### **HUNGRY HORSE, LLC**

### **ENVIRONMENTAL SERVICES**

January 23, 2007

Mr. Larry Johnson Energy, Minerals, and Natural Resources Department New Mexico Oil Conservation Division 1625 N. French Drive Hobbs, New Mexico 88240

Subject: Apache Corporation - - North Monument Grayburg San Andres Unit 1815 - Final C-141 and Closure Documentation

Dear Mr. Johnson:

Hungry Horse, LLC, on behalf of Apache Corporation (APACHE) submits for your consideration and approval the Final C-141 and Closure Documentation for the "North Monument Grayburg San Andres Unit 1815" remediation site. This report documents the vertical and horizontal extents of chloride contamination at the site, excavation and disposal of chloride contaminated soils, risk based closure (20-mil liners placed over in-situ >250-ppm Cl<sup>-</sup> soil) of two deeply contaminated areas within the overall release affected area, and backfilling of all excavated areas with clean caliche obtained from an off-site source. This submittal is consistent with NMOCD Guidelines for remediation and closure of hydrocarbon and/or produced water releases. Therefore, on behalf of Apache Corporation, Hungry Horse LLC requests that the NMOCD consider the information provided within this documentation and require "no further action" 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. Mike Warren of Apache Corporation can be contacted by phone at 432-556-2184.

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

Apache Corporation P.O. Drawer D Monument, NM 88265

Sincerely,

cc:

Jerry Brian, Senior Environmental Consultant/General Manager

Mike Warren, Apache Corporation, Monument, NM, w/enclosure Thaddeus Kostrubala, NM State Land Office

File

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

P.O. Box 1058

Phone: (505) 393-3

Application - PAC 0712951307

PP# 1313

### APACHE CORPORATION

### FINAL C-141 AND CLOSURE DOCUMENTATION

### NM GRAYBURG SAN ANDRES UNIT #1815 RELEASE

UL-O (SW¼ of the SE¼) of Section 2 T20S R36E

LATITUDE: N32° 35.815'

LONGITUDE: 103° 19.356'

~2.7 MILES SOUTHWEST (BEARING 224°) OF LOCO HILLS

**EDDY COUNTY, NEW MEXICO** 

January 23, 2007

PREPARED FOR APACHE CORPORATION BY:

### **HUNGRY HORSE, LLC**

**ENVIRONMENTAL SERVICES** 

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

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### **Project Summary**

Operating Company: Apache Corporation

Company Representative: Mike Warren Phone: 432-556-2184

Remediation Company: Hungry Horse, LLC Phone: 505-393-3386
Project Consultant: Jerry Brian Phone: 505-390-6149

Project Name: North Monument Grayburg San Andres Unit #1815

Project Reference: NMGSAU1815

### SITE SPECIFIC DATA:

Legal Description: Lea County, New Mexico

UL-O Sec 2 T20S R36E

General Location: 3.9 miles southwest (bearing 242.3°) of Monument, NM.

Latitude: N32° 35.815' Longitude: W103° 19.356'

Elevation: 3,560-ft amsl

Land Ownership: State of NM; Faye Klein

Ground Water Elevation: ~50-ft bgs

Water Wells within 1000-ft: none Surface Water within 1000-ft: none

### **RELEASE SPECIFIC DATA:**

Date of Release: 9/18/06

Material Released: Produced Water

Volume Released: ~2000-bbl Volume Recovered: ~1700-bbl

Cause of Release: Water flood injection line failure

### **REMEDIATION SPECIFIC DATA:**

Release Affected Area: ~14,800-ft<sup>2</sup> (flow path); ~6200-ft<sup>2</sup> (caliche pit)

Contaminant(s): Produced Water

Depth of Contamination: Maximum 42-ft. @ caliche pit 850-ft south of release point

Remediation Option Selected: Excavation/Disposal/Plastic Liners/Backfill

The southerly flow path was excavated to varying depths to achieve <250-ppm chloride concentrations based on vertical delineation results. One area of the flow path (centered on sample point 9) was excavated to 20-ft bgs to achieve <1000-ppm chloride concentrations, then covered with a 100' X 10' 20-mil plastic liner. The contaminated caliche pit area (76' X 82') was excavated to a depth of 21-ft bgs (10-ft below the existing excavated surface) to achieve a 1679-ppm chloride concentration. This excavated pit area was covered with a 20-mil plastic liner. All excavated material was disposed of at a facility approved by NMOCD to receive and process chloride contaminated soils. All excavations were backfilled with clean caliche obtained off-site.

Ground Water Monitoring: Not Applicable

Remediation Start: 9/21/06 Remediation Complete: 11-10-06

Contaminated Soil Disposal: Sundance Land Farm; ~7700-yd<sup>3</sup>

### 1.0 Introduction and Background

This report addresses the produced water release which occurred at the Apache Corporation (APACHE) North Monument Grayburg San Andres Unit 1815 injection well site. The release occurred on September 18, 2007. The estimated total volume of the release is ~2000-bbl, with approximately 1700-bbl recovered by vacuum truck. Total surface area affected by the release is ~21,000-ft<sup>2</sup> Site remediation was conducted by Hungry Horse, LLC – Environmental Services. Remediation activities were completed on November 10, 2006.

The release site is located on State of NM and private land in Unit Letter O, (SW¼ of the SE¼), Section 2, T20S, and R36E. The GPS coordinates are: Latitude: N32° 35.815'; Longitude: W103° 19.356'. A location map, topographical map of the site area, aerial photograph and a site detail drawing are included as Plates 1-4 in the Attachments.

The on-site remediation project commenced on 21-Sep-06 and was completed on 10-Nov-06 by Hungry Horse LLC. All laboratory analyses were conducted by Cardinal Laboratories, Hobbs, NM. Photocopies of the laboratory analytical results are attached to all printed copies of this report to substantiate the analytical results tables found on Page 13 of this report. (Electronic copies will not have laboratory reports included due to the resulting file size; refer to the analyses summary table on Page 14 of the Attachments).

### 2.0 Site Description

### 2.1 Geological Description

The United States Geological Survey (USGS) Ground-Water Report 6. "Geology and Ground-Water Conditions in Southern Lea County, New Mexico." A. Nicholson and A. Clebsch, 1961, describes the near surface geology of southern Lea County as "an intergrade of the Quaternary Alluvium (QA) sediments, i.e., fine to medium sand, with the mostly eroded Cenozoic Ogallala (CO) formation. Typically, the QA and CO formations in the area are capped by a thick interbed of caliche and generally overlain by sandy soil." The release site is located in the Laguna Valley physiographic subdivision, described by Nicholson & Clebsch as "covered almost entirely by dune sand which is stable or semi-stable over most of the area, but which locally drifts. The surface is very irregular and has no drainage features except at the edges of several playas. The sand is generally underlain by recent alluvium but in several places the sand forms topographic highs where it is underlain by a caliche surface. The thickness of the sand cover ranges from a few inches to a probable maximum of 20-feet."

### 2.2 Ecological Description

The area is typical of the Upper Chihuahuan Desert Biome consisting primarily of hummocky sand hills covered with Harvard Shin Oak (*Querqus harvardi*) interspersed with Honey Mesquite (*Prosopis glandulosa*) along with typical desert grasses, flowering annuals and flowering perennials. Mammals represented, include Orrd's and Merriam's Kangaroo Rat, Deer Mouse, White Throated Wood Rat, Cottontail Rabbit, Black Tailed Jackrabbit, Mule Deer, Bobcat, Red Fox and Coyote. Reptiles, Amphibians, and Birds are numerous and typical of the area. A survey of Listed, Threatened, or Endangered species was not conducted.

### 2.3 Area Ground Water

Based on current available data, ground water is projected to be ~50-ft bgs.

### 2.4 Area Water Wells

There are no recorded or observed water wells within 1000 horizontal feet of the site.

### 2.5 Area Surface Water Features

No surface water bodies exist within 1000 horizontal feet of the site.

### 3.0 NMOCD Site Ranking

Contaminant delineation and remedial work done at this site indicate that the chemical parameters of the soil and the physical parameters of the ground water were characterized consistent with the characterization and remediation/abatement goals and objectives set forth in the following New Mexico Oil Conservation Division (NMOCD) publications:

- ➤ Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993)
- ➤ Unlined Surface Impoundment Closure Guidelines (February 1993)

Acceptable thresholds for contaminants/constituents of concern (CoCs), i.e., TPH<sup>8015m</sup>, Benzene, and the mass sum of Benzene, Toluene, Ethyl Benzene, and total Xylenes (BTEX<sup>8260</sup>), was determined based on the NMOCD Ranking Criteria as follows:

- Depth to Ground water, i.e., distance from the lower most acceptable concentration to the ground water.
- Wellhead Protection Area, i.e., distance from fresh water supply wells.
- Distance to Surface Water Body, i.e., horizontal distance to all down gradient surface water bodies.

Based on the proximity of the site to area water wells, surface water bodies, and depth to ground water from the lower most contamination, the NMOCD ranking score for the site is 20 points with the soil remedial goals highlighted in the Site Ranking table presented below.

### NMOCD Site Ranking Table

1. 0	ROUND WATER	2. WELLHEAD PROTECTION	3. DISTANCE TO SURFACE WATER
DEPTH	TO GW <50 FEET: 20 POINTS	IF <1000' FROM WATER SOURCE, OR; <200' FROM PRIVATE DOMESTIC	<200 HORIZONTAL FEET: 20 POINTS
DEPTH TO	GW 50 TO 99 PEET: 10 POINTS	WATER SOURCE: 20 POINTS	200-1000 HORIZONTAL FEET: 10 POINTS
<b>Д</b> ЕРТН :	TO GW >100 FEET: 0 POINTS	IF >1000' FROM WATER SOURCE, OR; >200' FROM PRIVATE DOMESTIC WATER SOURCE: 0 POINTS	>1000 HORIZONTAL FEET: 0 POINTS
GROUND	WATER SCORE = 20	WELLHEAD PROTECTION SCORE= 0	SURFACE WATER SCORE= 0
	<b>S</b>	TE RANK (1+2+3) = 20 + 0 + 0 = 20 PORTS	
	TOTAL SITE RANKIN	G Score and Acceptable Remedial Goal	CONCENTRATIONS
PARAMETER		* * * * * * * * * * * * * * * * * * *	C
BENZENE		e constant	10 a pa
BTEX		等 (2) <b>经</b> 分配	<b>S</b> 3 repa
TPH	160 Pra	1000 per/	5000 PPM

### 4.0 Subsurface Soil Investigation

The vertical contamination extents beneath the southerly flow path, lateral ponding areas at the fence/gate area and the final flow terminus at the caliche pit were determined by trenching and sampling 15 points (14 along the flow path and 1 in the center of the caliche pit). Sampling trenches were extended until soil chloride concentrations were less than 250-ppm. Plate 5 of the Attachments displays all 15 sample points with a graphical representation of the contamination profile of each sample point. A summary table of all analytical results is contained on Page 14 of the Attachments.

### 5.0 Ground Water Investigation

No ground water investigation was conducted, nor will be necessary as a result of this release. The sample trench within the caliche pit was extended to 43-ft bgs with no ground water encountered.

### 6.0 Remediation Process

The initial phase of the site remediation was the excavation and installation of a 20-mil liner at the caliche pit located at the southern terminus of the contaminant flow path. The pre-existing bottom of the caliche pit was approximately 11-ft bgs. The results of the sampling protocol within the caliche pit indicated that the chloride concentration at the 21-ft bgs level was 1679-ppm. The bottom of the pit was excavated to 21-ft bgs and the walls of the pit were extended laterally to allow for a liner overlap. Excavated soil was disposed of at the Sundance Land Farm. The excavated bottom area (21-ft bgs) was then lined with a 76' X 82' 20-mil plastic liner and backfilled with a 10-ft layer of clean caliche.

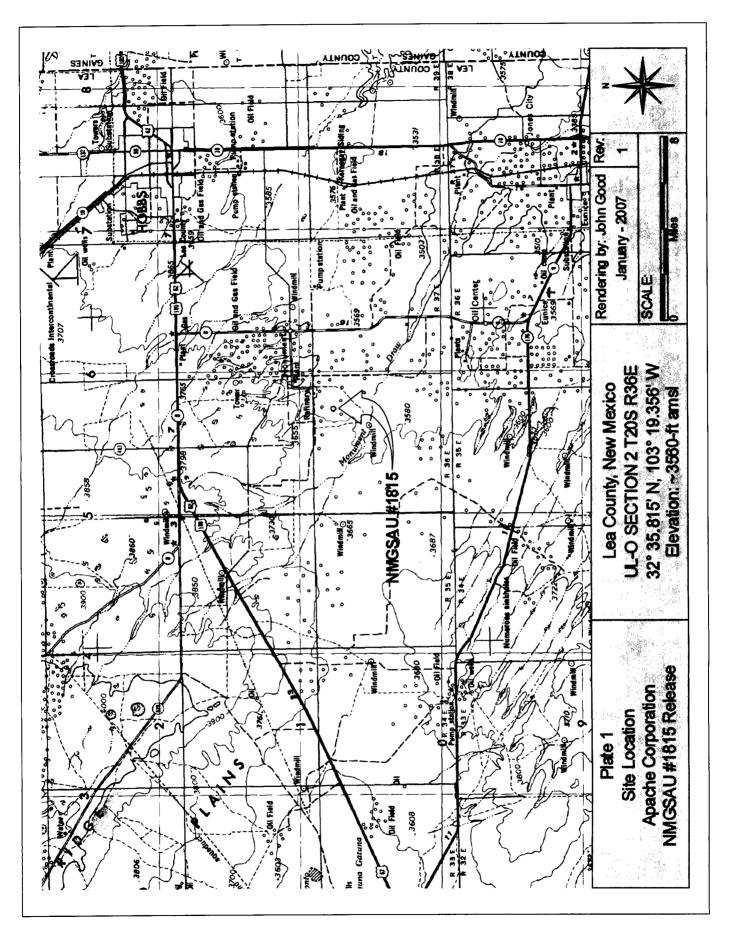
The 850-ft flow path emanating from the release point and the East-West lateral ponding areas at the fence/gate area were excavated to varying depths depending on the vertical contaminant profiles determined by the 14 sample trenches along the flow extent. Excavated depth ranged from just a few feet at the sample point #8 location to 23-ft bgs at the sample point #7 location. The excavation (50-ft north and south of sample point #9) was extended to 20-ft bgs to achieve a contaminant concentration of <1000-ppm in the remaining, unexcavated soil. This area was covered with a 10' X 100' 20-mil liner. All excavated soils were disposed of at the Sundance Land Farm. All excavated flow path areas were then backfilled with clean caliche obtained from an off-site source.

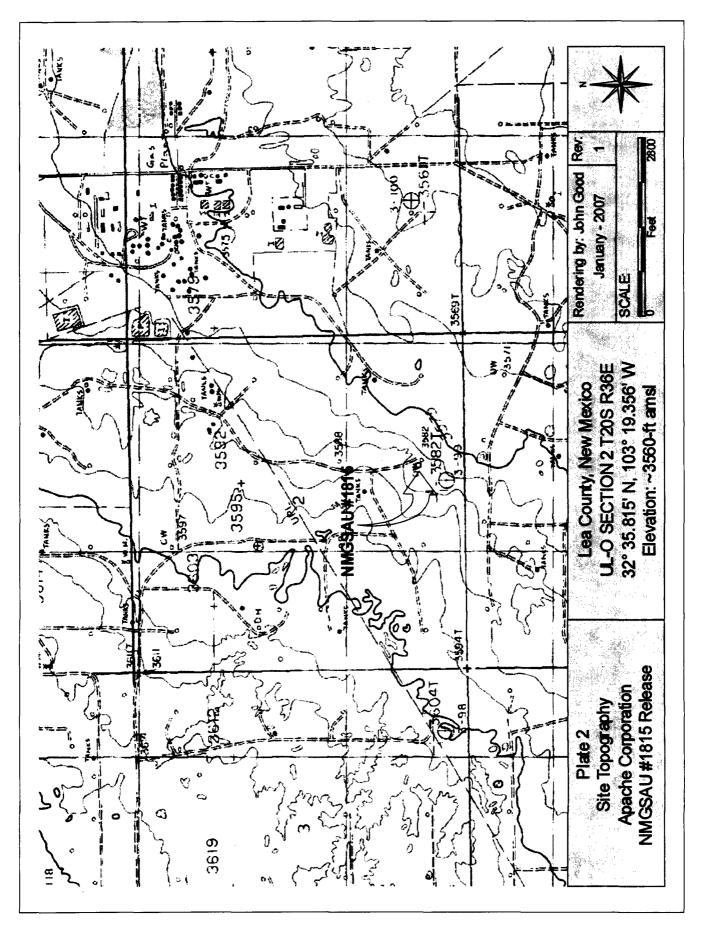
### 7.0 Closure Justification

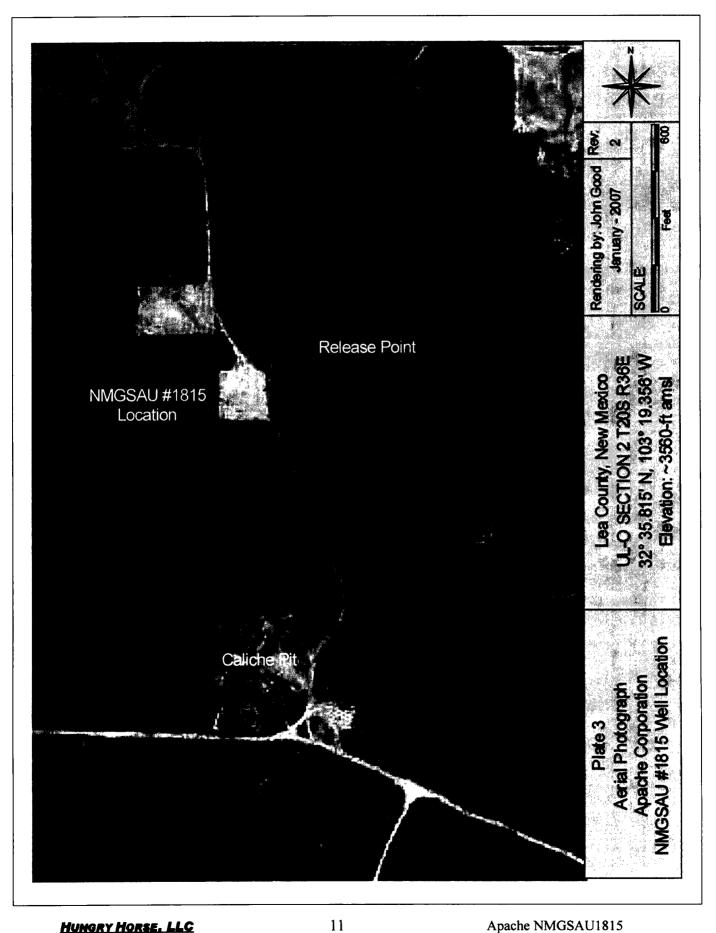
This report documents successful remediation of the Apache Corporation "North Monument Grayburg San Andres Unit #1815" release site. Contaminated soil within the affected areas, except two, was excavated to <250-ppm chloride concentration levels, and disposed of. The caliche pit was excavated to the 21-ft bgs level which displayed a chloride concentration of 1679-ppm. Soil below the 21-ft level was left in place and covered with a 76' X 82', 20-mil plastic liner. The trench area extending 50-ft on each side of sample point #9 was excavated to 20-ft bgs and then covered with a 100' X 10', 20-mil plastic liner. Soil left in-place below this liner displayed <1000-ppm chloride concentrations. Based on the information and data presented in this report, Hungry Horse LLC, on behalf of Apache Corporation, requests that the New Mexico Oil Conservation Division require "NO FURTHER ACTION" at this site in relation to the 9-18-06 release event.

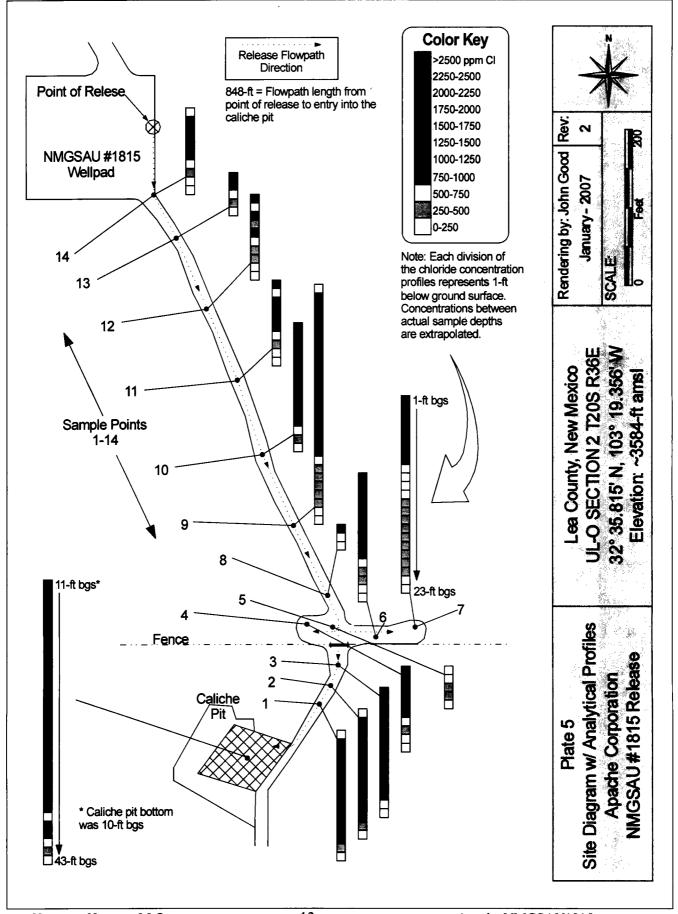
### **ATTACHMENTS**

Plate 1: Site Location Map	9
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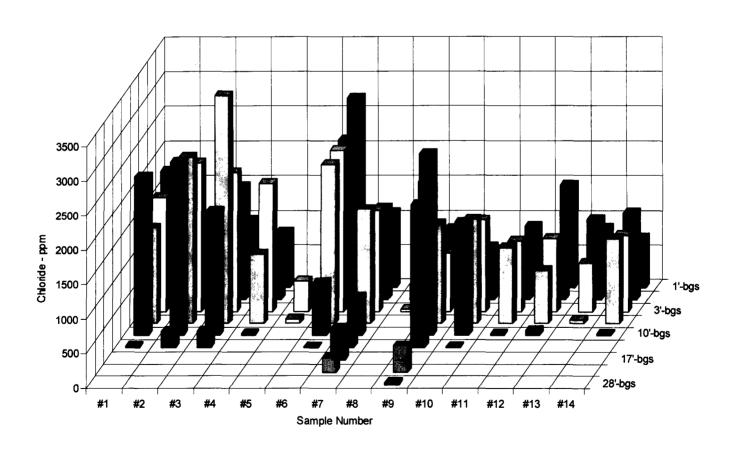




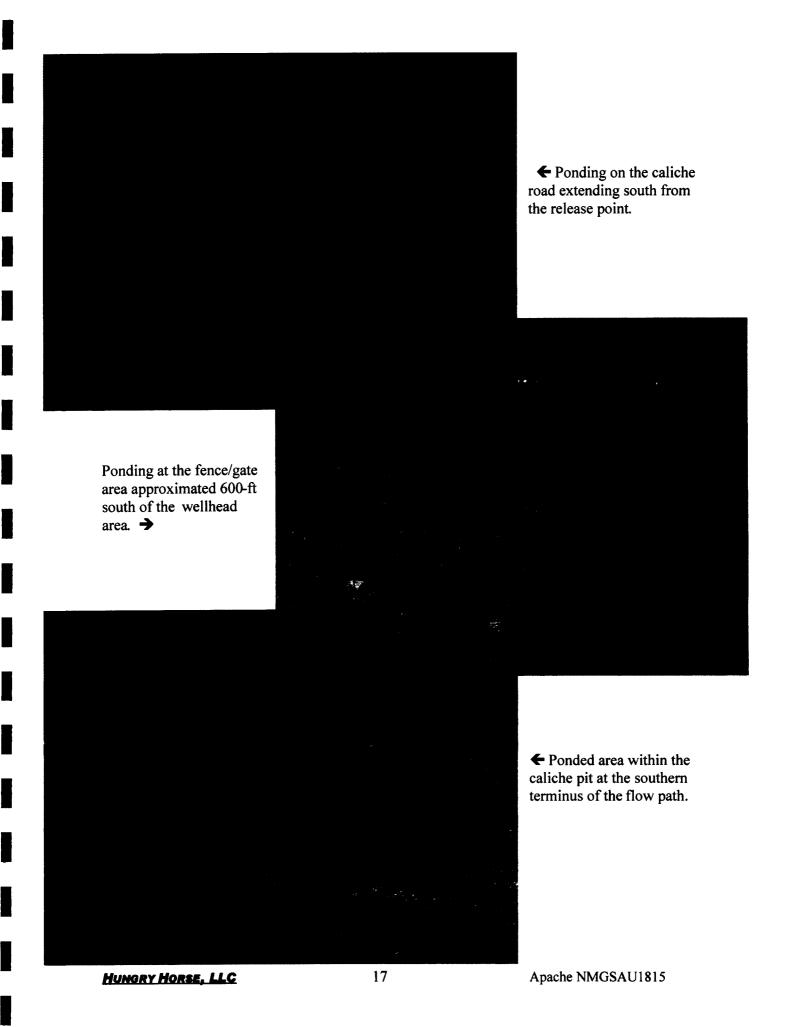
Chloride Analyses Summary Table(s)

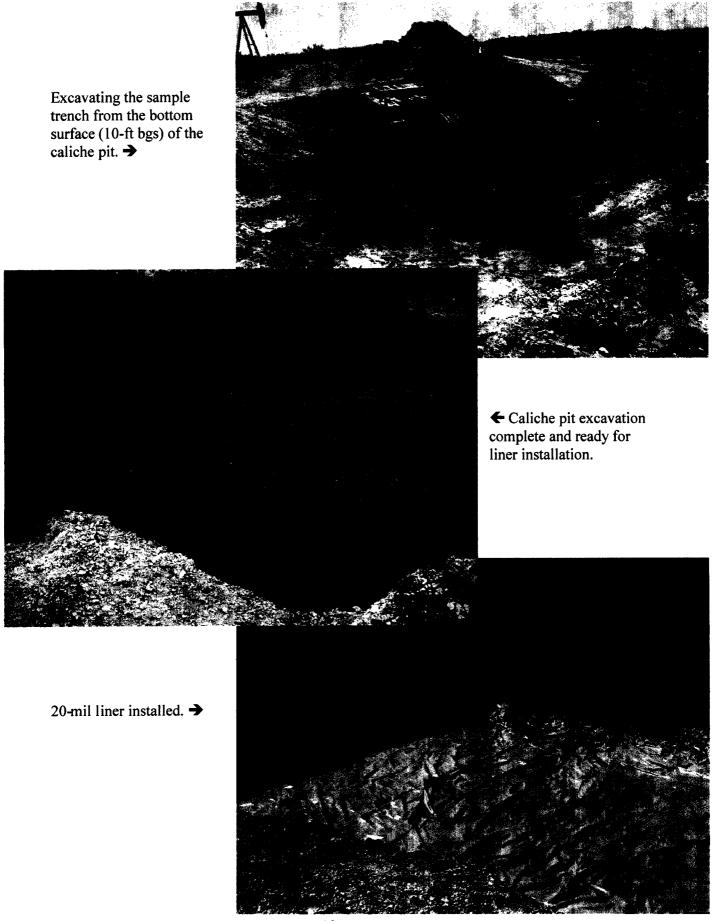
				S	ample Dep	th	-		
ID	1'-bgs	2'-bgs	3'-bgs	5'-bgs	10'-bgs	15'-bgs	17'-bgs	23'-bgs	28'-bgs
#1	720	1855	1663	1392	2303	32			
#2	672	1232	2159	2415	2511	240			
#3	976	1631	2015	3295	1807	240			
#4	800	928	1855	1008	32				
#5	32	16	448	64					
#6	2735	2303	2335	2303	768	15	_		
#7	1088	1328	1472	1663	560	272	464	208	
#8	1536	224	32						
#9	736	1024	848	1440	2639	2079		384	32
#10	544	768	1328	1520	1647	16			
#11	880	736	1024	1104	32				
#12	1488	560	1056	768	80				
#13	864	1168	704	48					
#14	720	1264	1104	1232	. 32				

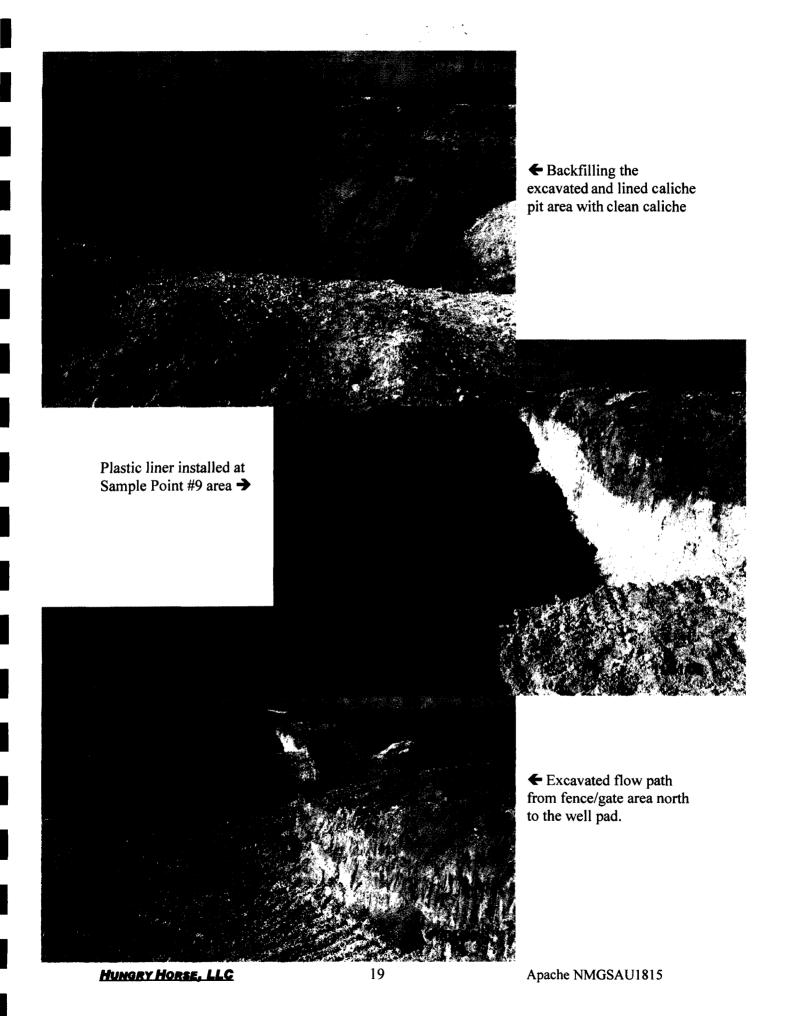
					S	ample Dep	th				
ID	11'-bgs	16'-bgs	21'-bgs	26'-bgs	31'-bgs	34'-bgs	36'-bgs	38'-bgs	40'-bgs	42'-bgs	43'-bgs
Pit	3167	1839	1679	1919	2047	1216	1360	624	1232	320	192

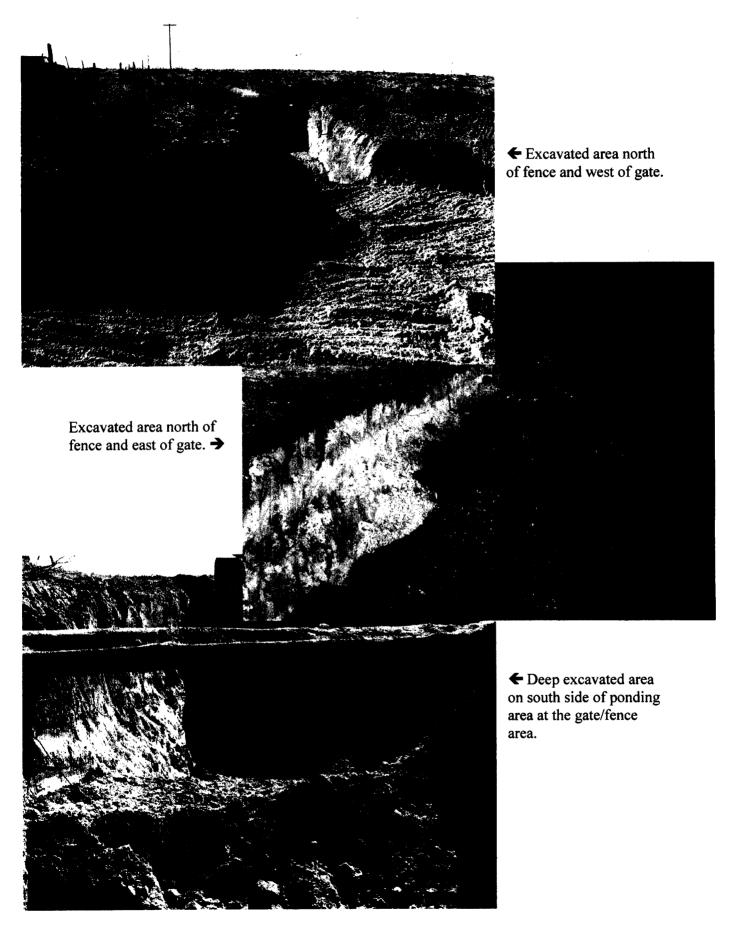


		Incide	ent Date:			CD Notified:	9/18/06
SITE:	NMGSA Unit #1815		Assigne	d Site Refe	rence:	AP-N	MGSAU1815
Company:		Corporation					
Street Addr							
Mailing Add							
City, State,		ent, NM 88265	5				
Representa	ative: Mike W	arren					
Representa	ative Telephone: 432-556	5-2184					
Telephone:							
Fluid Volum	ne Released (bbl): ~ 2000	Volume R	ecovered	(bbl): ~	17	00 Net Releas	se: ~ 300
	>25 bbl: Notify NMC	OCD verbally with	in 24 hours a	nd submit C-	141 withii	n 15 days.	
	5-25 bbl: Submit Form C-141 wit						).
Leak Spill	or Pit (LSP) Name:			Unit #181			<u> </u>
	Contamination:	· · · · · · · · · · · · · · · · · · ·		d Water In		ine	
	er, i.e. BLM, ST, Fee, Other:			NM; Faye			
LSP Dimen						32' @ caliche pit	<del></del>
					, 70 X C	oz (w canche pit	
LSP Area	D. ( D.: (DD)		21000 -	I L			
	Reference Point (RP):						
	stance and direction from RP:		22:				
Latitude: No			32deg 3				
Longitude:			103deg				
Elevation a	bove mean sea level (amsl):		3560 f	eet 1085	meters	s	
Distance from	om North Section Line (feet):		660				
Distance from	om West Section Line (feet):		1980				
Location - l	Jnit Letter and 1/4 1/4:	UL-	0 8	SW - 1/4 of	SE -	1/4	
Location - S	Section		2				
Location - 1			20S				
Location - F			36E				
	ter body within 1000' radius of s	ite:	0				
	ter body within 1000' radius of s		0			······································	<del></del>
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	rater wells within 1000' radius of		0				
	water wells within 1000' radius		0				
			0	•			
	water wells within 1000' radius r supply wells within 1000' radiu		0				
	r supply wells within 1000' radiu		<u>0</u>				
	) from land surface to Ground V	valei (DG): ~	50 42			<del></del>	
	) of lowest contamination (DC):	34C\A(\):					
Depth (feet	) to Ground Water (DG - DC = [		<u>8</u>	-44i A		0 Distance to	0
<u> </u>	1. Ground Water			otection A		3. Distance to	Surface Water
If Depth to	GW <50-feet: 20 points	If <1000' f		•	•	<200 horizontal 1	feet: 20 points
<u> </u>	·	from priva	te aomest	ic water so	urce:		<u> </u>
If Depth to	GW 50 to 100-feet: 10 points	20 points				200-1000 horizo	ntal feet: 10
-		lf >1000' fi				points	
If Depth to	GW >100-feet: 0 points	from priva	te domest	ic water so	urce: 0	>1000 horizontal	feet: 0 points
		points					·
<b>Ground Wa</b>		Wellhead	Protection	Score:	0	Surface Water S	core: 0
Site Rankin	g (1 + 2 + 3): <b>20</b>						
	Total Site Ra	nking Score	and Acce	ptable Co	ncentra	tions	
Parameter	20 or >		10				0
Benzene <sup>1</sup>	10-ppm		10-pj	om		10-	ppm
BTEX <sup>1</sup>	50-ppm		50-p				
	100-ppm	<del></del>					ppm
TPH (	i vo-hhiii		1000-	וווענ		<u>1 5000</u>	)-ppm

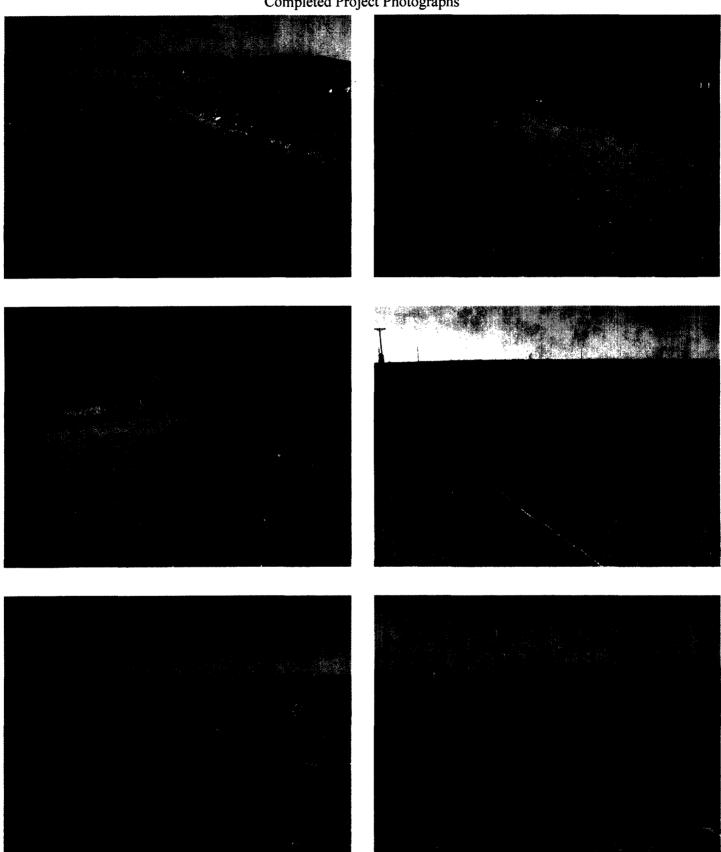








Completed Project Photographs



### Cardinal Laboratories Analytical Reports

(Photocopies attached to printed reports)



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

Receiving Date: 10/25/06 Reporting Date: 10/26/06 Project Owner: APACHE

Project Name: NMG SAU 1815
Project Location: LEA COUNTY

Analysis Date: 10/25/06 Sampling Date: 10/23/06 Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: NF

Analyzed By: LB

LAB NO.

1/2/

SAMPLE ID

CI<sup>-</sup> (mg/Kg)

ANALYSIS DATE:		10/25/06
H11704-1	S-9 28' BGS	32

Quality Control	510
True Value QC	500
% Recovery	102
Relative Percent Difference	0.0

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

NOTE: Analysis performed on a 1:4 w:v aqueous extract.

Chemist

10/26/06 Date

Page of

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2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240

) 393-2326 Fax (605) 393-2476	
(325) 673-7001 Fax (325) 673-7020 (505) 393-2326 Fax (605) 393-2476	
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Company Name:	HUNGEY HALSE		BILL TO		ANALYSI	ANALYSIS REQUEST	<del>-</del>
Project Manager:	18		P.O.#:				
Address:	10 Box 1058		Company:			fact -	
clty:	0665 State: 1711	ZIP: 882.40	Attn:	-			
Phone #:	Fax #:		Address:				
Project #:	Project Owner:	Dache.	Clty:				
Project Name:	UNG 5411 1815		State: Zip:				
Project Location:	ť		Phone #:				
Sampler Name:	Kelton Beaird		Fax#:				
FOR LAB USE CNLY		MATRIX	PRESERV.	SAMPLING			
Lab I.D.	Sample I.D.	G)RAB OR (C)OMP. F CONTAINERS SROUNDWATER NASTEWATER SOIL SOIL JIC	) тучея: се / соог отнея: П	T.W.E.			
H11704-1	5-9 28.865	x X / / / / / / / / / / / / / / / / / /	7/ 2 - 2		×		,
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PLEASE NOTE: Liability and D	PLEASE WOTE: Liability and Damages, Cardinal's lability and electic's acclusive rainedy for any claim activity whethy	shelher based in contract or lost, shall be in	is based in contract or tort, shall be limited to the amount paid by the client for the	r the	Terms and Conditions: Interest 1	Terms and Conditions: Interest will be charged on all accounts more than an annual from the original date of imples.	ŀ
eervice. In no event shall Cardina	ervice. In no event that Cardinal be labb for holderful or consequental desuges, holderfur without limitates, business interruptions, loss of use, or loss of profits hearred by client, its abiditaries, seemed the cardinal profits hearred by client, its abiditaries, and the consequential desuges, holderfur without limitation in the cardinal part of the consequential desuges, holderfur without limitation in the consequential desuges, holderfur without limitations and the consequential desuges.	as interruptions, loss of use, or loss of profits in	rained by offert, its subsidiaries,		and all costs of collections, including attorney's fees.	ing attorney's kes.	
Sampler Relinquish	Sampler Relinquished: Received By:	Received By:	ove stated resears of emerwite.	Phone Result:	O Yes D No		Г
1 de	Aime: 10-75-06			Fax Result: REKARKS:	11		
Relinquished By:	Date: Of John Strong	Received By: (Lab Staff)					
Dalivered By: (Circle One)	17:10 (11:10)	July + Kull	Checked				
Delivered Dr. 12	נו כופ סופ)	Temp, *C intact?	٤				
Samplery UPS - Bus - Other:	lus - Other:	쁜	Γ	-	•		

† Cardinal cannot accept verbal changes. Please fax written changes to (325) 673-7020.



ANALYTICAL RESULTS FOR HUNGRY HORSE ATTN: JERRY BRIAN P.O. BOX 1058 HOBBS, NM 88241 FAX TO: (505) 393-3386

Receiving Date: 10/10/06
Reporting Date: 10/11/06
Project Owner: APACHE
Project Name: NMCSALL1

Project Name: NMGSAU 1815
Project Location: LEA COUNTY, NM

Analysis Date: 10/11/06 Sampling Date: 10/10/06 Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: HM

Analyzed By: HM

CI LAB NO. SAMPLE ID (mg/Kg) H11639-1 S-7 23' BGS 208 S-9 23' BGS H11639-2 384 **Quality Control** 500 True Value QC 500 100 % Recovery Relative Percent Difference 2.0

METHOD: Standard Methods 4500-CIB

NOTE: Analyses performed on 1:4 w:v aqueous extracts.

10-11-06 Data

CHEMISE

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ARDINAL LABORATORIES, INC.

22	2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020	\bilene, TX 79603 ax (915) 673-7020	- 1	East 5) 393	Mart -232	and, I	10bb (505)	101 East Mariand, Hobbs, NM 882 (505) 393-2326 Fax (505) 393-2476	101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476							Page
Company Name:	Hunger	Norse							<b>971.17</b>				3	ANAL YSIS	1	REQUEST
Project Manager:		Brian					P.O. #:	2.0			L		_	_		-
Address: P C	0. Box 10	58					Company:	any:								
City: Hob	bbs	State: AM Zip:	1	04288	21		Attn:									
Phone #: 39	390-6149	Fax#:					Address:	::								
Project #:		Project Owner:	A	Desc	he		Clty:									
Project Name:	1200 G SA	1812	`				Starte:		Złp:		<del></del>		<del></del>			
Project Location:	Lea	2,40,40					Phone #:	#					,			
Sampler Name:	Kel+0~	Pr. Jest					Fax #:									
FOR LAB USE ONLY			┝	L	MATRIX	]	E	PRESERV.	1 SAMPLING	κĜ						
Lab I.D.	Sample I.D.	1.D.	# CONTAINERS  ** CONTAINERS	RESOUNDWATER RESTEWATER	POIL	SENDGE CKNDE OIF	OTHER:	CE / COOL	DATE	F						
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PLEASE NOTE: Lappacy and temples. All claims including the cervice. In no events shall Card.	TEACHER VOLTE: Lastesty and Commons. Cardents handley and cheer's auctained remody for any other safety whether bead in contrast or fort, and for blanks to the amount public by the darf for the new common and the common ways and the contrast of the common and any other cause whatever end the common ways to the common and any other cause whatever end the common ways to the common and any other cause whatever and the common	war't auchtave remedy for any defin ariaing whether beard in contract et fort, aftel the faithed for the amount puel by the dient for the cause withscener shall be deemed winked unless mode in writing and received by Caudinal within 30 days after conspiled no the asy equerical demaptes, folding without kindstoin, business bistorphiens, less of use, or loss of profits incurred by dent, its explaidations,	alm arteing od waived t of Embation	feet med	eed in cont i in writing riterruption	pract or tor and receiv a, town of	r, shall be ad by Carr see, or be	agod jo a Ligge pag B of balan	e anount paid by th 30 days after compl Incurred by client, its	e chart for the ellon of the applica exceldance,	\$			Terres and C 30 days past and all costs	onditions: la due at the ra of collectors.	Terms and Conditions: Interest will be of 30 days pest due at the rate of 24% per as and all cods of collections, including attom
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		/ imme:								REMARKS	••					

Sampler - UPS - Bus - Other:

CHECKED BY: (Initials)

(. Myders

Received By: (Lab Staff)

<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.



ANALYTICAL RESULTS FOR HUNGRY HORSE ATTN: JERRY BRIAN P.O. BOX 1058 HOBBS, NM 88241 FAX TO: (505) 393-3386

Receiving Date: 10/06/06 Reporting Date: 10/09/06 Project Owner: APACHE Project Name: NOT GIVEN

Project Location: NMGSAU 1815

Analysis Date: 10/06/06 Sampling Date: 10/06/06 Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: NF

Analyzed By: NF

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1	METH	OD:	Star	idard Me	ethods	3	4500-CIB
_							 <u> </u>

NOTE: Analysis performed on a 1:4 w:v aqueous extract.

Chemist Server

10-09-06

Date

A ARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240 (915) 673-7001 Fax (915) 673-7001 (915) 673-7001 Fax (915)

ō **ANALYSIS REQUEST** Page Add'l Phone #: ☐ Yes ☐ No ☐ Yes ☐ No Phone Result: Fax Result: REMARKS: ount paid by the chart for the SAMPLING BILL TO Jo-6-06 DATE Zip: (505) 393-2326 Fax (505) 393-2476 PRESERV : ЯЭНТО Company: Address: ICE / COOF Phone #: P.O. #: State: Fax #: Ë Attn: : ABHTO STUDGE Per Brian CRUDE OIL State: 12m Zip: 89240 **MASTEWATER ЗЕТАМОИ ПОЯБ** # CONTAINERS (G) RAB OR (C)OMP. Project Owner: mages. Condrafts liability and clearits exclusive remedy for any THEY LECK Fax#: Sample I.D. 0 7 390-Box Project Manager: CEASE NOTE: Libitiy and D. Company Name: Project Location: Sampler Name: Project Name: FOR LAB USE ONLY Lab I.D. H116-21 - 1 roject #: Address: Phone #: Ω.

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

HECKED BY:

Sample Condition
Cool Intact
Myes Cyes

ampler - MPS - Bus - Other:



ANALYTICAL RESULTS FOR HUNGRY HORSE ATTN: JERRY BRIAN P.O. BOX 1058 HOBBS, NM 88241 FAX TO: (505) 393-3386

Receiving Date: 10/06/06
Reporting Date: 10/09/06
Project Owner: APACHE
Project Name: NOT GIVEN

Project Location: NMGSAU 1815

Analysis Date: 10/06/06 Sampling Date: 10/06/06 Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: HM

Analyzed By: NF

CI SAMPLE ID LAB NO. (mg/Kg) H11626-1 S-9 15' BGS 2079 S-10 15' BGS H11626-2 **Quality Control** 500 True Value QC 500 100 % Recovery Relative Percent Difference 2.0

METHOD: Standard Methods 4500-Cl'B

NOTE: Analyses performed on 1:4 w:v aqueous extracts.

Chemist J. M. Jour

10-09-06

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ANALYSIS REQUEST

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2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs. NM 88240	(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476	Hungry Horse	Servey Brien	53 01 >	State: An Zip:	-6149 Fax#	Project Owner: Apa	STORESTAN	181 181	Kelton Blaire		Sample I.D.	5-9 15" 865	5-1015' 865			
2111	(9.	Company Name:	Project Manager:	Address: Rox	chy: Hobbs	Phone #: 390-6149	Project #:	Project Name:	Project Location:	Sampler Name:	FOR LAB USE ONLY	Lab I.D.	¥11622 -(1	-2			

30 days past due at the rate of 24% per armum from the original date of invoice and all costs of cofections, including attorney's fees. or tort, shall be limited to the emount paid by the clerit for the PLEASE NOTE: Liability and Demages. Cardina's leability and clear's exclusive remedy for any service. In no event shall Cerdinal be lable for Sampler Relinquished

coas: Interest will be charged on all eco

☐ Yes ☐ No Add'i Phone # ☐ Yes ☐ No Add'i Fax#: Phone Result: Fax Result: REMARKS: CHECKED BY: (Initials) - In gent Sample Condition
Cool Intact
Thes Tres Received By: (Lab Staff) June: 50 10-6 06 Time: Sampler | UPS - Bus - Other: Delivered By: (Circle One Relinquished By

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



ANALYTICAL RESULTS FOR HUNGRY HORSE ATTN: JERRY BRIAN P.O. BOX 1058 HOBBS, NM 88241 FAX TO: (505) 393-3386

Receiving Date: 10/05/06 Reporting Date: 10/05/06 Project Owner: APACHE Project Name: NOT GIVEN

Project Location: NMGSAU 1815

Analysis Date: 10/05/06 Sampling Date: 10/04/06 Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: NF

Analyzed By: HM

CI LAB NO. SAMPLE ID (mg/Kg) H11614-1 S-9 10' BGS 2639 H11614-2 S-10 10' BGS 1647 H11614-3 S-11 10' BGS 32 S-12 10' BGS H11614-4 80 H11614-5 S-14 10' BGS 32 **Quality Control** 490 True Value QC 500 % Recovery 98 Relative Percent Difference 0.0

METHOD: Standard Methods 4500-CI'B

NOTE: Analyses performed on 1:4 w:v aqueous extracts.

Chamiet 1. Ma

Date

A ARDINAL LABORATORIES, INC.

101 East Mariand, Hobbs, NM 88240	(505) 393-2326 Fax (505) 393-2476
2111 Beechwood, Abilene, TX 79603	(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

	(915) 673-7001 Fax (915) 673-7020	20 (505) 393-2326 Fax (505) 393-2476	(505) 393-2476			٤	Pageof	1
Company Name:	" Hungry Horse		7778		₹	ANALYSIS REQUEST	JEST	
Project Manager:	, , ,		P.O. #:					
Address:	Sox 1058		Company:					
City: Hat	Hobbs State:	Zip: 88240	Attn:					
Phone #:	Fax#:		Address:					
Project #:	Project Owner:	Abache	Cfty:					
Project Name:			State: Zip:					
Project Location:	m: 10006 5AU 1815		Phone #:					
Sampler Name:	16 HOW Bearing		Fex #:					
FOR LAB LIBE ONLY		MATRIX	PRESERV. S	SAMPLING				
Lab I.D.	Sample I.D.	GAB OR (C)OMP. OUTAINERS ENDEDMERRE STEWATER L L L GE BESSEE BESSEE GE BESSE GE BESS GE BESSE GE BESS GE BESSE G	/ COOF COOF D/BYSE: JEK:					
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PLEASE NOTE: LENBy on	PLEASE NOTE: Liability and Demagos. Cardina's liability and clear's exchance remary for any claim artisty whitee	clein arteing whether besed in contract or tor	besed in constant or bort, shall be limited to the amount paid by the client for the	toold by the cleant for the		Terms and Conditions: Interest will be charged on all accounts inner flam	set will be charged on all ax	CONTACT TIES
service. In no event shall Ca affiliates or eucossions artist	ensier. • Leans at rangement and any other consequents that control of the second of t	rmed vraked arlees made in vriling and recels Brout limitation, business interruptions, loss of Idmii, regardioss of whether such claim is bas	wide in writing and roeshed by Cardinal Witten 30 days after completion of the a see Interruptions, loss of use, or loss of profits Incursed by client, its autoaldissies, Antition such chain is based upon any of the stone stated reasons or clientwise.	policable		30 days past dae at the rate of 24% per arman from the original date of invices and all costs of collections, including attorney's fees.	f 24% per armun from the Authry attorney's fees.	original date of invelce,
	Ulshad: Date: 10-5-0(a)	Received By:		Result:	TYES THO A	Add' Fax #:		
Co navenhama	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Received By: (Lab Staff)	_					

Sampler JUPS - Bus - Other:

CHECKED BY: (Initials)

Sample Condition
Cool Intact

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stope L. Masino

<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.



ANALYTICAL RESULTS FOR HUNGRY HORSE ATTN: JERRY BRIAN P.O. BOX 1058 HOBBS, NM 88241 FAX TO: (505) 393-3386

Receiving Date: 10/04/06
Reporting Date: 10/05/06
Project Owner: APACHE
Project Name: NOT GIVEN

Project Location: NMGSAU 1815

Analysis Date: 10/05/06 Sampling Date: 10/04/06 Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: HM

Analyzed By: HM

	CIT
LAB NO. SAMPLE ID	(mg/Kg)
H11609-1 S-1 15' BGS	32
H11609-2 S-2 15' BGS	240
H11609-3 S-3 15' BGS	240
H11609-4 S-6 15' BGS	< 16
H11609-5 S-7 15' BGS	272
Quality Control	490
True Value QC	500
% Recovery	98
Relative Percent Difference	0.0

METHOD: Standard Methods 4500-CITB

NOTE: Analyses performed on 1:4 w:v aqueous extracts.

Hope S. M armo

10-05-

Date

ARDINAL LABORATORIES, INC. 2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240 (915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

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5) 393-2326 F		
7-7020 (50)		
1 Fax (315) 6/		
(515) 5/3-/UVI FRX (915) 6/3-/UZU (505) 393-2326 FAX (505) 393-2		
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	(915) 673-7001 Fax (915) 673-7020	(202) 38	13-2326 Fax (505) 393-2476		Pageof_	
Company Name:	" Hunery Horse		04 778	*****	ANALYSIS REQUEST	
Project Manager:	Serry Br		P.O. #:			
Address: $8\alpha$	8 501 x		Company:			
CITY: 4/0665	State: AMZip:	07288	Attn:			
Phone #:	390-6149 Fax#:		Address:			
Project #:	Project Owner:	Apache	City:			
Project Name:			State: Zip:			
Project Location:	" 1mG SAU 1815		Phone #:-			
Sampler Name:	V.	P	Fax #:			
FOR LAB USE ONLY		MATRIX	PRESERV SAMPLING	NG		
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.  # CONTRINERS GROUNDWATER WASTEWATER SOIL CRUDE OIL CRUDE OIL	АСІD/BASE: ICE / COOL THER:	J. L.		
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-2	5-2 15-1865					
73	5-3 151865					
70	5. 6 15' BGS					
Y	5-7 151865	**************************************	7	<del>\</del>		
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service, in no event, shall Car efficies or eucosesors arising	service. In to event what Cardinal be liable for inoticental or consequential demages, including without limbidion, business interruptions, less of use, or less of profits incurred by client, in subsidiaries of whather such client is based upon any of the above stated reasons or otherwise.	thout limitation, business interruptions, loss of u ritinsi, regardless of whether such claim is base	red by offer turbed res	subsidiatios, or offerwise.	and all costs of collections, including attorney's fees.	
Sampler Relinqu	Sampler Relinquished: Date: Received By:	Received By:		Phone Result:   Yes   No	o Add'l Phone #:	
A S	, Jime:				1 1	
Refinquished By:	Lime:	Received By: (Lab Staff)				
Delivered By: (Circle One)	D		L			
Sampler - UPS - Bus - Other:	Bus - Other:	Cool intact	(Initials)			
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<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.



ANALYTICAL RESULTS FOR **HUNGRY HORSE** ATTN: JERRY BRIAN P.O. BOX 1058 **HOBBS, NM 88241** FAX TO: (505) 393-3386

Receiving Date: 10/04/06 Reporting Date: 10/04/06 Project Owner: APACHE Project Name: NOT GIVEN

Project Location: NMGSAU 1815

Analysis Date: 10/04/06 Sampling Date: 10/04/06 Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: HM

Analyzed By: HM

		CI <sup>—</sup>
LAB NO.	SAMPLE ID	(mg/Kg)
H11605-1	S-1 5' BGS	1392
H11605-2	S-1 10' BGS	2303
H11605-3	S-2 5' BGS	2415
H11605-4	S-2 10' BGS	2511
H11605-5	S-3 5' BGS	3295
H11605-6	S-3 10' BGS	1807
Quality Con	trol	490
True Value	QC	500
% Recovery	1	98
Relative Pe	rcent Difference	0.0

METHOD: Standard Methods 4500-CITB

NOTE: Analyses performed on 1:4 w:v aqueous extracts.

Page of

ARDINAL LABORATORIES, INC.

111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240	(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476
111 Beechwood, Abilene, TX 79603	(915) 673-7001 Fax (915) 673-7020

company reality.	" HUNGEY HOPED						ANALYSIS	'SIS REC	REQUEST		
Project Manager:		4.	P.O. #:					_	_		
Address: 7.0. 105.78		J	Company:	, ,							
City:	· ハハ Zip: 名	0628	Attn:								
Phone #	Phone # (505) - 310 614? Fax#		Address:								
Project #:	Project Owner: Apr	ho c	Clty:								
Project Name:		g;	State:	:dıZ					· · · · · ·		
Project Location:	": 12m6 5A4 1815"	Q.	Phone #:								
Sampler Name:	Kelton Braind	<u> </u>	Fax #:								
FOR LAB USE ONLY		MATRIX	PRESERV.	ERV. SAMPLING	NG.						
Lab I.D.	Sample D. CONTERSTER CONTERSTER	SENDEE CENDE OIL SOIL	OTHER:	: яэнто <b>Р</b>	IME						
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5	5-3 5'865										
3	5.3 10' RGS W	2		>	>	>				-	<u> </u>
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	• •	e in writing and received	fly Cardina v	made in writing and received by Cardinal within 30 days wher completen of the applicable	pletion of the applica	1	30 days	30 days past das at the rate of 24% per arman from the original date of involce,	to of 24% per error	an from the origin	i dete of inveloe,

and all costs of collections, including attorney's fees.

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□ Yes	□ Yes						
Phone Result:   Yes   No   Add'  Phone #:	Fax Result:	REMARKS:					
-				1	CHECKED BY:	(initials)	
Received By:		ï	Received By: (Lab Staff)	gloss S. Morens	Sample Condition	Cool intact	No No
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Sampler Remoderated:	1 1 1 1	LUD H	Relinquished By		Delivered By: (Circle One)	Sampler UPS - Bus - Other:	

<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.



ANALYTICAL RESULTS FOR HUNGRY HORSE ATTN: JERRY BRIAN P.O. BOX 1058 HOBBS, NM 88241 FAX TO: (505) 393-3386

Receiving Date: 10/03/06 Reporting Date: 10/03/06 Project Owner: APACHE Project Name: NOT GIVEN

Project Location: NMGSAU 1815

Analysis Date: 10/03/06 Sampling Date: 10/03/06 Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: BC

Analyzed By: HM

CI SAMPLE ID LAB NO. (mg/Kg) H11595-1 S-4 10' BGS 32 H11595-2 S-6 10' BGS 768 H11595-3 S-7 10' BGS 560 **Quality Control** 490 True Value QC 500 % Recovery 98 Relative Percent Difference 2.0

METHOD:	Standard	Methods	3	4500-CIB
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NOTE: Analyses performed on 1:4 w:v aqueous extracts.

Chemist Moreno

10-03-06

Page of

ARDINAL LABORATORIES, INC.

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(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

company name:	HUNGEY				ANALYSIS REQUEST
Project Manager:	Jercy P		P.O. #.		
Address: P.O. 105-8	058		Company:		
City: (40)	State: N.	Zip: 88240	Attn:		
Phone # SOS	51-390-6149 FOX#		Address:		
Project #:	Project Owner:	Acche	Clfy:		
Project Name:		, ,	State: Zip:		
Project Location:	" 1mc SAU 1815.		Phone #:		
Sampler Name:	Kelton Beaird		Fex #:		
FOR LAB USE ONLY		MATRIX	PRESERV, SAMPLING	2	-
Lab I.D.	Sample I.D.	OR (C)OMP. CONTAINERS COUNDWATER COUNDWATER INC COUNDWATER INC COUNDE OIL	THER: SID/BASE: THER:	, , , , , , , , , , , , , , , , , , ,	
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service. In no event shell Carr affiliates of eucoseous arising	service. In no swart shall Cardhal be labble for brothenhal or consequental demagne, Including without Bratalan, buss difficults or successions arising cit of or related to the parformance of services hansurder by Cardhal, regardless of	rese Erlegtup Velteilber sik		t, is substitutes, one or oftenwho.	so days part cas at the tase of 2000 per annua men the original case of sweezs, and case of collections, including abbrary's fees.
Sampler Relinqui	,	Date: Received By:		t: 🗖 Yes	П
M.				FEMARKS:	U No Add1 Fax#:
Relinquished By:	10306	Received By: (Lab Staff)			
(0)	D	186	3		
Uenvered BV:	(Circle One)	Sample Ophditio	on CHEEKED BY: (initials)		
Sampler - UPS - Bus - Other:	Bus - Other:				

<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.



ANALYTICAL RESULTS FOR **HUNGRY HORSE** ATTN: JERRY BRIAN P.O. BOX 1058 HOBBS, NM 88241 FAX TO: (505) 393-3386

Receiving Date: 10/03/06 Reporting Date: 10/04/06 Project Owner: APACHE Project Name: NOT GIVEN

Project Location: NMGSAU 1815

Analysis Date: 10/04/06 Sampling Date: 10/03/06 Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: BC

Analyzed By: HM

CI LAB NO. SAMPLE ID (mg/Kg) H11598-1 S-9 5' BGS 1440 H11598-2 S-10 5' BGS 1520 S-11 5' BGS 1104 H11598-3 S-12 5' BGS 768 H11598-4 H11598-5 S-13 5' BGS 48 H11598-6 S-14 5' BGS 1232 **Quality Control** 490 True Value QC 500 % Recovery 98 Relative Percent Difference 0.0

METHOD: Standard Methods 4500-CITB

NOTE: Analyses performed on 1:4 w:v aqueous extracts.

H11598

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ARDINAL LABORATORIES, INC.
2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240

-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476	
ıx (505) 393-;	
) (505) 393-2326 Fax (505) 393-2476	
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(915) 6/3-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476	
15) 673-7001	,
( <u>2</u> 10	<u>;</u>

		) 393-2320 Fax	7-585 (cnc)	476		- Day	Б	1
Company Name:				01.118	4	<b>ANALYSIS REQUEST</b>	ST	
Project Manager:	Brien		P.O. #:					
Address: P.O. 10578	1058		Company:					
City:	. ∧ ~ Zip:	06288	Attn:					-
Phone #( < `>	5051-310-6148 FRX		Address:					
Project #:	Project Owner: A	Dacko	Cffy:					
Project Name:		)	State:	Zip:				
Project Location:	n: 12m6 SAU 1015		Phone #:					
Sampler Name:			Fax #:					
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9-	5-14 5' B65 X	~		10.3 3:00	<u>بر</u>			
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service. In no event shell Case	service. In no event shall Cardinal be labble for incidental or consequental changes, including without limitation, busing	univers branchplors, loss of u	se, or loss of profile in	shipmoffers, loss of use, or loss of profile incurred by others, its subsidiaries,	•	and all costs of collections, including attornsy's tens.	g altomay's fees.	f

purposeon arising out of or related to the performance of services haveurder by Central, regardless of whether auch claim is based upon any of the above stated treasms or otherwise.

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Committee - Chros.		KYes DYes					
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<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.



ANALYTICAL RESULTS FOR **HUNGRY HORSE** ATTN: JERRY BRIAN P.O. BOX 1058 HOBBS, NM 88241 FAX TO: (505) 393-3386

Receiving Date: 10/02/06 Reporting Date: 10/03/06 Project Owner: APACHE Project Name: NOT GIVEN

Project Location: NMGSAU 1815

Analysis Date: 10/02/06 Sampling Date: 10/02/06

Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: HM

Analyzed By: HM

		CI -
LAB NO.	SAMPLE ID	(mg/Kg)
H11594-1	S-8 1' BGS	1536
H11594-2	S-8 2' BGS	224
H11594-3	S-8 3' BGS	32
H11594-4	S-9 1' BGS	736
H11594-5	S-9 2' BGS	1024
H11594-6	S-9 3' BGS	848
H11594-7	S-10 1' BGS	544
H11594-8	S-10 2' BGS	768
H11594-9	S-10 3' BGS	1328
H11594-10	S-11 1' BGS	880
Quality Cont		500
True Value (	DC	500
% Recovery		100
Relative Per	cent Difference	2.0

METHOD: Standard Methods 4500-CIB

NOTE: Analyses performed on 1:4 w:v aqueous extracts.



ANALYTICAL RESULTS FOR HUNGRY HORSE ATTN: JERRY BRIAN P.O. BOX 1058 HOBBS, NM 88241 FAX TO: (505) 393-3386

Receiving Date: 10/02/06
Reporting Date: 10/03/06
Project Owner: APACHE
Project Name: NOT GIVEN

Project Location: NMGSAU 1815

% Recovery

Relative Percent Difference

Analysis Date: 10/02/06 Sampling Date: 10/02/06 Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: HM

Analyzed By: HM

CI LAB NO. SAMPLE ID (mg/Kg) S-11 2' BGS H11594-11 736 H11594-12 S-11 3' BGS 1024 H11594-13 S-12 1' BGS 1488 H11594-14 S-12 2' BGS 560 H11594-15 S-12 3' BGS 1056 H11594-16 S-13 1' BGS 864 H11594-17 S-13 2' BGS 1168 S-13 3' BGS H11594-18 704 H11594-19 S-14 1' BGS 720 H11594-20 S-14 2' BGS 1264 **Quality Control** 500 True Value QC 500

METHOD: Standard Methods 4500-Cl<sup>-</sup>B NOTE: Analyses performed on 1:4 w:v aqueous extracts.

140 TE. Tillasy 303 portormod 311 1.4 W.V aqueod3 extracts

Chemist

10-0.5-06

100

2.0

Date



ANALYTICAL RESULTS FOR **HUNGRY HORSE** ATTN: JERRY BRIAN P.O. BOX 1058 HOBBS, NM 88241 FAX TO: (505) 393-3386

Receiving Date: 10/02/06 Reporting Date: 10/03/06 Project Owner: APACHE Project Name: NOT GIVEN

Project Location: NMGSAU 1815

Analysis Date: 10/02/06 Sampling Date: 10/02/06 Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: HM

Analyzed By: HM

CI LAB NO. SAMPLE ID (mg/Kg) S-14 3' BGS H11594-21 1104 H11594-22 S-1 1' BGS 720 S-1 2' BGS H11594-23 1855 S-1 3' BGS H11594-24 1663 S-2 1' BGS H11594-25 672 H11594-26 S-2 2' BGS 1232 H11594-27 S-2 3' BGS 2159 H11594-28 S-3 1' BGS 976 H11594-29 S-3 2' BGS 1631 H11594-30 S-3 3' BGS 2015 **Quality Control** 500 True Value QC 500 % Recovery 100 Relative Percent Difference 2.0

METHOD: Standard Methods 4500-CIB

NOTE: Analyses performed on 1:4 w:v aqueous extracts.

Page of

ARDINAL LABORATORIES, INC.
2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240 (915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

State: \lambda Zip: \( \alpha \gamma Zip: \( \alpha \gamma \gamma Zip: \alpha \gamma	HUNDERY HOUSE	ANALYSIS REQUEST
State: \(\triangle \) \times \(2\lambda \) \times \	erry Brian	
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Sample I.D. OR CENTER FOR SAMPLING  Sample I.D. OR COUNTRY  Sample I.D. OR COU	State: N~ Zip: 88240	
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<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.

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2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240
(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476
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<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 505-333-2476.

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<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.



ANALYTICAL RESULTS FOR HUNGRY HORSE ATTN: JERRY BRIAN P.O. BOX 1058 HOBBS, NM 88241 FAX TO: (505) 393-3386

Receiving Date: 09/28/06 Reporting Date: 09/28/06 Project Owner: APACHE Project Name: NOT GIVEN

Project Location: NMG SA U 1815

Analysis Date: 09/28/06 Sampling Date: 09/28/06 Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: HM

Analyzed By: HM

CI LAB NO. SAMPLE ID (mg/Kg) H11588-1 S-4 5' BGS 1008 H11588-2 S-5 5' BGS 64 H11588-3 S-6 5' BGS 2303 S-7 5' BGS H11588-4 1663 **Quality Control** 480 500 True Value QC % Recovery 96 Relative Percent Difference 2.0

METHOD: Standard Methods 4500-CI'B

NOTE: Analyses performed on 1:4 w:v aqueous extracts.

Chemist

09-29-06

Date

Page of

ARDINAL LABORATORIES, INC. 2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240 (915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

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Relinquished By:	TY	Received	By: (Lab Staff)	2									
Delivered By: (Circle One)	(Circle One)	3	Condition	똜	CHECKED BY:								
Sampler UPS - Bus - Other:	· Bus - Other:	300	Cool Intact	=	(Initials)								
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<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.



ANALYTICAL RESULTS FOR HUNGRY HORSE, LLC ATTN: JERRY BRIAN P.O. BOX 1058 HOBBS, NM 88241 FAX TO: (505) 393-3386

Receiving Date: 09/25/06 Reporting Date: 09/25/06

Project Owner: APACHE
Project Name: NOT GIVEN

Project Location: NMG SA 1815

Analysis Date: 09/25/06 Sampling Date: 09/25/06 Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: NF

Analyzed By: HM

CI LAB NO. SAMPLE ID (mg/Kg) H11569-1 S-4 1' BGS 800 H11569-2 S-4 2' BGS 928 H11569-3 S-4 3' BGS 1855 H11569-4 S-5 1' BGS 32 H11569-5 S-5 2' BGS 16 H11569-6 S-5 3' BGS 448 H11569-7 S-6 1' BGS 2735 H11569-8 S-6 2' BGS 2303 H11569-9 S-6 3' BGS 2335 H11569-10 S-7 1' BGS 1088 H11569-11 S-7 2' BGS 1328 H11569-12 S-7 3' BGS 1472 **Quality Control** 970 True Value QC 1000 % Recovery 97 Relative Percent Difference 2.0

METHOD: Standard Methods 4500-Cl B

NOTE: Analyses performed on 1:4 w:v aqueous extracts.

Chemist

S. Moreno

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H11569

Page of

\* ARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476 (915) 673-7001 Fax (915) 673-7020

company remire.	HEMAYY HOYEL				BILL 70	9		ANALYSIS REQUEST	EST	
Project Manager:	" Jerry Bian			P.O. #:						
Address:	P.O. Box 1058			Company:	y:					
Clty: [1]	Lobbes States, un. Zip:	: 882 UB		Attn:						
Phone #: (50	(505) - 390-6149 Fax#			Address:			···			
Project #:	Project Owner:	gosche		Clfy:			<u>-</u>			-
Project Name:			77	State:	Zip:					
Project Location: NM C	": UMG SA 1815		-	Phone #:						
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<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.

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A ARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240

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<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.



ANALYTICAL RESULTS FOR HUNGRY HORSE, LLC ATTN: JERRY BRIAN P.O. BOX 1058 HOBBS, NM 88241 FAX TO: (505) 393-3386

Receiving Date: 09/22/06 Reporting Date: 09/22/06 Project Owner: APACHE

Project Name: NMGSAU - #1815 Project Location: LEA COUNTY, NM Analysis Date: 09/22/06 Sampling Date: 09/22/06 Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: BC

Analyzed By: HM

CI LAB NO. SAMPLE ID (mg/Kg) PIT - 42' BGS H11561-1 320 H11561-2 **PIT - 43' BGS** 192 **Quality Control** 950 True Value QC 1000 % Recovery 95 Relative Percent Difference 1.0

METHOD: Standard Methods 4500-CI'B

NOTE: Analyses performed on 1:4 w:v aqueous extracts.

Chemist S. Morent

09-22-06

Date



ANALYTICAL RESULTS FOR HUNGRY HORSE, LLC ATTN: JERRY BRIAN P.O. BOX 1058 HOBBS, NM 88241 FAX TO: (505) 393-3386

Receiving Date: 09/21/06 Reporting Date: 09/22/06 Project Owner: APACHE

Project Name: NMGSAU - #1815

Project Location: LEA COUNTY, NM

Analysis Date: 09/22/06 Sampling Date: 09/21/06 Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: BC

Analyzed By: HM

		CI <sup>-</sup>
LAB NO.	SAMPLE ID	(mg/Kg)
H11560-1	PIT - 11' BGS	3167
H11560-2	PIT - 16' BGS	1839
H11560-3	PIT - 21' BGS	1679
H11560-4	PIT - 26' BGS	1919
H11560-5	PIT - 31' BGS	2047
H11560-6	PIT - 34' BGS	1216
H11560-7	PIT - 36' BGS	1360
H11560-8	PIT - 38' BGS	624
H11560-9	PIT - 40' BGS	1232
Quality Con	950	
True Value	1000	
% Recovery	95	
Relative Pe	rcent Difference	1.0

METHOD: Standard Methods 4500-CI<sup>\*</sup>B

NOTE: Analyses performed on 1:4 w:v aqueous extracts.

H11560

ARDINAL LABORATORIES, INC. 2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240 (915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

	(915) 673-7001 Fax (915)	Fax (915) 673-7020 (505)	(505) 393-2326 Fax (505) 393-2476	3-2476	Pageof	
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Project Manager:	1000		HILL TO PO#:	*		_
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CITY: THE LOT	State: Zip:		Attn:			
Phone #: 39	Ó		Address:			
Fax# 373	7852-	ě	City:			
Project #:	Project Owner:	padre	State: Zip:			
Project Name: NM SSAU	151814-#1815		Phone #:			
Project Location:			Fax#:			
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† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

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101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476 2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020

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Phone Result: ☐ Yes ☐ No Add/ Phone #: Fax Result: ☐ Yes ☐ No Add/ Fax #: REMARKS: All Cool infact

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

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

Form C-141

Revised June 10, 2003

1625 N. French Dr., Hobbs, NM 88240 District II.

1301 W. Grand Avenue, Artesia, NM 88210

Distric III

1000 Rio Brazos Road, Aztec, NM 87410

District IV

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

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 Mike Warren											
Address P.O. Drawer D Monument, NM 88265 Telephone No. 432-556-2184											
Facility Name NMGSA Unit #1815 Facility Type Injection Well											
Surface Owner State of NM; Faye Klein Mineral Owner State of NM Lease No.											
				ΓΙΟΝ	OF RE	ELEASE	API#	£300	250415	60000	
Unit Letter	Section	Township	Range	T	from	Feet from		ude-W	Latitude-N	County	
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Type of Release	e				Volum	e of Release		Volume	Recovered		
Produced Wat	er				_	nated 2000			1700	bbl	
Source of Relea	ase				Date ar	nd Hour of Occu	irrence	Date and	d Hour of Disco	very	
Produced Water Injection Line 9/18/2006 09/18/06											
Was Immediate Notice Given?  If YES, To Whom?											
By Whom? Mike Warren - Apache Corporation Date and Hour 09/18/06  If VES Volume Importing the Wetersource											
Was a Watercourse Reached?  ☐ YES ☐ NO ☐ If YES, Volume Impacting the Watercourse											
If a Watercourse was Impacted, Describe Fully*											
ii a watercoars	e was impacted,	Describe I any									
Describe Cause of Problem and Remedial Action Taken. *											
Loss of integrity of produced water injection line. Free fluids vacuumed from terminal end of flowpath at caliche pit south of well pad.											
Hungry Horse, LLC - Environmental Services contracted to perform remediation.											
Describe Area Affected and Cleanup Action Taken. *											
The area affected was approximately 21,000-ft <sup>2</sup> including the 848' flowpath and ponded area within the caliche pit. Hungry Horse											
LLC, Hobbs, NM conducted the site remediation. Final Closure document attached.											
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											
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Printed Name:		Mike Wa	rren		Approx	ed by District S	NU(Po	mes (	\.(),		
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Date:	1/23/2007	Phone:	432-556-2184	•	[					ĺ	