



EXPLORING WHAT'S POSSIBLE

APACHE CORPORATION

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

Empire Abo C-49 SWD (2RP-2638)

Termination Request

API No. 30-015-03180

Release Date: November 17th, 2014

Unit Letter L, Section 29, Township 17S, Range 29E

March 9th, 2015

Mike Bratcher

New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division, Environmental Bureau – District 2
811 S. First St.
Artesia, NM 88210

**RE: Termination Request
Apache Empire Abo C-49 SWD (2RP-2638)
UL/L sec. 29 T17S R29E
API No. 30-015-03180**

Mr. Bratcher:

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 7.2 miles west of Loco Hills, New Mexico at UL/L sec. 29 T17S R29E. Previous soil bores conducted at this site show that there is no groundwater in this area.

On November 17th, 2014, Apache discovered that a ceramic plunger on the east triplex pump failed at the SWD, releasing 750 barrels of produced water over 28,604 square feet of lease pad, lease road and pasture land. All pumps were shut down and vacuum trucks were dispatched to the site. The vacuum trucks recovered a total of 650 barrels of produced water. NMOCD and BLM were notified of the release on November 17th, 2014, and an initial C-141 was sent to both agencies for approval. NMOCD approved the initial C-141 on December 2nd, 2014 (Appendix A).

RECS personnel were on site beginning on November 17th, 2014, to conduct remediation efforts (Figure). Based on an initial assessment of the release, the release area on the pad was scraped down 6 inches. Once the scrape was completed, 5 points were taken from the bottom of the scrape and field tested for chlorides and organic vapors. The samples were then sent to a commercial laboratory for analysis. The laboratory returned chloride readings that ranged from 752 mg/kg to non-detect. GRO, DRO and BTEX readings for the bottom samples returned values of non-detect.

In the pasture to the west of the pad, the release was scraped in two parts: a 1.5 ft excavation and a 6 inch scrape. At the base of the 1.5 ft excavation, two bottom samples and four wall samples were taken and field tested for chlorides and organic vapors. The samples were then sent to a commercial laboratory for analysis. The laboratory returned chloride readings that ranged from

912 mg/kg to non-detect. GRO, DRO and BTEX readings for the bottom and wall samples returned values of non-detect. A bottom sample from the 6 inch scrape was taken and field tested for chlorides and organic vapors. The sample was then sent to a commercial laboratory for analysis. The 6 inch scrape bottom sample returned a chloride value of 240 mg/kg with GRO, DRO and BTEX readings of non-detect.

On December 9th, 2014, three auger points were installed in the release area to the east of the lease pad. The auger points were installed to a depth of 1 ft bgs, and the 1 ft bgs samples from each auger point were taken and field tested for chlorides and organic vapors. The samples were then taken to a commercial laboratory for analysis. Hand Auger Point 1 returned a laboratory chloride value of 768 mg/kg, Hand Auger Point 2 returned a laboratory chloride value of 720 mg/kg, and Hand Auger Point 3 returned a laboratory chloride value of 144 mg/kg. The GRO, DRO and BTEX results for all samples returned values of non-detect (Appendix B).

Based on the laboratory sampling data, a Path Forward was submitted to NMOCD and BLM on January 6th, 2015. The Path Forward requested permission to backfill the lease pad, the scrape and excavation to the west of the lease pad. In addition, Apache requested permission to scrape the release area on the east side of the pad to 1 ft bgs and then backfill that scrape. NMOCD and BLM approved the Path Forward on January 7th, 2015.

The east side of the pad was scraped down by hand shovel to 1 ft bgs. All contaminated soils were taken to a NMOCD approved facility for disposal. Clean caliche was imported to the site to backfill the lease pad and lease road. Clean top soil was imported to site to backfill the pasture. The scrapes were contoured to the surrounding location.

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

Given that Apache received permission to backfill the site from NMOCD and BLM, and the scrapes were backfilled with clean soil, 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,



Lara Weinheimer
Project Scientist
RECS
(575) 441-0431

Attachments:

Figure – Excavation Data

Appendix A – Initial C-141

Appendix B – Laboratory Analyses

Appendix C – Photo Documentation

Appendix D – Final C-141

Figures

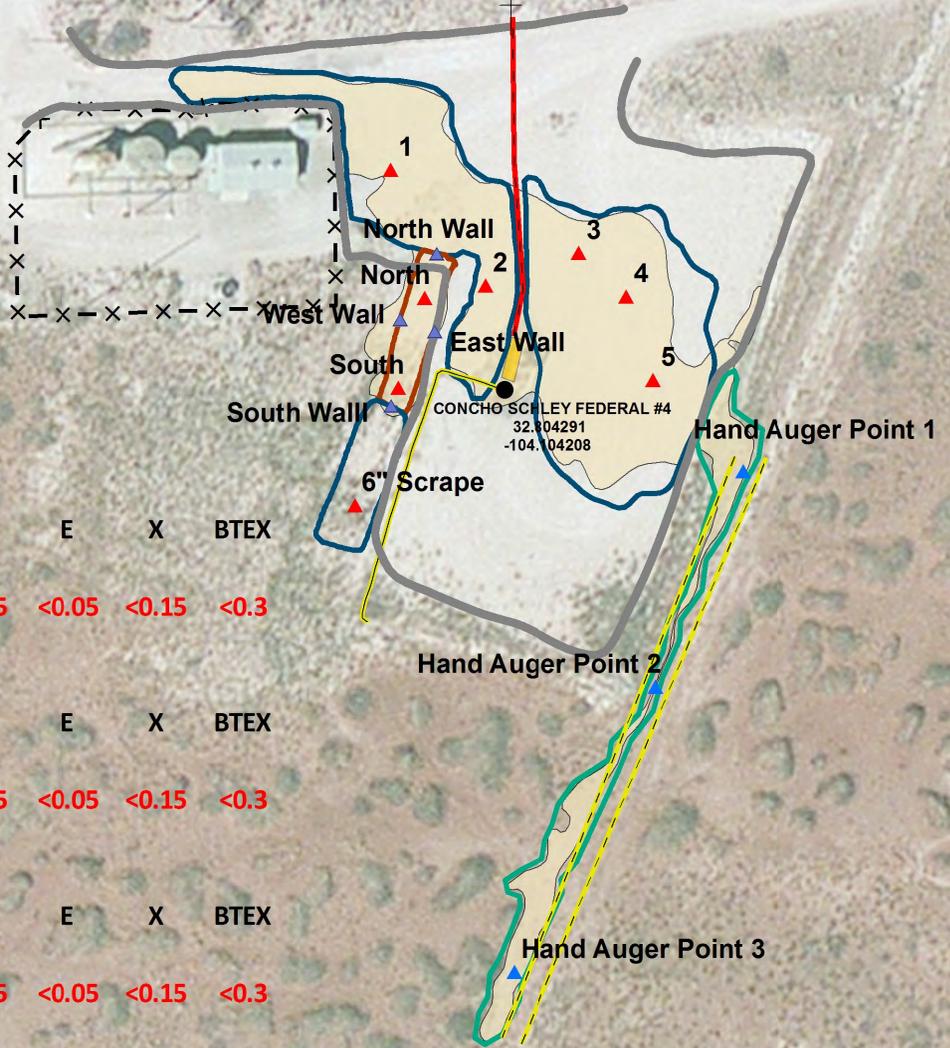
Excavation Data

1.5 ft Excavation

	CI-	PID	GRO	DRO	B	T	E	X	BTEX
North Bottom	912	0.5	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
South Bottom	64	0.6	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
North Wall	<16	0.6	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
East Wall	224	0.6	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
South Wall	144	0.3	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
West Wall	<16	0.3	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3

6 in Scrape

	CI-	PID	GRO	DRO	B	T	E	X	BTEX
Point 1	752	0.5	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
Point 2	384	0.1	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
Point 3	752	0.4	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
Point 4	<16	0.8	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
Point 5	576	1	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3



Hand Auger Point 1

	CI-	PID	GRO	DRO	B	T	E	X	BTEX
SS 5370		2.2							
1'	768	0.2	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3

Hand Auger Point 2

	CI-	PID	GRO	DRO	B	T	E	X	BTEX
SS 2832		0.1							
1'	720	0.6	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3

Hand Auger Point 3

	CI-	PID	GRO	DRO	B	T	E	X	BTEX
SS 8549		0.7							
1'	144	0.3	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3

	CI-	PID	GRO	DRO	B	T	E	X	BTEX
6" Scrape	240	0.2	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3

Legend

- | | |
|-------------------------|------------------------|
| ⊥ ELECTRIC POLE | ×-× FENCE |
| ▲ AUGER POINT | — PAD/ROAD EDGE |
| ▲ BOTTOM SAMPLING POINT | — SURFACE PIPELINE |
| ▲ WALL SAMPLES | ▭ SCRAPE 1 FT |
| ● WELLHEAD | ▭ SCRAPE 1.5 FT |
| — BURIED PIPELINE | ▭ SCRAPE 6 IN |
| — BURIED ELECTRIC LINE | ▲ PUMPJACK |
| | ▭ STAIN - 28,604 SQ FT |

CI- FIELD DATA
 CI- LAB DATA

Landowner: BLM
 DGW: None

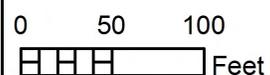
Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS community



**APACHE
 EMPIRE ABO UNIT
 C-49 SWD**

UL L SECTION 29
 T-17-S R-29-E
 EDDY COUNTY, NM

Figure



GPS date: 12/03/14 CF, 12/10/14 AR
 Drawing date: 1/27/15
 Drafted by: L. Weinheimer



Appendix A

Initial C-141

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

State of New Mexico
Energy Minerals and Natural Resources

NOV 26 2014

Form C-141
Revised August 8, 2011

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

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

Submit to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

NAB1433654072

OPERATOR

Initial Report Final Report

Name of Company: Apache Corporation <i>873</i>	Contact Bruce Baker
Address: 2350 W Marland Blvd Hobbs, NM 88240	Telephone No. (432) 631-6982
Facility Name Empire Abo C-49 SWD	Facility Type: Facility

Surface Owner BLM	Mineral Owner	API No. Facility
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LOCATION OF RELEASE

30-015-03180

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
L	29	17S	29E					Eddy

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 750 barrels of produced water	Volume Recovered 650 barrels of produced water
Source of Release: Triplex pump	Date and Hour of Occurrence 11/17/2014 at 1:00 a.m.	Date and Hour of Discovery 11/17/2014 at 6:00 a.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher (NMOCD) and Jeffery Robertson (BLM)	
By Whom? Bruce Baker	Date and Hour 11/17/2014	
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.*
Ceramic plunger on east triplex pump failed resulting in the loss of fluid. All pumps were shut down and vacuum trucks were dispatched to pick up standing fluid.

Describe Area Affected and Cleanup Action Taken.*
The majority of the release was contained inside the dirt containment wall but fluid did breach the containment on the northwest corner and ran down lease road and onto a well pad and about 3,000 square feet of pasture was affected on the west and east and south-east of well pad east of facility. The area was mapped and field samples were collect.

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>	OIL CONSERVATION DIVISION	
Printed Name: Bruce Baker	Approved by Environmental Specialist	Signed By: <i>Mike Bratcher</i>
Title: Environmental Technician	Approval Date: <i>12/2/14</i>	Expiration Date: <i>N/A</i>
E-mail Address: larry.baker@apachecorp.com	Conditions of Approval:	
Date: 11/26/2014	Phone: (432) 631-6982	Remediation per O.C.D. Rules & Guidelines <input type="checkbox"/>

SUBMIT REMEDIATION PROPOSAL NO
LATER THAN: 11/21/15

* Attach Additional Sheets If Necessary

2 RP-2638

Appendix B

Laboratory Analyses

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



December 10, 2014

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EMPIRE ABO C-49 SWD

Enclosed are the results of analyses for samples received by the laboratory on 12/04/14 16:56.

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.

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". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received:	12/04/2014	Sampling Date:	12/03/2014
Reported:	12/10/2014	Sampling Type:	Soil
Project Name:	EMPIRE ABO C-49 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Kathy Perez
Project Location:	NOT GIVEN		

Sample ID: POINT 1 BOTTOM @ 6" (H403711-01)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/09/2014	ND	1.87	93.7	2.00	3.16	
Toluene*	<0.050	0.050	12/09/2014	ND	1.72	86.2	2.00	3.97	
Ethylbenzene*	<0.050	0.050	12/09/2014	ND	1.63	81.5	2.00	1.82	
Total Xylenes*	<0.150	0.150	12/09/2014	ND	4.90	81.6	6.00	2.34	
Total BTEX	<0.300	0.300	12/09/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.6 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	752	16.0	12/05/2014	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/06/2014	ND	195	97.6	200	0.501	
DRO >C10-C28	<10.0	10.0	12/06/2014	ND	202	101	200	1.55	

Surrogate: 1-Chlorooctane 126 % 47.2-157
Surrogate: 1-Chlorooctadecane 145 % 52.1-176

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received:	12/04/2014	Sampling Date:	12/04/2014
Reported:	12/10/2014	Sampling Type:	Soil
Project Name:	EMPIRE ABO C-49 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Kathy Perez
Project Location:	NOT GIVEN		

Sample ID: POINT 2 BOTTOM @ 6" (H403711-02)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/09/2014	ND	1.87	93.7	2.00	3.16		
Toluene*	<0.050	0.050	12/09/2014	ND	1.72	86.2	2.00	3.97		
Ethylbenzene*	<0.050	0.050	12/09/2014	ND	1.63	81.5	2.00	1.82		
Total Xylenes*	<0.150	0.150	12/09/2014	ND	4.90	81.6	6.00	2.34		
Total BTEX	<0.300	0.300	12/09/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.9 % 61-154

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	384	16.0	12/05/2014	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	12/06/2014	ND	195	97.6	200	0.501		
DRO >C10-C28	<10.0	10.0	12/06/2014	ND	202	101	200	1.55		

Surrogate: 1-Chlorooctane 126 % 47.2-157

Surrogate: 1-Chlorooctadecane 141 % 52.1-176

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* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received:	12/04/2014	Sampling Date:	12/04/2014
Reported:	12/10/2014	Sampling Type:	Soil
Project Name:	EMPIRE ABO C-49 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Kathy Perez
Project Location:	NOT GIVEN		

Sample ID: POINT 3 BOTTOM @ 6" (H403711-03)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/09/2014	ND	1.87	93.7	2.00	3.16		
Toluene*	<0.050	0.050	12/09/2014	ND	1.72	86.2	2.00	3.97		
Ethylbenzene*	<0.050	0.050	12/09/2014	ND	1.63	81.5	2.00	1.82		
Total Xylenes*	<0.150	0.150	12/09/2014	ND	4.90	81.6	6.00	2.34		
Total BTEX	<0.300	0.300	12/09/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.2 % 61-154

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	752	16.0	12/05/2014	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	12/06/2014	ND	195	97.6	200	0.501		
DRO >C10-C28	<10.0	10.0	12/06/2014	ND	202	101	200	1.55		

Surrogate: 1-Chlorooctane 121 % 47.2-157

Surrogate: 1-Chlorooctadecane 140 % 52.1-176

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* = Accredited Analyte

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 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received:	12/04/2014	Sampling Date:	12/03/2014
Reported:	12/10/2014	Sampling Type:	Soil
Project Name:	EMPIRE ABO C-49 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Kathy Perez
Project Location:	NOT GIVEN		

Sample ID: POINT 4 BOTTOM @ 6" (H403711-04)

BTEX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/09/2014	ND	1.81	90.5	2.00	7.27		
Toluene*	<0.050	0.050	12/09/2014	ND	1.79	89.5	2.00	7.66		
Ethylbenzene*	<0.050	0.050	12/09/2014	ND	1.71	85.7	2.00	7.88		
Total Xylenes*	<0.150	0.150	12/09/2014	ND	5.27	87.8	6.00	7.94		
Total BTEX	<0.300	0.300	12/09/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	12/05/2014	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	12/06/2014	ND	195	97.6	200	0.501		
DRO >C10-C28	<10.0	10.0	12/06/2014	ND	202	101	200	1.55		

Surrogate: 1-Chlorooctane 122 % 47.2-157

Surrogate: 1-Chlorooctadecane 140 % 52.1-176

Cardinal Laboratories

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Received:	12/04/2014	Sampling Date:	12/03/2014
Reported:	12/10/2014	Sampling Type:	Soil
Project Name:	EMPIRE ABO C-49 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Kathy Perez
Project Location:	NOT GIVEN		

Sample ID: POINT 5 BOTTOM @ 6" (H403711-05)

BTEX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/09/2014	ND	1.81	90.5	2.00	7.27		
Toluene*	<0.050	0.050	12/09/2014	ND	1.79	89.5	2.00	7.66		
Ethylbenzene*	<0.050	0.050	12/09/2014	ND	1.71	85.7	2.00	7.88		
Total Xylenes*	<0.150	0.150	12/09/2014	ND	5.27	87.8	6.00	7.94		
Total BTEX	<0.300	0.300	12/09/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 61-154

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	576	16.0	12/05/2014	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	12/06/2014	ND	195	97.6	200	0.501		
DRO >C10-C28	<10.0	10.0	12/06/2014	ND	202	101	200	1.55		

Surrogate: 1-Chlorooctane 121 % 47.2-157

Surrogate: 1-Chlorooctadecane 138 % 52.1-176

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- 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



December 15, 2014

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EMPIRE ABO C-49 SWD

Enclosed are the results of analyses for samples received by the laboratory on 12/10/14 16:15.

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.

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,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received:	12/10/2014	Sampling Date:	12/10/2014
Reported:	12/15/2014	Sampling Type:	Soil
Project Name:	EMPIRE ABO C-49 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Kathy Perez
Project Location:	NOT GIVEN		

Sample ID: SPOIL PILE LOCATION (H403772-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	12/11/2014	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/11/2014	ND	197	98.4	200	1.87	
DRO >C10-C28	<10.0	10.0	12/11/2014	ND	209	105	200	1.93	
<i>Surrogate: 1-Chlorooctane</i>	<i>93.6 %</i>	<i>47.2-157</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>89.7 %</i>	<i>52.1-176</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



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: <i>Apache</i>		BILL TO		ANALYSIS REQUEST											
Project Manager: <i>Bruce Baker</i>		P.O. #:		Chlorides TPH 8015 M BTEX Texas TPH Complete Cations/Anions TDS											
Address:		Company:													
City:	State:	Zip:	Attn:												
Phone #:	Fax #:	Address:													
Project #:	Project Owner:		City:												
Project Name:	State:		Zip:												
Project Location: <i>Empire ABO Unit C-49</i>	Phone #:														
Sampler Name: <i>Abc Redcop</i>	Fax #:														
FOR LAB USE ONLY															
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX			PRESERV.	SAMPLING							
				GROUNDWATER	WASTEWATER	SOIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME		
<i>H403112</i>	<i>Spoil Pile Location</i>	<i>G</i>	<i>1</i>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>		<i>12-10-14</i>	<i>1:30</i>	<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: <i>Abc Redcop</i>	Date: <i>12-10-14</i>	Received By: <i>[Signature]</i>	Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
	Time: <i>4:15</i>		Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:	
	Time:		email results: hconder@rice-ecs.com; knorman@rice-ecs.com; jkamplain@rice-ecs.com; regans@rice-ecs.com; lflores@rice-ecs.com; lweinheimer@rice-ecs.com; kjones@riceswd.com; cursanic@rice-ecs.com environmental tech: aredecop@rice-ecs.com	
Delivered By: (Circle One)	Sample Condition	Checked By: (Initials)		
Sampler - UPS - Bus - Other: <i>5.6</i>	Cool <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<i>XP</i>		

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

Bruce Baker



December 17, 2014

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EAU C 49 SWD

Enclosed are the results of analyses for samples received by the laboratory on 12/12/14 8:00.

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.

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". The signature is written in a cursive style.

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received:	12/12/2014	Sampling Date:	12/09/2014
Reported:	12/17/2014	Sampling Type:	Soil
Project Name:	EAU C 49 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: NORTH BOTTOM 1.5' (H403792-01)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/15/2014	ND	1.90	95.1	2.00	3.04	
Toluene*	<0.050	0.050	12/15/2014	ND	1.88	93.8	2.00	0.356	
Ethylbenzene*	<0.050	0.050	12/15/2014	ND	1.79	89.5	2.00	0.736	
Total Xylenes*	<0.150	0.150	12/15/2014	ND	5.39	89.9	6.00	0.413	
Total BTEX	<0.300	0.300	12/15/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	912	16.0	12/12/2014	ND	400	100	400	3.92	

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	12/15/2014	ND	185	92.6	200	2.97	
DRO >C10-C28	<10.0	10.0	12/15/2014	ND	197	98.4	200	1.88	

Surrogate: 1-Chlorooctane 91.2 % 47.2-157
Surrogate: 1-Chlorooctadecane 86.8 % 52.1-176

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received:	12/12/2014	Sampling Date:	12/09/2014
Reported:	12/17/2014	Sampling Type:	Soil
Project Name:	EAU C 49 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SOUTH BOTTOM 1.5' (H403792-02)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/15/2014	ND	1.90	95.1	2.00	3.04		
Toluene*	<0.050	0.050	12/15/2014	ND	1.88	93.8	2.00	0.356		
Ethylbenzene*	<0.050	0.050	12/15/2014	ND	1.79	89.5	2.00	0.736		
Total Xylenes*	<0.150	0.150	12/15/2014	ND	5.39	89.9	6.00	0.413		
Total BTEX	<0.300	0.300	12/15/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 61-154

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	12/12/2014	ND	400	100	400	3.92		

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	12/15/2014	ND	185	92.6	200	2.97		
DRO >C10-C28	<10.0	10.0	12/15/2014	ND	197	98.4	200	1.88		

Surrogate: 1-Chlorooctane 89.1 % 47.2-157

Surrogate: 1-Chlorooctadecane 84.7 % 52.1-176

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received:	12/12/2014	Sampling Date:	12/09/2014
Reported:	12/17/2014	Sampling Type:	Soil
Project Name:	EAU C 49 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: NORTH WALL (H403792-03)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/15/2014	ND	1.90	95.1	2.00	3.04	
Toluene*	<0.050	0.050	12/15/2014	ND	1.88	93.8	2.00	0.356	
Ethylbenzene*	<0.050	0.050	12/15/2014	ND	1.79	89.5	2.00	0.736	
Total Xylenes*	<0.150	0.150	12/15/2014	ND	5.39	89.9	6.00	0.413	
Total BTEX	<0.300	0.300	12/15/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 61-154

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/12/2014	ND	400	100	400	3.92	

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	12/15/2014	ND	185	92.6	200	2.97	
DRO >C10-C28	<10.0	10.0	12/15/2014	ND	197	98.4	200	1.88	

Surrogate: 1-Chlorooctane 89.6 % 47.2-157

Surrogate: 1-Chlorooctadecane 84.5 % 52.1-176

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received:	12/12/2014	Sampling Date:	12/09/2014
Reported:	12/17/2014	Sampling Type:	Soil
Project Name:	EAU C 49 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: EAST WALL (H403792-04)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/15/2014	ND	1.90	95.1	2.00	3.04	
Toluene*	<0.050	0.050	12/15/2014	ND	1.88	93.8	2.00	0.356	
Ethylbenzene*	<0.050	0.050	12/15/2014	ND	1.79	89.5	2.00	0.736	
Total Xylenes*	<0.150	0.150	12/15/2014	ND	5.39	89.9	6.00	0.413	
Total BTEX	<0.300	0.300	12/15/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 61-154

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	12/12/2014	ND	400	100	400	3.92	

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	12/15/2014	ND	185	92.6	200	2.97	
DRO >C10-C28	<10.0	10.0	12/15/2014	ND	197	98.4	200	1.88	

Surrogate: 1-Chlorooctane 84.4 % 47.2-157
Surrogate: 1-Chlorooctadecane 80.5 % 52.1-176

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received:	12/12/2014	Sampling Date:	12/09/2014
Reported:	12/17/2014	Sampling Type:	Soil
Project Name:	EAU C 49 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SOUTH WALL (H403792-05)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/15/2014	ND	1.90	95.1	2.00	3.04	
Toluene*	<0.050	0.050	12/15/2014	ND	1.88	93.8	2.00	0.356	
Ethylbenzene*	<0.050	0.050	12/15/2014	ND	1.79	89.5	2.00	0.736	
Total Xylenes*	<0.150	0.150	12/15/2014	ND	5.39	89.9	6.00	0.413	
Total BTEX	<0.300	0.300	12/15/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 61-154

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	12/12/2014	ND	400	100	400	3.92	

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	12/15/2014	ND	185	92.6	200	2.97	
DRO >C10-C28	<10.0	10.0	12/15/2014	ND	197	98.4	200	1.88	

Surrogate: 1-Chlorooctane 86.3 % 47.2-157

Surrogate: 1-Chlorooctadecane 83.0 % 52.1-176

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received:	12/12/2014	Sampling Date:	12/09/2014
Reported:	12/17/2014	Sampling Type:	Soil
Project Name:	EAU C 49 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: WEST WALL (H403792-06)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/15/2014	ND	1.90	95.1	2.00	3.04	
Toluene*	<0.050	0.050	12/15/2014	ND	1.88	93.8	2.00	0.356	
Ethylbenzene*	<0.050	0.050	12/15/2014	ND	1.79	89.5	2.00	0.736	
Total Xylenes*	<0.150	0.150	12/15/2014	ND	5.39	89.9	6.00	0.413	
Total BTEX	<0.300	0.300	12/15/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 61-154

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/12/2014	ND	400	100	400	3.92	

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	12/15/2014	ND	185	92.6	200	2.97	
DRO >C10-C28	<10.0	10.0	12/15/2014	ND	197	98.4	200	1.88	

Surrogate: 1-Chlorooctane 84.0 % 47.2-157

Surrogate: 1-Chlorooctadecane 81.7 % 52.1-176

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

Analytical Results For:

 APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received:	12/12/2014	Sampling Date:	12/09/2014
Reported:	12/17/2014	Sampling Type:	Soil
Project Name:	EAU C 49 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: 6" SCRAPE (H403792-07)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/15/2014	ND	1.90	95.1	2.00	3.04	
Toluene*	<0.050	0.050	12/15/2014	ND	1.88	93.8	2.00	0.356	
Ethylbenzene*	<0.050	0.050	12/15/2014	ND	1.79	89.5	2.00	0.736	
Total Xylenes*	<0.150	0.150	12/15/2014	ND	5.39	89.9	6.00	0.413	
Total BTEX	<0.300	0.300	12/15/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.8 % 61-154

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	12/12/2014	ND	400	100	400	3.92	

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	12/15/2014	ND	185	92.6	200	2.97	
DRO >C10-C28	<10.0	10.0	12/15/2014	ND	197	98.4	200	1.88	

Surrogate: 1-Chlorooctane 89.0 % 47.2-157

Surrogate: 1-Chlorooctadecane 84.8 % 52.1-176

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



December 17, 2014

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EAU C 49 SWD

Enclosed are the results of analyses for samples received by the laboratory on 12/12/14 8:00.

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.

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". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received:	12/12/2014	Sampling Date:	12/09/2014
Reported:	12/17/2014	Sampling Type:	Soil
Project Name:	EAU C 49 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HAND AUGER PT 2 @ 1' (H403793-01)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/15/2014	ND	1.90	95.1	2.00	3.04	
Toluene*	<0.050	0.050	12/15/2014	ND	1.88	93.8	2.00	0.356	
Ethylbenzene*	<0.050	0.050	12/15/2014	ND	1.79	89.5	2.00	0.736	
Total Xylenes*	<0.150	0.150	12/15/2014	ND	5.39	89.9	6.00	0.413	
Total BTEX	<0.300	0.300	12/15/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	720	16.0	12/12/2014	ND	400	100	400	3.92	

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	12/15/2014	ND	185	92.6	200	2.97	
DRO >C10-C28	<10.0	10.0	12/15/2014	ND	197	98.4	200	1.88	

Surrogate: 1-Chlorooctane 88.0 % 47.2-157
Surrogate: 1-Chlorooctadecane 86.6 % 52.1-176

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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RPD	Relative Percent Difference
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***	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

December 17, 2014

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EAU C 49 SWD

Enclosed are the results of analyses for samples received by the laboratory on 12/12/14 8:00.

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.

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,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received:	12/12/2014	Sampling Date:	12/09/2014
Reported:	12/17/2014	Sampling Type:	Soil
Project Name:	EAU C 49 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HAND AUGER PT 3 @ 1' (H403794-01)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/15/2014	ND	1.90	95.1	2.00	3.04	
Toluene*	<0.050	0.050	12/15/2014	ND	1.88	93.8	2.00	0.356	
Ethylbenzene*	<0.050	0.050	12/15/2014	ND	1.79	89.5	2.00	0.736	
Total Xylenes*	<0.150	0.150	12/15/2014	ND	5.39	89.9	6.00	0.413	
Total BTEX	<0.300	0.300	12/15/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.9 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	12/12/2014	ND	400	100	400	3.92	

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	12/15/2014	ND	185	92.6	200	2.97	
DRO >C10-C28	<10.0	10.0	12/15/2014	ND	197	98.4	200	1.88	

Surrogate: 1-Chlorooctane 87.0 % 47.2-157
Surrogate: 1-Chlorooctadecane 83.1 % 52.1-176

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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***	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: 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:		State:		Zip:		Attn:																					
Phone #:		Fax #:		Address:																							
Project #:		Project Owner:				City:																					
Project Name: EAU C49 SWD *				State:		Zip:																					
Project Location: Barraschiff Federal Tank Battery				Phone #:																							
Sampler Name: ABC Redox				Fax #:																							
FOR LAB USE ONLY																											
Lab I.D.		Sample I.D.		(GRAB OR C/OMP)		# CONTAINERS												MATRIX		PRESERV.		SAMPLING					
H403794		1 Hand Auger Pt3 @ 1'		G		1		GROUNDWATER						DATE		TIME											
								WASTEWATER						12-9-14		3:49											
								SOIL								✓ ✓ ✓											
								OIL																			
								SLUDGE																			
								OTHER:																			
								ACID/BASE:																			
								ICE / COOL																			
								OTHER:																			

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Relinquished By: <i>ah</i>		Date: 12-12-14		Received By: <i>Jodi Jensen</i>		Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Add'l Phone #:	
Time: 8:00		Time:		Time:		Fax Result: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:	
Relinquished By:		Date:		Received By:		REMARKS: *Project name changed as per Jacob. 12/17/14 ch			
Time:		Time:		Time:		email results:			
Delivered By: (Circle One)		Sample Condition		CHECKED BY: (Initials)		hconder@rice-ecs.com; knorman@rice-ecs.com;			
Sampler - UPS - Bus - Other:		Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>		12		jkamplain@rice-ecs.com; regans@rice-ecs.com; lflores@rice-ecs.com;			
		Yes <input type="checkbox"/> No <input type="checkbox"/>		AA		lweinheimer@rice-ecs.com; kjones@riceswd.com;			
		No <input type="checkbox"/> No <input type="checkbox"/>				cursanic@rice-ecs.com			
						environmental tech: aredecop@rice-ecs.com			

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

#54

Bruce Baker

December 17, 2014

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EAU C 49 SWD

Enclosed are the results of analyses for samples received by the laboratory on 12/12/14 8:00.

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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,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received:	12/12/2014	Sampling Date:	12/09/2014
Reported:	12/17/2014	Sampling Type:	Soil
Project Name:	EAU C 49 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HAND AUGER PT 1 @ 1' (H403795-01)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/16/2014	ND	1.81	90.3	2.00	10.1	
Toluene*	<0.050	0.050	12/16/2014	ND	1.76	87.8	2.00	10.6	
Ethylbenzene*	<0.050	0.050	12/16/2014	ND	1.67	83.4	2.00	11.8	
Total Xylenes*	<0.150	0.150	12/16/2014	ND	5.02	83.6	6.00	12.5	
Total BTEX	<0.300	0.300	12/16/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	768	16.0	12/12/2014	ND	400	100	400	3.92	

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	12/15/2014	ND	185	92.6	200	2.97	
DRO >C10-C28	<10.0	10.0	12/15/2014	ND	197	98.4	200	1.88	

Surrogate: 1-Chlorooctane 89.6 % 47.2-157
Surrogate: 1-Chlorooctadecane 87.2 % 52.1-176

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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RPD	Relative Percent Difference
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***	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

Appendix C

Photo Documentation

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

Apache Empire Abo C-49 SWD

Unit Letter L, Section 29, T17S, R29E



Initial release area, facing east

11/17/14



Initial release area, facing southeast

11/17/14



Initial release area, facing south

11/17/14



Initial release area, facing southeast

11/17/14



Initial release area, facing south

11/17/14



Initial release area, facing north

11/17/14



Initial release area, facing north

11/17/14



Scraping 6 inches, facing north

12/3/14



Site backfill, facing south

1/26/15



Site backfilled, facing south

1/26/15



Site backfilled, facing north

1/26/15



Site backfilled, facing north

1/26/15

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 2350 W. Marland Blvd., Hobbs, NM 88240	Telephone No. (432) 631-6982
Facility Name Empire Abo C-49 SWD	Facility Type Facility

Surface Owner BLM	Mineral Owner	API No. 30-015-03180
-------------------	---------------	----------------------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
L	29	17S	29E					Eddy

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 750 barrels of produced water	Volume Recovered 650 barrels of produced water
Source of Release Triplex pump	Date and Hour of Occurrence 11/17/2014 at 1:00 a.m.	Date and Hour of Discovery 11/17/2014 at 6:00 a.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher (NMOCD) and Jeffery Robertson (BLM)	
By Whom? Bruce Baker	Date and Hour 11/17/2014	
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.* Ceramic plunger on east triplex pump failed resulting in the loss of fluid. All pumps were shut down, and vacuum trucks were dispatched to pick up standing fluid.

Describe Area Affected and Cleanup Action Taken.* A total of 28,604 square feet of lease pad, lease road and pasture land were affected. RECS personnel were on site beginning on November 17th, 2014, to conduct remediation efforts. Based on an initial assessment of the release, the release area on the pad was scraped down 6 inches. Once the scrape was completed, 5 points were taken from the bottom of the scrape and sent to a commercial laboratory for analysis. In the pasture to the west of the pad, the release was scraped in two parts: a 1.5 ft excavation and a 6 inch scrape. At the base of the 1.5 ft excavation, two bottom samples and four wall samples were taken and sent to a commercial laboratory for analysis. A bottom sample from the 6 inch scrape was taken and sent to a commercial laboratory for analysis. On December 9th, 2014, three auger points were installed in the release area to the east of the lease pad. The auger points were installed to a depth of 1 ft bgs, and the 1 ft bgs samples from each auger point were sent to a commercial laboratory for analysis. Based on the laboratory sampling data, a Path Forward was submitted to NMOCD and BLM on January 6th, 2015. The Path Forward requested permission to backfill the lease pad and the scrape and excavation to the west of the lease pad. In addition, Apache requested permission to scrape the release area on the east side of the pad to 1 ft bgs and then backfill that scrape. NMOCD and BLM approved the Path Forward on January 7th, 2015. The east side of the pad was scraped down by hand shovel to 1 ft bgs. All excavated soil was taken to a NMOCD approved facility for disposal. Clean caliche was imported to the site to backfill the lease pad and lease road. Clean top soil was imported to site to backfill the pasture. The scrapes were contoured to the surrounding location.

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>	OIL CONSERVATION DIVISION	
Printed Name: Bruce Baker	Approved by Environmental Specialist:	
Title: Environmental Technician	Approval Date:	Expiration Date:
E-mail Address: larry.baker@apachecorp.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 3/9/15	Phone: (432) 631-6982	

* Attach Additional Sheets If Necessary