGS database. The wells identified from these two sources are listed in **Table 3**, and the locations of the wells are shown in **Figure 7**.

The LWBZ at the site consists of the lower portions of a weathered shale unit, including a sand to clayey sand horizon occurring within the weathered shale or at its base. The LWBZ was determined to have sufficient yield and quality to be considered a potential drinking water source during the RI. Groundwater samples taken from the LWBZ during the five-year review period have shown that arsenic and PCP levels have increased to levels above the MCLs. Monitoring wells in the LWBZ at the site have depths ranging from about 27 to 41 feet. Nearby water wells identified in the USGS database and shown in **Figure 7** have depths ranging from 40 to 180 feet. Water well 931811345910 has a depth of 180 feet and is located within the historical site boundaries near the northern edge of the site, but is outside of the areas found to be contaminated and remediated during the RA. Its depth of 180 feet is about 140 feet deeper than the LWBZ at the site. Water well 931735345920 is about 3000 feet northeast of the site and has a depth of 40 feet, and is very likely completed in the same weathered shale geologic unit as the contaminated LWBZ at the site. The five residential wells shown in the RI were identified in investigations previous to the RI, and no information on the depths of the wells was found in the RI. However, at least one other water well in the area appears to be completed in the same geologic unit as the LWBZ, and it is possible one or more of these nearby residential wells may also be completed in this geologic unit. Two of these residential wells, RW-33 and RW-34, are located just a few hundred feet north of the site boundary. Because the areal extent of site groundwater contamination is unknown, and because there is a possibility that water wells near the site may be withdrawing water from the same geologic unit as the contaminated LWBZ, the water wells near the site should be evaluated to determine if they have been impacted by the site groundwater contamination.

5.4 Interviews

Interviews were conducted during the site visit with Mayor Doug Forrest at the Plainview city hall, and with Don Hall at Prospect Steel, the steel fabrication plant operating on the northern portion of the site designated for reuse. Interview forms were provided to EPA Remedial Project Manager Philip Allen, and ADEQ representative Dianna Kilburn. The completed interview record forms are presented in **Attachment 2**.

5.5 Site Inspection

An inspection was conducted at the site on October 14, 2009. The completed site inspection checklist is provided in **Attachment 3**. Site inspection tasks included a visual inspection of site features including the waste burial cell caps, monitoring wells, and fences and gates. There is a warning sign at the front gate, and the gate at the site is kept locked. The site is only partially fenced, with gaps existing in the fence line. The ROD did not specify any fencing requirements for the site. The roads on the site are partially overgrown but are passable, and are mowed occasionally by the city. There is a good cover of native vegetation over the waste cell caps and no erosion of the caps was observed. The perimeters of the two waste cells are delineated with steel posts, but the only two warning signs observed at the waste cells were lying on the ground. All monitoring wells were located and were in good condition, but some of the wells were difficult to identify due to poor markings. Some of the wells were overgrown with vines and brush. The vegetation overgrowing these wells needs to be cleared away to allow continued access for groundwater monitoring. All well caps were closed and locked. The drainage ditch south of the RHP waste cell was overgrown with brush. There had been significant rainfall in the days prior to the site inspection, and there were several areas with shallow standing water, especially in the area of the SEP waste cell. There are no onsite facilities, or records kept at the site. Part of the former site north of the RHP waste cell is now fenced off separately from the rest of the site, and is used as a steel fabrication plant. Photographs taken during the site inspection are provided in **Attachment 4**. The inspection team consisted of John Hickman and Frank Roepke of the U.S. Army Corps of Engineers. They were accompanied by Philip Allen of EPA Region 6, Dianna Kilburn and Buz Bartholmey of ADEQ, and Doug Forrest and Paul Metcalf of the City of Plainview.

6.0 Technical Assessment

The Five-Year Review must determine whether the remedy at a site is protective of human health and the environment. The EPA guidance describes three questions used to provide a framework for organizing and evaluating data and information, and to ensure all relevant issues are considered when determining the protectiveness of a remedy.

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

The documents that detail the remedial decisions for the site are the September 2004 ROD, and the July 2005 ESD. The remedy at the site is complete, and the site is currently undergoing O&M, including groundwater monitoring. Based on the data review, the site inspection, and interviews, it appears that the remedy is functioning as intended by the decision documents. Groundwater monitoring results, O&M

operations, and O&M costs are discussed in sections 4 and 5. Opportunities for optimization, early indicators of potential remedy problems, and implementation of institutional controls are discussed below.

Opportunities for Optimization. No opportunities for optimization were noted during this review.

Early Indicators of Potential Remedy Problems. Levels of PCP and arsenic in the LWBZ have increased to levels above drinking water MCLs during the period covered during this review. This indicates that the discontinuous clay layer believed to be separating the UWBZ from the LWBZ may have been sufficiently breached during the RA to allow groundwater in the more highly contaminated UWBZ to enter the LWBZ, or possibly that water from the UWBZ is entering the LWBZ through a monitoring well borehole. The current areal extent of groundwater contamination is unknown, and the potential for off-site migration of contaminated groundwater has not been evaluated. There are water wells located near the site which may be drawing water from the same geologic unit which forms the LWBZ at the site. These wells could possibly be impacted by the site groundwater contamination, and should be evaluated to verify their safety. There does not appear to be any significant contaminant leaching from the stabilized soils and sediments as indicated by measured concentration of arsenic and PCP in the UWBZ; however, the increased contamination levels in the LWBZ were not anticipated in the design documents.

Implementation of Institutional Controls. The remedy specified in the ROD includes the placement of an institutional control on the site property, such as a property easement or other appropriate mechanism, to protect human health and prevent accidental exposure through the following actions: 1) alert prospective purchasers that hazardous substances are present at the site and explaining the actions taken to address the site contamination; 2) document the restricted activities that would interfere with or adversely affect the integrity or protectiveness of the remedy implemented at the site; and, 3) ensure future site development is consistent with the industrial/commercial human health exposure scenario (i.e., non-residential usage) that is the basis for the soil cleanup goals for PCP and arsenic. The city has placed a deed restriction on the site forbidding drilling, excavation or digging of any kind at the site; however, no institutional controls are in place to provide notice of site conditions to prospective purchasers or to ensure appropriate site development.

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

The purpose of this question is to evaluate the effects of any significant changes in standards or assumptions used at the time of remedy selection. Changes in promulgated standards or "to be

considered" (TBC) and assumptions used in the original definition of the remedial action may indicate that an adjustment in the remedy is necessary to ensure the protectiveness of the remedy.

Changes in ARARs. Applicable or Relevant and Appropriate Requirements (ARARs) for this site were identified in ROD dated September 2004. The five-year review for this site included identification of and evaluation of changes in the ROD-specified ARARs to determine whether such changes may affect the protectiveness of the selected remedy. A comprehensive list of ARARs identified in ROD is provided below.

The ARARs identified by the ROD are divided into chemical-specific, action-specific, and location-specific categories. There have been no changes in these ARARs, standards, or TBCs that would affect the protectiveness of the remedy.

The selected remedy complied with those Federal and State requirements that were applicable or relevant and appropriate for this remedial action. There were no location-specific ARARs pertinent to the selected remedy. Some of these ARARs apply to activities that are not currently taking place at the site or conditions that do not currently exist. Therefore, as a practical matter, they are no longer applicable to site remediation. However, should additional construction activities occur, these ARARs may be applicable. These are marked below as - **(No longer occurring)**.

Chemical-Specific ARARs:

Chemical specific ARARs are usually health or risk based numerical values or methodologies that, when applied to site-specific conditions, result in the establishment of numerical values. These values establish the acceptable amount or concentration of a chemical that may be found in, or discharged to, the environment.

- OSWER Directive 9200.4-26, Approach for Addressing Dioxin in Soil at CERCLA and RCRA sites, recommends the cleanup goal of 5 - 20 ppb for dioxin toxic equivalency (TEQ) in soils at commercial and industrial sites.
- ADEQ Regulation No. 22.103(k) which excludes environmental remediation activities carried out within the site boundaries from the solid waste management requirements.
- ADEQ Regulation No. 2 which specifies water quality standards for surface water and implementation procedures for application of the surface water quality standards. The requirements are applicable to the discharge of water from the SEP and other excavations containing water that must be removed to complete the remedial action.
- Toxic Substances Control Act asbestos abatement projects (40 CFR 763.121) which specifies operational and personal protection requirements for asbestos abatement workers not covered

under 20 CFR 1925.58 or under an OSHA-approved states asbestos abatement plan. These requirements were applicable to the structure and building demolition due to the presence of asbestos within the structures - **(No longer occurring)**.

- National Emission Standards, (40 CFR Part 61.145) which specifies national standards for asbestos abatement during demolition or renovation. These requirements were applicable to the structure and building demolition due to the presence of asbestos within the structures- **(No longer occurring)**.
- ADEQ Regulation No. 21 which specifies standards for demolitions, renovations, and disposal of friable asbestos-containing material in order to reduce visible emissions of asbestos-containing materials - **(No longer occurring)**.

Action-Specific ARARs:

Action-specific ARARs are typically technology or activity-based requirements applicable to actions involving special categories of wastes. Action-specific requirements are usually triggered by certain remedial activities that may be a component of the overall cleanup alternative. The following action-specific requirements were identified in the ROD as applicable during remedial actions:

- ADEQ Regulation §264.310 and §22.1301 which specifies final cover systems on hazardous and solid waste landfills are relevant and appropriate to the long-term management of the treated waste at the site. The final covers are designed to minimize infiltration and erosion.

There have been no changes in the ARARs indentified in the ROD which affect the current protectiveness of the site. However, there is currently a change in the Preliminary Remediation Goals (PRGs) for dioxins in soils being evaluated which could potentially affect the protectiveness of the site. The ROD states that dioxin/furans were not selected as a COC at the site because the exposure point concentration at the 95 percent upper confidence limit is 0.48 parts per billion (ppb), which is below the EPA recommended range of 5 to 20 ppb established for commercial industrial settings, or even the more stringent 1 ppb set for residential settings (OSWER Directive 9200.4-26). EPA's Office of Solid Waste and Emergency Response (OSWER) has developed a Draft Recommended Interim Preliminary Remediation Goals for Dioxin in Soil at CERCLA and RCRA Sites (**EPA, 2009**). This guidance proposes PRGs for dioxin in soil of 72 ppt for residential land use and 950 ppt for commercial/industrial land use. Once the recommended interim PRGs are finalized, the Mountain Pine site may need to be re-evaluated to determine compliance with the newly established interim remediation goals for dioxin.

ADEQ Regulation No. 2 was updated on November 25, 2007, and ADEQ Regulation No. 22 was updated on April 26, 2008, but these updates did not affect the protectiveness of the site; however, there were no ARARs identified in the ROD which address the current groundwater conditions. Although no groundwater specific ARARs or actions were specified in the ROD, the remedial action objectives did include preventing off-site migration of arsenic and PCP to surface water and wetland sediments that exceed human and ecological based levels for the chemicals of concern, and preventing or minimizing potential leaching of PCP and arsenic from the soils to the groundwater. To meet the remedial action objectives, ARARs for the site should be revisited, and groundwater compliance monitoring standards should be established for the site. The state of Arkansas considers all groundwater potable, and drinking water standards established in the Safe Drinking Water Act are an applicable ARAR for groundwater at the site.

Changes in Exposure Pathways, Toxicity, and Other Contaminant Characteristics.

There has been no change to the standardized risk assessment methodology or toxicity characteristics of the individual COCs, or new contaminants identified that could affect the protectiveness of the remedy. Although no new contaminants have been identified, levels of arsenic and PCP in the groundwater have increased since the completion of the RA to levels higher than drinking water MCLs. Arsenic and PCP were not included in the groundwater exposure pathway developed in the HHRA, so arsenic and PCP groundwater contamination levels present a new exposure pathway at the site.

Although there have been no changes to the toxicity characteristics of the COCs, there has been a change in one of the assumptions used to screen COPCs in the groundwater for inclusion in the HHRA. During the RI, Federal drinking water MCLs and EPA Region 6 Tap Water MSLs calculated with a target risk of $1x10^{-6}$ for carcinogens and using a hazard quotient of 0.1 (calculated as 10 percent of the Region 6 MSL) for non-carcinogens were used to screen COPCs in the LWBZ groundwater for inclusion in the HHRA. Of the chemicals detected in the onsite LWBZ groundwater samples, only iron and manganese exceeded the risk-based screening levels and were carried forth as COPCs. The MCL for arsenic was 50 µg/L at the time the ROD was developed, and concentrations of arsenic did not exceed the MCL for arsenic at that time. Arsenic was not included in the HHRA for groundwater at the site. The MCL for arsenic has been changed to 10 µg /L, effective January 23, 2006. Since the completion of the RA, concentrations of both arsenic and PCP have been measured above the current MCLs in the LWBZ, and the conditions used in developing the groundwater HHRA are no longer valid. The HHRA should be revised to reflect current groundwater contamination and risk levels. Additionally, the areal extent of groundwater contamination is unknown, and water wells located near and within the site boundaries could potentially be impacted. These wells should be evaluated and sampled if there is a possibility that they are withdrawing contaminated groundwater.

Groundwater contaminant levels of arsenic and PCP in the LWBZ have increased to levels above drinking water MCLs since the completion of the RA. The ARARs, compliance monitoring standards, HHRA, and site remedial goals should all be re-evaluated to address the current site conditions.

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

Examples of other information that might call into question the protectiveness of the remedy include potential future land use changes in the vicinity of the site or other expected changes in site conditions or exposure pathways. The City of Plainview is considering alternative uses for the site, and any land use change needs to consistent with preserving the protectiveness of the remedy of the site.

7.0 Issues

Several issues are identified for this site, as described below

No.	Issues	Affects Protectiveness (Y/N)	
		Current	Future
1.	**There are no compliance monitoring standards established for groundwater at the site.** The O&M plan described in the ROD included a groundwater monitoring program to evaluate the potential leaching of PCP and arsenic from the treated waste materials to the groundwater, but did not give compliance monitoring standards. There has been an increase in arsenic and PCP concentrations in the LWBZ since the completion of the RA, however there are no established compliance monitoring standards in which to compare and evaluate the measured values. The compliance monitoring standards would be used to assist in ensuring that the remedial action is performing as planned.	N	Potential Impact
2.	**The measured concentrations of arsenic and PCP have increased and exceeded drinking water MCLs in the UWBZ and LWBZ during the period covered by the review.** MCL exceedances in the UWBZ could be indications of contaminant leaching from the stabilized soils and sediments at an unacceptable rate. The increase in the LWBZ has occurred at monitoring well MW-107, west of and down-gradient of the RHP waste cell. The increase in concentrations in the LWBZ from pre- to post-RA indicates that the discontinuous clay layer separating the UWBZ from the LWBZ may have been breached during the RA allowing the more highly contaminated groundwater in the UWBZ into the LWBZ, or possibly that water from the UWBZ has entered the LWBZ through a monitoring well borehole.	N	Potential Impact
3.	**The HHRA in the ROD does not address the contamination in the LWBZ as it currently exists.** Groundwater sampling in the LWBZ during the period covered in this review showed contamination levels of arsenic and PCP at levels higher than those measured during the RI and used to develop the HHRA. The RI did not include arsenic and PCP in the groundwater HHRA. Since the completion of the RA, concentrations of arsenic and PCP have increased and have been measured exceeding the drinking water MCLs, which indicates that site groundwater contamination now presents a higher risk to groundwater use than existed at the time of the ROD.	N	Potential Impact
4.	**There are no identified ARARs for groundwater for the site.** Because groundwater contamination was not considered a risk to human health or the environment at the time of the ROD, no ARAR was identified for groundwater at the site.	N	Potential Impact
5.	**The ROD does not address the groundwater COCs identified in the review period.** At the time of the ROD, only groundwater in the LWBZ was considered a potential drinking water source, and the low level of contamination in this zone was believed to be due to natural conditions. No remedial goal for groundwater was established in the ROD. During the period covered by this review, concentrations of arsenic and PCP in the groundwater have increased and been measured at values greater than the MCLs. The remedy specified in the ROD does not address the contamination in the groundwater as it currently exists.	N	Potential Impact

No.	Issues	Affects Protectiveness (Y/N)	
		Current	Future
6.	**The areal extent of the groundwater contamination is unknown.** The measured concentrations of arsenic and PCP at monitoring wells MW-107 and MW-119 have increased and exceeded the drinking water MCLs during the period covered by this review. MW-107 is located in the LWBZ, and MW-119 is located in the UWBZ. These two wells are located west of the RHP waste cell, and are the most down-gradient wells on the site. Because there are no monitoring wells down-gradient of MW-107 and MW-119, the western extent of the LWBZ and UWBZ contamination is unknown. To prevent any possible off-site use of contaminated groundwater, an evaluation of the current extent and potential migration of groundwater contamination should be made.	Y	Potential Impact
7.	**Water wells near the site could be impacted by site groundwater contamination.** The areal extent of site groundwater contamination is unknown, and there is a possibility that water wells near the site may be withdrawing water from the same geologic unit as the contaminated LWBZ.	Y	Potential Impact
8.	**There are no warning signs posted at the waste cell caps.** The only warning signs observed at the waste cells caps during the site inspection were lying on the ground.	N	Potential Impact
9.	**Reporting limits for some sample analyses are above constituent MCLs.** The analytical non-detect reporting limits for PCP are above the MCL of 1 µg/L for some samples. Because the reporting limits are above the MCL for these samples, it is unknown if concentrations of PCP exceeded the MCL.	N	Potential Impact
10.	**The institutional controls at the site do not meet the requirements set forth in the ROD.** The remedy specified in the ROD includes the placement of an institutional control on the site property, such as a property easement or other appropriate mechanism, to protect human health and prevent accidental exposure through the following actions: 1) alert prospective purchasers that hazardous substances are present at the site and explaining the actions taken to address the site contamination; 2) document the restricted activities that would interfere with or adversely affect the integrity or protectiveness of the remedy implemented at the site; and, 3) ensure future site development is consistent with the industrial/commercial human health exposure scenario (i.e., non-residential usage) that is the basis for the soil cleanup goals for PCP and arsenic. The city has placed a deed restriction on the site forbidding drilling, excavation or digging of any kind at the site; however, no institutional controls are in place to provide notice to potential purchasers of site conditions or to ensure appropriate site development.	N	Potential Impact

8.0 Recommendations and Follow-Up Actions

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

No.	Recommendations/Follow-up Actions	Party Responsible	Oversite Agency	Follow-up Actions: Affects Protectiveness (Y/N)	
				Current	Future
1.	**Consider establishing compliance monitoring standards for groundwater at the site**. These standards would be used to evaluate whether contaminant leaching is occurring from the stabilized soils and sediments at an unacceptable rate.	EPA	EPA	N	Potential Impact
2.	**Consider conducting additional monitoring and evaluation of the UWBZ and LWBZ to ensure compliance with the RAOs for the site.** Consideration should be given to the installation of additional monitoring wells in the vicinity of the waste burial cells to provide additional information on possible contaminant leaching from the waste cells. Additional monitoring and evaluation may allow identifying the source of the LWBZ contamination and the development of a post-ROD assessment criteria or a remedy, which would aid in ensuring the continued protectiveness of the remedial action.	EPA	EPA	N	Potential Impact
3.	**Consider review of the HHRA at the site using current site groundwater conditions.** The higher post-RA concentrations of arsenic and PCP in the LWBZ may result in a higher risk associated with potential groundwater use at the site than that presented in the ROD, which may require a modification of the remedial goals at the site.	EPA	EPA	N	Potential Impact
4.	**Consider a new review of ARARs for groundwater at the site with a ROD amendment, if applicable.** There has been an increase in observed contamination in the LWBZ since the completion of the RA, and there were no groundwater specific ARARs identified in the ROD which address current conditions at the site. The state of Arkansas considers all groundwater potable, and drinking water standards established in the Safe Drinking Water Act are applicable ARARs for groundwater at the site.	EPA	EPA	N	Potential Impact

No.	Recommendations/Follow-up Actions	Party Responsible	Oversite Agency	Follow-up Actions: Affects Protectiveness (Y/N)	
				Current	Future
5.	**Consider re-evaluating the ROD to address the COCs identified during the next review period.** Prepare a ROD Amendment if the HHRA re-evaluation indicates a remedy for groundwater restoration is required, or an Explanation of Significant Differences to the ROD if only groundwater monitoring is required.	EPA	EPA	N	Potential Impact
6.	**Consider installing additional monitoring wells down-gradient of monitoring wells MW-107 and MW-119, and evaluate the extent and off-site migration potential of groundwater contamination.** Although the City of Plainview owns the portion of the site remediated during the RA, and groundwater is not being used at that portion of the site, there is a potential for off-site migration and well contamination.	EPA	EPA	N	Potential Impact
7.	**Evaluate water wells near the site to determine if they have been impacted by the site groundwater contamination.** The wells may be drawing water from the same geologic unit that forms the contaminated LWBZ at the site. A review of the boring logs of these existing wells should be performed prior to the next Five Year Review, to determine if theses wells are hydraulically connected.	ADEQ	EPA	N	Potential Impact
8.	**Post warning signs at the perimeter of the waste cell caps.**	ADEQ	EPA	N	Potential Impact
9.	**Use reporting limits less than the MCL for PCP in the sample analyses if possible.**	ADEQ	EPA	N	Potential Impact
10.	**Implement institutional controls to provide notice of site conditions and ensure appropriate site development.** The institutional controls would 1) alert prospective purchasers that hazardous substances are present at the site and explain the actions taken to address the site contamination; and, 2) ensure future site development is consistent with the industrial/commercial human health exposure scenario (i.e., non-residential usage) that is the basis for the soil cleanup goals for PCP and arsenic.	City of Plainview	EPA	N	Potential Impact

9.0 Protectiveness Statement

The remedy for the Mountain Pine site is protective of human health and the environment because the waste has been removed or solidified/stabilized, capped, and is protected from erosion. Because the completed remedial actions and monitoring program for the Mountain Pine site are considered protective for the short term, the remedy for the site is protective of human health and the environment and will continue to be protective.

10.0 Next Review

The next Five-Year Review, the second for this site, should be completed by March 2015. Key issues to be considered are the evaluation of the potential off-site migration of contaminated groundwater, identifying the source of contamination in the LWBZ, the establishment and identification of groundwater compliance monitoring standards and ARARs, and the reevaluation of the site remedial goals and groundwater HHRA.

Figures and Tables

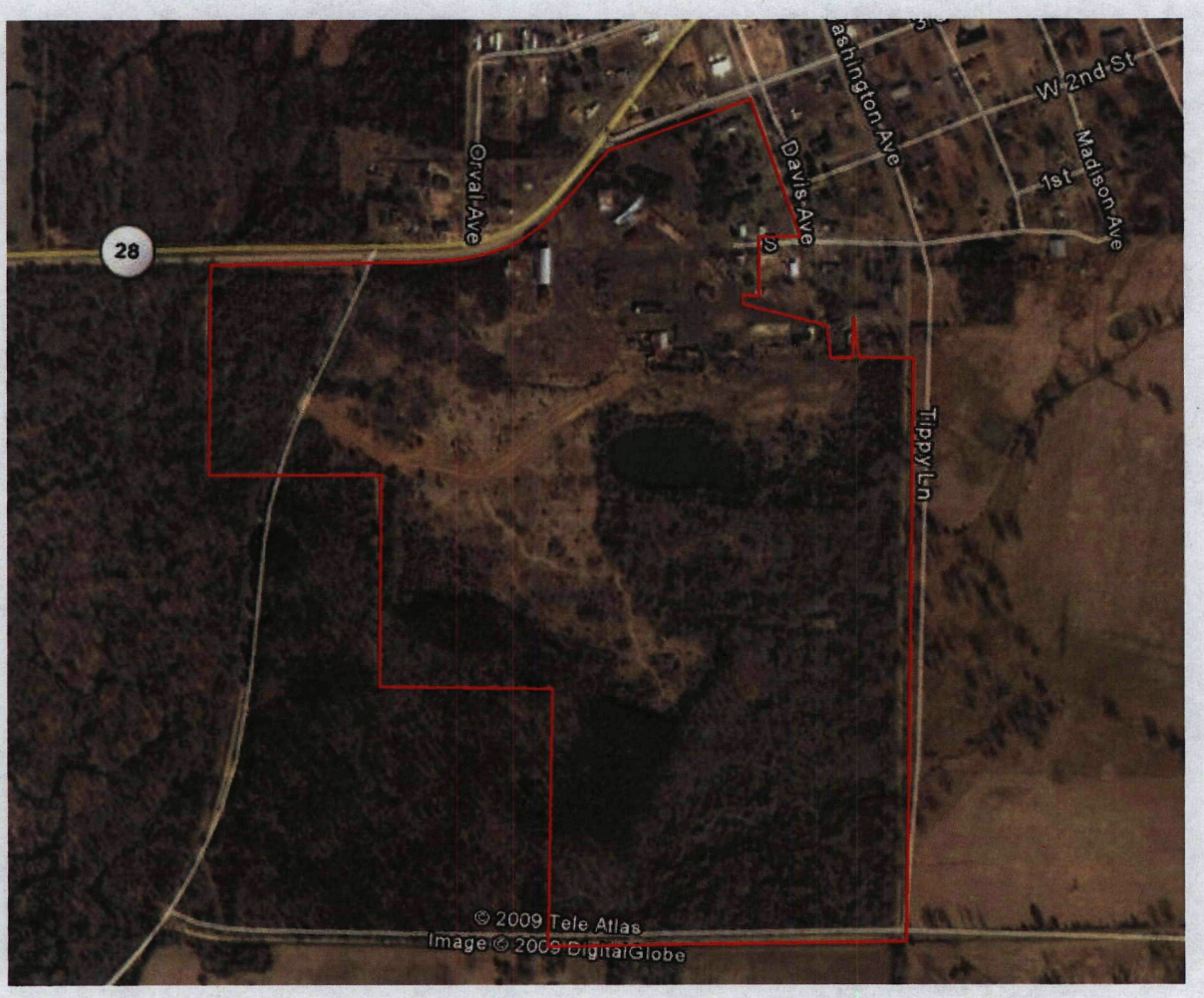

Figure 1. Aerial View of Mountain Pine Pressure Treating Superfund Site.

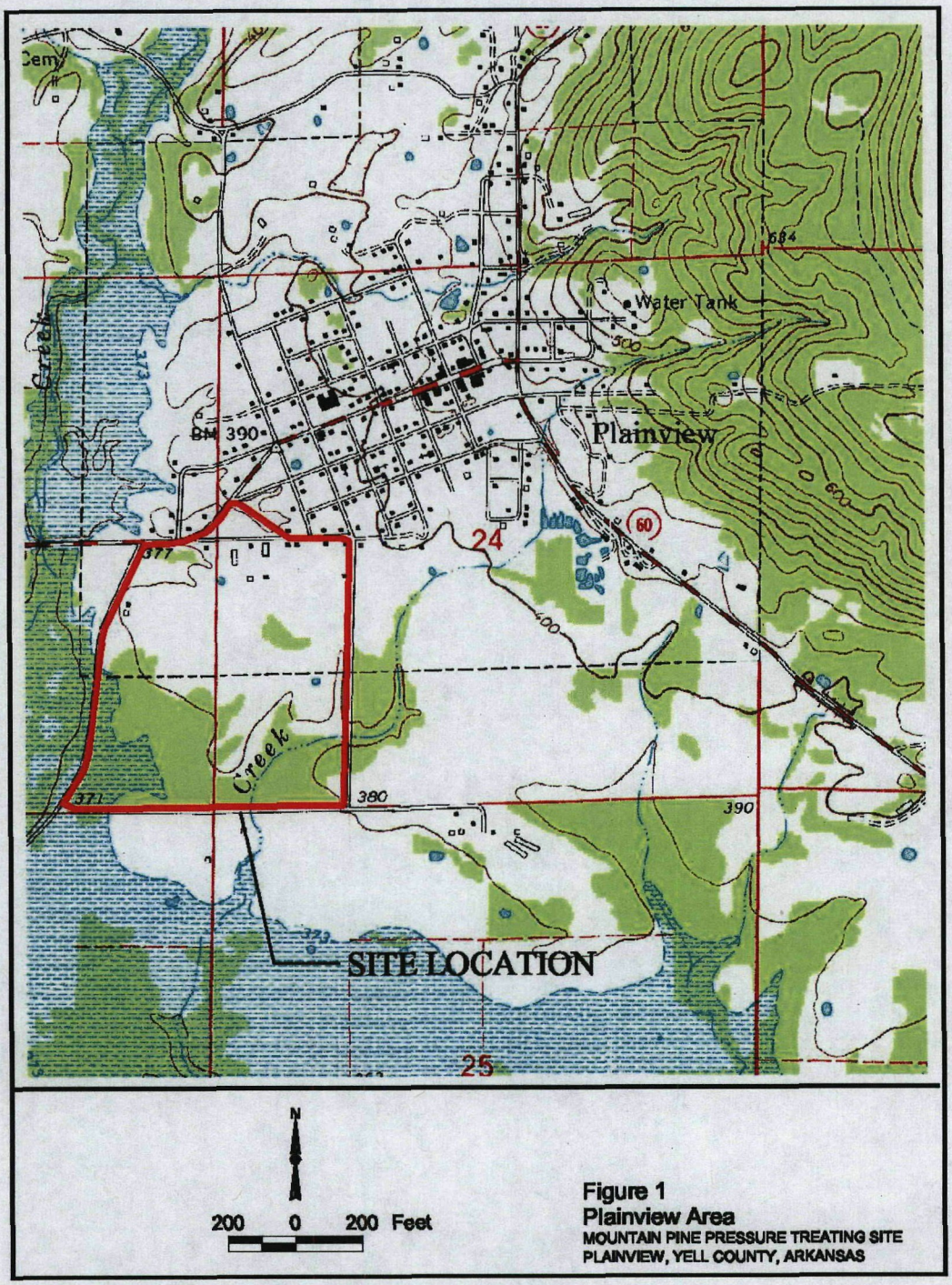

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Figure 2. Site Location.

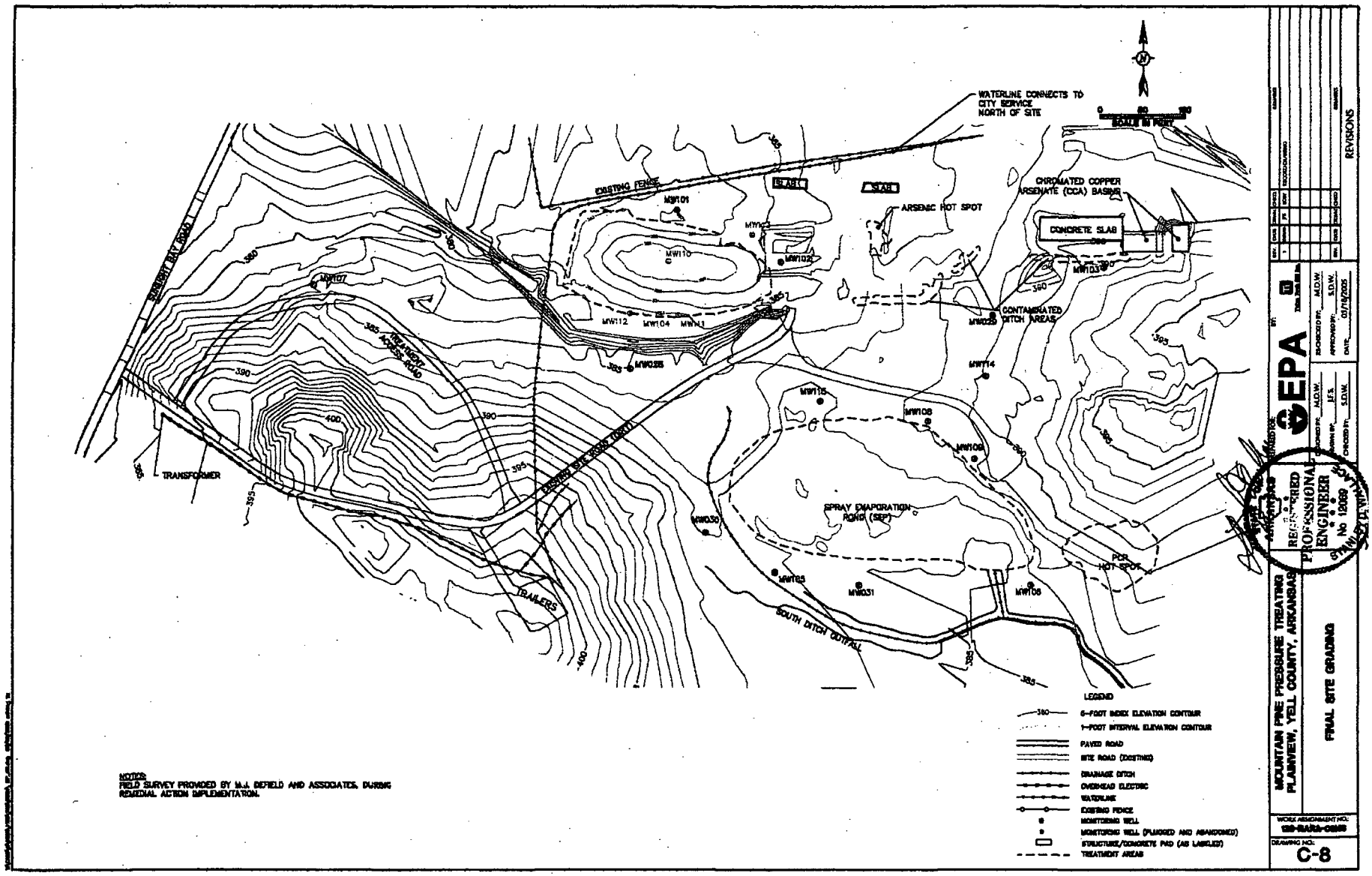


Figure 3. Site Map.

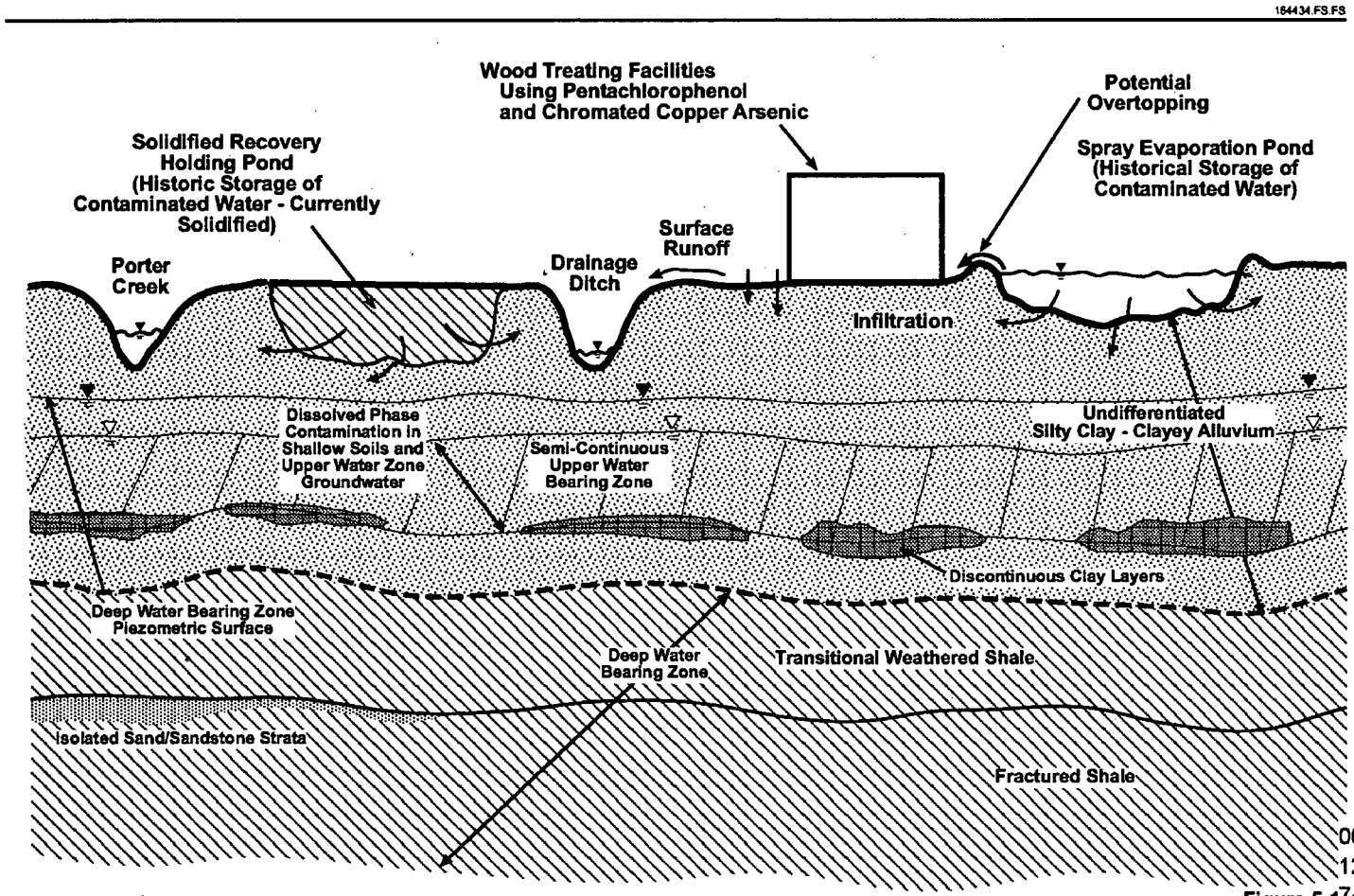


Figure 4. Generalized Hydrogeoloic Profile.

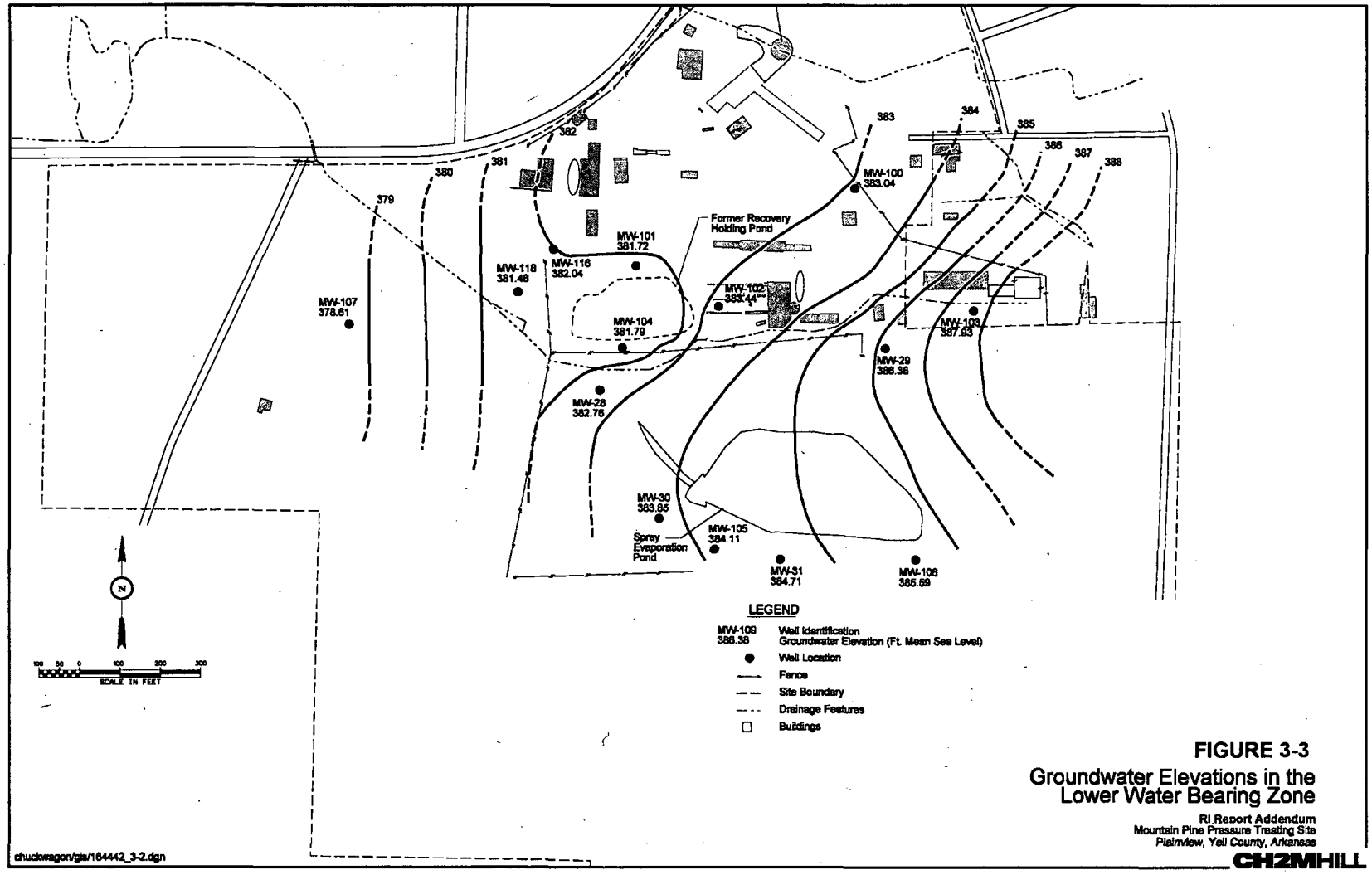


Figure 5. Groundwater Elevations in the Lower Water Bearing Zone

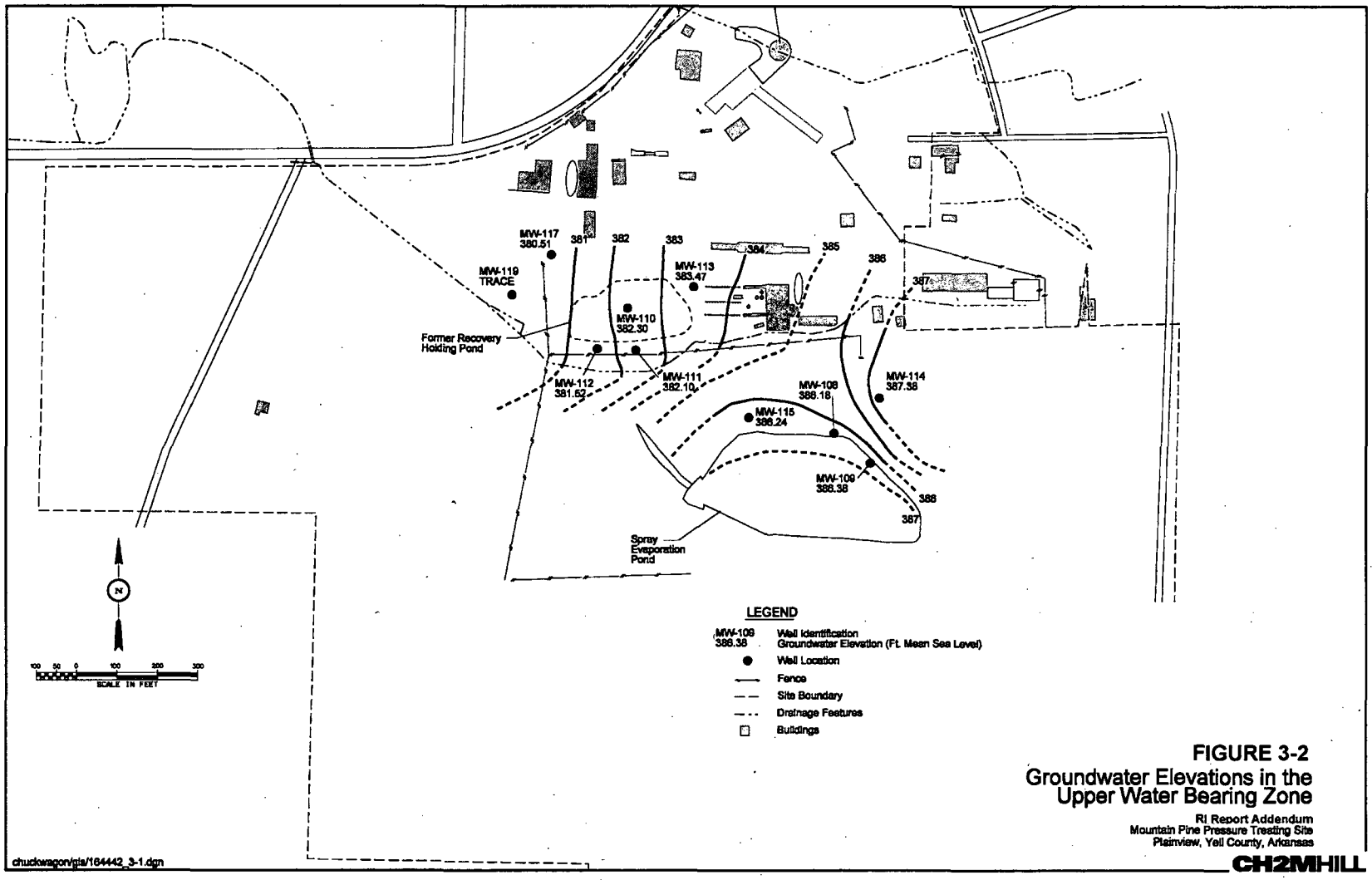


Figure 6. Groundwater Elevations in the Upper Water Bearing Zone

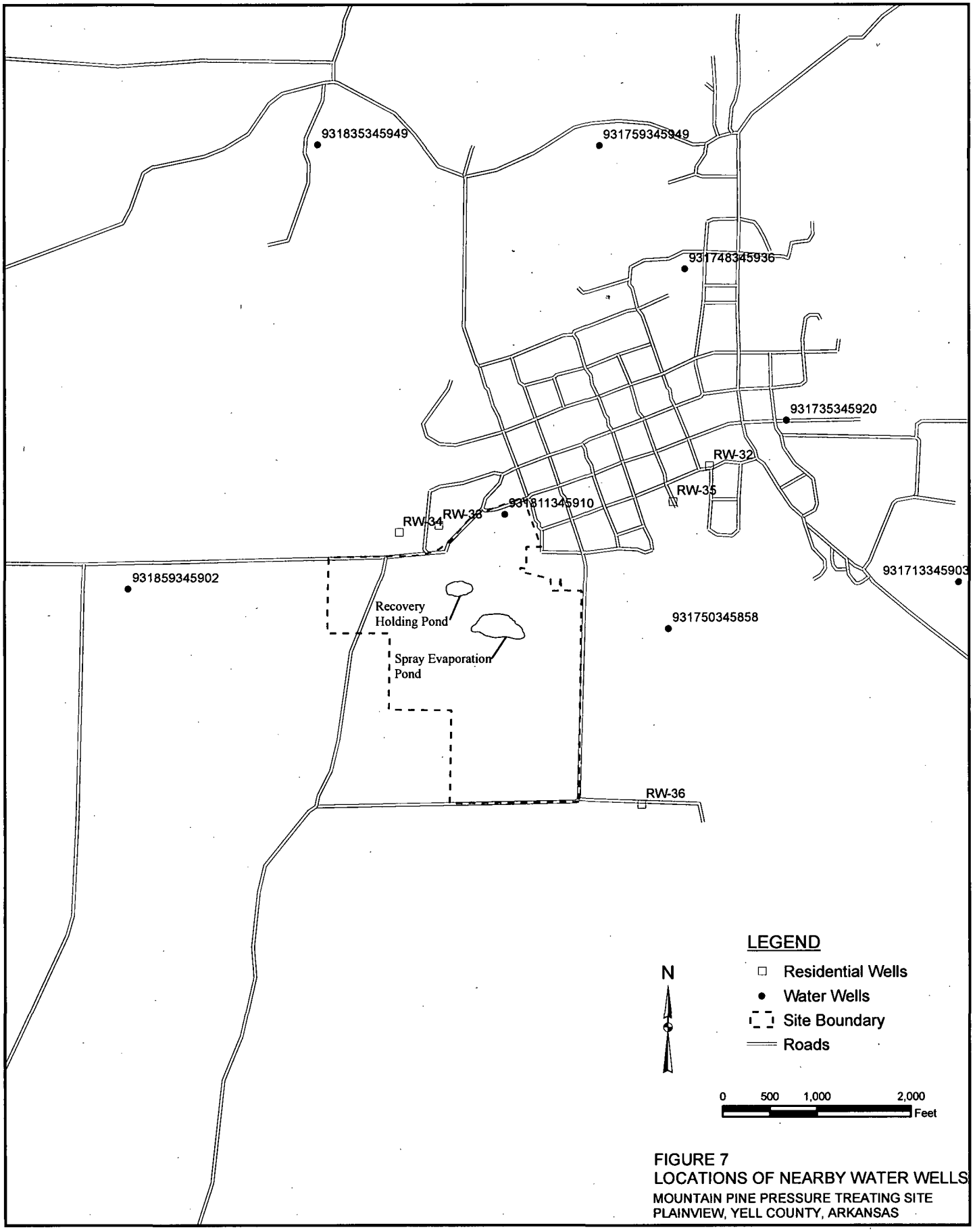


Figure 7. Locations of Nearby Water Wells.

Table 1
Chronology of Site Events
Mountain Pine Pressure Treating Superfund Site
Plainview, Arkansas

Date	Event
1965	MPPT began operations as a subsidiary of the Plainview Lumber Company, initially utilizing two wood preserving processes using PCP and creosote.
1970s	The process was transitioned to a CCA treatment process with an addition to the PCP plant on its northern side.
1980	The new CCAPT wood treatment facility was built east of the existing facility, and the older PCP facility ceases to operate
May 19, 1980	Hazardous Waste Management regulations of the Resource Conservation and Recovery Act (RCRA) were promulgated. Bottom sediment sludges from the treatment of wastewaters from wood preserving processes that use creosote or PCP were identified as hazardous waste number K001.
October 1981	Groundwater monitoring begins at MPPT.
September 1982	The facility files for bankruptcy, groundwater monitoring ceases.
November 8, 1985	Interim status to operate under RCRA Is terminated.
October 16, 1986	The EPA Region 6 Regional Administrator issues an order requiring the closing of the surface impoundments (the RHP and the SEP) in accordance with RCRA regulatory standards. PLC responds by declaring bankruptcy without closing the impoundments, which subsequently filled with rainwater.
May 4, 1987	Site is referred to CERCLA for possible inclusion on the NPL list.
July 1987	The RCRA Facility Assessment is submitted identifying 23 Solid Waste Management Units and eight Areas of Concern at the site.
August 25, 1987	Site receives a preliminary Hazard Ranking Score of 17.5, less than the 28.5 score necessary for inclusion on the NPL.
November 24, 1987	The EPA Region 6 TAT conducts an emergency site inspection following the discovery by the US Army Corps of Engineers (USACE) that the RHP had breached its dike during recent heavy rains.
December 10, 1987	Verbal approval is granted for an emergency removal action by the EPA Regional Administrator following observations by the EPA Field Investigation Team and initial sampling conducted by Technical Assistance Team.
December 11, 1987	Removal Action is initiated at MPPT.
November 13, 1987	USACE reinforces the dike surrounding the RHP with surrounding soils.
November 20, 1987	Emergency Response Branch notifies EPA of imminent threat to human health and the environment posed by the overflowing RHP.
December 8, 1987	TAT collects 4 soil, 4 water, and 1 high hazard liquid sample; high concentrations of PCP and elevated CCA concentrations are found.
December 10, 1987	Verbal permission for emergency removal action granted by EPA Regional Administrator; removal action is initiated the following day.
December 1987	Booms utilizing absorbent pads and oil sorbent skim and collect oil phase from the surface of the RHP. Volume estimates of the RHP and SEP are made (1.224 million gallons and 1.640 million gallons, respectively). Sludge volume in the RHP calculated to be 1209 cubic yards. Flow rates within the drainage ditch and Porter Creek were determined. Warning signs and fences are constructed. The CCA containments were calculated to contain 44,000 of rain-diluted CCA solution. Deceased turtles and frogs are noted in the containments.
December 18, 1987	Liquid is pumped from the RHP to the SEP to alleviate pressure on dike. The level of the RHP is lowered by 2 feet.
December 21, 1987	Inside wall of the RHP is reinforced with bentonite; 500 pounds of aluminum sulfate are applied to the surface of the RHP to promote inorganic flocculation.

Table 1
Chronology of Site Events
Mountain Pine Pressure Treating Superfund Site
Plainview, Arkansas

March 10, 1988	The removal action project is demobilized. Final disposition of liquids at the CCA facility occurs on April 13, 1988.
June 6-10, 1988	FIT members conduct a Sampling Inspection at MPPT consisting of soil, water, residential well, asbestos, and air sampling to determine the extent of contamination attributable to site operations.
September 29, 1988	Sampling Inspection is submitted concluding that widespread contamination of CCA and PCP exists at the site, and offsite migration of contaminants has occurred.
January 5, 1988	Two carbon bed units are delivered to the site to treat water from the RHP. Treatment of the RHP water begins on January 7. Waters are discharged to drainage ditch to Porter Creek following laboratory confirmation that contaminants were below specified limits.
January 12, 1988	Drain pipe on a rectangular holding tank of the MPPT facility splits due to stress from a recent freeze/thaw cycle. Unknown amounts of PCP and diesel fluids were released into the site drainage ditch above the carbon bed effluent collection dam. Release is contained to area above the RHP using booms, absorbent pads, and fiberpearl sorbent. Contaminants were collected and disposed in 55-gallon drums. An inline valve was tightened to prevent future releases. PCP levels in subsequent water samples taken from the pond continued to be below state discharge standards.
January, 1988	Contaminated soils around the MPPT facility are staged for use as backfill within the RHP. The SEP is treated with ferric sulfate and lime to flocculate inorganics and raise pH.
March 10, 1988	Project is demobilized
April 13, 1988	EPA-OSC, TAT, and ERCS remobilize to site to dispose of CCA liquids. Solids are dropped out via acidation and landfilled, remaining liquids are deep-well injected. A residual amount of the post-treated CCA liquid is placed in each of the upright tanks to keep them from floating in their containments.
Jan-Feb 1991	Emergency Response Branch conducts removal actions at the CCATP, approximately 30,000 gallons of CCA wastewater are disposed.
May 7-9, 1991	Expanded Site Inspection sampling is conducted consisting of soil, sediment, and surface water sample collection in order to document the presence of PCDDs and PCDFs at the site, as well as to gather additional data for inclusion of the site on the NPL list.
February 22, 1993	The Expanded Site Inspection report is submitted confirming the presence of PCDDs and PCDFs and determining that the pathway of concern at the site is the surface water pathway.
August 1993	An aerial photographic analysis of the area is submitted consisting of photographic coverages flown between March 1962 and February 1989.
March 1994	Emergency Response Branch mobilizes to site to dispose of the "Vulcan Glazed Penta" that was placed inside a cooker vessel of the MPPT facility. The waste was placed in drums and disposed offsite at an approved disposal facility.
March/April 1994	Emergency Response Branch mobilizes to the site to address removal of the dioxin-containing waste sealed in an onsite treatment cylinder. A profiling sample is collected and the waste disposed at an offsite disposal facility.
March 19, 1996	APC&E personnel conduct a reconnaissance of the site in order to observe current conditions, locate site sources, and select appropriate sample locations.
February 18, 1997	The APC&E submits the CSA & FI SOW detailing their sampling plan; samples collected in 1997, results not yet documented in a report.
May 1998	APC&E performs additional sampling of Lake Nimrod sediment and fish. Results presented in ADEQ memorandum dated October 23, 1998.
April 1999	MPPT site was added to the NPL.

Table 1 **Chronology of Site Events** *Mountain Pine Pressure Treating Superfund Site* *Plainview, Arkansas*	
February 2002	Remedial Investigation completed by CH2M Hill.
October 2003	Addendum to RI completed by CH2M Hill.
September 2004	EPA signs the Record of Decision.
March 2005	Remedial Design Report completed by Tetra Tech.
March 2005	Remedial action initiated at site.
July 2005	EPA modifies the RA performance goals in the site ESD.
September 27, 2005	EPA conducts the final site inspection.
September 2005 - June 2008	EPA and ADEQ conduct site O&F and groundwater monitoring.
July 2008-present	ADEQ conducts site O&M and groundwater monitoring.

Table 2
Monitoring Wells[1]
Mountain Pine Pressure Treating Superfund Site
Plainview, Arkansas

Well	Depth (feet BTOC)	Water Bearing Zone	Years in Operation
MW-28	31.83	LWBZ	1981-present
MW-29	38.13	LWBZ	1981-present
MW-30	31.21	LWBZ	1981-present
MW-31	32.34	LWBZ	1981-present
MW-100	32.48	LWBZ	2000-present
MW-101	27.94	LWBZ	2000-present
MW-102	27.41	LWBZ	2000-present
MW-103	32.41	LWBZ	2000-present
MW-104	28.11	LWBZ	2000-2005
MW-105	40.77	LWBZ	2000-present
MW-106	35.37	LWBZ	2000-present
MW-107	32.06	LWBZ	2000-present
MW-108	11.61	UWBZ	2000-present
MW-109	10.79	UWBZ	2000-present
MW-110	10.97	UWBZ	2000-2005
MW-111	10.57	UWBZ	2000-2005
MW-112	9.82	UWBZ	2000-2005
MW-113	9.28	UWBZ	2000-2005
MW-114	7.97	UWBZ	2000-present
MW-115	10.77	UWBZ	2000-present
MW-116	32.68	LWBZ	2003-present
MW-117	10.98	UWBZ	2003-present
MW-118	32.32	LWBZ	2003-present
MW-119	11.39	UWBZ	2003-present

1 – List current as of 2009.
BTOC = Below Top of Casing.

Table 3
Water Wells Near the Mountain Pine Site
Mountain Pine Pressure Treating Superfund Site
Plainview, Arkansas

Well ID	Date Well Completed	Well Depth (feet)	Longitude	Latitude
931750345858	12/23/1996	120	93 17 50 W	34 58 58 N
931835345949	2/23/1995	140	93 18 35 W	34 59 49 N
931759345949	5/29/1997	80	93 17 59 W	34 59 49 N
931713345903	1/16/2002	100	93 17 13 W	34 59 03 N
931735345920	10/15/1998	40	93 17 35 W	34 59 20 N
931748345936	5/22/2002	180	93 17 48 W	34 59 36 N
931811345910	5/5/1998	180	93 18 11 W	34 59 10 N
931859345902	3/18/2007	130	93 18 59 W	34 59 02 N
RW-32				
RW-33				
RW-34				
RW-35				
RW-36				

RW – residential well locations obtained from the Mountain Pine Pressure Treating Remedial Investigation (**CH2M HILL, 2002**)

All other well information from the USGS Arkansas water well database (**USGS, 2010**)

Attachment 1

Documents Reviewed

Attachment 1
List of Documents Reviewed

U.S. Environmental Protection Agency (EPA), 2001. *Comprehensive Five-Year Review Guidance.* OSWER No. 9355.7-03B-P. June 2001.

CH2M HILL, 2002. *Final Remedial Investigation, Mountain Pine Pressure Treating, Inc. Superfund Site, Plainview, Yell County, Arkansas.* February 2002.

CH2M HILL, 2003. *Addendum to the Remedial Investigation, Mountain Pine Pressure Treating, Inc. Superfund Site, Plainview, Yell County, Arkansas.* October 2003.

U.S. Environmental Protection Agency (EPA), 2004. *Record of Decision, Mountain Pine Pressure Treating, Inc. Superfund Site, Plainview, Yell County, Arkansas.* September 2004.

U.S. Environmental Protection Agency (EPA), 2005. *Explanation of Significant Differences, Mountain Pine Pressure Treating, Inc. Superfund Site, Plainview, Yell County, Arkansas.* July 2005.

Tetra Tech, 2006. *Remedial Action Report, Mountain Pine Pressure Treating, Inc. Superfund Site, Plainview, Yell County, Arkansas,* March 10, 2006.

Arkansas Department of Environmental Quality (ADEQ), 2009. *Groundwater Monitoring Report, Mountain Pine Pressure Treating, Plainview Arkansas, 2008-2009.*

U.S. Environmental Protection Agency (EPA), 2009. *Draft Recommended Interim Preliminary Remediation Goals for Dioxin in Soil at CERCLA and RCRA Sites.* OSWER 9200.3-56. (December 30, 2009).

United States Geological Survey (USGS), 2010. Arkansas Water Projects: Web Accessible Water-Well Database, http://ar.water.usgs.gov/PROJECTS/WWData.html, retrieved March 17, 2010.

Attachment 2

Interview Record Forms

Five-Year Review Interview Record Mountain Pine Pressure Treating Superfund Site, Plainview, Arkansas			**Interviewee:** Philip Allen - EPA Phone: (214) 665-8516 email: allen.philip@epa.gov	
Site Name: Mountain Pine Pressure Treating Superfund Site	**EPA ID No.** ARD049658628		**Date of Interview** December 2, 2009	**Interview Method** e-mail
Interview Contacts	**Organization**	**Phone**	**Email**	**Address**
Philip Allen	EPA Region 6	214-665-8516	Allen.Philip@epamail.epa.gov	1445 Ross Ave Dallas, TX 75202-2733
John Hickman	U.S. Army Corps of Engineers	918-669-7142	john.a.hickman@usace.army.mil	1645 S. 101st E. Ave Tulsa, OK 74128-4609
Frank Roepke	U.S. Army Corps of Engineers	918-669-7444	frank.roepke@usace.army.mil	1645 S. 101st E. Ave Tulsa, OK 74128-4609

Interview Questions (scope of the interview is from 2005 to present)

1. What is your overall impression of the work conducted at the site since 2005?

Response: The remedy remains protective of human health and the environment, and is performing as designed.

2. From your perspective, what effect have remedial operations at the site had on the surrounding community? Are you aware of any ongoing community concerns regarding the site or its operation and maintenance?

Response: The surrounding community has benefitted dramatically by the Remedial Action that was implemented in 2005; since the site remediation has eliminated all significant threats to human health and the environment. Also, the visual improvement from demolishing the abandoned dilapidated buildings and process equipment has benefitted the City of Plainview. There are no community concerns.

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

Response: The ADEQ is responsible for routine sampling of the groundwater. The City of Plainview is responsible for maintenance and security of the site.

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

Response: None known.

5. 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:** No.
6. Are you aware of any problems or difficulties encountered which impacted the effectiveness of the remedial action, or a change in O&M procedures? If so, please describe changes and impacts. **Response:** There is only one minor issue, which is individuals entering the site to ride horses or ATV "four-wheelers". The only problem with this issue is "rutting" of the landfill cap. The City is monitoring the site, and has corrected the problem.
7. Have there been any changes in state or federal environmental standards since 2005 which may call into question the protectiveness or effectiveness of the remedial action? **Response:** None known.
8. Do you know of opportunities to optimize the operation, maintenance, or sampling efforts at the site since 2005, and have such changes been implemented? **Response:** There are no such opportunities.
9. Do you feel well-informed about the site's activities and progress? **Response:** Yes.
10. Do you have any comments, suggestions, or recommendations regarding the site? **Response:** No.

Five-Year Review Interview Record Mountain Pine Pressure Treating Superfund Site, Plainview, Arkansas			**Interviewee:** Dianna Kilburn - ADEQ Phone: 501-682-0844 email: kilburn@adeq.state.ar.us	
Site Name: Mountain Pine Pressure Treating Superfund Site	**EPA ID No.** ARD049658628		**Date of Interview** November 17, 2009	**Interview Method** email
Interview Contacts	**Organization**	**Phone**	**Email**	**Address**
Philip Allen	EPA Region 6	214-665-8516	Allen.Philip@epamail.epa.gov	1445 Ross Ave Dallas, TX 75202-2733
John Hickman	U.S. Army Corps of Engineers	918-669-7142	john.a.hickman@usace.army.mil	1645 S. 101st E. Ave Tulsa, OK 74128-4609
Frank Roepke	U.S. Army Corps of Engineers	918-669-7444	frank.roepke@usace.army.mil	1645 S. 101st E. Ave Tulsa, OK 74128-4609

Interview Questions (scope of the interview is from 2005 to present)

1. What is your overall impression of the work conducted at the site since 2005?

Response: Work on the site has gone well. The community has been supportive of the work. Part of the site is being re-used and has created a few jobs. The city maintains the property by mowing and clearing around the wells and monitoring the site for trespassing. The EPA contractors conducted the groundwater sampling until June 2008 when the state took over O&M. ADEQ has retained contractors to conduct sampling at the site.

2. From your perspective, what effect have remedial operations at the site had on the surrounding community? Are you aware of any ongoing community concerns regarding the site or its operation and maintenance?

Response: It appears that the effect has been positive. Part of the site is currently in re-use and the site without the old buildings and ponds is more aesthetic. The city seems most receptive of the remedial actions taken and the ongoing O&M.

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

Response: ADEQ has visited the site with EPA from 2005 to present with O&M responsibility transferring to the state in 2008. ADEQ has contracted for completion of the O&M groundwater sampling for May and December 2008 and May and October 2009. Prior to and sometimes during these events we have contacted the city regarding mowing and clearing.

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

Response: None known

5. 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:** None known
6. Are you aware of any problems or difficulties encountered which impacted the effectiveness of the remedial action, or a change in O&M procedures? If so, please describe changes and impacts. **Response:** None known. Consistent mowing and clearing of the drainage ditch is being worked out with the city.
7. Have there been any changes in state or federal environmental standards since 2005 which may call into question the protectiveness or effectiveness of the remedial action? **Response:** No
8. Do you know of opportunities to optimize the operation, maintenance, or sampling efforts at the site since 2005, and have such changes been implemented? **Response:** No opportunities have arisen at this time. Continued sampling and evaluation of the data may allow for optimization in the future.
9. Do you feel well-informed about the site's activities and progress? **Response:** ADEQ has open communication with the city and EPA regarding this site.
10. Do you have any comments, suggestions, or recommendations regarding the site? **Response:** The groundwater data to date indicate that contaminant levels at the most downgradient well are decreasing, however, there is some question regarding degradation. An additional downgradient well may be necessary if the data do not support the expected degradation.

Five-Year Review Interview Record Mountain Pine Pressure Treating Superfund Site, Plainview, Arkansas			**Interviewee:** Mayor Doug Forrest – City of Plainview Phone: (479) 272-2233 email: pviewsfund@arkwest.com	
Site Name: Mountain Pine Pressure Treating Superfund Site	**EPA ID No.** ARD049658628		**Date of Interview** October 14, 2009	**Interview Method** In person
Interview Contacts	**Organization**	**Phone**	**Email**	**Address**
Philip Allen	EPA Region 6	214-665-8516	Allen.Philip@epamail.epa.gov	1445 Ross Ave Dallas, TX 75202-2733
John Hickman	U.S. Army Corps of Engineers	918-669-7142	john.a.hickman@usace.army.mil	1645 S. 101st E. Ave Tulsa, OK 74128-4609
Frank Roepke	U.S. Army Corps of Engineers	918-669-7444	frank.roepke@usace.army.mil	1645 S. 101st E. Ave Tulsa, OK 74128-4609

Interview Questions (scope of the interview is from 2005 to present)

1. What is your overall impression of the work conducted at the site since 2005?

Response: Our impression is good. The site is maintained and mowed yearly by the city. Last year a partial controlled burn was conducted on the site to help clear the brush. The city regularly checks on the gate and coordinates with ADEQ to allow site access.

2. From your perspective, what effect have remedial operations at the site had on the surrounding community? Are you aware of any ongoing community concerns regarding the site or its operation and maintenance?

Response: The community was glad to have the site cleaned up. The community would like to make additional use of the site if possible. No complaints have been made on the site.

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

Response: The city routinely checks on the site and law enforcement patrols the area. The city accommodates ADEQ site visits.

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

Response: There have been no problems with the site.

5. 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:** There have been no violations or complaints.
6. Are you aware of any problems or difficulties encountered which impacted the effectiveness of the remedial action, or a change in O&M procedures? If so, please describe changes and impacts. **Response:** No.
7. Have there been any changes in state or federal environmental standards since 2005 which may call into question the protectiveness or effectiveness of the remedial action? **Response:** None that we are aware of.
8. Do you know of opportunities to optimize the operation, maintenance, or sampling efforts at the site since 2005, and have such changes been implemented? **Response:** No.
9. Do you feel well-informed about the site's activities and progress? **Response:** Yes, we are well informed, and can contact EPA for information.
10. Do you have any comments, suggestions, or recommendations regarding the site? **Response:** No.

Five-Year Review Interview Record Mountain Pine Pressure Treating Superfund Site, Plainview, Arkansas			**Interviewee:** Don Hall – Prospect Steel Phone: (479) 272-2233 email: donh@lexicon-inc.com	
Site Name: Mountain Pine Pressure Treating Superfund Site	**EPA ID No.** ARD049658628		**Date of Interview** October 14, 2009	**Interview Method** In person
Interview Contacts	**Organization**	**Phone**	**Email**	**Address**
Philip Allen	EPA Region 6	214-665-8516	Allen.Philip@epamail.epa.gov	1445 Ross Ave Dallas, TX 75202-2733
John Hickman	U.S. Army Corps of Engineers	918-669-7142	john.a.hickman@usace.army.mil	1645 S. 101st E. Ave Tulsa, OK 74128-4609
Frank Roepke	U.S. Army Corps of Engineers	918-669-7444	frank.roepke@usace.army.mil	1645 S. 101st E. Ave Tulsa, OK 74128-4609

Interview Questions (scope of the interview is from 2005 to present)

1. What is your overall impression of the work conducted at the site since 2005?

Response: Good.

2. From your perspective, what effect have remedial operations at the site had on the surrounding community? Are you aware of any ongoing community concerns regarding the site or its operation and maintenance?

Response: The community is happy with the operation.

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

Response: No.

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

Response: No.

5. 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:** No.
6. Are you aware of any problems or difficulties encountered which impacted the effectiveness of the remedial action, or a change in O&M procedures? If so, please describe changes and impacts. **Response:** No.
7. Have there been any changes in state or federal environmental standards since 2005 which may call into question the protectiveness or effectiveness of the remedial action? **Response:** Mr. Hall stated that he was not aware of any changes.
8. Do you know of opportunities to optimize the operation, maintenance, or sampling efforts at the site since 2005, and have such changes been implemented? **Response:** No.
9. Do you feel well-informed about the site's activities and progress? **Response:** Yes.
10. Do you have any comments, suggestions, or recommendations regarding the site? **Response:** Mr. Hall stated that he had heard that the construction of ball fields was being considered for the site and expressed concern that this may not be an appropriate use due to the hazards at the site.

Attachment 3

Site Inspection Checklist

Five-Year Review Site Inspection Checklist

I. SITE INFORMATION	
Site name: Mountain Pine Pressure Treating Superfund Site	**Date of inspection: October 14, 2009**
Location and Region: Plainview, Arkansas	**EPA ID:** ARD049658628
Agency, office, or company leading the Five-Year Review: USACE	**Weather/temperature: 60's, cloudy**

Remedy Includes: (Check all that apply)

- ✓ Landfill cover/containment
- ✓ Access controls
- ✓ Institutional controls
- ☐ Groundwater pump and treatment
- ☐ Surface water collection
- ☐ Other: _____
- ☐ Monitored natural attenuation
- ☐ Groundwater containment (Cap)
- ☐ Vertical barrier walls

Attachments: ✓ Inspection team roster attached ☐ Site map attached

Inspection Team: Frank Roepke, John Hickman

II. INTERVIEWS (Check all that apply)

1. **O&M site manager**
   Name: Dianna Kilburn Title: Geologist Supervisor Date: 11/17/2009
   Interviewed ☐ at site ☐ at office ☐ by phone ✓ by email Phone no. (501) 682-0844
   Problems, suggestions: *see interview form*

1. **EPA RPM**
   Name: Philip Allen Title: Regional Project Manager Date: 12/2/2009
   Interviewed ☐ at site ☐ at office ☐ by phone ✓ by email Phone no. (214) 665-8516
   Problems, suggestions: *see interview form*

2. **O&M staff**
   Name: Title: Date:
   Interviewed ☐ at site ☐at office ☐ by phone ☐ by email Phone no

   Problems, suggestions:

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

Agency: City of Plainview
Contact
Name: Doug Forrest Title: Mayor Date: 10/14/2009 Phone no. (479) 272-4320
Problems; suggestions;

Agency:
Contact
Name: Title: Date: Phone no.
Problems; suggestions: see interview form

Agency:
Contact
Name: Title: Date: Phone no.
Problems; suggestions; see interview form

Other interviews (optional) ✓ Report attached.

Interview record forms are provided in Attachment 2 to the Five-Year Review.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**

✓ O&M manual	✓ Readily available	✓ Up to date	☐ N/A
✓ As-built drawings	✓ Readily available	✓ Up to date	☐ N/A
✓ O&M logs	✓ Readily available	✓Up to date	☐ N/A

Remarks: *ADEQ keeps field notes of work performed.*

2. **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: *ADEQ workers have HAZWOPER training*

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: *No permits are required at this site.*

5.	**Gas Generation Records** Remarks:	☐ Readily available	☐ Up to date	✓ N/A
6.	**Settlement Monument Records** Remarks:	☐ Readily available	☐ Up to date	✓ N/A
7.	**Groundwater Monitoring Records** Remarks:	✓ Readily available	✓ Up to date	☐ N/A
8.	**Leachate Extraction Records** Remarks:	☐Readily available	☐ Up to date	✓ N/A
9.	**Discharge Compliance Records**			
	☐ Air	☐ Readily available	☐ Up to date	✓ N/A
	☐ Water (effluent)	☐ Readily available	☐ Up to date	✓ N/A
	Remarks			
10.	**Daily Access/Security Logs** Remarks: *The city controls access to the site, but does not keep security logs.*	☐ Readily available	☐ Up to date	☐ N/A

IV. O&M COSTS

1. **O&M Organization**

✓ State in-house ☐ Contractor for State
☐ PRP in-house ☐ Contractor for PRP
☐ Federal Facility in-house ☐ Contractor for Federal Facility

Remarks: *The City of Plainview mows the site, and ADEQ maintains the monitoring wells and waste cell cap, and performs groundwater monitoring.*

2. **O&M Cost Records**

✓ Readily available ✓ Up to date
☐ Funding mechanism/agreement in place (entirely funded by PRP)
Original O&M cost estimate ☐ Breakdown attached

Total annual cost by year for review period if available

From ☐ Breakdown attached
Date 9/27/2005 Date 6/30/2008 Total cost $66,653
From ☐ Breakdown attached
Date 7/1/2008 Date 6/30/2008 Total cost $11,073

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons:

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

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ✓ Gates secured ☐ N/A
Remarks:
There are no fencing requirements in the ROD, and the site is only partially fenced. The gate is kept locked.

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☐ N/A
Remarks: *There is a warning sign posted at the front gate. Warning signs at waste cell caps were on the ground. The site is periodically checked by the city police.*

C. Institutional Controls (ICs)

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:
Frequency:
Responsible party/agency: *City of Plainview*

Contact:

Name: Title Date Phone no. ( )

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

Remarks:

The City of Plainview has filed a deed restriction restricting drilling, excavation and digging of any kind on the site.

2. **Adequacy** ☐ ICs are adequate ✓ ICs are inadequate ☐ N/A
Remarks: *The ROD specified ICs alerting prospective purchasers of site conditions and history, and ensuring that future site development is consistent with the human health exposure scenario that is the basis for soil cleanup goals have not been implimented.*

D. General

1. **Vandalism/trespassing** ☐ Location shown on site map ✓ No vandalism evident
Remarks: *Trespassers have entered the site in the past to ride horseback and ATVs. The only problem with this is rutting of the waste cell cap. The city is monitoring the site and has corrected the problem.*

2. **Land use changes on site** ☐ N/A
Remarks: *The northern portion of the former site has been fenced off separately from the rest of the site, and is now a steel fabrication plant.*

3. **Land use changes off site** ✓ 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: *The roads are partially overgrown on the site but are passable.*

B. Other Site Conditions

Remarks :

VII. ENGINEERED COVERS ✓ Applicable ☐ N/A

A. Surface

1. **Settlement** (Low spots) ☐ Location shown on site map ✓ Settlement not evident
   Areal extent_____ Depth_____
   Remarks:

2. **Cracks** ☐ Location shown on site map ✓ Cracking not evident
   Lengths_____ Widths_____ Depths_____
   Remarks_____
   _____

3. **Erosion** ☐ Location shown on site map ✓ Erosion not evident
   Areal extent_____ Depth_____

   Remarks:

4. **Holes** ☐ Location shown on site map ✓ Holes not evident
   Areal extent_____ Depth_____
   Remarks_____
   _____

5. **Vegetative Cover** ✓ Grass ✓ Cover properly established ✓ No signs of stress
   ☐ Trees/Shrubs (indicate size and locations on a diagram)

   Remarks:

6. **Alternative Cover (armored rock, concrete, etc.)** ✓ N/A
   Remarks_____
   _____

7. **Bulges** ☐ Location shown on site map ✓ Bulges not evident
   Areal extent_____ Height_____
   Remarks

8.	**Wet Areas/Water Damage**	☐ Wet areas/water damage not evident	
	✓ Wet areas	☐ Location shown on site map	Areal extent_____
	✓ Ponding	☐ Location shown on site map	Areal extent_____
	☐ Seeps	☐ Location shown on site map	Areal extent_____
	☐ Soft subgrade	☐ Location shown on site map	Areal extent_____
	Remarks: *There had been significant rain in the days prior to the site inspection, and several areas of the site had shallow standing water, especially in the area of the SEP waste cell cap.*		
9.	**Slope Instability** ☐ Slides	☐ Location shown on site map	✓ No evidence of slope instability
	Areal extent_____		
	Remarks_____		
B. Benches	☐ Applicable	✓ N/A	
	(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)		
1.	**Flows Bypass Bench**	☐ Location shown on site map	☐ okay
	Remarks		
2.	**Bench Breached**	☐ Location shown on site map	☐ okay
	Remarks		
3.	**Bench Overtopped**	☐ Location shown on site map	☐ okay
	Remarks		
C. Letdown Channels	☐ Applicable	✓ N/A	
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**	☐ Evidence of Erosion	☐ No evidence of erosion
	Areal extent_____	Depth_____	
	Remarks:		
4.	**Undercutting**	☐ Evidence of undercutting	☐ No evidence of undercutting
	Remarks:		

5. **Obstructions** Type_____ ☐ No obstructions
☐ Location shown on site map Areal extent_____
Size_____
Remarks_____

6. **Excessive Vegetative Growth** Type_____
☐ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks_____

D. Cover Penetrations ☐ Applicable ✓ N/A

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

2. **Gas Monitoring Probes**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

3. **Monitoring Wells** (within surface area of landfill)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

4. **Leachate Extraction Wells**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

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

E. Gas Collection and Treatment ☐ Applicable ✓ N/A

1. **Gas Treatment Facilities**
   ☐ Flaring ☐ Thermal destruction ☐ Collection for reuse
   ☐ Good condition ☐ Needs Maintenance
   Remarks_____

2. **Gas Collection Wells, Manifolds and Piping**
   ☐ Good condition ☐ Needs Maintenance
   Remarks

3. **Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)
   ☐ Good condition ☐ Needs Maintenance ☐ N/A
   Remarks_____

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** Areal extent_____ Depth_____ ☐ N/A
   ☐ Siltation not evident
   Remarks_____

2. **Erosion** Areal extent_____ Depth_____
   ☐ Erosion not evident
   Remarks

3. **Outlet Works** ☐ Functioning ☐ N/A
   Remarks_____

4. **Dam** ☐ Functioning ☐ N/A
   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

2. **Vegetative Growth** ☐ Location shown on site map ☐ N/A
   ✓ Vegetation does not impede flow
   Areal extent_____ Type brush
   Remarks:
   The drainage ditch south of the RHP waste cell is overgrown with brush.

3. **Erosion** ☐ Location shown on site map ✓ Erosion not evident
   Areal extent_____ Depth_____
   Remarks_____

4. **Discharge Structure** ☐ Functioning ✓ N/A
   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** Type of monitoring
   ☐ Performance not 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**
   ☐ Good condition ☐ All required wells properly operating ☐ Needs Maintenance ☐ N/A
   Remarks_____

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   ☐ Good condition ☐ Needs Maintenance
   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 ☐ N/A

1. ***Collection Structures, Pumps, and Electrical***
   ☐ Good condition ☐ Needs Maintenance
   Remarks_____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   ☐ Good condition ☐ Needs Maintenance
   Remarks_____

3. **Spare Parts and Equipment**
   ☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
   Remarks:

C. Treatment System ☐ Applicable ✓ N/A

1. **Treatment Train** (Check components that apply)
   ☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
   ☐ Air stripping ☐ Carbon adsorbers
   ☐ Filters_____
   ☐ Additive (*e.g.*, chelation agent, flocculent)
   ☐ Others_____
   ☐ Good condition ☐ Needs Maintenance
   ☐ Sampling ports properly marked and functional
   ☐ Sampling/maintenance log displayed and up to date
   ☐ Equipment properly identified
   Remarks:

2. **Electrical Enclosures and Panels** (properly rated and functional)
   ☐ N/A ☐ Good condition ☐ Needs Maintenance
   Remarks_____

3. **Tanks, Vaults, Storage Vessels**
☐ N/A ☐ Good condition ☐ Proper secondary containment ☐ Needs Maintenance
Remarks: *Single walled tanks with concrete secondary containment pads.*

4. **Discharge Structure and Appurtenances**
☐ N/A ☐ Good condition ☐ Needs Maintenance
Remarks_____

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

6. **Monitoring Wells** (pump and treatment remedy)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs Maintenance ☐ N/A
Remarks: *Static water levels measured monthly. Flow is checked daily.*

D. Monitoring Data

1. Monitoring Data
✓ Is routinely submitted on time ✓ Is of acceptable quality

F. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
✓ Properly secured/locked ✓ Functioning ✓ Routinely sampled ✓ Good condition
✓ All required wells located ☐ Needs Maintenance ☐ N/A
Remarks: *Some of the wells were overgrown with vines and brush.*

X. OTHER REMEDIES

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

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

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

The remedy's purpose is to stabilize and solidify soils and sediment contaminated with PCP and arsenic, to return the treated materials to the excavated locations, and to cap the materials with clean soil. The remedy also demolished site process buildings, and treated and discharged contaminated surface water at the site. Ongoing O&M is intended to monitor and protect the waste cell caps and monitoring wells, and monitor the groundwater to evaluate the potential leaching of the solidified/stabilized soils and sediments.

The remedy appears to be effective and functioning as designed. Groundwater monitoring has shown measured concentrations of PCP and arsenic increasing and exceeding the MCLs during the review period, but this appears to be contaminate dislodged during the Remedial Action, not from leaching of the materials in the waste cells.

B. Adequacy of O&M

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

O&M appears to be effective in monitoring and protecting the waste cell caps. The missing of the posted signs at the waste cell caps and the overgrown sampling wells should be easily corrected.

C. Early Indicators of Potential Remedy Problems

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.

Groundwater monitoring during the review period has shown measured concentrations of PCP and arsenic increasing and exceeding the MCLs, but this appears to be contaminate disturbed during the Remedial Action, not from leaching of the materials in the waste cells. Additional monitoring and evaluation will be needed to determine the potential for off-site migration of contaminants. The ROD will need to be re-evaluated to address the COCs identified in the groundwater during the review period.

D Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.
No opportunities for optimization were identified during this review.

Attachment 4

Site Inspection Photographs

Photo 1: RHP waste cell cover.

Photo 2: Well MW-102.

Photo 3: RHP waste cell cover.

Photo 4: Well MW-101.

Photo 5: Wells MW-117 and MW-116.

Photo 6: Wells MW-118 and MW-119.

Photo 7: Well MW-115.

Photo 8: SEP waste cell cover.

Photo 9: Well MW-105.

Photo 10: Well MW-30.

Photo 11: Well MW-31.

Photo 12: Well MW-106.

Photo 13: Fallen warning sign.

Photo 14: Well MW-103.

Photo 15: Well MW-29, overgrown.

Photo 16: Well MW-114.

Photo 17: Well MW-109, overgrown.

Photo 18: Well MW-108, overgrown.

Photo 19: Well MW-28.

Photo 20: Well MW-107.

Photo 21: Sign at the front gate.

Photo 22: Front gate.

Photo 23: Well MW-116.

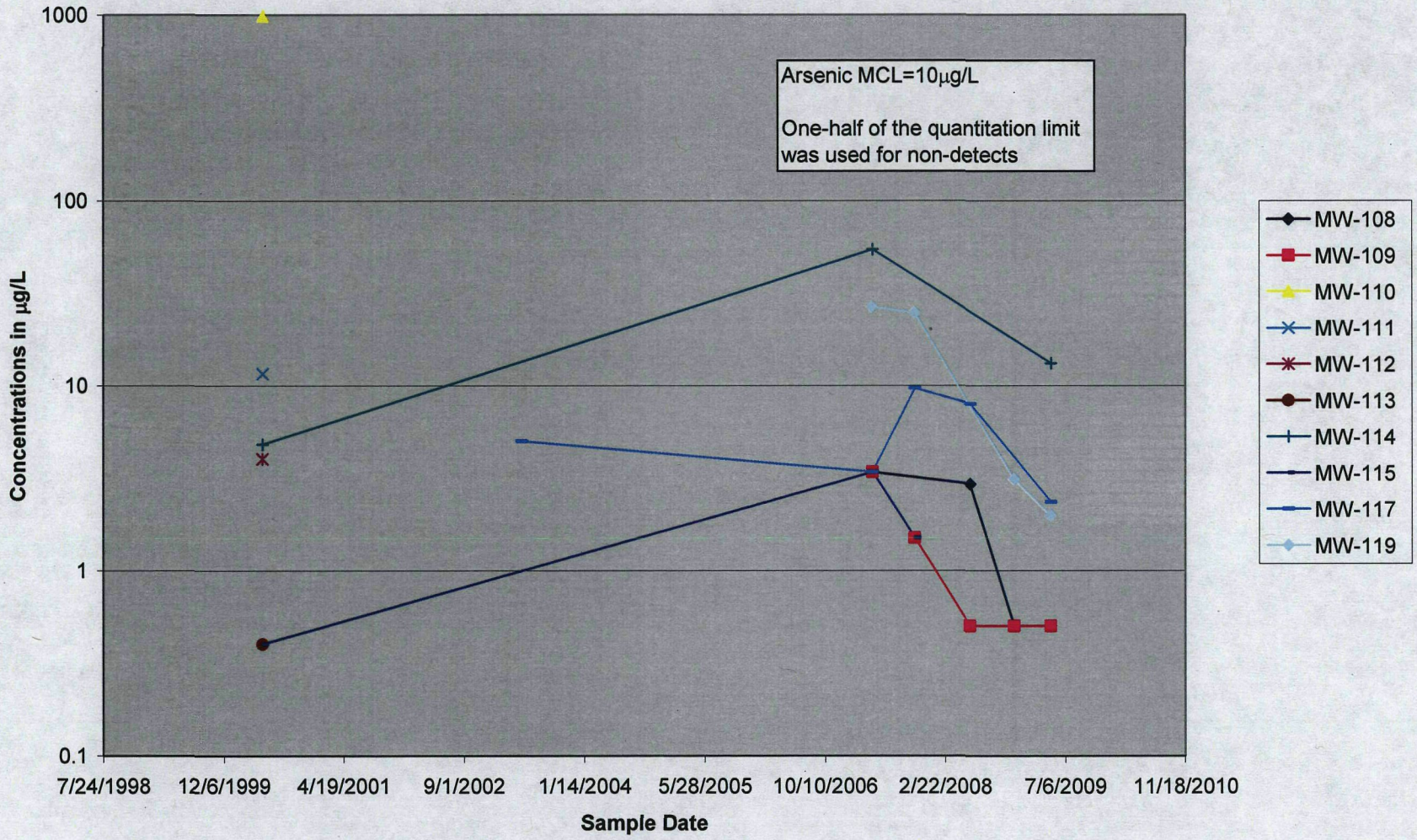
Photo 24: Well MW-117.

Photo 25: Gap in the fence line at the corner of the Prospect Steel lot. The gap is between the new chain link fence and the older barbed wire fence.

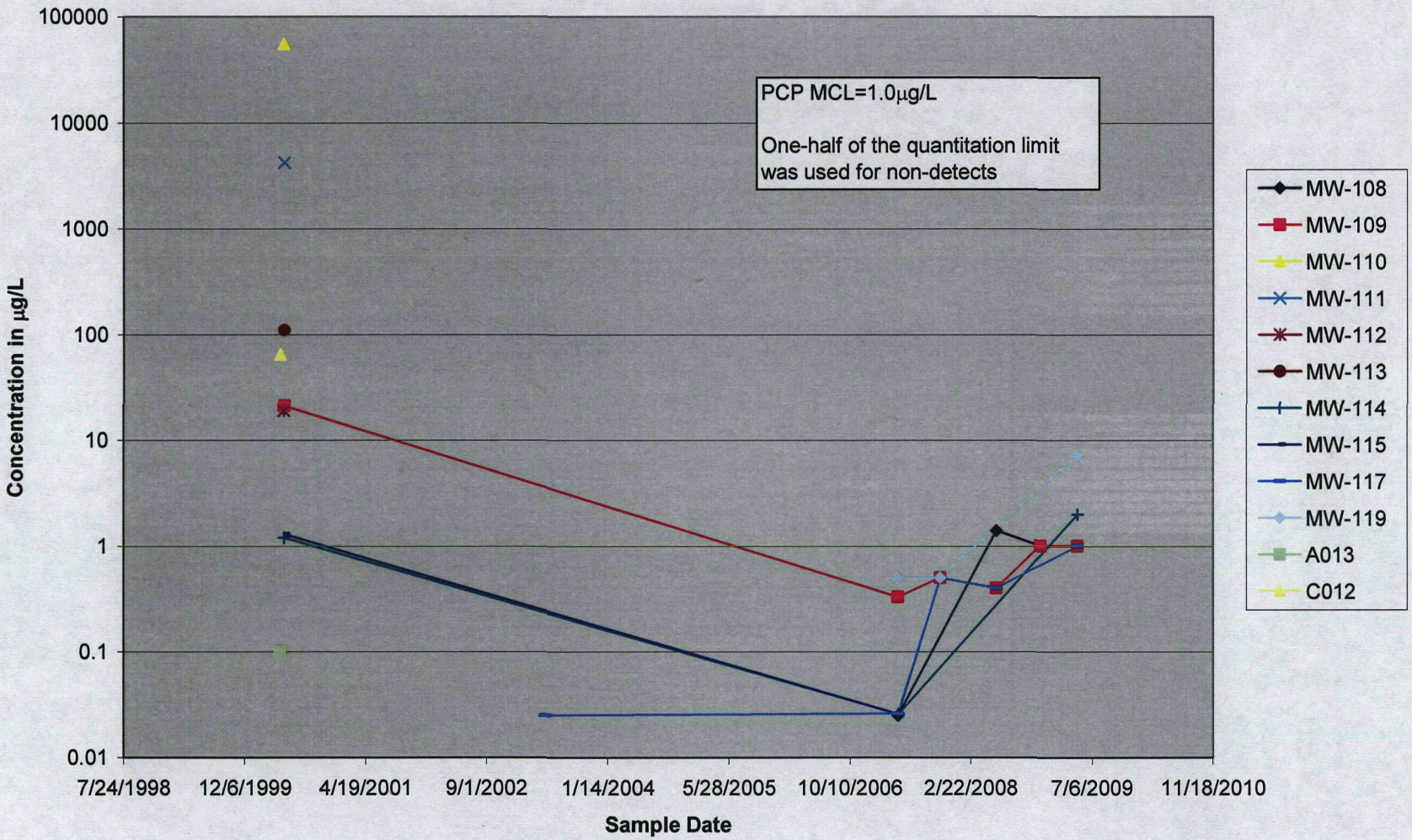
Attachment 5

Concentration Graphs for Indicators

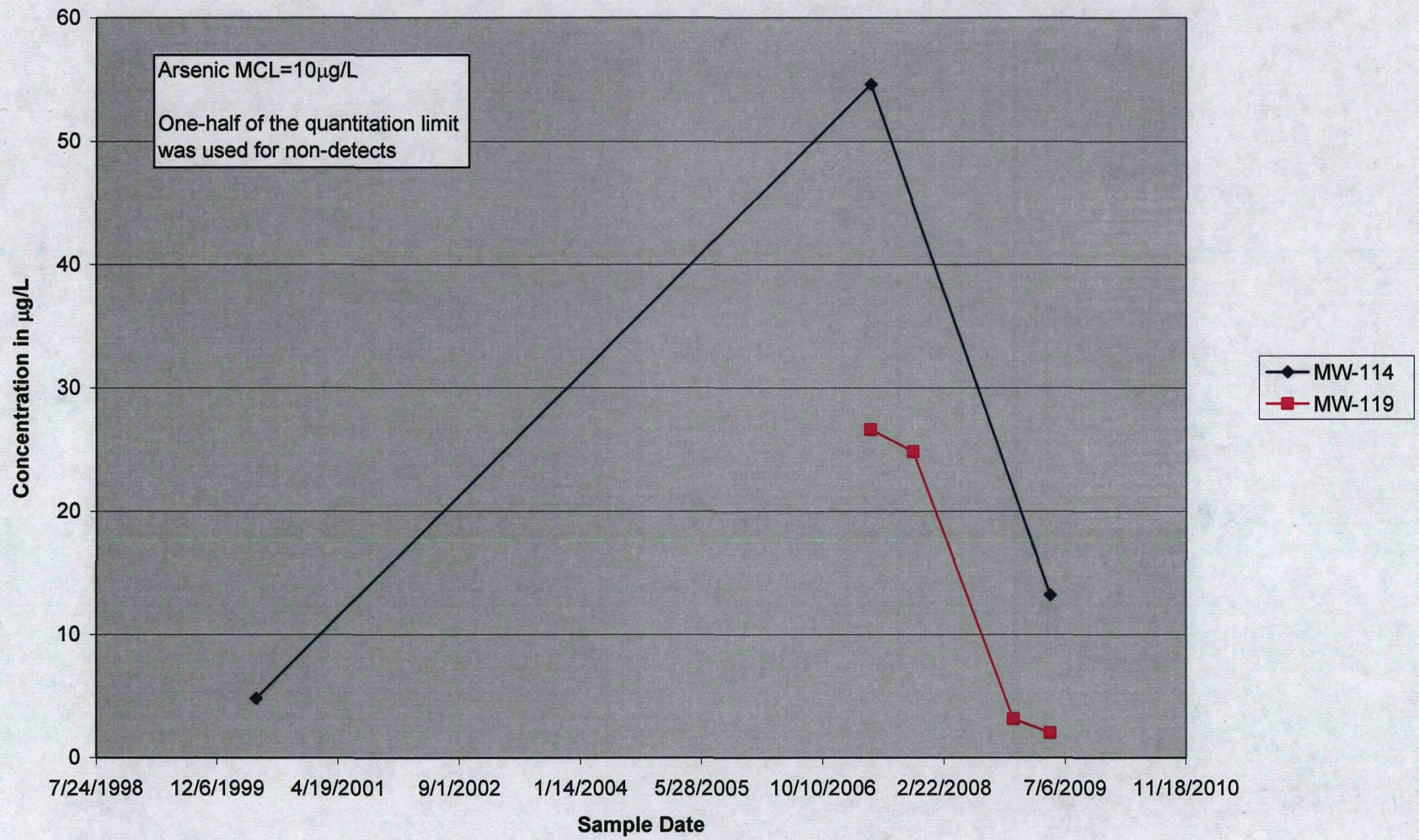
Attachment 5-1
Arsenic Concentrations in UWBZ for All Monitoring Wells



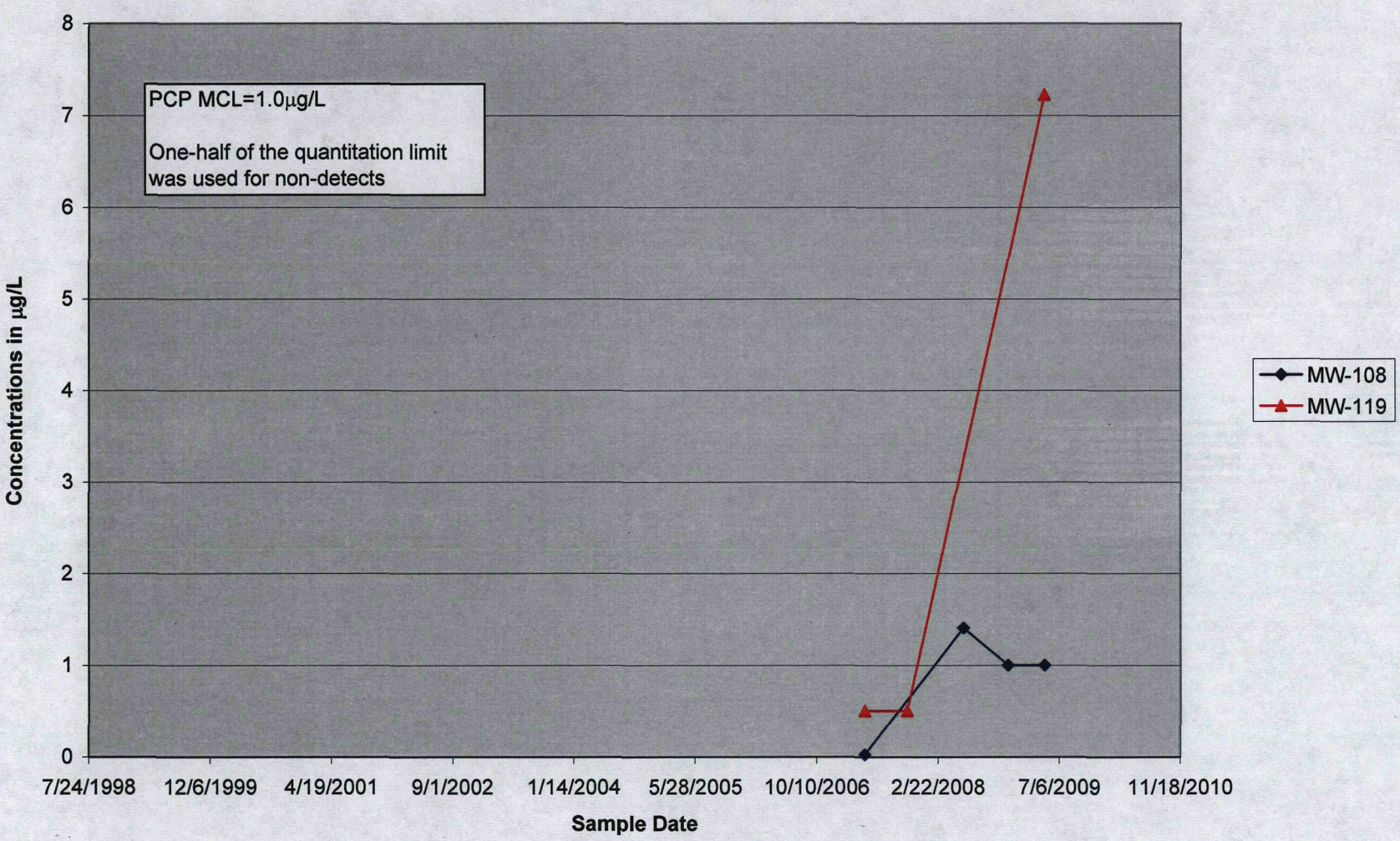
Attachment 5-2
PCP Concentrations in UWBZ for All Monitoring Wells



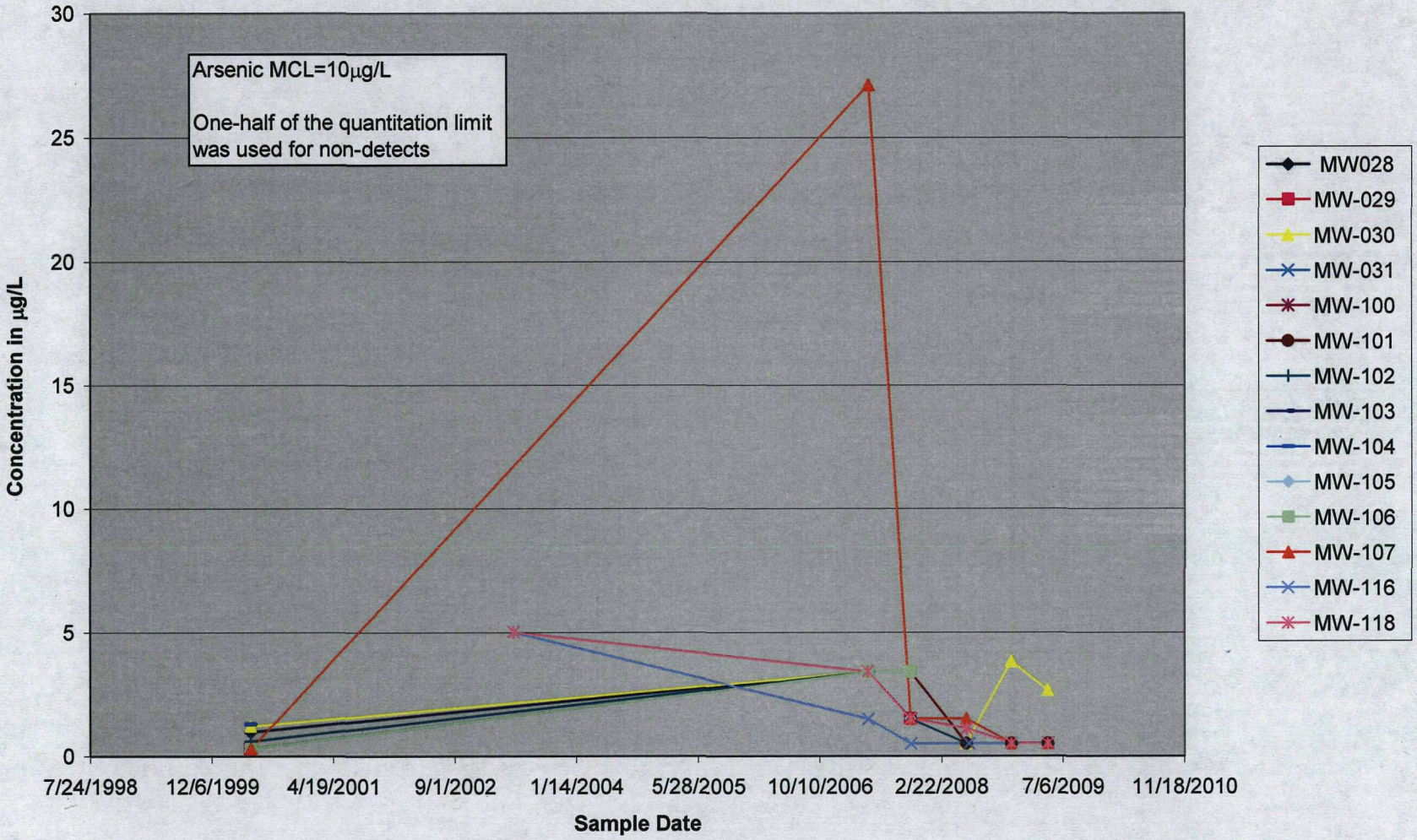
Attachment 5-3
Monitoring Wells in UWBZ With Arsenic Above MCL Post Remedial Action



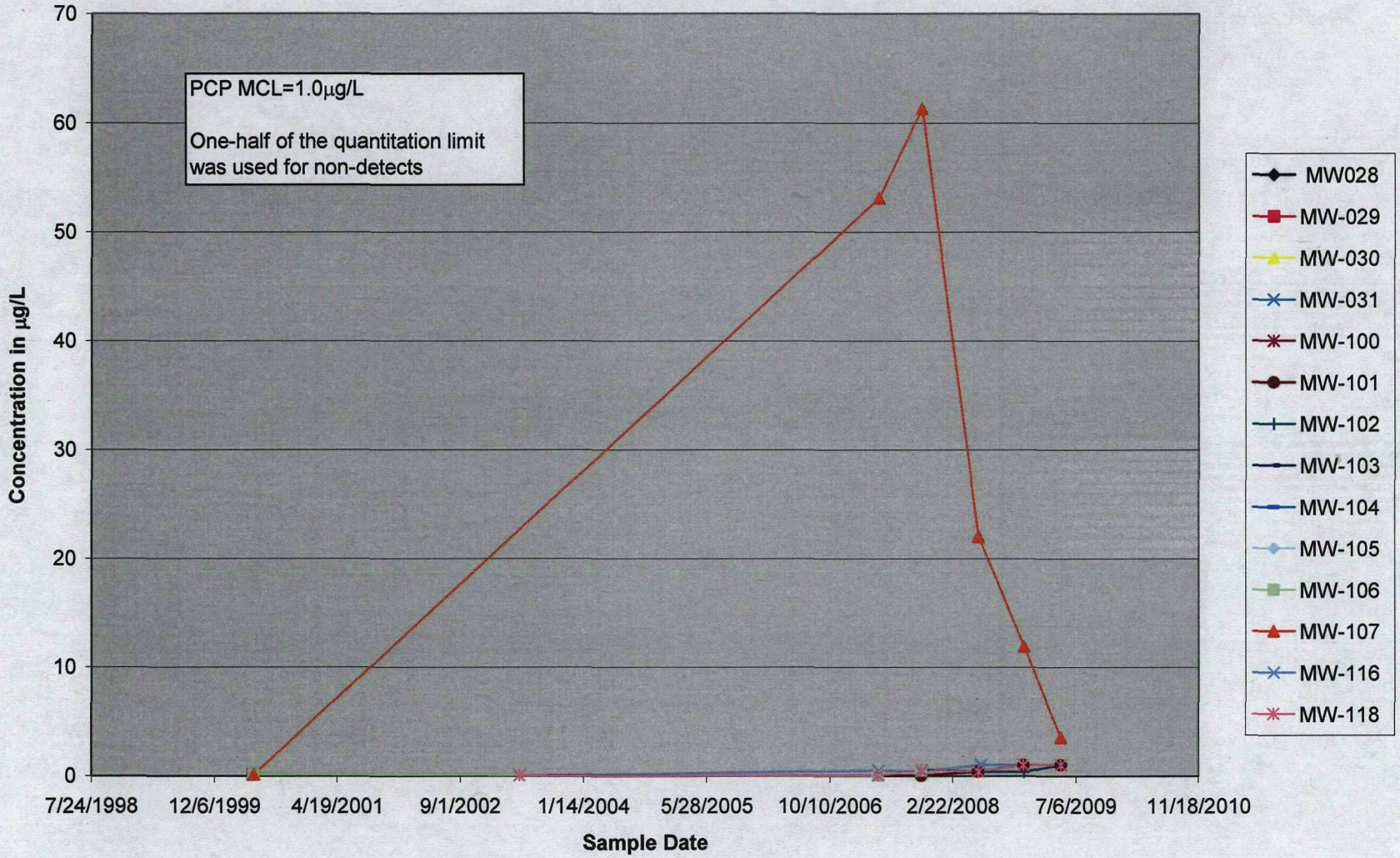
Attachment 5-4
Monitoring Wells in UWBZ With PCP Concentrations Above MCL Post Remedial Action



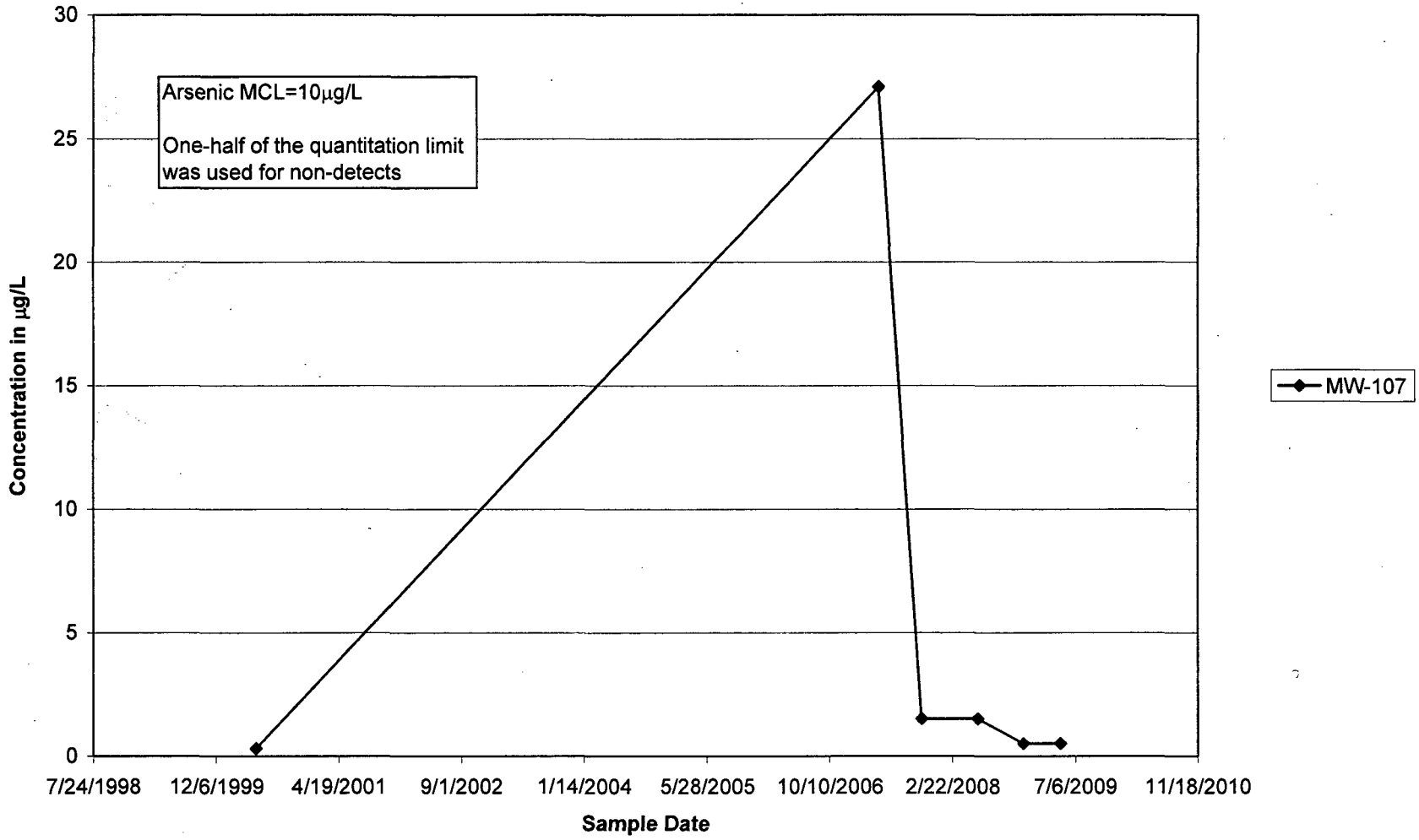
Attachment 5-5
Arsenic Concentrations in LWBZ for All Monitoring Wells



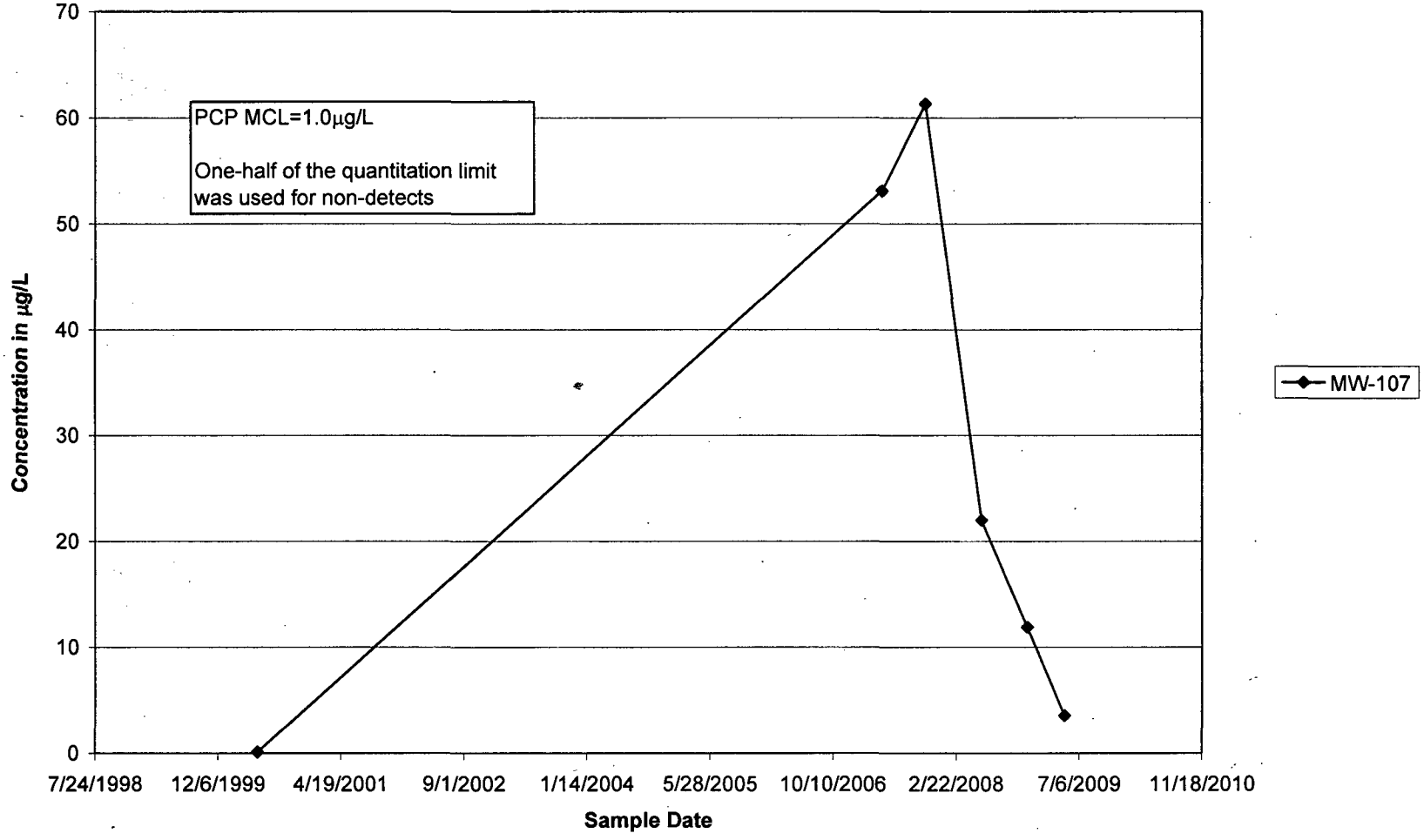
Attachment 5-6
PCP Concentrations in LWBZ for All Monitoring Wells



Attachment 5-7
Monitoring Wells in LWBZ With Arsenic Concentrations Above MCL Post Remedial Action



Attachment 5-8
Monitoring Wells in LWBZ With PCP Concentrations Above MCL Post Remedial Action



Attachment 6

Groundwater Monitoring Data

Attachment 6-1
Groundwater Sampling Data
Mountain Pine Pressure Treating Superfund Site
Plainview, Arkansas

Sample Location	Sample ID	Sample Date	Field Measurements					Turbidity (NTUs)	TPH/DRO (mg/L)	PCP (µg/L)		Arsenic (µg/L)		Chromium (µg/L)	
			Temperature (°C)	Specific Conductance µS/cm	Dissolved Oxygen (mg/L)	pH (Su)	ORP (mVs)								
MW028	MPT344	5/13/2000								<0.25	U	0.98	J	<3	U
	0704035-03	4/24/2007	15.02	0.54	0.85	6.08	29.3	234	<0.198	<0.050	U	<6.80	U	NA	
	0710022-03	10/16/2007	18.04	0.736	0.85	6.15	11.4	NA	<0.206	<1.000	U	<3.00	U	NA	
			Not	Sampled	in	2008	or	2009							
MW-029	MPT345	5/12/2000								<0.25	U	<0.6	U	<3	U
	0704035-04	4/24/2007	16.2	0.175	1.34	6.41	118	10.1	<0.200	<0.050	U	<6.80	U	NA	
	0710022-04	10/16/2007	19.6	0.21	1.22	6.5	-29.4	2.7	<0.198	<1.000	U	<3.00	U	NA	
			Not	Sampled	in	2008	or	2009							
MW-030	MPT346	5/14/2000								<0.25	U	1.2	J	<3	U
	0704035-05	4/24/2007	16.53	0.104	0.38	5.96	10	8.9	<0.204	<0.051	U	<6.80	U	NA	
	0710022-05	10/16/2007	17.72	0.26	3.69	6.1	-43.1	5.5	<0.204	<0.051	U	<3.00	U	NA	
	2008-1821	6/3/2008	17.26	0.191	2.03	6.11	44.4	3.65	<0.200	<0.800	U	<1.00	U	NA	
	2008-3464	12/4/2008	16.7	0.24	1.27	6.28	NA	4.89	<2.000	<2.000	U	3.82	=	<1.00	U
	2009-1158	5/5/2009	16.3	0.251	0.62	5.86	-84.1	1.93	<0.200	<2.000	U	2.66	=	<1.00	U
MW-031	MPT347	5/14/2000								<0.25	U	<0.6	U	<3	U
	0704035-06	4/24/2007	15.24	1.176	0.88	5.84	54.1	18.7	<0.215	<0.054	U	<6.80	U	NA	
	0710022-06	10/16/2007	16.82	0.546	1.65	6.73	-56.8	3.5	<0.200	<1.000	U	<3.00	U	NA	
			Not	Sampled	in	2008	or	2009							
MW-100	MPT330	5/12/2000								<0.25	U	<0.6	U	<3	U
	0704035-07	4/24/2007	18.5	0.566	-0.62	6.15	-22.1	50.6	<0.202	<0.051	U	<6.80	U	NA	
		10/17/2007	20.83	0.618	1.01	6.11	15.3	17.3	<0.194	<1.000	U	<3.00	U	NA	
MW-101	MPT331	5/13/2000								<0.25	U	<0.6	U	<3	U
	0704037-02	4/24/2007	14.96	0.475	1.92	6.21	43.3	2.3	<0.204	<0.051	U	<6.80	U	NA	
	0710022-07	10/16/2007	20.94	0.494	1.38	6.42	-110.2	2.2	<0.204	<0.051	U	<6.80	U	NA	

Attachment 6-1
Groundwater Sampling Data
Mountain Pine Pressure Treating Superfund Site
Plainview, Arkansas

Sample Location	Sample ID	Sample Date	Field Measurements					Turbidity (NTUs)	TPH/DRO (mg/L)	PCP (µg/L)		Arsenic (µg/L)		Chromium (µg/L)	
			Temperature (°C)	Specific Conductance µS/cm	Dissolved Oxygen (mg/L)	pH (Su)	ORP (mVs)								
	2008-1825	6/3/2008	17.55	0.556	0.76	6.38	-15.4	4.68	<0.200	<0.800	U	<1.00	U	NA	
	2008-3457	12/4/2008	18.5	0.487	0.37	6.71	NA	3.45	<0.200	<2.000	U	<1.00	U	<1.00	U
	2009-1159	5/4/2009	16.2	0.489	0.25	6.09	55.4	0.63	<0.200	<2.000	U	<1.00	U	<1.00	U
MW-102	MPT332	5/13/2000								<0.25	U	0.6	J	<3	U
	0704035-08	4/24/2007	17.51	0.278	-0.14	6.83	79	1	<0.204	<0.051	U	<6.80	U	NA	
	0710022-08	10/16/2007	20.95	0.331	1.45	6.71	-43.3	4	<0.200	<1.100	U	<3.00	U	NA	
	2008-1824	6/4/2008	18.38	0.357	0.77	6.58	-24.7	4.56	<0.200	<0.800	U	<1.00	U	<1.00	U
	2008-3458	12/5/2008	18.6	0.361	0.19	6.82	-24.7	4.56	<0.200	<0.800	U	<1.00	U	<1.00	U
	2009-1160	5/5/2009	17.2	0.361	0.07	6.42	-99.9	1.15	<0.200	<2.000	U	<1.00	U	<1.00	U
MW-103	MPT333	5/12/2000								<0.25	U	<0.6	U	<3	U
	0704035-04	4/24/2007	16.16	0.268	0.87	6.26	31.9	5.8	<0.192	<0.048	U	<6.80	U	NA	
	0710022-09	10/16/2007	19.57	0.253	1.19	6.48	-163.2	0.7	<0.207	<1.000	U	<3.00	U	NA	
			Not	Sampled	in	2008	or	2009							
MW-104*	MPT334	5/13/2000								0.29	=	1.3	J	<3	U
MW-105	MPT335	5/14/2000								<0.25	U	<0.6	U	<3	U
	0704035-10	4/24/2007	16.85	0.438	-0.1	6.41	-5.7	14.4	<0.206	<0.052	U	<6.80	U	NA	
	0710022-11	10/16/2007	16.91	0.489	6.59	6.32	-100.3	10.3	<0.208	<1.100	U	<3.00	U	NA	
			Not	Sampled	in	2008	or	2009							
MW-106	MPT336	5/14/2000								<0.25	U	<0.6	U	<3	U
	0704035-11	4/24/2007	16.04	0.298	3.23	6.65	-0.2	5.7	<0.206	<0.050	U	<6.80	U	NA	
	0710022-12	10/16/2007	16.55	0.325	1.16	6.77	-40.7	1.2	<0.204	<1.000	U	<6.80	U	NA	
			Not	Sampled	in	2008	or	2009							
MW-107	MPT337	5/15/2000								<0.25	U	<0.6	U	<3	U
	0704039-04	4/25/2007	17.85	0.462	2	5.79	-17.2	224	<0.204	53.1	=	27.1	=	NA	
	0710024-04	10/17/2007	20.28	0.577	0.89	5.58	9.7	52.2	<0.204	61.3	=	<3.00	U	NA	

Attachment 6-1
Groundwater Sampling Data
Mountain Pine Pressure Treating Superfund Site
Plainview, Arkansas

Sample Location	Sample ID	Sample Date	Field Measurements					Turbidity (NTUs)	TPH/DRO (mg/L)	PCP (µg/L)		Arsenic (µg/L)		Chromium (µg/L)	
			Temperature (°C)	Specific Conductance µS/cm	Dissolved Oxygen (mg/L)	pH (Su)	ORP (mVs)								
	2008-1820	6/3/2008	17.52	0.714	1.6	5.63	43.6	65.11	<0.200	22	=	<3.00	U	NA	
	2008-3459	12/4/2008	18.3	0.739	0.16	6.06	NA	4.4	<0.200	11.9	=	<1.00	U	<1.00	U
	2009-1161	5/5/2009	15.8	0.556	1.91	5.56	NA	19.7	<0.200	3.531	=	<1.00	U	<1.00	U
MW-116	MW-116	4/28/2003								<0.05	U	<10	U	<10	U
	0704035-09	4/24/2007	16.63	0.528	4.12	6.89	-67.3	-0.6	<0.200	<1.000	U	<3.00	U	NA	
	0710024-07	10/17/2007	20.65	0.725	0.95	6.81	-178.8	21.2	<0.209	<0.800	U	<1.00	U	NA	
	2008-1828	6/14/2008	18.22	0.704	1.1	6.85	-59.9	0.65	<0.200	<2.000	U	<1.00	U	<1.00	U
	2008-3462	12/4/2008	17.6	0.655	0.65	7.13	NA	2.68	<0.200	<2.000	U	<1.00	U	<1.00	U
	2009-1165	5/4/2009	16.7	0.636	0.1	6.59	NA	0.63	<0.200	<2.000	U	<1.00	U	<1.00	U
MW-118	MW-118	4/29/2003								<0.052	U	<10	U	<10	U
	0704035-15	4/24/2007	17.16	0.485	-0.06	8.21	141.4	0.3	<0.197	<0.049	U	<6.80	U	NA	
	0710022-13	10/16/2007	18.49	0.518	9	8.14	-119.9	3.4	<0.211	<1.000	U	<3.00	U	NA	
	2008-1826	6/4/2008	16.61	0.585	1.79	6.96	-68.9	12.38	<0.200	<0.800	U	1.1	=	NA	
	2008-3463	12/3/2008	16.7	0.583	0.39	8.04	NA	4.14	<0.200	<2.000	U	<1.00	U	<1.00	U
	2009-1167	5/4/2009	15.8	0.574	0.16	7.42	NA	1.63	<0.200	<2.000	U	<1.00	U	<1.00	U
MW-108	0704039-05	4/25/2007	14.6	0.114	0.78	4.85	101	7.4	<0.200	<0.050	U	<6.80	U	NA	
		10/17/2007	Not	Sampled	Dry	Well									
	2008-1822	6/4/2008	19.26	0.172	1.28	4.36	78.1	2.97	<0.200	1.406	=	2.93	=	NA	
	2008-3460	12/4/2008	15.1	197	5.12	5.05	NA	4.37	<0.200	<2.000	U	<1.00	U	<1.00	U
	2009-1162	5/5/2009	16.5	200	0.11	4.66	NA	7.43	<0.200	<2.000	U	<1.00	U	<1.00	U
MW-109	MPT354	5/16/2000								21	=				
	0704039-06	4/25/2007	14.28	0.057	3.26	4.77	135.9	82.4	<0.208	0.329	=	<6.80	U	NA	
	0710024-05	10/17/2007	20.91	0.058	4.9	4.9	98.1	38	<0.202	<1.000	U	<3.00	U	NA	
	2008-1823	6/4/2008	18.87	0.061	0.69	4.02	132.8	1.79	<0.200	<0.800	U	<1.00	U	NA	

Attachment 6-1
Groundwater Sampling Data
Mountain Pine Pressure Treating Superfund Site
Plainview, Arkansas

Sample Location	Sample ID	Sample Date	Field Measurements					Turbidity (NTUs)	TPH/DRO (mg/L)	PCP (µg/L)		Arsenic (µg/L)		Chromium (µg/L)	
			Temperature (°C)	Specific Conductance µS/cm	Dissolved Oxygen (mg/L)	pH (Su)	ORP (mVs)								
	2008-3461	12/4/2008	15.4	0.053	0.25	5.02	NA	3.13	<0.200	<2.000	U	<1.00	U	<1.00	U
	2009-1163	5/5/2009	16.5	0.055	0.08	4.71	NA	16.9	<0.200	<2.000	U	<1.00	U	<1.00	U
MW-110*	MPT355	5/16/2000								56000	=	988	=	205	=
MW-111*	MPT356	5/16/2000								4200	=	11.6	J	3.8	J
MW-112*	MPT357	5/15/2000								19	=	4	J	<3	U
MW-113*	MPT358	5/16/2000								110	=	<0.8	U	<3	U
MW-114	MPT359	5/15/2000								1.2	=	4.8	J	6.7	J
	0704037-04	4/25/2007	16.35	0.265	1.74	6.35	76.2	7.38	<0.202	<0.051	U	54.6	=	NA	
		10/17/2007	Not	Sampled	Well	Dry									
		6/4/2008	22.58	0.308	3.35	5.81	96.8	526.8	NA	NA		NA		NA	
		12/5/2008	Not	Sampled	Dry	Well									
	2009-1164	5/5/2009	17.7	0.296	1.39	5.5	NA	1000	<0.400	<4.000	U	13.2	=	13.4	=
MW-115	MPT360	5/15/2000								1.3	=	<0.8	U	<3	U
	0704039-08	4/25/2007	15.11	0.85	0.22	5.48	81	0.3	<0.204	<0.051	U	<6.80	U	NA	
	0710024-06	10/17/2007	21.02	0.984	3.74	5.93	65.3	14.2	<0.208	<1.000	U	<3.00	U	NA	
		1/1/2008	Not	Sampled	in	2008	or	2009							
MW-117	MW-117	4/28/2003								<0.05	U	<10	U	<10	U
	0704035-14	4/24/2007	15.67	0.491	1	5.8	150	3.4	<0.206	<0.052	U	<6.80	U	NA	
	0710024-09	10/17/2007	22.63	0.525	2.05	6	50.4	9.2	<0.206	<1.000	U	9.7	=	NA	
	2008-1827	6/4/2008	21.86	0.807	2.43	6.19	-13.7	15.2	<0.200	<0.800	U	7.95	=	NA	
	2008-3467	12/4/2008	Not	Sampled											
	2009-1166	5/5/2009	15.9	0.788	1.22	6.02	NA	11.1	<0.200	<2.000	U	2.34	=	<1.00	U
MW-119		4/28/2003	Not	Sampled	Dry	Well									
	0704035-16	4/24/2007	14.5	1.724	0.09	7.36	-31.6	1737	<0.202	<1.000	U	26.6	=	NA	
	0710022-14	10/16/2007	19.66	0.476	3.82	6.61	-16.4	NA	<0.206	<1.000	U	24.8	=	NA	

Attachment 6-1
Groundwater Sampling Data
Mountain Pine Pressure Treating Superfund Site
Plainview, Arkansas

Sample Location	Sample ID	Sample Date	Field Measurements					Turbidity (NTUs)	TPH/DRO (mg/L)	PCP (µg/L)		Arsenic (µg/L)		Chromium (µg/L)	
			Temperature (°C)	Specific Conductance µS/cm	Dissolved Oxygen (mg/L)	pH (Su)	ORP (mVs)								
		6/4/2008	18.1	2.834	4.17	7.31	18.6	980.1	NA	NA		NA		NA	
	2008-3465	12/4/2008	13.8	1.94	3.37	7.35	NA	392	NA	NA		3.12	=	7.71	=
	2009-1168	5/4/2009	15.4	2.45	1.92	5.88	NA	37.5	<0.200	7.224	=	1.99	=	<1.00	U
A013**	MPT328	5/1/2000								0.2	J				
C012**	MPT329	5/1/2000								65	=				

U - Not detected.
J - Indicated an estimated value. Used when the analyte concentration is below the method reporting limit (MRL) and above non-detect.
Shaded cells are measurements above the MCLs.
* - These wells were plugged and abandoned during the RA.
** - Grab samples taken from dug holes.
Field measurements were used to determine stable conditions during well purging and sampling and should not be considered precise estimates of these parameters.

Attachment 7

Notices to the Public Regarding the Five-Year Review

PROOF OF PUBLICATION
In The
YELL COUNTY RECORD
Danville, Arkansas

I, David Fisher, do solemnly swear that I am the publisher of the YELL COUNTY RECORD, a newspaper published weekly, at Danville, Danville District of Yell County, Arkansas, and that said newspaper, published in said county, has a bonafide circulation, and that the notice attached hereto was published in said newspaper for 1 consecutive issues as follows:

1ST Pub. 10-7-09
2ND Pub. ____
3RD Pub. ____
4TH Pub. ____
5TH Pub. ____
6TH Pub. ____

David Fisher

Subscribed and sworn to before me this 7th day of October 20 09.

Notary Public

My commission expires 12-10-2018

Publication Fee $ ____
Notary $ ____
Total Cost $ ____

PAMELA BROWN NOTARY PUBLIC #12368896 EXPIRES 12-10-2018 YELL COUNTY

Mountain Pine Pressure Treating Superfund Site
PUBLIC NOTICE
U.S. EPA Region 6 Begins First Five-Year Review of Site Remedy

The U.S. Environmental Protection Agency Region 6 (EPA) has begun the first five-year review of the remedy for the Mountain Pine Pressure Treating Superfund Site in Plainview, Yell County, Arkansas. The review will evaluate the performance of the remedy and protection of public health and the environment.

The site was formerly used in the treatment of wood using preservatives. The property consists of approximately 95 acres bordered on the north by State Highway 28, and on the west by Sunlight Bay Road. The EPA conducted remedial action at the site from March 2005 through September 2005, and completed the stabilization of approximately 10,000 cubic yards of contaminated soil.

The first five-year review is scheduled to be completed in April 2010. Results of the five-year review will be made available to the public at the following information repository:

Plainview City Hall
303 West Main Street
Plainview, AR 72857
(479) 272-2233

Information about the Mountain Pine Pressure Treating Site is also available on the Internet at http://www.epa.gov/region6/6sf/pdffiles/0603651.pdf. For more information about the Mountain Pine Pressure Treating Site contact Philip Allen at (214) 665-8516 or 1-800-533-3508 (toll free).

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Attachment 7-1. Proof of publication and public notice published in the Yell County Record.