



EXPLORING WHAT'S POSSIBLE

# APACHE CORPORATION

P.O.Box 1849  
Eunice, NM 88231  
Phone 575.394.3159

WBDU #38  
(1RP-3398)

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## Termination Request

API No. 30-025-09906

Release Date: March 27<sup>th</sup>, 2014

Unit Letter O, Section 9, Township 21S, Range 37E

**November 20<sup>th</sup>, 2014**

**Dr. Tomáš Oberding, PhD**

Environmental Specialist – New Mexico Oil Conservation Division  
Energy, Minerals and Natural Resources Department  
1625 N. French Dr.  
Hobbs, NM 88240

**RE: Termination Request  
Apache Corporation – WBDU #38 (1RP-3398)  
UL/O sec. 9 T21S R37E  
API No. 30-025-09906**

Dr. Oberding:

Apache Corporation (Apache) has retained Rice Environmental Consulting and Safety (RECS) to address potential environmental concerns at the above-referenced site.

### **Background and Previous Work**

The site is located approximately 5.6 miles east of Oil Center, New Mexico at UL/O sec. 9 T21S R37E. NM OSE and BLM records indicate that groundwater will likely be encountered at a depth of approximately 63 +/- feet.

On March 27<sup>th</sup>, 2014, a release occurred below the isolation valve coupling, releasing 5 barrels of produced water over 7,931 square feet of lease pad and pasture land. A vacuum truck was dispatched to the site and recovered 1 barrel of produced water. The well was shut in, and the valve was replaced. An initial C-141 informing NMOCD of the release was signed on April 17<sup>th</sup>, 2014, and was submitted to NMOCD for their approval. NMOCD approved the initial C-141 on October 29<sup>th</sup>, 2014 (Appendix A).

RECS personnel were on site beginning on March 28<sup>th</sup>, 2014, to assess the release. The site was photographed and GPS mapped. Seven points within the stain and one point on the battery pad were sampled at the surface and with depth (Figure 1). The bottom samples from each auger point were field tested for chlorides and organic vapors. The bottom samples from the six auger points in the release on the pasture were taken to a commercial laboratory for analysis (Appendix B). Point 1, which was located on the lease pad, did not have its sample taken to the lab. Instead, Apache determined that a more effective remediation process was to scrape the release area on the pad down 8 inches. A five point composite was then taken from the base of the 8 inch scrape. The sample was taken to a commercial laboratory for analysis and returned a chloride value of 240 mg/kg, a Diesel Range Organics (DRO) value of 54.2 mg/kg and a Gasoline Range Organics (GRO) value of non-detect.

Based on the laboratory analysis of the release area in the pasture, the pasture was excavated in four parts to remove the contaminated soil. Points 2, 3, 4, and 5 were scraped from 1 - 2.5 feet bgs. Point 6 was excavated to 4 ft bgs, and Point 7 was scraped to 6 inches bgs. All scrapes remained 5 ft away from any underground pipelines to provide safety measures for equipment and personnel.

Ten wall samples were taken throughout the release area in the pasture, and the samples were field tested for chlorides and organic vapors. Seven of the wall samples were then taken to a commercial laboratory for analysis. The remaining three wall samples were not taken to a commercial laboratory, since they were located along the buried gas line. The seven wall samples returned laboratory chloride values below 250 mg/kg and GRO and DRO values of non-detect, except for South Wall 2, which returned a laboratory chloride reading of 304 mg/kg. All excavated soil was taken to a NMOCD approved facility for disposal. Clean top soil and caliche were imported to the site to serve as backfill. The lease pad was backfilled with the imported caliche, and the pasture area was backfilled with the imported top soil. All areas were contoured to the surrounding location. On October 6<sup>th</sup>, 2014, the disturbed area in the pasture was seeded with 27 lbs of Blue Gramma Mix.

Photo documentation of the field activities can be found in Appendix C.

Given that Apache has removed the contaminated soil and disposed of it at a NMOCD approved facility, Apache respectfully requests 'remediation termination' and site closure. A final C-141 can be found in Appendix D.

RECS appreciates the opportunity to work with you on this project. Please call Hack Conder at (575) 393-2967 or me if you have any questions or wish to discuss the site.

Sincerely,

A handwritten signature in black ink, appearing to read 'Lara Weinheimer', with a long, sweeping horizontal stroke extending to the right.

Lara Weinheimer  
Project Scientist  
RECS  
(575) 441-0431

Attachments:

- Figure 1–Excavation Data
- Appendix A – Initial C-141
- Appendix B – Laboratory Analyses
- Appendix C – Photo Documentation
- Appendix D – Final C-141

# Figures

# Excavation Data

## 5 Point Composite on Pad at 8 inches

CI-	GRO	DRO
240	<10	54.2

## Point 2

CI-	PID	GRO	DRO
1.5' 80	3.8	<10	<10

## Point 3

CI-	PID	GRO	DRO
2' 48	3.2	<10	<10

## Wall Samples

	CI-	PID	GRO	DRO
North Wall 1	32	2.3	<10	<10
North Wall 2	48	1.9	<10	<10
South Wall 1	224	1.5	<50	<50
South Wall 2	304	2.2	<10	<10
East Wall 3	48	2.2	<10	<10
East Wall 2	<16	1.8	<10	<10
East Wall 1	144	1.7	<10	<10

## Legend

- ▲ WALL SAMPLE
- ▲ SAMPLE POINT
- WELLHEAD
- - - BURIED ELECTRIC
- - - BURIED GAS LINE
- PAD/ROAD EDGE
- SURFACE GAS LINE
- SURFACE STEEL LINE
- EXCAVATION AT 4 FT
- SCRAPE AT 1 FT - 2.5 FT
- SCRAPE AT 6 IN
- STAIN - 7,931 SQ FT

	CI-	PID
West Wall 1	590	1.8
West Wall 2	694	1.3
West Wall 3	740	2

## CI- FIELD DATA

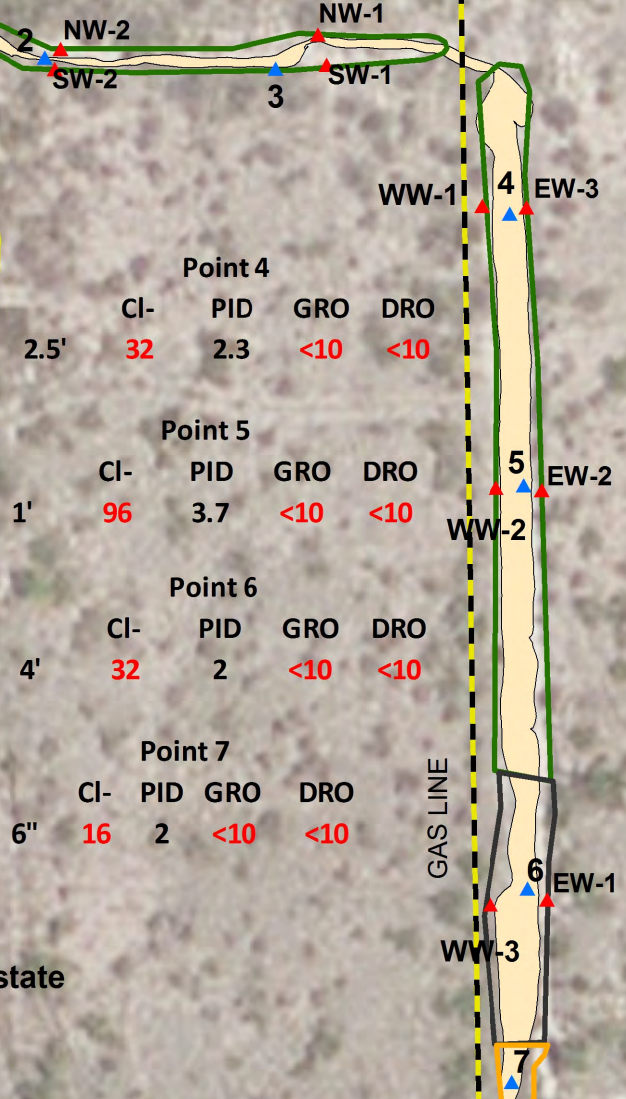
## CI- LAB DATA

LANDOWNER: Millard Deck Estate

DGW: 63 FT

32.487989

-103.165745



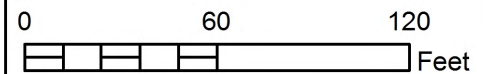
Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



# APACHE WBDU #38

Unit Letter O, Section 9  
T-21-S R-37-E  
LEA COUNTY, NM

Figure 1



GPS Date: 5/8/14 KH  
Drawing date: 10/15/14  
Drafted by: C. Ursanic/L. Weinheimer

# Appendix A

Initial C-141

**RICE Environmental Consulting and Safety (RECS)**  
P.O. Box 2948 Hobbs, NM 88241  
Phone 575.393.2967



District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

**HOBBS OCD** State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505  
**RECEIVED**

Form C-141  
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

Name of Company Apache Corporation	Contact Bruce Baker
Address 8 Ellison Lane Eunice, NM 88231	Telephone No. 432-631-6982
Facility Name WBDU # 38	Facility Type injection well

Surface Owner Millard Deck Estates	Mineral Owner Federal	API No. 30-025-09906
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**LOCATION OF RELEASE**

Unit Letter O	Section 9	Township 21S	Range 37E	Feet from the 660'	North/South Line FSL	Feet from the 1980'	East/West Line FEL	County Lea
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Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

**NATURE OF RELEASE**

Type of Release Produced Water	Volume of Release 5 Barrels of water	Volume Recovered 1 Barrel of water
Source of Release injection line	Date and Hour of Occurrence 3/27/14	Date and Hour of Discovery 3/27/14 at 6:00 a.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	IF YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	IF YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*  
The release occurred below isolation valve coupling. The well was shut in and a vacuum truck was dispatched to pick-up standing fluid. The valve was replaced.

Describe Area Affected and Cleanup Action Taken.\* The release was 7,931 square feet with approximately 4,000 square feet in the pasture. A vacuum truck was dispatched and recovered 1 barrel of fluid. The area was mapped and field surface samples collected.

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>Bruce Baker</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Bruce Baker	Approved by Environmental Specialist:	
Title: Environmental Technician	Approval Date: <i>10-29-14</i>	Expiration Date: <i>12-29-14</i>
E-mail Address: larry.baker@apachecorp.com	Conditions of Approval: <i>Site sample report. Replete &amp; evaluate area w/</i>	Attached <input type="checkbox"/> <i>IRP 3378</i>
Date: 4/17/14 Phone: (432) 631-6982	<i>NMOCD guides</i>	

\* Attach Additional Sheets If Necessary

*Grid 873  
NT014 30 248958  
PT014 30 24 9116*

**OCT 30 2014**

# Appendix B

## Laboratory Analyses

**RICE Environmental Consulting and Safety (RECS)**  
P.O. Box 2948 Hobbs, NM 88241  
Phone 575.393.2967





May 21, 2014

BRUCE BAKER  
APACHE - EUNICE  
P. O. BOX 1849  
EUNICE, NM 88231

RE: WBDU #38

Enclosed are the results of analyses for samples received by the laboratory on 05/20/14 10:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Celey D. Keene".

Celey D. Keene  
Lab Director/Quality Manager

**Analytical Results For:**

 APACHE - EUNICE  
 BRUCE BAKER  
 P. O. BOX 1849  
 EUNICE NM, 88231  
 Fax To: 394-2425

 Received: 05/20/2014  
 Reported: 05/21/2014  
 Project Name: WBDU #38  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 05/19/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: PAD 5 PT COMP @ 8" (H401535-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>240</b>	16.0	05/21/2014	ND	416	104	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/21/2014	ND	232	116	200	0.445	
<b>DRO &gt;C10-C28</b>	<b>54.2</b>	10.0	05/21/2014	ND	260	130	200	1.06	

Surrogate: 1-Chlorooctane 104 % 65.2-140

Surrogate: 1-Chlorooctadecane 111 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report



---

Celey D. Keene, Lab Director/Quality Manager



# CARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603  
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <b>Apache</b>		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>																	
Project Manager: <b>BRUCE BAKER</b>		P.O. #:		Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions	TDS	<b>RESH!</b>											
Address:		Company:																			
City: Hobbs State: NM Zip: 88240		Attn:																			
Phone #: Fax #:		Address:																			
Project #: Project Owner:		City:																			
Project Name:		State: Zip:																			
Project Location: <b>WBDU #38</b>		Phone #:																			
Sampler Name: Kyle Humphrey		Fax #:																			
FOR LAB USE ONLY																					
Lab I.D. <b>H401535</b>	Sample I.D. <b>PAD 5 Port comp @ 8"</b>	(G/RAB OR (C)OMP. # CONTAINERS <b>6 1</b>	MATRIX GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER:								PRESERV. ACID/BASE: ICE / COOL OTHER:	SAMPLING DATE TIME <b>5-19-14 11:00</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							

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 the client for the 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 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.

Relinquished By: <b>Kyle Humphrey</b>	Date: <b>5/20/14</b> Time: <b>10:00</b>	Received By: <b>Jodi Henson</b>	Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
Relinquished By:	Date:	Received By:	Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
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) <b>JH</b>	
REMARKS: email results Knorman@rice-ecs.com Kjones@riceswd.com; jkamplain@rice-ecs.com hconder@rice-ecs.com; Lweinheimer@rice-ecs.com Khumphrey@rice-ecs.com sedwards@rice-ecs.com, lflores@rice-ecs.com				

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476  
**#54**



May 14, 2014

BRUCE BAKER  
APACHE - EUNICE  
P. O. BOX 1849  
EUNICE, NM 88231

RE: WBDU #38

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Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

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Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene  
Lab Director/Quality Manager

**Analytical Results For:**

 APACHE - EUNICE  
 BRUCE BAKER  
 P. O. BOX 1849  
 EUNICE NM, 88231  
 Fax To: 394-2425

 Received: 05/09/2014  
 Reported: 05/14/2014  
 Project Name: WBDU #38  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 05/06/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: NORTH WALL #1 (H401407-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	05/13/2014	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/13/2014	ND	189	94.6	200	3.60	
DRO >C10-C28	<10.0	10.0	05/13/2014	ND	205	103	200	3.63	
<i>Surrogate: 1-Chlorooctane</i>	<i>91.7 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>91.5 %</i>	<i>63.6-154</i>							

**Sample ID: NORTH WALL #2 (H401407-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>48.0</b>	16.0	05/13/2014	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/13/2014	ND	189	94.6	200	3.60	
DRO >C10-C28	<10.0	10.0	05/13/2014	ND	205	103	200	3.63	
<i>Surrogate: 1-Chlorooctane</i>	<i>113 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>114 %</i>	<i>63.6-154</i>							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 APACHE - EUNICE  
 BRUCE BAKER  
 P. O. BOX 1849  
 EUNICE NM, 88231  
 Fax To: 394-2425

 Received: 05/09/2014  
 Reported: 05/14/2014  
 Project Name: WBDU #38  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 05/06/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SOUTH WALL #1 (H401407-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>224</b>	16.0	05/13/2014	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	05/13/2014	ND	189	94.6	200	3.60	
DRO >C10-C28	<50.0	50.0	05/13/2014	ND	205	103	200	3.63	
<i>Surrogate: 1-Chlorooctane</i>	<i>116 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>132 %</i>	<i>63.6-154</i>							

**Sample ID: SOUTH WALL #2 (H401407-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>304</b>	16.0	05/13/2014	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/13/2014	ND	189	94.6	200	3.60	
DRO >C10-C28	<10.0	10.0	05/13/2014	ND	205	103	200	3.63	
<i>Surrogate: 1-Chlorooctane</i>	<i>114 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>116 %</i>	<i>63.6-154</i>							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 APACHE - EUNICE  
 BRUCE BAKER  
 P. O. BOX 1849  
 EUNICE NM, 88231  
 Fax To: 394-2425

 Received: 05/09/2014  
 Reported: 05/14/2014  
 Project Name: WBDU #38  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 05/06/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: PT. 3 @ 2' (H401407-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>48.0</b>	16.0	05/13/2014	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/13/2014	ND	189	94.6	200	3.60	
DRO >C10-C28	<10.0	10.0	05/13/2014	ND	205	103	200	3.63	
<i>Surrogate: 1-Chlorooctane</i>	<i>122 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>122 %</i>	<i>63.6-154</i>							

**Sample ID: PT. 4 @ 2.5' (H401407-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	05/13/2014	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/13/2014	ND	189	94.6	200	3.60	
DRO >C10-C28	<10.0	10.0	05/13/2014	ND	205	103	200	3.63	
<i>Surrogate: 1-Chlorooctane</i>	<i>124 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>123 %</i>	<i>63.6-154</i>							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 APACHE - EUNICE  
 BRUCE BAKER  
 P. O. BOX 1849  
 EUNICE NM, 88231  
 Fax To: 394-2425

 Received: 05/09/2014  
 Reported: 05/14/2014  
 Project Name: WBDU #38  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 05/06/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: EAST WALL #3 (H401407-07)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>48.0</b>	16.0	05/13/2014	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/13/2014	ND	189	94.6	200	3.60	
DRO >C10-C28	<10.0	10.0	05/13/2014	ND	205	103	200	3.63	
<i>Surrogate: 1-Chlorooctane</i>		<i>116 %</i>	<i>65.2-140</i>						
<i>Surrogate: 1-Chlorooctadecane</i>		<i>117 %</i>	<i>63.6-154</i>						

**Sample ID: EAST WALL #1 (H401407-08)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>144</b>	16.0	05/13/2014	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/13/2014	ND	189	94.6	200	3.60	
DRO >C10-C28	<10.0	10.0	05/13/2014	ND	205	103	200	3.63	
<i>Surrogate: 1-Chlorooctane</i>		<i>123 %</i>	<i>65.2-140</i>						
<i>Surrogate: 1-Chlorooctadecane</i>		<i>126 %</i>	<i>63.6-154</i>						

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 APACHE - EUNICE  
 BRUCE BAKER  
 P. O. BOX 1849  
 EUNICE NM, 88231  
 Fax To: 394-2425

 Received: 05/09/2014  
 Reported: 05/14/2014  
 Project Name: WBDU #38  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 05/07/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: PT. 7 @ 6" (H401407-09)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	05/13/2014	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/13/2014	ND	189	94.6	200	3.60	
DRO >C10-C28	<10.0	10.0	05/13/2014	ND	205	103	200	3.63	
<i>Surrogate: 1-Chlorooctane</i>	<i>118 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>127 %</i>	<i>63.6-154</i>							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report



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Celey D. Keene, Lab Director/Quality Manager



# CARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603  
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Apache		BILL TO				ANALYSIS REQUEST																					
Project Manager: Bruce Baker		P.O. #:				Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions	TDS																
Address:		Company:																									
City: Hobbs State: NM Zip: 88240		Attn:																									
Phone #: Fax #:		Address:																									
Project #: Project Owner:		City:																									
Project Name:		State: Zip:																									
Project Location: WDDV #38		Phone #:																									
Sampler Name:		Fax #:																									
FOR LAB USE ONLY	Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX							PRESERV.		SAMPLING													
					GROUNDWATER							WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME						
H4D1407	1	North Well # 7	6	1			✓				✓			5-6-14	9:00	✓	✓										
	2	North Well #2	6	1			✓				✓			5-6-14	9:05	✓	✓										
	3	South Well #4	6	1			✓				✓			5-6-14	9:10	✓	✓										
	4	South Well #2	6	1			✓				✓			5-6-14	9:15	✓	✓										
	5	Pt. 2 @ 2 Ft.	6	1			✓				✓			5-6-14	9:20	✓	✓										
	6	Pt. 4 @ 2.5 Ft.	6	1			✓				✓			5-6-14	9:25	✓	✓										
	7	East Well #3	6	1			✓				✓			5-6-14	9:30	✓	✓										
	8	East Well #3	6	1			✓				✓			5-7-14	4:00	✓	✓										
	9	Pt. 7 @ 6"	6	1			✓				✓			5-7-14	4:05	✓	✓										

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Relinquished By: <i>Melody</i>	Date: 5/9/14 Time: 9:20	Received By: <i>Jodi Benson</i>	Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
Relinquished By:	Date:	Received By:	Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	CHECKED BY: (Initials) <i>JH</i>	REMARKS: <i>Bruce Baker</i> email: hconder@riceswd.com; lflores@rice-ecs.com; lweinheimer@rice-ecs.com; knorman@rice-ecs.com; jkamplain@rice-ecs.com; sedwards@rice-ecs.com; cursanic@rice-ecs.com Environmental Tech: @rice-ecs.com	

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

#54



May 14, 2014

BRUCE BAKER  
APACHE - EUNICE  
P. O. BOX 1849  
EUNICE, NM 88231

RE: WBDU #38

Enclosed are the results of analyses for samples received by the laboratory on 05/09/14 9:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene  
Lab Director/Quality Manager



**Analytical Results For:**

 APACHE - EUNICE  
 BRUCE BAKER  
 P. O. BOX 1849  
 EUNICE NM, 88231  
 Fax To: 394-2425

 Received: 05/09/2014  
 Reported: 05/14/2014  
 Project Name: WBDU #38  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 05/05/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: PT. 2 @ 1.5' (H401405-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>80.0</b>	16.0	05/13/2014	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/12/2014	ND	195	97.3	200	0.174	
DRO >C10-C28	<10.0	10.0	05/12/2014	ND	205	102	200	0.686	

Surrogate: 1-Chlorooctane 110 % 65.2-140

Surrogate: 1-Chlorooctadecane 110 % 63.6-154

**Sample ID: PT. 5 @ 1' (H401405-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>96.0</b>	16.0	05/13/2014	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/12/2014	ND	195	97.3	200	0.174	
DRO >C10-C28	<10.0	10.0	05/12/2014	ND	205	102	200	0.686	

Surrogate: 1-Chlorooctane 128 % 65.2-140

Surrogate: 1-Chlorooctadecane 127 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 APACHE - EUNICE  
 BRUCE BAKER  
 P. O. BOX 1849  
 EUNICE NM, 88231  
 Fax To: 394-2425

 Received: 05/09/2014  
 Reported: 05/14/2014  
 Project Name: WBDU #38  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 05/05/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: PT. 6 @ 4' (H401405-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	05/13/2014	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/12/2014	ND	195	97.3	200	0.174	
DRO >C10-C28	<10.0	10.0	05/12/2014	ND	205	102	200	0.686	
<i>Surrogate: 1-Chlorooctane</i>	<i>112 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>111 %</i>	<i>63.6-154</i>							

**Sample ID: EAST WALL #2 (H401405-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>&lt;16.0</b>	16.0	05/13/2014	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/13/2014	ND	189	94.6	200	3.60	
DRO >C10-C28	<10.0	10.0	05/13/2014	ND	205	103	200	3.63	
<i>Surrogate: 1-Chlorooctane</i>	<i>110 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>109 %</i>	<i>63.6-154</i>							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report



---

Celey D. Keene, Lab Director/Quality Manager



# ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603  
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <b>AFCNP</b>		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>																							
Project Manager: <b>Bruce Baker</b>		P.O. #:		Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions	TDS																		
Address:		Company:																									
City: Hobbs State: NM Zip: 88240		Attn:																									
Phone #: Fax #:		Address:																									
Project #: Project Owner:		City:																									
Project Name:		State: Zip:																									
Project Location: <b>WBVV #38</b>		Phone #:																									
Sampler Name:		Fax #:																									
FOR LAB USE ONLY										MATRIX			PRESERV.		SAMPLING												
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS							GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME							
<b>H401405</b>																											
1	pt. 2 @ 1.5 Ft	6	1			✓				✓	✓		8-5-14	10:00	✓	✓											
2	pt. 5 @ 1 Ft.	6	1			✓				✓	✓		5-5-14	10:05	✓	✓											
3	pt. 6 @ 4 Ft.	6	1			✓				✓	✓		5-5-14	10:10	✓	✓											
4	East Well #2	6	1			✓				✓	✓		5-6-14	10:00	✓	✓											

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 the client for the 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 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.

Relinquished By: <i>K. P. Henson</i>	Date: <b>5/1/14</b>	Received By: <i>Jodi Henson</i>	Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
Relinquished By:	Time: <b>9:20</b>	Received By:	Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One)	Sample Condition	CHECKED BY: <i>JPH</i>	REMARKS: <b>Bruce Baker</b>	
Sampler - UPS - Bus - Other:	Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>		email: hconder@riceswd.com; lflores@rice-ecs.com;	
	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		lweinheimer@rice-ecs.com; knorman@rice-ecs.com;	
			jkamplain@rice-ecs.com; sedwards@rice-ecs.com;	
			cursanic@rice-ecs.com	
			Environmental Tech: @rice-ecs.com	

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

**#54**

# Appendix C

Photo Documentation

**RICE Environmental Consulting and Safety (RECS)**  
P.O. Box 2948 Hobbs, NM 88241  
Phone 575.393.2967



# Apache WBDU #38

Unit Letter O, Section 9, T21S, R37E



Initial release area, facing southwest 3/28/14



Initial release area, facing east 3/28/14



Initial release area, facing north 3/28/14



Initial release area, facing west 3/28/14





Excavating release, facing southeast

5/6/14



Excavating release, facing southeast

5/7/14



Exporting soil, facing northwest

5/7/14



Site backfilled, facing west

10/6/14





Site backfilled, facing north

10/6/14



Site backfilled, facing north

10/6/14



Tilling, facing east

10/6/14



Seeding, facing west

10/6/14





Final photo, facing east

10/6/14



Final photo, facing west

10/6/14



Final photo, facing southeast

10/6/14

# Appendix D

Final C-141

**RICE Environmental Consulting and Safety (RECS)**  
P.O. Box 2948 Hobbs, NM 88241  
Phone 575.393.2967

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., 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

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

Form C-141  
Revised August 8, 2011  
Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

Name of Company Apache Corporation	Contact Bruce Baker
Address 8 Ellison Lane Eunice, NM 88231	Telephone No. (432) 631-6982
Facility Name WBDU #38	Facility Type injection well

Surface Owner Millard Deck Estates	Mineral Owner Federal	API No. 30-025-09906
------------------------------------	-----------------------	----------------------

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	9	21S	37E	660'	FSL	1980'	FEL	Eddy

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

**NATURE OF RELEASE**

Type of Release Produced Water	Volume of Release 5 barrels of water	Volume Recovered 1 Barrel of water
Source of Release Injection line	Date and Hour of Occurrence 3/27/2014	Date and Hour of Discovery 3/27/2014 at 6:00 a.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*  
Describe Cause of Problem and Remedial Action Taken.\* The release occurred below isolation valve coupling. The well was shut in and a vacuum truck was dispatched to pick-up standing fluid. The valve was replaced.

Describe Area Affected and Cleanup Action Taken.\* A total of 7,931 square feet of pad and pasture land was affected. RECS personnel were on site beginning on March 28<sup>th</sup>, 2014, to assess and map the site. Based on the assessment, seven points within the stain and one point on the battery pad were sampled at the surface and with depth. The bottom samples from the six auger points in the release on the pasture were taken to a commercial laboratory for analysis. Point 1, which was located on the lease, did not have its sample taken to the lab. Instead, Apache determined that a more effective remediation process was to scrape the release area on the pad down 8 inches. A five point composite was taken from the base of the 8 inch scrape. The sample was then taken to a commercial laboratory for analysis and returned a chloride value of 240 mg/kg, a DRO value of 54.2 mg/kg and a GRO value below non-detect. Based on the laboratory analyses, the release area in the pasture was excavated in four parts to remove the contaminated soil. Points 2, 3, 4 and 5 were scraped from 1- 2.5 feet bgs. Point 6 was excavated to 4 feet bgs, and Point 7 was scraped to 6 inches bgs. Seven of the wall samples were then taken to a commercial laboratory for analysis. The seven wall samples returned laboratory chloride values below 250 mg/kg and GRO and DRO values of non-detect, except for South Wall 2, which returned a laboratory chloride reading of 304 mg/kg. The lease pad was backfilled with clean imported caliche, and the pasture area was backfilled with imported top soil. On October 6<sup>th</sup>, 2014, the site was seeded with 27 lbs of Blue Gramma Mix.

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>Bruce Baker</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Bruce Baker	Approved by Environmental Specialist:	
Title: Environmental Tech	Approval Date:	Expiration Date:
E-mail Address: larry.baker@apachecorp.com	Conditions of Approval:	
Date: 11-20-14 Phone: (432) 631-6982	Attached <input type="checkbox"/>	