

RP 1204

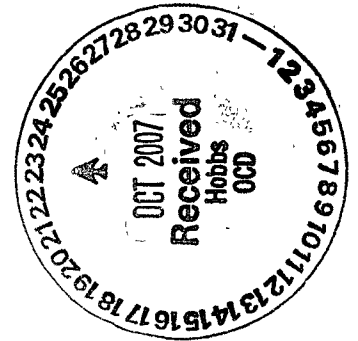
# Apache Corporation

## Final Report NMGSAU # 2109

Flowline Release

API # 30-025-05918

Unit H Section 5, T. 20 S., R. 37 E.  
Lea County, New Mexico



Prepared for Apache Corporation by:

**Hungry Horse, LLC**

Environmental Services

3709 S. Eunice Hwy, P.O. Box 1058, Hobbs, New Mexico 88241  
(575) 393-3386; Fax (575) 391-4585

October 18, 2007

NMOCD Environmental  
ATTN: Larry Johnson  
1625 N. French Drive  
Hobbs, NM 88240

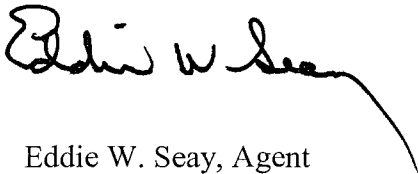
RE: Apache Corporation  
NMGSAU #2109  
Unit H Sec. 5, T. 20 S., R. 37 E.

Mr. Johnson:

This report is being submitted on behalf of Apache Corporation and Hungry Horse, LLC, by Eddie Seay Consulting. Apache has completed the backfill and leveling verbally authorized by NMOCD at the above mentioned spill site. A Stage 1 Ground Water Abatement Plan has been filed and quarterly samples will be obtained for NMOCD review. All contaminated soil was removed and relocated to an OCD approved landfarm (J&L). Affected areas were shaped and contoured to reflect original condition. Please find the attached photos, a copy of the abatement plan, the first samples obtained and the final report form C-141 awaiting your approval.

If you have any questions, please feel free to call.

Regards,



Eddie W. Seay, Agent  
601 W. Illinois  
Hobbs, NM 88242  
(575) 392-2236  
seay04@leaco.net

cc: Apache Corporation  
Hungry Horse, LLC

## District I

1625 N. French Dr., Hobbs, NM 88240

## District II

1301 W. Grand Avenue, Artesia, NM 88210

## District III

1000 Rio Brazos Road, Aztec, NM 87410

## District IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Form C-141

Revised June 10, 2003

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Submit 2 Copies to appropriate

District Office in accordance

with Rule 116 on back

side of form.

## Release Notification and Corrective Action

## OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Apache Corporation	Contact	Guinn Burks
Address	P.O. Box 728, Crane, TX 79731	Telephone No.	432-556-9143
Facility Name	Production Well Flowline	Facility Type	Production Well Flowline

Surface Owner	State of NM	Mineral Owner	State of NM	Lease No.	30-025-05918
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## LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from South Line	Feet from East Line	Longitude-W	Latitude-N	County
H	5	20S	37E	2100	0	103deg 15.89'	32deg 36.021'	Lea

## NATURE OF RELEASE

WTE @ 32'

Type of Release	Crude Oil and Produced Water Component (1:5)	Volume of Release	greater than 25 bbl	Volume Recovered	0 bbl
Source of Release	Production Well Flowline (2")	Date and Hour of Occurrence	Unknown	Date and Hour of Discovery	2/15/07 7:30 AM
Was Immediate Notice Given?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Not Required	If YES, To Whom?	NMOCD - Hobbs Office		
By Whom?	Terry Pickerel - Apache Corporation	Date and Hour	2/15/2007 ~8:30 AM		
Was a Watercourse Reached?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	If YES, Volume Impacting the Watercourse	NA		
If a Watercourse was Impacted, Describe Fully*					

Describe Cause of Problem and Remedial Action Taken. \*

2" production flowline (within 6" steel conduit) crossing beneath NM Hwy 8 (1.6 miles south of Monument, NM) lost integrity due to corrosion. Two wells feeding into the flowline were shut-in. Hungry Horse, LLC, Hobbs, NM contracted for emergency response.

Describe Area Affected and Cleanup Action Taken. \*

The initial affected area was approximately 2,000 sq ft (30' x 60') within the highway right-of-way. The highway was blocked north and south. Hungry Horse LLC, Hobbs, NM conducted the emergency response and began excavation/disposal of the release @ ~11:00 AM, 2/15/07.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	<i>Guinn Burks</i>	OIL CONSERVATION DIVISION	
Printed Name:	Guinn Burks	Approved by District Supervisor:	<i>John</i>
Title:	Environmental Coordinator - Permian Basin	Approval Date:	3.15.07 Expiration Date: 6.15.07
E-Mail Address:	Guinn.Burks@apachecorp.com	Conditions of Approval:	SUBMITAL OF FINAL C-141 w/ CLOSURE REPORT.
Date:	3/2/2007	Phone:	432-556-9143
		<input type="checkbox"/> Attached	

incident - nPAC 0707848188  
application - nPAC 0707848343

RP# 1204

**Apache Corporation**

Incident Date: 2/15/07 NMOCD Notified: 2/15/07

SITE: NMGSA Unit #2109		Assigned Site Reference:	
Company: Apache Corporation			
Street Address:			
Mailing Address: P.O. Box 728			
City, State, Zip: Crane, TX 79731			
Representative: Guinn Burks			
Representative Telephone: 432-556-9143			
Telephone:			
Fluid Volume Released (bbl): > 25		Volume Recovered (bbl): 0	Net Release: > 25
>25 bbl: Notify NMOCD verbally within 24 hours and submit C-141 within 15 days.			
5-25 bbl: Submit Form C-141 within 15 days. (Also applies to unauthorized release of >50 mcf Natural Gas).			
Leak, Spill, or Pit (LSP) Name:		NMGSA Unit #2109	
Source of Contamination:		Production Well Flowline (2")	
Land Owner, i.e. BLM, ST, Fee, Other:		State of NM	
LSP Dimensions:		~ 50' X 40' under highway	
LSP Area		~ 2000 -ft <sup>2</sup>	
Location of Reference Point (RP):			
Location distance and direction from RP:			
Latitude: North		32deg 36.021'	
Longitude: West		103deg 15.897'	
Elevation above mean sea level (amsl):		3560 feet 1085 meters	
Distance from South Section Line (feet):		2100	
Distance from East Section Line (feet):		0	
Location - Unit Letter and 1/4 1/4:		UL- H SE - 1/4 of NE - 1/4	
Location - Section		5	
Location - Township		20S	
Location - Range		37E	
Surface water body within 1000' radius of site:		0	
Surface water body within 1000' radius of site:		0	
Domestic water wells within 1000' radius of site:		0	
Domestic water wells within 1000' radius of site:		0	
Agricultural water wells within 1000' radius of site:		0	
Agricultural water wells within 1000' radius of site:		0	
Public water supply wells within 1000' radius of site:		0	
Public water supply wells within 1000' radius of site:		0	
Depth (feet) from land surface to Ground Water (DG): ~		32	
Depth (feet) of lowest contamination (DC):		32	
Depth (feet) to Ground Water (DG - DC = DtGW): ~		0	
<b>1. Ground Water</b>		<b>2. Wellhead Protection Area</b>	
If Depth to GW <50-feet: 20 points		If <1000' from water source, or, <200' from private domestic water source: 20 points	
If Depth to GW 50 to 100-feet: 10 points		If >1000' from water source, or, >200' from private domestic water source: 0 points	
If Depth to GW >100-feet: 0 points			
Ground Water Score: 20		Wellhead Protection Score: 0	
Site Ranking (1 + 2 + 3): 20		Surface Water Score: 0	
<b>Total Site Ranking Score and Acceptable Concentrations</b>			
Parameter	20 or >	10	0
Benzene <sup>1</sup>	10-ppm	10-ppm	10-ppm
BTEX <sup>1</sup>	50-ppm	50-ppm	50-ppm
TPH	100-ppm	1000-ppm	5000-ppm

<sup>1</sup> 100-ppm field VOC headspace measurement may be substituted for lab analysis

# **HUNGRY HORSE, LLC**

## **ENVIRONMENTAL SERVICES**

March 11, 2007

Mr. Wayne Price  
Energy, Minerals, and Natural Resources Department  
New Mexico Oil Conservation Division  
Environmental Bureau  
1220 S. St. Francis Drive  
Santa Fe, New Mexico 87505

Subject: Apache Corporation - - NMGSAU #2109 – Stage I Ground Water Abatement Plan

Dear Mr. Price:

Hungry Horse, LLC, on behalf of Apache Corporation (APACHE) submits for your consideration the Stage I Ground Water Abatement Plan for the “NMGSAU #2109” flow line release site. This report documents the vertical and horizontal extents of hydrocarbon and chloride contamination at the site, excavation and disposal of contaminated soils down to the 31-ft bgs level and confirmation of ground water impact at the site.

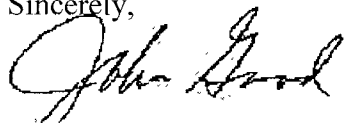
This submittal is consistent with NMOCD Rule 19 requirements of immediate notification and submittal of a Stage I Abatement Plan in the event that ground water contamination has occurred as a result of oilfield activities. On behalf of Apache Corporation, Hungry Horse LLC requests that the NMOCD consider the information provided within this documentation and allow Apache Corp to proceed with the proposed monitor well installations and further ground water investigations at this site.

Questions or comments regarding this project should be directed to Mr. Jerry Brian at the Hungry Horse office, or at 505-390-6149. Mr. Guinn Burks of Apache Corporation can be contacted by phone at 432-556-9143.

Please address all official correspondence regarding this release and subsequent remediation activities to Mr. Guinn Burks at:

Apache Corporation  
P.O. Box 728  
Crane, TX 79731

Sincerely,



John Good, Environmental Consultant/Project Manager

cc: Guinn Burks, Apache Corporation  
Larry Johnson, NMOCD – Hobbs District Office  
Jerry Brian, Hungry Horse LLC  
File

***P.O. Box 1058, Hobbs, NM 88241  
Phone: (505) 393-3386 Fax: (505) 391-4585***

# APACHE CORPORATION

## STAGE 1 GROUND WATER ABATEMENT PLAN

NMGSAU #2109 FLOW LINE RELEASE SITE  
API#30-025-05918

UL-H (SE¼ OF THE NE¼) OF SECTION 5 T20S R37E  
LATITUDE: N32° 36.021'      LONGITUDE: 103° 15.897'  
1.6 MILES SOUTH (BEARING 180°) OF MONUMENT  
LEA COUNTY, NEW MEXICO

**March 5, 2007**

PREPARED FOR APACHE CORPORATION BY:

**HUNGRY HORSE, LLC**

**ENVIRONMENTAL SERVICES**

Project Manager/Consultant: John Good

**3709 S. Eunice Hwy, P.O. Box 1058, Hobbs, New Mexico 88241**  
**(505) 393-3386; Fax (505) 391-4585**

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## 1. Company Contacts

Apache Corporation:

Guinn Burks, Permian Basin Environmental Coordinator

Phone: 432-556-9143

Email: [Guinn.Burks@apachecorp.com](mailto:Guinn.Burks@apachecorp.com)

Mailing Address: P.O. Box 728, Crane, TX 79731

Hungry Horse, LLC:

Jerry Brian, General Manager/Environmental Consultant

Phone: 505-393-3386

Email: [jrbrian@verizon.net](mailto:jrbrian@verizon.net)

Mailing Address: P.O. Box 1058, Hobbs, NM 88241

## 2. Introduction and Background

This Stage 1 Ground Water Abatement Plan is submitted to the NM Oil Conservation Division – Environmental Bureau as a result of the confirmed ground water impact at the Apache Corporation North Monument Grayburg San Andres Unit 2109 release site. The release, 1.6 miles south of Monument, NM and directly beneath the pavement of NM Hwy 8, was discovered at approximately 7:30 AM on February 15, 2007. All appropriate notifications to regulatory authorities and law enforcement agencies were made in a timely fashion by personnel of Apache Corporation. Hungry Horse, LLC, Hobbs, NM was contracted by Apache Corporation to conduct the Emergency Response and remediation of the release site, and was present at the site by 11:00 AM, 2/15/07.

The release site and resultant ground water contaminant source is located directly under NM Hwy 8, 1.6 miles south of Monument, NM. Although this release occurred exactly on a north-south section line, for records keeping purposes it will be associated with the nearest Apache Corp production well utilizing this flow line – NMGSAU #2109. This production well is located west of the release point in UL-H, Section 5, T20S and R37E. The GPS coordinates for the highway release point are: Latitude N32° 36.021' and Longitude W103° 15.897'.

Ground water contamination (chlorides) was confirmed at the release site on Saturday, February 17<sup>th</sup> when the contaminant excavation was extended to 32-ft bgs where ground water was encountered. Analysis of the ground water resulted in no detectable hydrocarbon contamination and a total chloride concentration of 704-ppm. This chloride concentration is above the New Mexico Water Quality Control Commission's established drinking water standard of 250-ppm chlorides, thus the requirement of a Stage 1 Abatement Plan is triggered.

This plan is required and submitted pursuant to OCD Rule 19.E.1 and OCD Rule 19.E.3. The Stage 1 Abatement Plan presented herein complies with the requirements of these rules and incorporates work performed at the site prior to detection of the groundwater impact.



### 3. Project and Site Investigation Status

The project was initiated the morning of 2/15/07 when Hungry Horse, LLC reacted to an “Emergency Response” request from Apache Corporation at the release site. The initial phase of the excavation was basically following the black iron sulfide visual indicator resulting from the reaction of  $H_2S$  contained in the released fluids with the iron oxide found in the soil. Clean, lateral portions of the excavation area had to be removed to allow deeper access for the excavation equipment. Excavation and disposal of visually impacted soil continued through to the morning of Saturday, 2/17/07.

Chloride contamination from the release permeated the soil laterally beyond the center, iron sulfide contaminated area. Lateral extent beyond the “black” zone was monitored by utilizing “Hach” strips for quick field chloride analysis. Clean sidewalls were finally achieved at a depth of 25-ft bgs. Samples were collected for certified laboratory analysis.

The excavation was vertically extended to 31-ft bgs where “red sand” was encountered, indicating that the saturated zone would soon be encountered. This red sand from 31-ft bgs was field tested for chlorides with a resultant ~800-ppm. A sample was collected for laboratory analysis. A small area of the bottom (3' X 3') was manually extended to 32-ft bgs, where it promptly filled with ground water. The ground water was field tested with a resultant ~600-ppm indication. A ground water sample was collected for laboratory analysis. A sample of the clean backfill material purchased off-site was also collected for laboratory analysis. Cardinal Laboratories, Hobbs, NM accommodated us by agreeing to analyze the samples on Saturday afternoon. The samples were delivered to Cardinal Labs at 1:00 PM and we had results by 3:00 PM. Results of the analyses are as follows:

Sample Location	Chlorides – ppm	TPH/BTEX
West Sidewall @ 25'	<16	<10.0 / <0.012
East Sidewall @ 25'	<16	<10.0 / <0.012
North Sidewall @ 25'	288	<10.0 / <0.012
South Sidewall @ 25'	80	<10.0 / <0.012
Red Sand @ 31'	576	<10.0 / <0.012
Ground Water @ 32'	704	<10.0 / <0.012
Backfill Material	<16	<10.0 / <0.012

Approximately 2,700-yd<sup>3</sup> of contaminated soil was excavated from the site and disposed of at the NMOCD approved J & L Land Farm. The excavation was complete and was ready to be backfilled commencing Sunday morning, 2/18/07.

Due to NMDOT compaction and moisture requirements, the backfill of the excavation had to be done in 2-ft compacted lifts. Each 2-ft lift was tested and certified by a NMDOT technician. All backfill lifts achieved 100% compaction and moisture content

in the desired 12.0% to 12.5% range. The excavation was backfilled to the 10-ft bgs level by the end of the workday, Sunday, 2/18/07.

At 8:45 AM, Monday, 2/19/07, a 50' X 50' 20-mil plastic liner was installed over the center of the release location at the 10-ft bgs elevation. The excavation was then backfilled, compacted and certified by NMDOT up to the 6-ft bgs elevation. At this 6-ft level a 160-ft long, 12" diameter steel conduit was placed across the location to allow replacement of the Apache flow line. This conduit was anti-corrosion treated along its entire length.

The remainder of the excavation was backfilled, compacted and certified on Tuesday, 2/20/07. At this point Hungry Horse, LLC retreated from the site, allowing Armstrong Construction and NMDOT to complete the final paving phase of the project. 143-ft of pavement and shoulder area was replaced. NM Hwy 8 was re-opened to traffic at 4:55 PM, Thursday, 2/22/07.

#### **4. Abatement Plan**

The purpose of the Stage 1 abatement plan is "to design and conduct a site investigation that will adequately define site conditions, and provide the data necessary to select and design an effective abatement option." Pursuant to OCD Rule 19.E.3, a Stage 1 abatement plan may include but not be limited to information as needed to select and implement an abatement option. Accordingly, Apache Corporation will generate and include the following information and data in the report to be submitted following such site investigation as necessary to determine abatement options. Information previously generated and included with this report is expected to satisfy some to the investigation report requirements.

- a. *Descriptions of the site, including a site map, and of site history including the nature of the release that caused the water impact, and a summary of previous investigations;*

Information satisfying much of the requirement is submitted herein. It will be updated as necessary for submittal with the Stage 1 report.

- b. *Additional site investigation to define (i) site geology and hydrogeology, the vertical and horizontal extent and magnitude of groundwater contamination, subsurface hydraulic conductivity, transmissivity, storativity, and rate and direction of contaminant migration, inventory of water wells inside and within one (1) mile from the perimeter of the three dimensional body where the standards set forth in [the rule] are exceeded, and location and number of such wells actually or potentially affected by the impact; and (ii) surface-water hydrology, seasonal stream flow characteristics, groundwater/surface-water relationships, ...[etc.]*

Additional investigation is necessary to fill gaps in data already collected at the site, including the drilling and installation of monitor wells, and measurement of aquifer properties. An inventory of water wells will be conducted within one mile of the perimeter of the site and wells that potentially could be affected by the contamination identified. Three temporary monitor wells will be installed and completed as permanent wells

with a bentonite seal to within 2 ft. of the surface and a metal protective locking box cemented at the surface. Following evaluation of data collected from the initial monitor wells, additional monitoring wells will be drilled as deemed necessary.

To determine the hydraulic conductivity and transmissivity of the sediments, groundwater slug-tests will be conducted on the monitor wells and the draw down and recovery data analyzed with procedures commonly utilized for this purpose. Determination of storativity usually requires installation of closely spaced monitor wells so that one can serve as an observation well for the pumping well. At this location with a shallow water table, storativity can be estimated from technical publications and a separate monitor well solely for this purpose is not necessary.

No intermittent, ephemeral or permanent sources of surface water are present in the area of the impact, so no hydrological or biological studies of the impact of the release on surface water are necessary.

- c. *Monitoring program, including sampling stations and frequencies, for the duration of the abatement plan that may be modified, after approval by the Director, as additional sampling stations are created.*

Following installation of the monitoring wells, they will be developed to remove any mud, silt and sand inadvertently introduced during the drilling process. The well locations and elevations will be located and surveyed by a registered professional surveyor. Water levels will be measured quarterly and wells will be sampled quarterly for CoC's following purging to ensure a fresh sample. In addition, the initial sampling will also include major cations and anions to establish a baseline condition for these constituents.

- d. *Quality assurance plan, consistent with the sampling and analytical techniques listed in [the Water Quality Control Commission regulations] for all work to be conducted pursuant to the abatement plan.*

Samples will be collected and handled in accordance with appropriate protocols for collection, preservation and transport of samples including maintaining a chain-of-custody and record keeping. The analytical laboratory selected to perform the analyses will be monitored for compliance with the applicable QA/QC standards.

- e. *A schedule for all Stage 1 abatement plan activities, including the submission of summary quarterly progress reports, and the submission, for approval by the Director, of a detailed final site investigation report.*

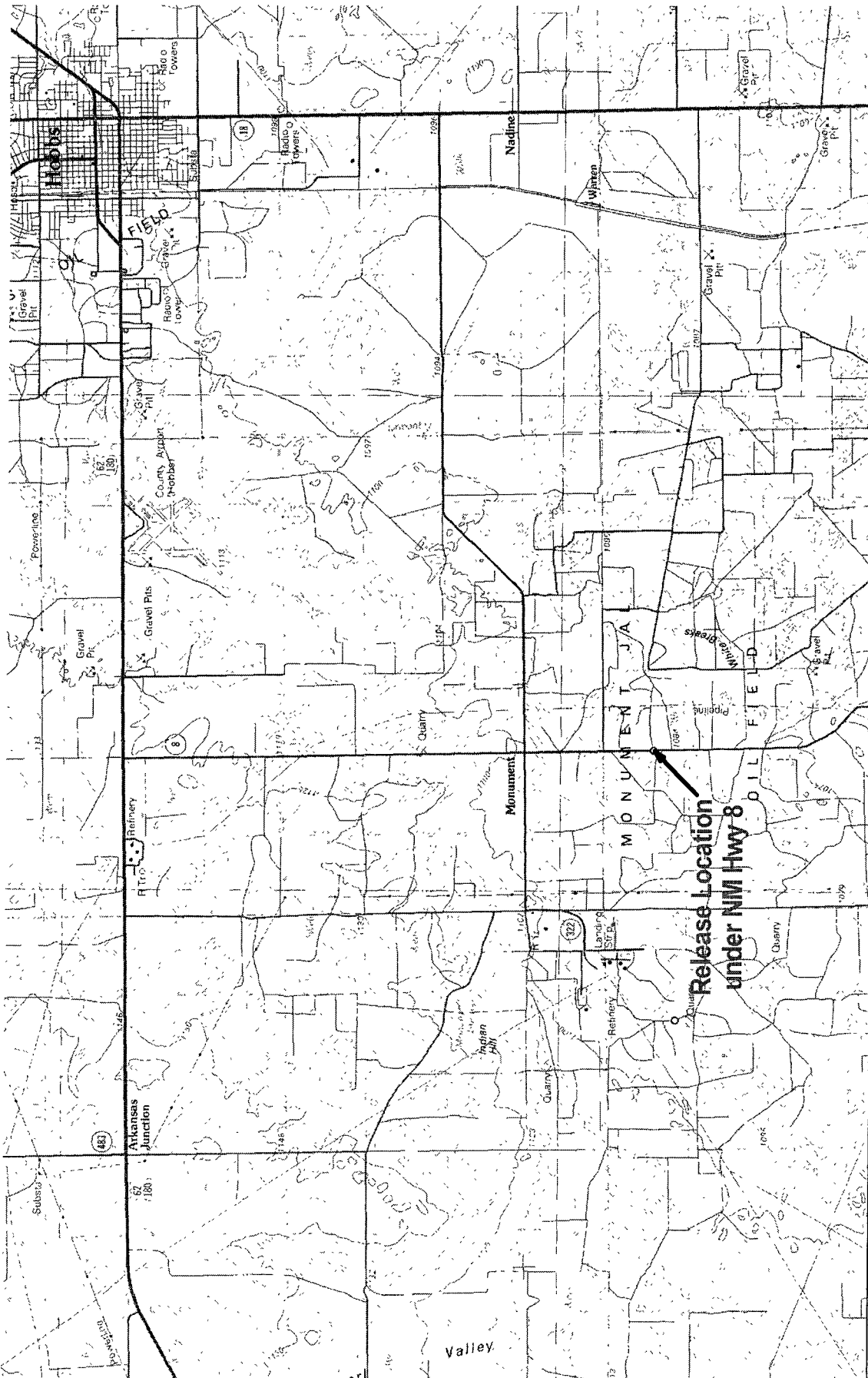
It is expected that all investigation work proposed within the Stage 1 abatement plan will be completed within three months of the date of approval. Quarterly progress reports will be submitted within 30 days following the end of the previous quarter. The report will include work performed and analytical results from testing of water quality in new and existing monitor wells. A final report will be prepared and submitted within 60 days of the completion of the work.

- f. Any additional information that may be required to design and perform and adequate site investigation.*

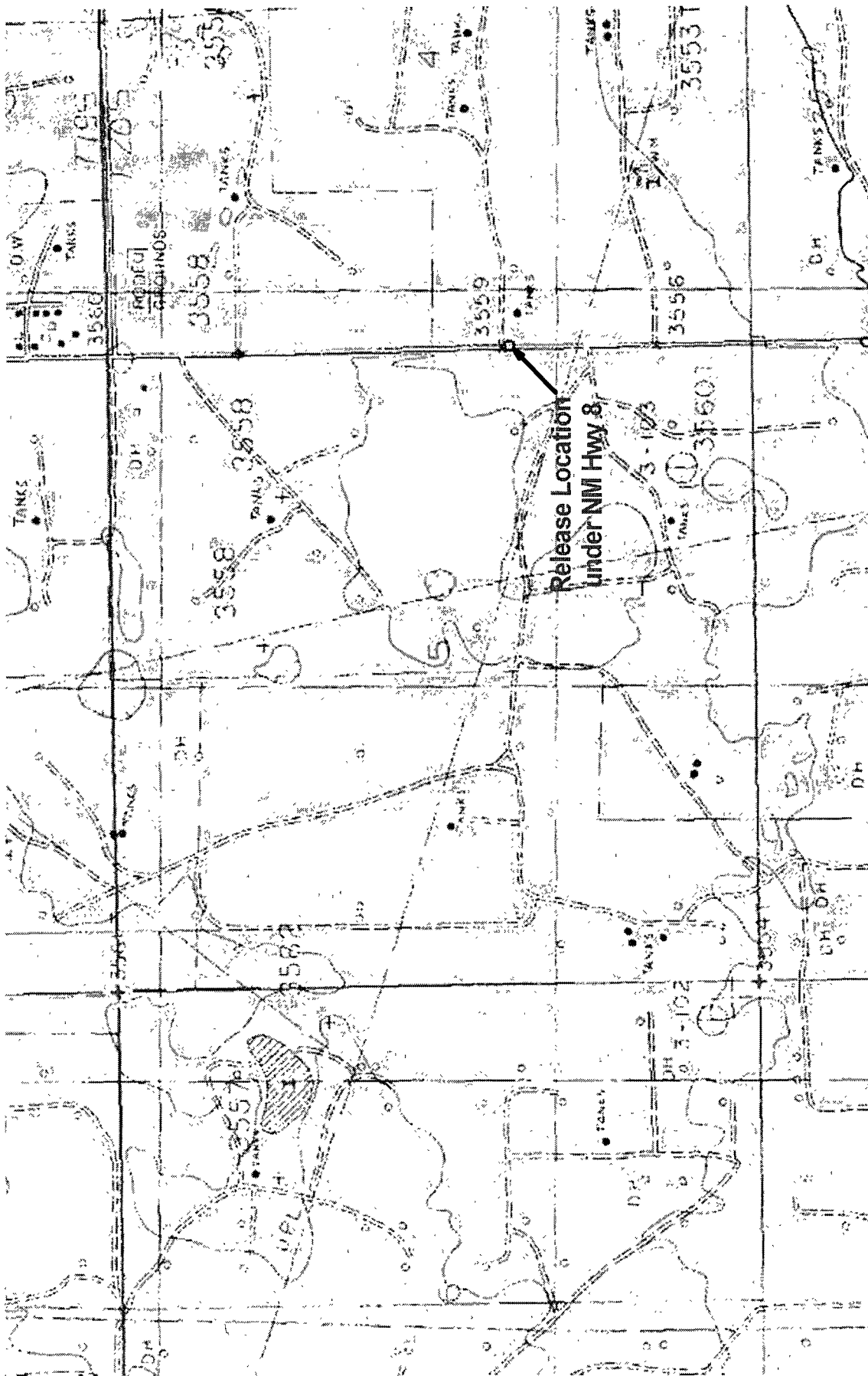
The information necessary to design and perform an adequate site investigation is included in the above paragraphs.

## ATTACHMENTS

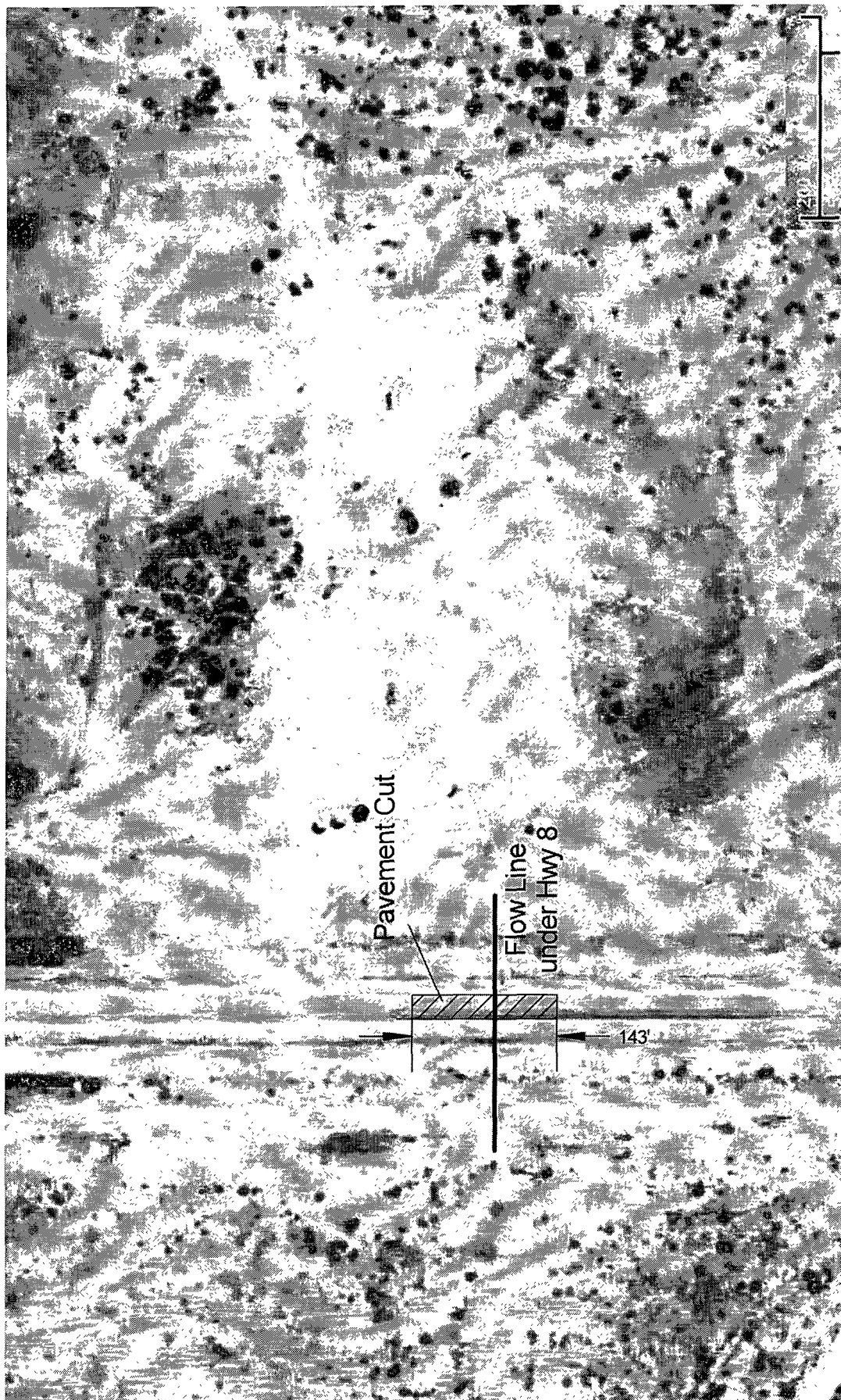
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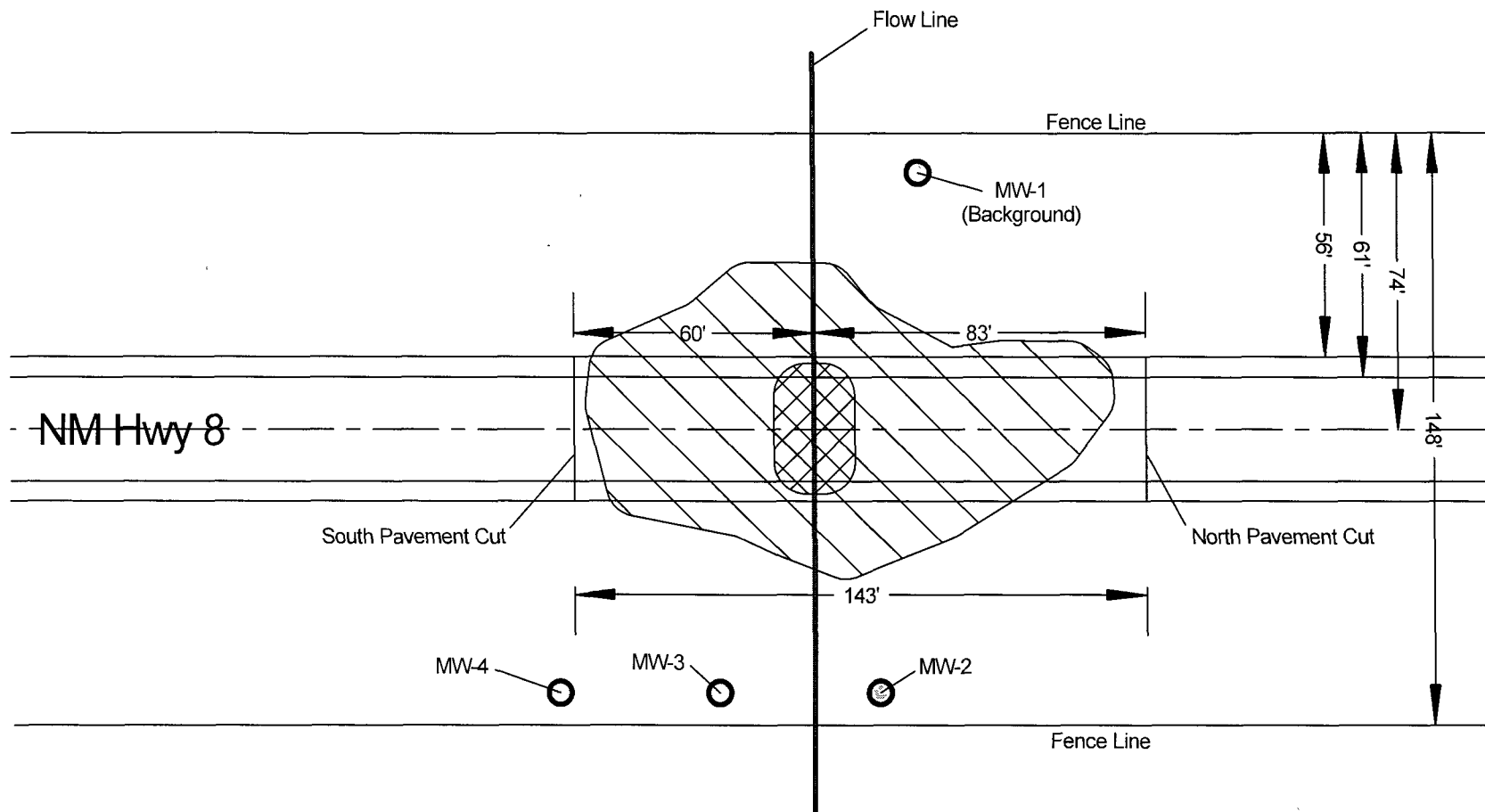
<b>Plate-1</b> Release Site Location Apache Corporation NMGSAU #2109	Lea County, New Mexico UL-H SECTION 5 T20S R37E 32° 36.021' N, 103° 15.897' W Elevation: ~3560-ft amsl		Drawing by: John Good March - 2007	Rev: 1
	SCALE: 0 3 Miles			



<p><b>Plate 2</b></p> <p>Release Site Topography</p> <p>Apache Corporation</p> <p>NMGSAU #2109</p>	<p>Lea County, New Mexico</p> <p>UL-H SECTION 5 T20S R37E</p> <p>32° 36.021' N, 103° 15.897' W</p> <p>Elevation: ~3560-ft amsl</p>	<p>Drawing by: John Good</p> <p>March - 2007</p> <p>Rev: 1</p> <p>SCALE: 0 2400 Feet</p>	
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<p>Plate 3</p> <p>Aerial Photograph</p> <p>Apache Corporation</p> <p>NMGSAU #2109</p>	<p>Lea County, New Mexico</p> <p>UL-H SECTION 5 T20S R37E</p> <p>32° 36.021' N, 103° 15.897' W</p> <p>Elevation: ~3560-ft amsl</p>	<p>Drawing by: John Good</p> <p>March - 2007</p> <p>Rev: 1</p> <p>SCALE: 1" = 139'</p>	
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LEGEND

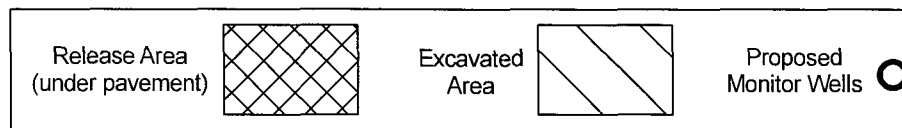


Plate 4  
Site Detail Drawing  
Apache Corporation  
NMGSAU #2109

Lea County, New Mexico  
UL-H SECTION 5 T20S R37E  
32° 36.021' N, 103° 15.897' W  
Elevation: ~3560-ft amsl

Drawing by: John Good  
March - 2007

Rev:  
1

SCALE: 1" = 40'





## District I

1625 N French Dr, Hobbs, NM 88240

## District II

1301 W Grand Avenue, Artesia, NM 88210

## District III

1000 Rio Brazos Road, Aztec, NM 87410

## District IV

1220 S St Francis Dr, Santa Fe, NM 87505

**State of New Mexico**  
**Energy Minerals and Natural Resources**

Form C-141

Revised June 10, 2003

**Oil Conservation Division**  
**1220 South St. Francis Dr.**  
**Santa Fe, NM 87505**

Submit 2 Copies to appropriate

District Office in accordance

with Rule 116 on back

side of form

**Release Notification and Corrective Action**

**OPERATOR**

☒ Initial Report    ☐ Final Report

Name of Company	<b>Apache Corporation</b>	Contact	<b>Guinn Burks</b>
Address	<b>P.O. Box 728</b>	Telephone No.	<b>432-556-9143</b>
Facility Name	<b>NMGSA Unit #2109</b>	Facility Type	<b>Production Well Flowline</b>

Surface Owner	<b>State of NM</b>	Mineral Owner	<b>State of NM</b>	Lease No.	<b>30-025-05918</b>
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**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from South Line	Feet from East Line	Longitude-W	Latitude-N	County
<b>H</b>	<b>5</b>	<b>20S</b>	<b>37E</b>	<b>2100</b>	<b>0</b>	<b>103deg 15.897'</b>	<b>32deg 36.021'</b>	<b>Lea</b>

**NATURE OF RELEASE**

Type of Release	Volume of Release	Volume Recovered
<b>Crude Oil and Produced Water Component (1:5)</b>	<b>greater than 25 bbl</b>	<b>0 bbl</b>
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery
<b>Production Well Flowline (2")</b>	<b>Unknown</b>	<b>2/15/07 7:30 AM</b>
Was Immediate Notice Given?	If YES, To Whom?	
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Not Required	<b>NMOCD - Hobbs Office</b>	
By Whom?	Date and Hour	
<b>Terry Pickerel - Apache Corporation</b>	<b>2/15/2007 ~8:30 AM</b>	
Was a Watercourse Reached?	If YES, Volume Impacting the Watercourse	
<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<b>NA</b>	

If a Watercourse was Impacted, Describe Fully\*

Describe Cause of Problem and Remedial Action Taken. \*

**2" production flowline (within 6" steel conduit) crossing beneath NM Hwy 8 (1.6 miles south of Monument, NM) lost integrity due to corrosion. Two wells feeding into the flowline were shut-in. Hungry Horse, LLC, Hobbs, NM contracted for emergency response.**

Describe Area Affected and Cleanup Action Taken. \*

**The initial affected area was approximately 2,000-ft<sup>2</sup> (50' X 40') within the highway right-of-way. The highway was blocked north and south. Hungry Horse LLC, Hobbs, NM conducted the emergency response and began excavation/disposal of the release @ ~11:00 AM, 2/15/07.**

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	<b>OIL CONSERVATION DIVISION</b>		
(original submittal signed by G. Burks)			
Printed Name:	<b>Guinn Burks</b>		
	Approved by District Supervisor:		
Title:	<b>Environmental Coordinator - Permian Basin</b>		
	Approval Date:	Expiration Date:	
E-Mail Address:	<b>Guinn.Burks@apachecorp.com</b>		
Date:	<b>3/2/2007</b>		
Phone:	<b>432-556-9143</b>		
Conditions of Approval:			<input type="checkbox"/> Attached

SITE: NMGSA Unit #2109 Assigned Site Reference:  
 Company: Apache Corporation  
 Street Address:  
 Mailing Address: P.O. Box 728  
 City, State, Zip: Crane, TX 79731  
 Representative: Guinn Burks  
 Representative Telephone: 432-556-9143  
 Telephone:  
 Fluid Volume Released (bbl): > 25 Volume Recovered (bbl): 0 Net Release: > 25

>25 bbl: Notify NMOCD verbally within 24 hours and submit C-141 within 15 days

5-25 bbl: Submit Form C-141 within 15 days. (Also applies to unauthorized release of >50 mcf Natural Gas).

Leak, Spill, or Pit (LSP) Name: NMGSA Unit #2109  
 Source of Contamination: Production Well Flowline (2")  
 Land Owner, i.e. BLM, ST, Fee, Other: State of NM  
 LSP Dimensions: ~ 50' X 40' under highway  
 LSP Area ~ 2000 -ft<sup>2</sup>  
 Location of Reference Point (RP):  
 Location distance and direction from RP:  
 Latitude: North 32deg 36.021'  
 Longitude: West 103deg 15.897'  
 Elevation above mean sea level (amsl): 3560 feet 1085 meters  
 Distance from South Section Line (feet): 2100  
 Distance from East Section Line (feet): 0  
 Location - Unit Letter and 1/4 1/4: UL- H SE - 1/4 of NE - 1/4  
 Location - Section 5  
 Location - Township 20S  
 Location - Range 37E  
 Surface water body within 1000' radius of site: 0  
 Surface water body within 1000' radius of site: 0  
 Domestic water wells within 1000' radius of site: 0  
 Domestic water wells within 1000' radius of site: 0  
 Agricultural water wells within 1000' radius of site: 0  
 Agricultural water wells within 1000' radius of site: 0  
 Public water supply wells within 1000' radius of site: 0  
 Public water supply wells within 1000' radius of site: 0  
 Depth (feet) from land surface to Ground Water (DG): ~ 32  
 Depth (feet) of lowest contamination (DC): 32  
 Depth (feet) to Ground Water (DG - DC = DtGW): ~ 0

**1. Ground Water**
**2. Wellhead Protection Area**
**3. Distance to Surface Water**

If Depth to GW <50-feet: 20 points	If <1000' from water source, or, <200' from private domestic water source: 20 points	<200 horizontal feet: 20 points
If Depth to GW 50 to 100-feet: 10 points	If >1000' from water source, or, >200' from private domestic water source: 0 points	200-1000 horizontal feet: 10 points
If Depth to GW >100-feet: 0 points		>1000 horizontal feet: 0 points
Ground Water Score: 20	Wellhead Protection Score: 0	Surface Water Score: 0

Site Ranking (1 + 2 + 3): 20

**Total Site Ranking Score and Acceptable Concentrations**

Parameter	20 or >	10	0
Benzene <sup>1</sup>	10-ppm	10-ppm	10-ppm
BTEX <sup>1</sup>	50-ppm	50-ppm	50-ppm
TPH	100-ppm	1000-ppm	5000-ppm



PHONE (815) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2328 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
HUNGRY HORSE ENVIRONMENTAL LLC  
ATTN: JOHN GOOD  
P.O. BOX 1058  
HOBBS, NM 88241  
FAX TO: (505) 391-4585

Receiving Date: 02/17/07

Reporting Date: 02/20/07

Project Owner: APACHE CORP.

Project Name: HWY. 8

Project Location: 1.5 MI. SOUTH OF MONUMENT, NM

Sampling Date: 02/17/07

Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: BC

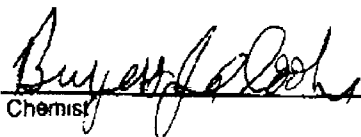
Analyzed By: BC/NF

LAB NUMBER	SAMPLE ID	GRO (C <sub>6</sub> -C <sub>10</sub> ) (mg/Kg)	DRO (>C <sub>10</sub> -C <sub>28</sub> ) (mg/Kg)	CI* (mg/Kg)
		02/19/07	02/19/07	02/17/07
H12210-1	W-WALL-25	<10.0	<10.0	<16
H12210-2	E-WALL-25	<10.0	<10.0	<16
H12210-3	N-WALL-25	<10.0	<10.0	288
H12210-4	S-WALL-25	<10.0	<10.0	80
H12210-5	CALICHE BACKFILL	<10.0	<10.0	<16
H12210-6	BOTTOM-31	<10.0	<10.0	576
Quality Control		817	775	510
True Value QC		800	800	500
% Recovery		102	96.8	102
Relative Percent Difference		0.2	4.3	2.0

METHODS TPH GRO & DRO: EPA SW-846 8015 M; CI: Std. Methods 4500-CIB

\*Analyses performed on 1:4 w/v aqueous extracts.

NOTE: Results for CI analyses reported by phone on 2/17/07.

  
Chemist

2/20/07  
Date

h12210a1

PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.



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PHONE (505) 393-2325 • 101 E MARLAND • HOBBS NM 88240

ANALYTICAL RESULTS FOR  
HUNGRY HORSE ENVIRONMENTAL LLC  
ATTN: JOHN GOOD  
P.O. BOX 1058  
HOBBS NM 88241  
FAX TO (505) 391-4585

Receiving Date: 02/17/07  
Reporting Date: 02/20/07  
Project Owner: APACHE CORP.  
Project Name: HWY. 8  
Project Location: 1.5 MI. SOUTH OF MONUMENT, NM

Sampling Date: 02/17/07  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: BC  
Analyzed By: LB

LAB NUMBER	SAMPLE ID	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE		02/19/07	02/19/07	02/19/07	02/19/07
H12210-1	W-WALL-25	<0.002	<0.002	<0.002	<0.006
H12210-2	E-WALL-25	<0.002	<0.002	<0.002	<0.006
H12210-3	N-WALL-25	<0.002	<0.002	<0.002	<0.006
H12210-4	S-WALL-25	<0.002	<0.002	<0.002	<0.006
H12210-5	CALICHE BACKFILL	<0.002	<0.002	<0.002	<0.006
H12210-6	BOTTOM-31	<0.002	<0.002	<0.002	<0.006
Quality Control		0.097	0.093	0.093	0.295
True Value QC		0.100	0.100	0.100	0.300
% Recovery		97.2	93.3	93.7	98.2
Relative Percent Difference		7.4	7.1	6.9	6.8

METHOD: EPA SW-846 8021 B

  
Chemist

  
Date

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PHONE (505) 393-2328 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
HUNGRY HORSE ENVIRONMENTAL LLC  
ATTN: JOHN GOOD  
P.O. BOX 1058  
HOBBS, NM 88241  
FAX TO: (505) 391-4585

Receiving Date: 02/17/07

Reporting Date: 02/20/07

Project Owner: APACHE CORP.

Project Name: HWY 8

Project Location: 1.5 MI SOUTH OF MONUMENT, NM

Sampling Date: 02/17/07

Sample Type: GROUNDWATER

Sample Condition: COOL & INTACT

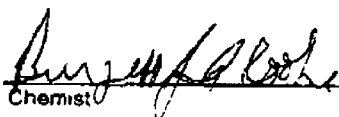
Sample Received By: BC

Analyzed By: BC/NF

LAB NUMBER	SAMPLE ID	GRO (C <sub>8</sub> -C <sub>10</sub> ) (mg/L)	DRO (>C <sub>10</sub> -C <sub>28</sub> ) (mg/L)	CI* (mg/L)
ANALYSIS DATE		02/19/07	02/19/07	02/17/07
H12210-7	GROUNDWATER-32	<5.0	<5.0	704
Quality Control		27.9	29.1	510
True Value QC		30.0	30.0	500
% Recovery		93.1	96.9	102
Relative Percent Difference		0.5	3.6	2.0

METHODS: TPH GRO & DRO EPA SW-846 8015 M, CI: Std. Methods 4500-CIB

NOTE: Result for CI analysis reported by phone on 2/17/07

  
Chemist

2/20/07  
Date

H12210a2

PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.



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PHONE (505) 393-2326 • 101 E MARLAND • HOBBS, NM 88240

**ANALYTICAL RESULTS FOR  
HUNGRY HORSE ENVIRONMENTAL LLC  
ATTN: JOHN GOOD  
P.O. BOX 1058  
HOBBS, NM 88241  
FAX TO: (505) 391-4585**

Receiving Date: 02/17/07  
Reporting Date: 02/20/07  
Project Owner: APACHE CORP.  
Project Name: HWY. 8  
Project Location: 1.5 MI SOUTH OF MONUMENT, NM

Sampling Date: 02/17/07  
Sample Type: GROUNDWATER  
Sample Condition: COOL & INTACT  
Sample Received By: BC  
Analyzed By: LB

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		02/19/07	02/19/07	02/19/07	02/19/07
H12210-7	GROUNDWATER-32	<0.002	<0.002	<0.002	<0.006
Quality Control		0.097	0.093	0.093	0.295
True Value QC		0.100	0.100	0.100	0.300
% Recovery		97.2	93.3	93.7	98.2
Relative Percent Difference		2.3	1.4	1.5	1.5

METHOD: EPA SW-846 8021 B

  
Chemist

2/20/07  
Date

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Excavation on Friday,  
2/16



Excavation bottom on 2/16



West sidewall @ 25'





East sidewall @ 25'



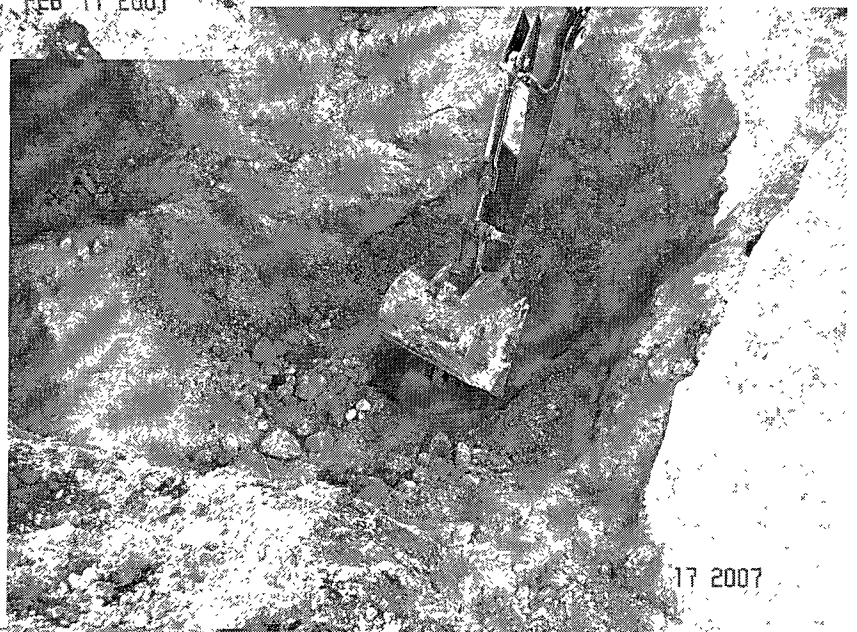
North sidewall @ 25'  
and hand excavation to  
ground water



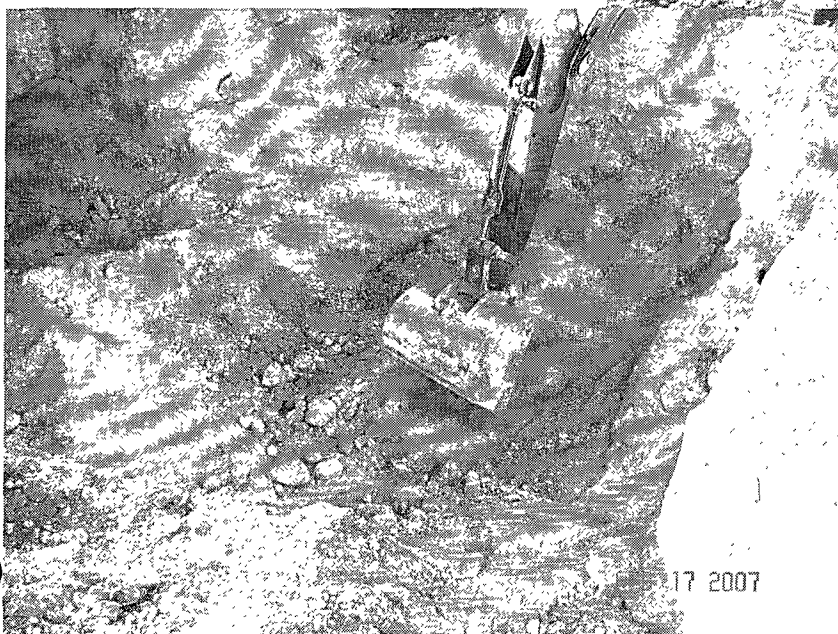
South sidewall @ 25'



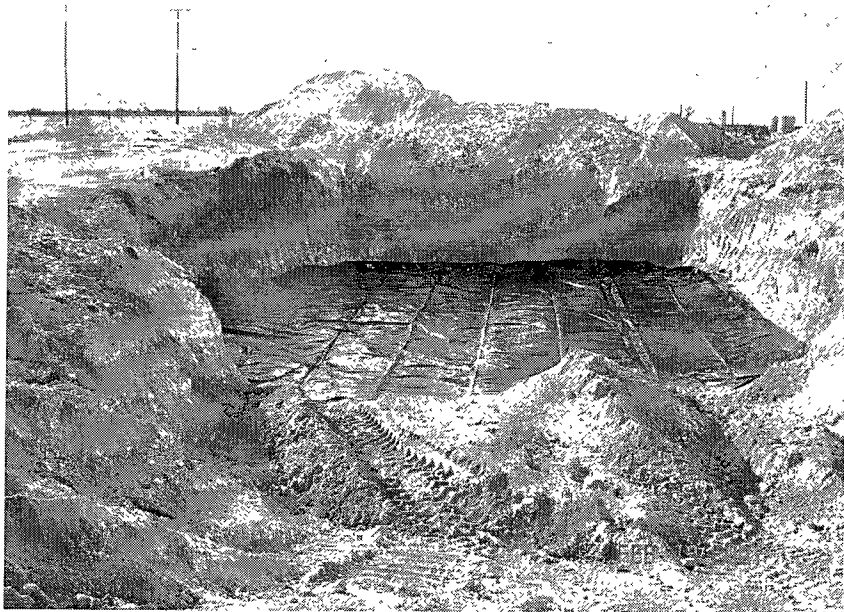
Red sand @ 31'



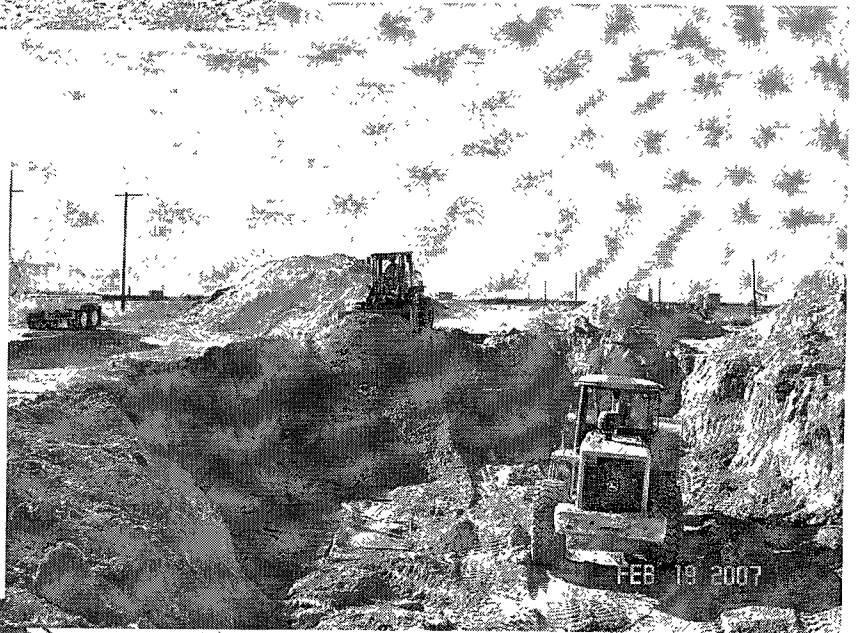
Placing bentonite to plug  
exposed ground water



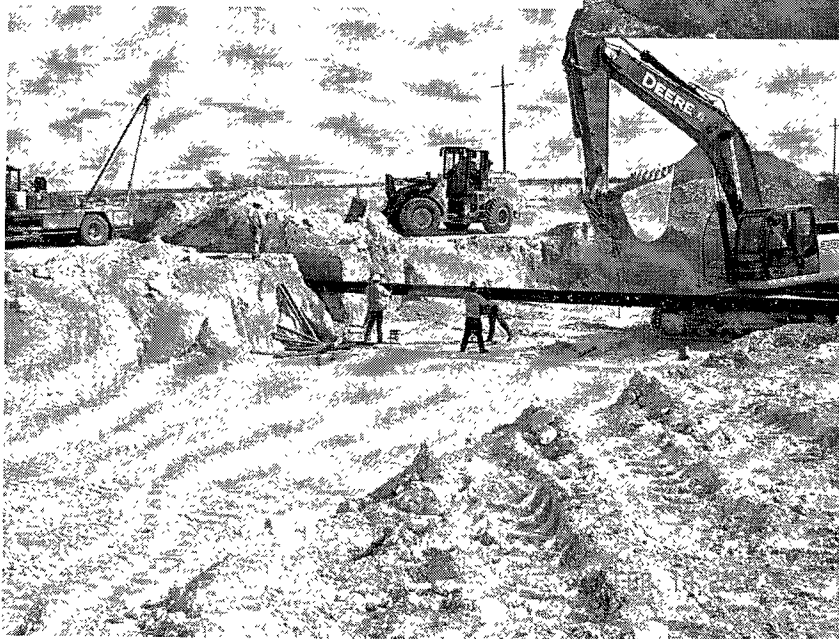
Placing bentonite to plug  
exposed ground water



20-mil woven plastic  
liner installed @ 10'



Placing backfill lift  
over plastic liner



Placing 12" conduit  
pipe across road @ 6'





Placing final backfill layer  
into the right-of-way

Armstrong Construction  
paving the location



Road completed and open  
to traffic at 4:55 PM



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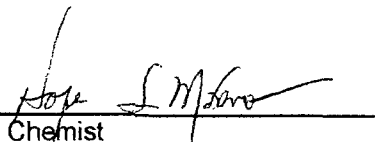
ANALYTICAL RESULTS FOR  
HUNGRY HORSE ENVIRONMENTAL  
ATTN: JOHN GOOD  
P.O. BOX 1058  
HOBBS, NM 88241  
FAX TO: (505) 391-4585

Receiving Date: 07/31/07  
Reporting Date: 07/31/07  
Project Owner: APACHE  
Project Name: HWY. 8-QUARTERLY  
Project Location: LEA COUNTY, NM

Analysis Date: 07/31/07  
Sampling Date: 07/31/07  
Sample Type: GROUNDWATER  
Sample Condition: COOL & INTACT  
Sample Received By: LB  
Analyzed By: HM

LAB NUMBER	SAMPLE ID	Cl <sup>-</sup> (mg/L)
H13012-1	MW#1	320
H13012-2	MW-2	364
H13012-3	MW-3	412
H13012-4	MW-4	364
Quality Control		500
True Value QC		500
% Recovery		100
Relative Percent Difference		< 0.1

METHOD: Standard Methods	4500-Cl <sup>-</sup> B
--------------------------	------------------------

  
Chemist

07-31-07  
Date

H19012 HHE

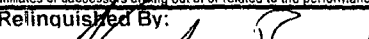
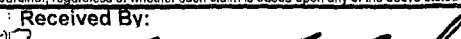
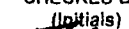
PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.



## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

H13012

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Relinquished By: 		Date: 7-31-07 Time: 3:00		Received By: 		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #: Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Fax #: REMARKS:	
Relinquished By:		Date: Time:		Received By:			
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No		CHECKED BY: (Initials) 			

† C cannot accept verbal changes. Please fax written changes to 505-393-2476.

Atache  
Hghy 8

MW#1

TD = 43.13' BGS

DGW = 31.1' BGS

WC = 12.03'

MW#2

TD = 48' BGS

DGW = 29.5' BGS

WC = 18.5'

MW#3

TD = 49.7' BGS

DGW = 29.1' BGS

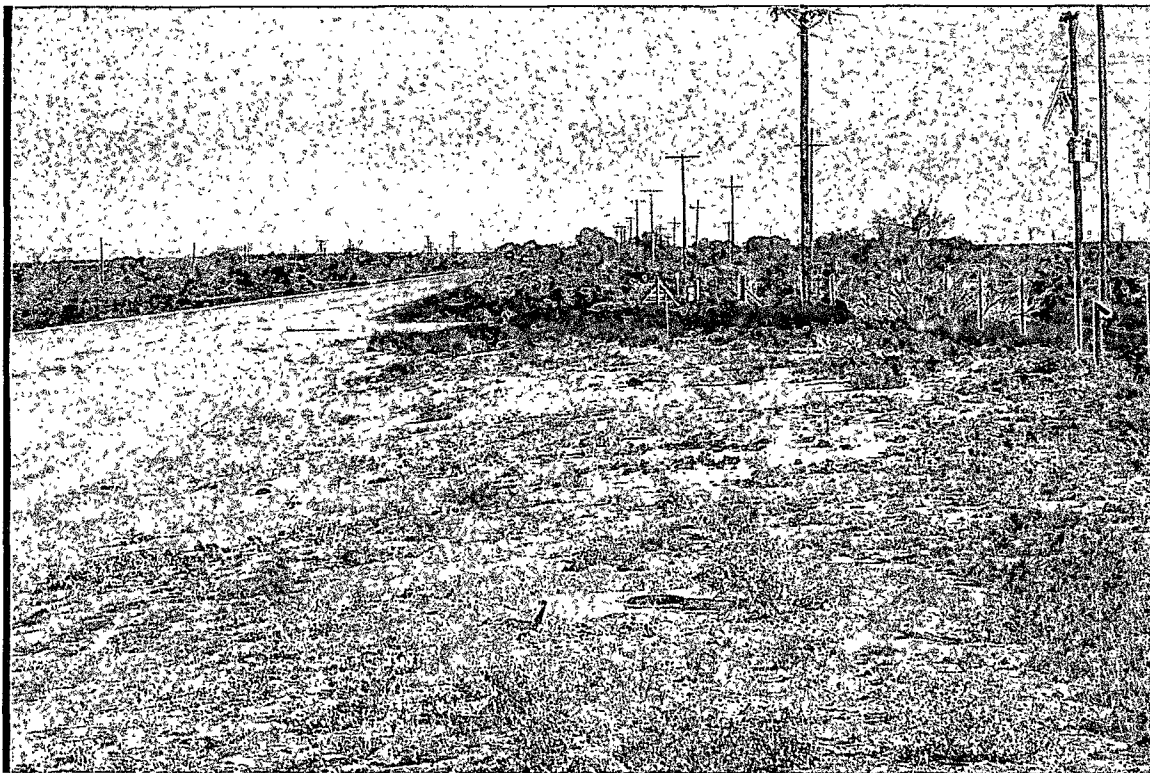
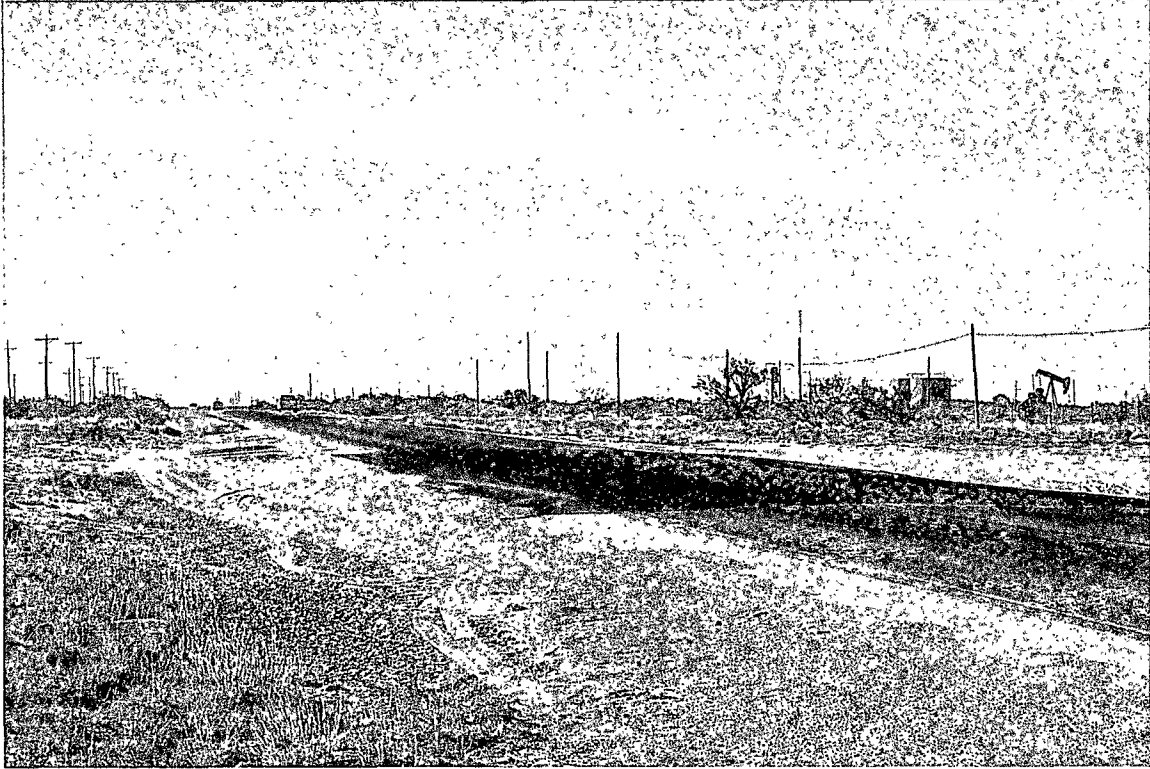
WC = 20.6'

MW#4

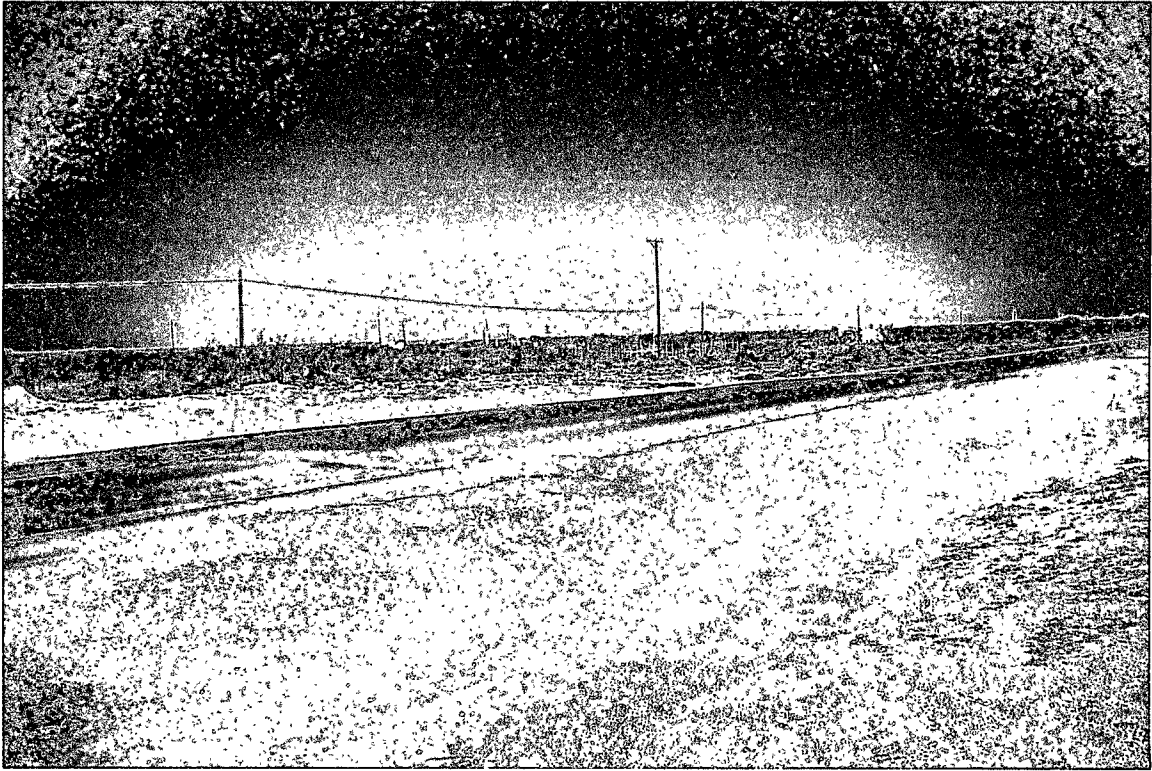
TD = 45.9' BGS

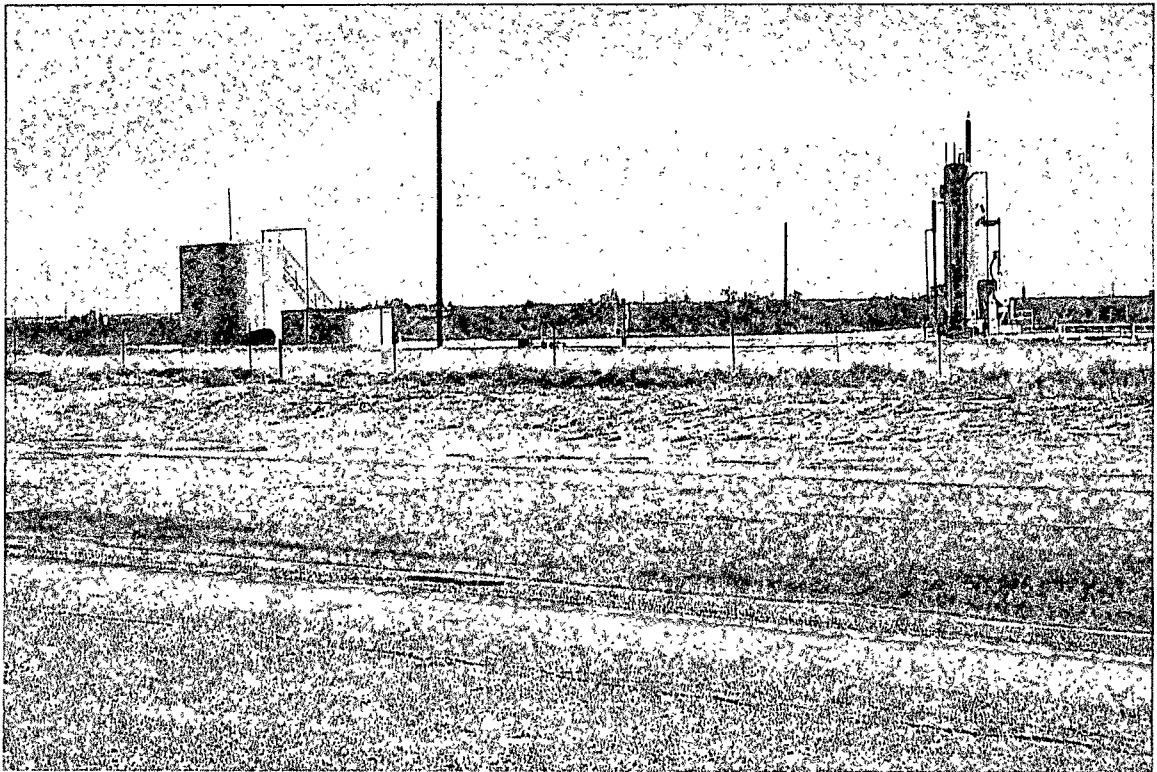
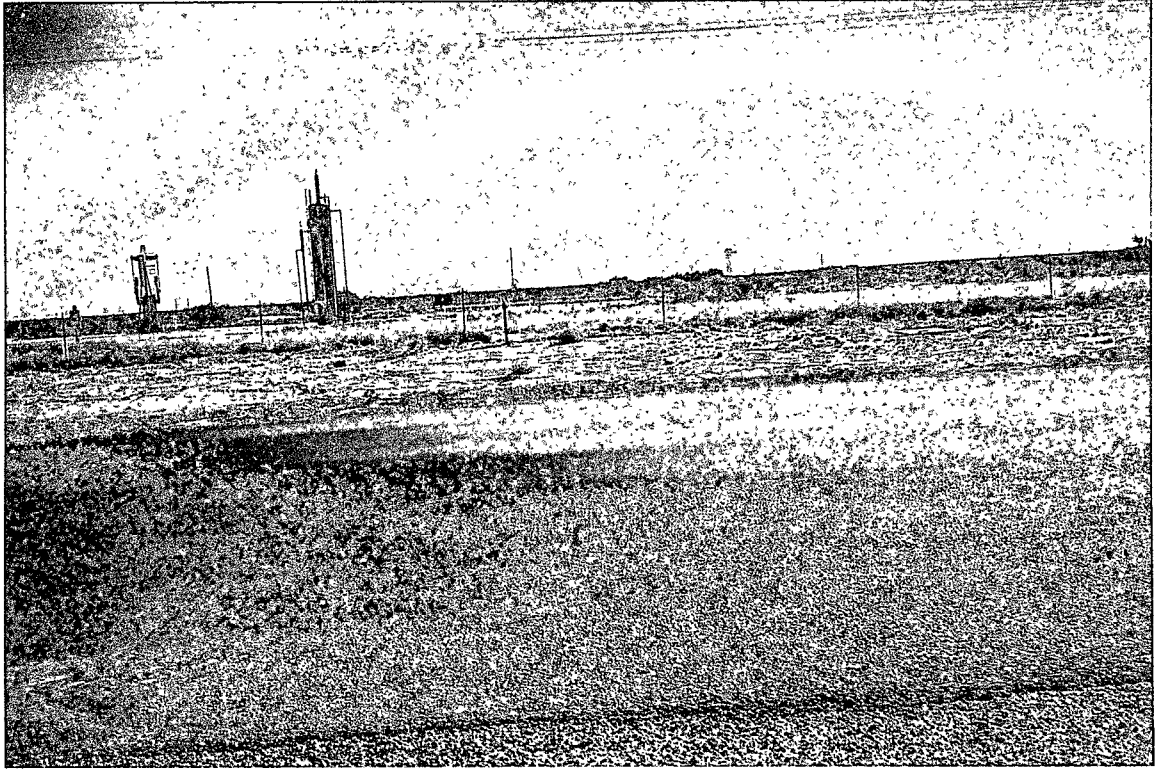
DGW = 29.6' BGS

WC = 16.3'









District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

RP 1204

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

**Release Notification and Corrective Action**

**OPERATOR**

☐ Initial Report ☒ Final Report

Name of Company	Apache Corporation	Contact	Guinn Burks
Address	PO Box 728 Crane, TX 79731	Telephone No.	432.556.9143
Facility Name	NMGSAU # 2109	Facility Type	Production Well Flowline

Surface Owner	State of NM	Mineral Owner	State of NM	Lease No.	API # 30-025-05918
---------------	-------------	---------------	-------------	-----------	--------------------

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	5	20S	37E		2100 from S		0	Lea

**Latitude** 32deg 36.021' **Longitude** 103deg 15.897'

**NATURE OF RELEASE**

Type of Release	Crude Oil and Produced Water (1:5)	Volume of Release	> 25 bbls	Volume Recovered	0 bbls
Source of Release	Production Well Flowline (2")	Date and Hour of Occurrence	Unknown	Date and Hour of Discovery	2/15/07 730
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	NMOCD – Hobbs Office		
By Whom?	Terry Pickerel – Apache	Date and Hour	2/15/07	-	830
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	N/A		

If a Watercourse was Impacted, Describe Fully.\*

N/A

Describe Cause of Problem and Remedial Action Taken.\*

2" flowline (within 6" steel conduit) crossing beneath NM Hwy 8 (1.6 miles S of Monument, NM) lost integrity due to corrosion. Two (2) wells feeding flowline shut down, while Hungry Horse Environmental was contacted for emergency response.

Describe Area Affected and Cleanup Action Taken.\*

Affected area includes approximately 2000 sqft of Hwy 8 right of way. As a result of North and South bound traffic being blocked, Hungry Horse Environmental conducted emergency response and removed the affected soil for transport to disposal. Remediation of the affected area was conducted in accordance with NMOCD guidelines as well as the submission of an abatement plan for additional release response.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: <i>Eddie W Seay</i>		<b>OIL CONSERVATION DIVISION</b>	
Printed Name: <i>Eddie W Seay</i>		Approved by District Supervisor: <i>Chris Williams</i>	
Title: <i>Agent</i>		Approval Date: <i>10/23/07</i>	Expiration Date: <i>10/23/07</i>
E-mail Address: <i>seay_04@leaco.net</i>		Conditions of Approval:	Attached <input type="checkbox"/>
Date: <i>10/22/2007</i>		Phone: <i>392-2236</i>	

\* Attach Additional Sheets If Necessary