יר*ו*ון

EXPLORING WHAT'S POSSIBLE



### **APACHE CORPORATION**

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

# NB Tween #029

# Closure Report

API 30-015-39747

Release Date: March 23, 2012

Unit Letter F, Section 25, Township 17S, Range 28E

#### Rice Environmental Consulting & Safety

P.O. Box 2948 Hobbs, NM 88241 Phone 575.393.2967

#### May 23<sup>rd</sup>, 2013

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 – NB Tween #29 AD UL/F sec. 25 T17S R28E API No. 30-015-39747 2RP-1098

Mr. Bratcher:

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

#### **Background and Previous Work**

The site is an accidental discharge of brine water associated with the NB Tween #29. During drilling activities, a transport filling the frac tanks overflowed the tanks and fluids were released onto the well pad. An initial form C-141 was submitted by Apache Corporation on April 2, 2012 (Appendix A). The site is located approximately 3 miles west of Loco Hills, in unit letter 'F' of section 25, T17S, R28E in Eddy County, New Mexico.

During construction of the well pad, a reinforced plastic liner was placed approximately 2 ft. below ground surface (bgs) to mitigate possible environmental impacts of drilling activities. On April 4, 2012, RECS personnel initiated work at the NB Tween #29 (Figure 1). Surface soil samples were collected from the impacted areas as per post-drilling methods. Most of the impacted soils remained in the soils above the liner. The samples were field tested for chloride. Headspace measurements were also taken in the field using a Photo Ionization Detector (PID). The samples were submitted to a commercial laboratory for chloride, TPH, and BTEX analyses (Appendix C).

The leak area outside the northeast edge of the liner was excavated to 1 ft. bgs (Figure 2). On June 22, 2012, RECS personnel collected and field tested representative wall grab samples and a composite bottom sample from the excavation. The samples were submitted to a laboratory for chloride analysis and did not exceed 80 mg/kg (Appendix C).

The leak areas outside the liner to the west, south, and southwest were also excavated to 1 ft. bgs (Figure 2). On June 25, 2012, RECS personnel collected and field tested representative wall grab samples and composite bottom samples from each excavation. The samples were submitted to a laboratory for chloride analysis and did not exceed 144 mg/kg (Appendix C).

Excavated soils were removed to a NMOCD approved disposal facility. The excavations were backfilled with clean caliche and leveled. See Appendix B for photographs of field activities.

#### Conclusion

Due to the complete removal of impacted soils, Apache submits the final C-141 (Appendix D) and respectfully requests the closure of the regulatory file for this site.

Apache Corporation appreciates the opportunity to work with you on this project. Please call Hack Conder at (575) 631-6432 if you have any questions or comments.

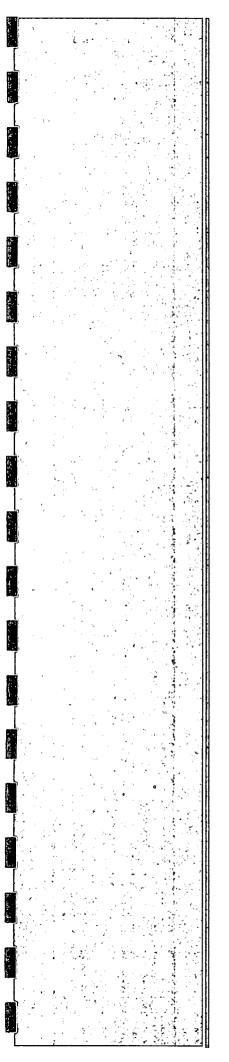
Sincerely,

JC.W.e

Lara Weinheimer Project Scientist RECS (575) 441-0431

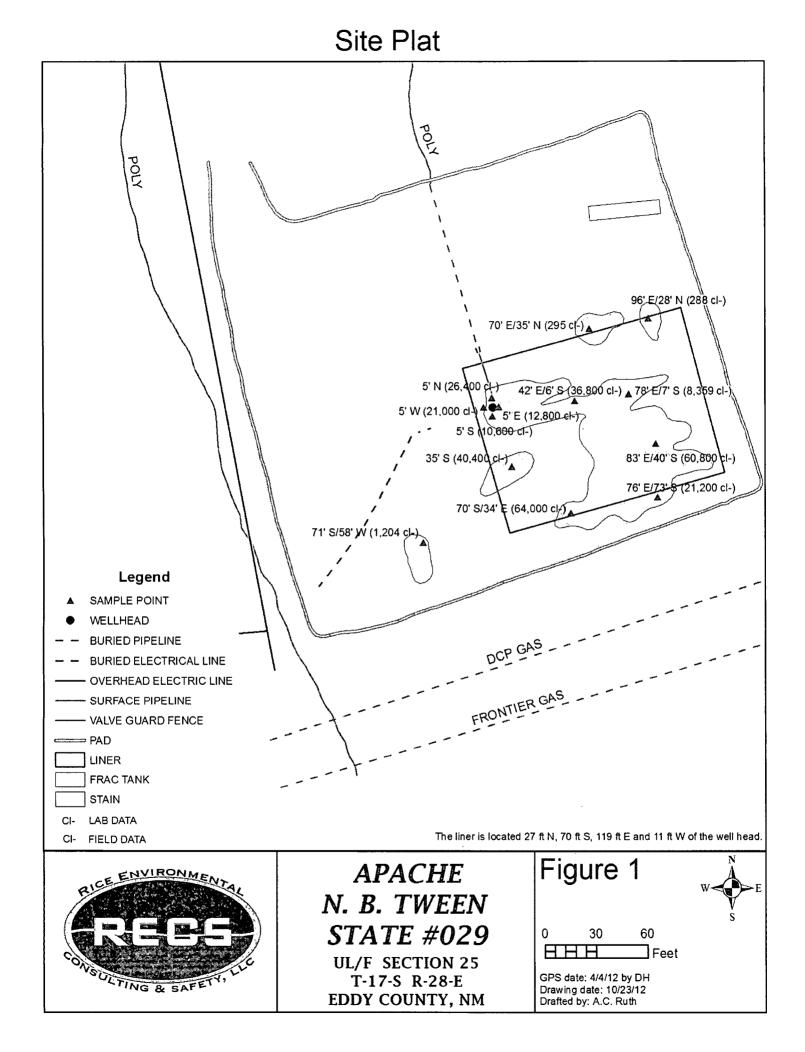
Attachments:

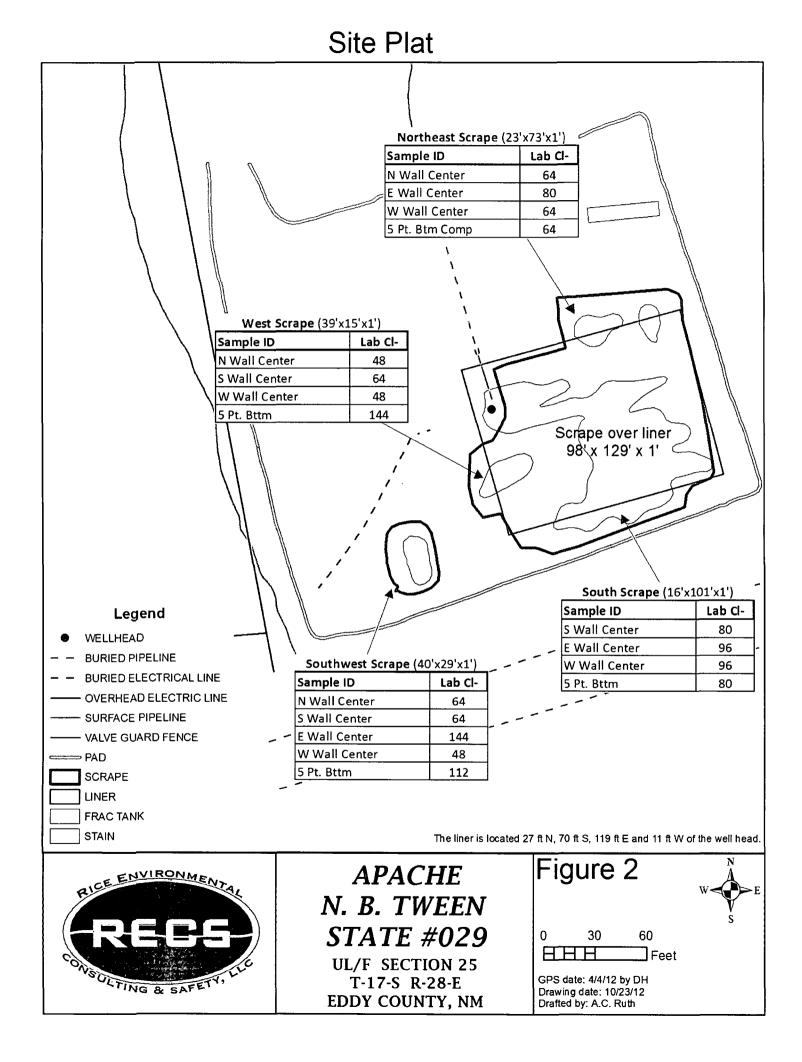
Site Plat with Initial Lab Sampling Data
Site Plat with Final Lab Sampling Data
Initial Form C-141
Site Photographs
Laboratory Results
Final Form C-141

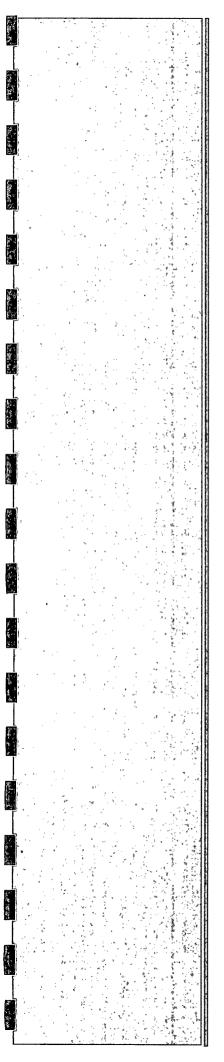


# Figures

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







Appendix A Initial Form 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

Form C-141 Revised August 8, 2011

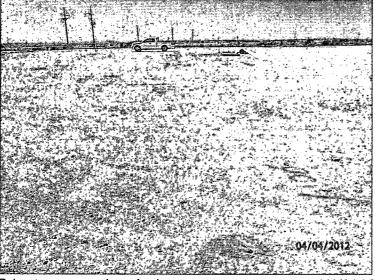
Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

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		9 Eunice NM	1 88231				to. 575-390-41					
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should their of	operations h	nave failed to a	idequately	/ investigate and r	emediate	e contaminati	on that pose a thr	eat to gr	ound wate	r. surface wa	iter. hu	man health
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# Appendix B Site Photographs

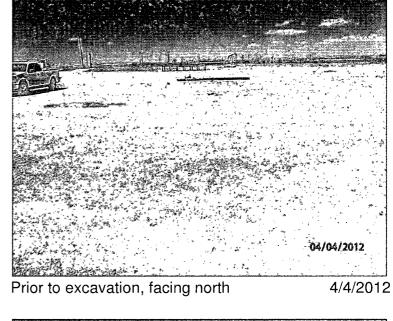
RICE Environmental Consulting and Safety (RECS) P.O. Box 2948 Hobbs, NM 88241 Phone 575.393.2967

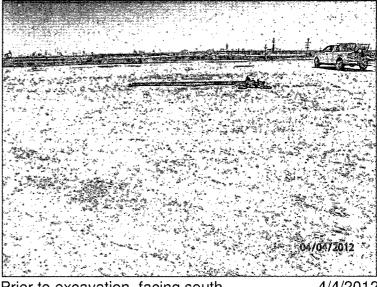
#### NB Tween #029 Unit F, Section 25, T17S, R28E



Prior to excavation, facing west

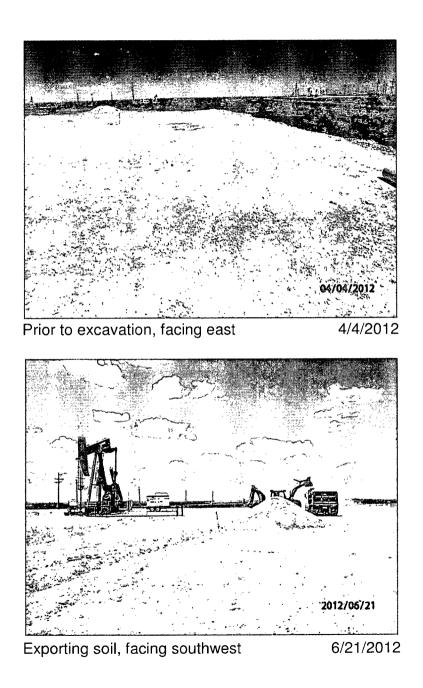
4/4/2012

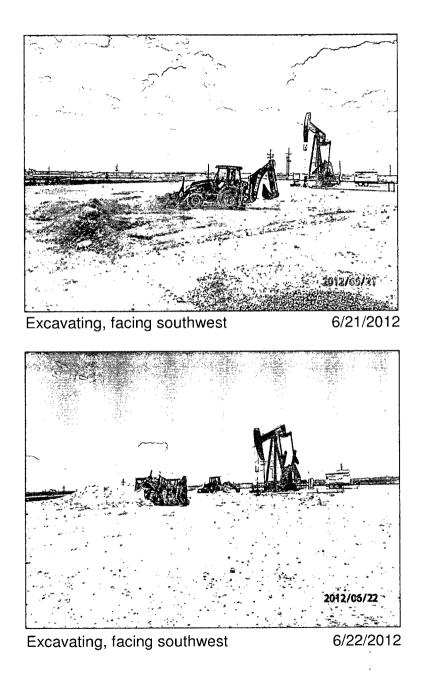


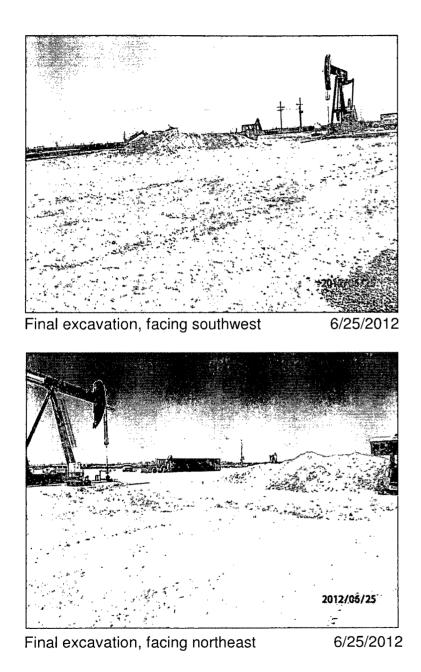


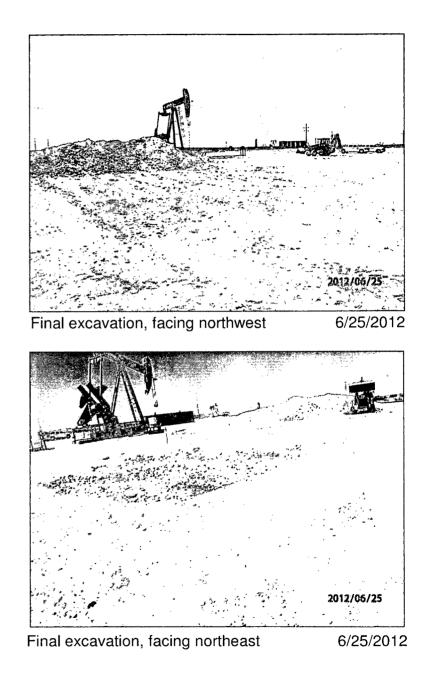
Prior to excavation, facing south

4/4/2012









## Appendix C Laboratory Results

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



April 10, 2012

NATALIE GLADDEN

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: N B TWEEN STATE #029

Enclosed are the results of analyses for samples received by the laboratory on 04/05/12 9:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. 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 <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceg.texas.gov/field/ga/lab</a> accredited certif.html.

Cardinal Laboratories is accreditated 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. Keine

Celey D. Keene Lab Director/Quality Manager



**APACHE - EUNICE** NATALIE GLADDEN P. O. BOX 1849 **EUNICE NM, 88231** Fax To: 394-2425

Received:	04/05/2012	Sampling Date:	04/04/2012
Reported:	04/10/2012	Sampling Type:	Soil
Project Name:	N B TWEEN STATE #029	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: 5' NORTH (H200789-01) ------

BTEX 8021B	mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/05/2012	ND	2.02	101	2.00	4.99	
Toluene*	<0.050	0.050	04/05/2012	ND	2.11	105	2.00	4.78	
Ethylbenzene*	<0.050	0.050	04/05/2012	ND	2.11	105	2.00	4.56	
Total Xylenes*	<0.150	0.150	04/05/2012	ND	6.52	109	6.00	4.30	

Surrogate: 4-Bromofluorobenzene (PIL 100 % 64.4-134

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	26400	16.0	04/09/2012	ND	384	96.0	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/05/2012	ND	230	115	200	4.71	
DRO >C10-C28	241	10.0	04/05/2012	ND	235	117	200	4.62	
Surrogate: 1-Chlorooctane	101	% 55.5-15	4						
Surrogate: 1-Chlorooctadecane	109	% 57.6-15	8						

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

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Celey D. Kune

Celey D. Keene, Lab Director/Quality Manager



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

Received:	04/05/2012	Sampling Date:	04/04/2012
Reported:	04/10/2012	Sampling Type:	Soil
Project Name:	N B TWEEN STATE #029	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: 5' EAST (H200789-02)

BTEX 8021B	mg,	/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
Benzene*	<0.050	0.050	04/05/2012	ND	2.02	101	2.00	4.99	
Toluene*	<0.050	0.050	04/05/2012	ND	2.11	105	2.00	4.78	
Ethylbenzene*	<0.050	0.050	04/05/2012	ND	2.11	105	2.00	4.56	
Total Xylenes*	<0.150	0.150	04/05/2012	ND	6.52	109	6.00	4.30	

Surrogate: 4-Bromofluorobenzene (PIL 100 % 64.4-134

Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	12800	16.0	04/09/2012	ND	384	96.0	400	0.00	
TPH 8015M	mg,	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/05/2012	ND	230	115	200	4.71	
DRO >C10-C28	38.3	10.0	04/05/2012	ND	235	117	200	4.62	
Surrogate: 1-Chlorooctane	104	% 55.5-15	4						
Surrogate: 1-Chlorooctadecane	129	% 57.6-15	8						

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

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Celeg D. Kune

Celey D. Keene, Lab Director/Quality Manager



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

Received:	04/05/2012	Sampling Date:	04/04/2012
Reported:	04/10/2012	Sampling Type:	Soil
Project Name:	N B TWEEN STATE #029	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: 5' SOUTH (H200789-03)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/05/2012	ND	2.02	101	2.00	4.99	
Toluene*	<0.050	0.050	04/05/2012	ND	2.11	105	2.00	4.78	
Ethylbenzene*	<0.050	0.050	04/05/2012	ND	2.11	105	2.00	4.56	
Total Xylenes*	<0.150	0.150	04/05/2012	ND	6.52	109	6.00	4.30	
Surrogate: 4-Bromofluorobenzene (PIL	101 5	% 64.4-13	4				· · · ·		
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	10600	16.0	04/09/2012	ND	384	96.0	400	0.00	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/05/2012	ND	230	115	200	4.71	
DRO >C10-C28	15.3	10.0	04/05/2012	ND	235	117	200	4.62	
Surrogate: 1-Chlorooctane	107 5	% 55.5-15	4						
Surrogate: 1-Chlorooctadecane	130	% 57.6-15	8						

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

04/05/2012	Sampling Date:	04/04/2012
04/10/2012	Sampling Type:	Soil
N B TWEEN STATE #029	Sampling Condition:	Cool & Intact
NONE GIVEN	Sample Received By:	Jodi Henson
NOT GIVEN		
	04/10/2012 N B TWEEN STATE #029 NONE GIVEN	04/10/2012Sampling Type:N B TWEEN STATE #029Sampling Condition:NONE GIVENSample Received By:

#### Sample ID: 5' WEST (H200789-04)

BTEX 8021B	mg/	kg	Analyze	d By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
Benzene*	<0.050	0.050	04/05/2012	ND	2.02	101	2.00	4.99			
Toluene*	<0.050	0.050	04/05/2012	ND	2.11	105	2.00	4.78			
Ethylbenzene*	<0.050	0.050	04/05/2012	ND	2.11	105	2.00	4.56			
Total Xylenes*	<0.150	0.150	04/05/2012	ND	6.52	109	6.00	4.30			
Surrogate: 4-Bromofluorobenzene (PIL 101 % 64.4-134		4									
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: HM							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
Chloride	21000	16.0	04/09/2012	ND	384	96.0	400	0.00			
TPH 8015M	mg/kg		mg/kg		Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10	<10.0	10.0	04/05/2012	ND	230	115	200	4.71			
DRO >C10-C28	<10.0	10.0	04/05/2012	ND	235	117	200	4.62			
Surrogate: 1-Chlorooctane	107 %	6 55.5-15	4								
Surrogate: 1-Chlorooctadecane	130 %	6 57.6-15	8								

#### Sample ID: 35' SOUTH (H200789-05)

Chloride, SM4500CI-B	mg,	/kg	Analyze						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	40400	16.0	04/09/2012	ND	384	96.0	400	0.00	

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#### \*=Accredited Analyte

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Celey Di Keene

Celey D. Keene, Lab Director/Quality Manager



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

Received:	04/05/2012	Sampling Date:	04/04/2012
Reported:	04/10/2012	Sampling Type:	Soil
Project Name:	N B TWEEN STATE #029	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: 70' SOUTH / 34' EAST (H200789-06)

Chloride, SM4500Cl-B	mg,	/kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64000	16.0	04/09/2012	ND	384	96.0	400	0.00	

#### Sample ID: 42' EAST / 6' SOUTH (H200789-07)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	36800	16.0	04/09/2012	ND	384	96.0	400	0.00	

#### Sample ID: 83' EAST / 40' SOUTH (H200789-08)

Chloride, SM4500Cl-B	mg,	/kg	Analyze						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	60800	16.0	04/09/2012	ND	384	96.0	400	0.00	

#### Sample ID: 76' EAST / 73' SOUTH (H200789-09)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	21200	16.0	04/09/2012	ND	384	96.0	400	0.00	

#### Sample ID: 96' EAST / 28' NORTH (H200789-10)

Chloride, SM4500Cl-B	mg	/kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	04/09/2012	ND	384	96.0	400	0.00	

#### **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 whitspeever shall be deemed waived unless made in writing and received by Cardinal within thirry (30) days after completion of the applicable service. In no event shall Cardinal be lable 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 claims based upon any of the above stated reasons or otherwise. Results relate only to the sample's identified above. This reproduced exception full individuntien approval of Cardinal Laboratores.

Celey D. Kere

Celey D. Keene, Lab Director/Quality Manager



#### **Notes and Definitions**

QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
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 SM4500CI-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

#### **Cardinal Laboratories**

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Celey D. Kune

Celey D. Keene, Lab Director/Quality Manager

#### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name	P: Apache				B	ILL TO	· ·	:				ANAL	YSIS	S RE	QUE	ST		
Project Manage	" Notalle Gladden				P.O. #:													
Address:					Company:							S						
City:	State: NM	Zip:	~		Attn:							io						
Phone #:	Fax #:				Address:							An						
Project #:	Project Owne	r:		,	City:			6	Σ		I	Cations/Anions						
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FOR LAB USE ONLY				MATRIX	PRESERV	SAMPLING		0	TPH		Le Le	fe						
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	96'E. 28'N.	G	$\overline{i}$	V		4-4-12 2:4	5	v							***			 

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	1 Fold	415.16 11 11-11	Fax Result: 🛛 Yes 🖾 No Add'I Fax #:
	I IMANIA HAM	Time:	REMARKS:
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	Relinguished By	Date: Received By:	email results Natalie.Gladden@usa.apachecorp.com
	A A	G.S. C Trai	
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1	Delivered By: (Circle One)	Sample Condition   CHECKED BY:	Zconder@rice-ecs.com; Bbaker@rice-ecs.com;
_	Denvered uv. Joncie.Oner		hconder@rice-ecs.com; Lweinheimer@rice-ecs.com
$\leq$	Sampler UPS - Bus - Other:	- U D Ves Ves (mitials)	nconder@nce-ecs.com, Ewenneimer@nce-ecs.com

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



June 27, 2012

NATALIE GLADDEN

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: N B TWEEN STATE #029

Enclosed are the results of analyses for samples received by the laboratory on 06/22/12 14:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. 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 <a href="https://www.tceq.texas.gov/field/ga/lab\_accred\_certif.html">www.tceq.texas.gov/field/ga/lab\_accred\_certif.html</a>.

Cardinal Laboratories is accreditated 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,

Celeg D. Keine

Celey D. Keene Lab Director/Quality Manager



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

06/22/2012	Sampling Date:	06/21/2012
06/27/2012	Sampling Type:	Soil
N B TWEEN STATE #029	Sampling Condition:	Cool & Intact
NONE GIVEN	Sample Received By:	Jodi Henson
NOT GIVEN		
	06/27/2012 N B TWEEN STATE #029 NONE GIVEN	06/27/2012Sampling Type:N B TWEEN STATE #029Sampling Condition:NONE GIVENSample Received By:

#### Sample ID: N E SCRAPE N WALL CENTER (H201430-01)

Chloride, SM4500Cl-B	mg	Analyze	d By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	06/25/2012	ND	432	108	400	3.77	

#### Sample ID: E WALL CENTER (H201430-02)

Chloride, SM4500Cl-B	loride, SM4500Cl-B mg/kg			d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	06/25/2012	ND	432	108	400	3.77	

#### Sample ID: W WALL CENTER (H201430-03)

Chloride, SM4500CI-B	ie, SM4500CI-B mg/kg			Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	06/25/2012	ND	432	108	400	3.77	

#### Sample ID: 5 PT BTM COMP (H201430-04)

Chloride, SM4500Cl-B	, SM4500Cl-B mg/kg			d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	06/25/2012	ND	432	108	400	3.77	

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

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Celuz D. Kune

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 $6^{\circ}\text{C}$
	Samples reported on an as received basis (wet) unless otherwise noted on report

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#### \*=Accredited Analyte

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager

#### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Zconder@rice-ecs.com; Bbaker@rice-ecs.com;

jkamplain@rice-ecs.com

hconder@rice-ecs.com; Lweinheimer@rice-ecs.com;

RDINAL LABORATORIES

Company Name	Apache Corp.									81	LL TO						ANAI	_YSIS	REC	QUEST		
Project Manager	<sup>*</sup> Natalie Gladden							P.O.	#:								S		T			
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City:	State:	Zij	:	~~~~				Attn:							Cations/Anions		1		1			
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alyses, All claims including	Domoges. Cardinal's lability and client's exclusive remedy to those for negligience and any other cause whatsoever shall be dive be lable for incidental or consequential damages, includ out of or related to the performance of services hereunder by Date: <u>6-2/-12</u> Time: 0730	deeme ng withou Cardina Re	d waive it limita regar	d unless tion, bus fless of ed B	made i Incss ir whether Y:	in writing	and r	ecéives	by Ca	udinal v	vithin 30 days afte	r complation of the client, its subsidia asons or otherwise Phone Research Fax Result REMARKS	ne opplicat nies se. Sult: S:	C Yes			Add'l I Add'l I	<sup>5</sup> hone # <sup>-</sup> ax #:	:		 	
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† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

87

×

Delivered By: (Circle One)

Sampler UPS - Bus - Other:

Sample Condition

Cool /Intact Ves Yes No No

CHECKED BY:

171



June 27, 2012

NATALIE GLADDEN APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: N B TWEEN STATE #029

Enclosed are the results of analyses for samples received by the laboratory on 06/25/12 16:41.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. 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 <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> accredited certif.html.

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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.

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. Keine

Celey D. Keene Lab Director/Quality Manager



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

Received:	06/25/2012	Sampling Date:	06/25/2012
Reported:	06/27/2012	Sampling Type:	Soil
Project Name:	N B TWEEN STATE #029	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: S SCRAPE S WALL CENTER (H201436-01)

Chloride, SM4500CI-B mg/kg			Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	06/26/2012	ND	432	108	400	3.77	

#### Sample ID: S SCRAPE E WALL CENTER (H201436-02)

Chloride, SM4500Cl-B	hloride, SM4500Cl-B mg/kg			d By: HM					<u> </u>
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	06/26/2012	ND	432	108	400	3.77	

#### Sample ID: S SCRAPE W WALL CENTER (H201436-03)

Chloride, SM4500CI-B mg/kg			Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	06/26/2012	ND	432	108	400	3.77	

#### Sample ID: S SCRAPE 5 PT BTTM (H201436-04)

Chloride, SM4500Cl-B	mg/kg			Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	06/26/2012	ND	432	108	400	3.77	

#### Cardinal Laboratories

#### \*=Accredited Analyte

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Celey D. Kune

Celey D. Keene, Lab Director/Quality Manager



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

Received:	06/25/2012	Sampling Date:	06/25/2012
Reported:	06/27/2012	Sampling Type:	Soil
Project Name:	N B TWEEN STATE #029	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: W SCRAPE N WALL CENTER (H201436-05)

Chloride, SM4500Cl-B mg/kg			Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/26/2012	ND	432	108	400	3.77	

#### Sample ID: W SCRAPE S WALL CENTER (H201436-06)

Chloride, SM4500CI-B	4500CI-B mg/kg			Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	06/26/2012	ND	432	108	400	3.77	

#### Sample ID: W SCRAPE W WALL CENTER (H201436-07)

Chloride, SM4500CI-B	mg	/kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/26/2012	ND	432	108	400	3.77	

#### Sample ID: W SCRAPE 5 PT BTTM (H201436-08)

Chloride, SM4500Cl-B	mg	/kg	Analyze	Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	06/26/2012	ND	432	108	400	3.77	

#### Sample ID: SW SCRAPE N WALL CENTER (H201436-09)

Chloride, SM4500CI-B	mg/kg			Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	06/26/2012	ND	432	108	400	3.77	

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

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Celey D. Kune

Celey D. Keene, Lab Director/Quality Manager



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

Received:	06/25/2012	Sampling Date:	06/25/2012
Reported:	06/27/2012	Sampling Type:	Soil
Project Name:	N B TWEEN STATE #029	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: SW SCRAPE S WALL CENTER (H201436-10)

Chloride, SM4500CI-B	mg/kg			Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	06/26/2012	ND	432	108	400	3.77	

#### Sample ID: SW SCRAPE E WALL CENTER (H201436-11)

Chloride, SM4500Cl-B	mg/	'kg	Analyze	d By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	06/26/2012	ND	432	108	400	3.77		

#### Sample ID: SW SCRAPE W WALL CENTER (H201436-12)

Chloride, SM4500CI-B	mg	/kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/26/2012	ND	416	104	400	0.00	

#### Sample ID: SW SCRAPE 5 PT BTTM (H201436-13)

Chloride, SM4500Cl-B	mg/kg			Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	06/26/2012	ND	416	104	400	0.00	

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

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Celeg D. Kune

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 SM4500CI-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

**Cardinal Laboratories** 

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Celey D. Kune

Celey D. Keene, Lab Director/Quality Manager

#### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES 101 East Mariand, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603

10	(505) 393-2326 FAX (505) 393-2	4/6	(3	25)	673	<u>}~10</u>	01	PA.	A (:			-		an a												
Company Name: Apache Corp.							BILL TO						ANALYSIS REQUEST													
Project Manager: Natalie Gladden							_[ <sup>F</sup>	P.O. #:						Į							ł					
Address:							Company:									S										
City:	State:	Zip	<b>):</b>					A	ttn	:									b		[					
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Lab I.D. HZD1434	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE OTHED .	ACID/RASE.		OTHER :		DATE	TIME					Complete							
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† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

#26

#### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

RDINAL LABORATORIES

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

† Cardinal cannot accept verbal changes. Please fax written changes to 505-398-2476

#26

# Appendix D Final Form C-141

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

1625 N. French Dr., Hobbs, NM 88240         District II         1301 W. Grand Avenue, Artesia, NM 88210CT 03205         District III         1000 Rio Brazos Road, Aztec, NM 87400         District IV         1220 S. St. Francis Dr., Santa Fe, NM 87505         Santa Fe, NM 87505         Santa Fe         Name of Company         Apache Corporation         Address PO BOX 1849, Eunice, NM 88231         Facility Name       NB Tween #029         Surface Owner       State	New Mexico and Natural Resources rvation Division h St. Francis Dr. e, NM 87505 <b>n and Corrective Act</b> <b>OPERATOR</b> Contact Bruce Baker Telephone No. (575) 394-1. Facility Type Production Unknown	☐ Initial Report ⊠ Final Report								
Unit Letter Section Township Range Feet from the Nort	n/South Line Feet from the E	ast/West Line County								
F 25 17S 28E 1525 FNL	1670 F	EL Eddy								
Latitude	Longitude									
	C OF RELEASE									
Type of Release         Brine           Source of Release         Overfilled frac tanks	Volume of Release 20 bblsDate and Hour of Occurrence3/23/20120300	Volume Recovered 0 bbls Date and Hour of Discovery 3/23/2012 0300								
Was Immediate Notice Given?	If YES, To Whom?									
By Whom?	Date and Hour									
Was a Watercourse Reached?	If YES, Volume Impacting the Watercourse.									
If a Watercourse was Impacted, Describe Fully.*		OCT 03 2L								
Describe Cause of Problem and Remedial Action Taken.*		NMOCD AR								
Transport driver fell asleep while unloaded his truck into the frac tanks Describe Area Affected and Cleanup Action Taken.* The leak affected the caliche pad surrounding the wellhead. The impact samples were collected from the excavation, field tested, and sent to a c NMOCD approved disposal facility. The excavations were backfilled w	ed areas were excavated to 1 ft. belo summercial laboratory for chloride a	ow ground surface. Representative grab nalysis. Impacted soils were removed to a								
I hereby certify that the information given above is true and complete to regulations all operators are required to report and/or file certain release public health or the environment. The acceptance of a C-141 report by should their operations have failed to adequately investigate and remedi or the environment. In addition, NMOCD acceptance of a C-141 report federal, state, or local laws and/or regulations.	notifications and perform corrective he NMOCD marked as "Final Repor- ate contamination that pose a threat does not relieve the operator of resp	e actions for releases which may endanger ort" does not relieve the operator of liability to ground water, surface water, human health ponsibility for compliance with any other								
	<u>OIL CONSE</u>	RVATION DIVISION								
Signature: Bruce Braker Printed Name: Bruce Baker	Approved by District Supervisor:									
Title: environmental Tech	Approval Date:	Expiration Date:								
E-mail Address: larry, baker@apacheco.p.com	Conditions of Approval:	Attached								
Date: <b>8-30-13</b> Phone: (575) 394-1503										