

# **AE Order Number Banner**

### Report Description

This report shows an AE Order Number in Barcode format for purposes of scanning. The Barcode format is Code 39.



**App Number:** pLWJ1028751769

1RP - 2627
APACHE CORP

## Rice Environmental Consulting & Safety

P.O. Box 5630 Hobbs, NM 88241 Phone 575.393.4411 Fax 575.393.0293

July 21st, 2011

Mr. Geoffrey Leking
New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division, Environmental Bureau
1625 N. French Drive
Hobbs, New Mexico 88240

RE: ACCIDENTAL DISCHARGE UPDATE
Apache Corporation
NMGSAU 1631 (1RP 10-12-2627): UL/J sec. 32 T19S R37E

Mr. Leking:

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

The site is located approximately 1 mile southwest of Monument, New Mexico at UL/J, Sec. 32, T19S, R37E as shown on the Site Location Map (Figure 1). A leak was discovered at the site on September 28<sup>th</sup>, 2010. Produced water was released from the collar of the injection line and an unknown amount of water was released.

Beginning on September 28<sup>th</sup>, 2010, the site was excavated to 38 ft x 96 ft x 14 ft 8 in deep to remove the saturated soils and the soils were taken to Sundance Services for disposal. The saturated soils extended down to 14 ft 8 in where they encountered the capillary fringe of the aquifer. On October 7<sup>th</sup>, 2010, three soil bores were installed to determine the extent of the contamination at the site (Figure 2). RECS personnel field tested the soil for chlorides and screened in the field with a photo-ionization detector (PID). Representative samples from the bore were taken to a commercial laboratory for confirmation of chloride and hydrocarbon field numbers (Appendix A). Laboratory readings showed chloride numbers ranging from a high of 1,340 mg/kg at 12 ft bgs in soil bore #3 to a low of 16 mg/kg at 3 ft bgs in soil bore #1. Laboratory readings for Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) showed non-detect in all soil bores.

On October 7<sup>th</sup>, 2010, RECS personnel took a sample of the clean imported soil which was used to backfill the site to a commercial laboratory for analysis. Chloride concentrations, GRO, and DRO from the laboratory sample showed readings of non-detect. On October 11<sup>th</sup>, 2011, RECS personnel field tested the excavation walls for chlorides and screened in the field with a photoionization detector (PID) (Figure 3). Representative samples from the west and south walls were taken to a commercial laboratory for confirmation of chloride and hydrocarbon field numbers. For all wall samples, the GRO and DRO showed readings of non-detect. Chloride readings ranged from a high of 496 mg/kg at Pt. 3 of the West wall to a low of non-detect at Pt. 2 of the

South wall. At 4.5 ft bgs, a 20-mil reinforced liner was installed throughout the excavation. A 6 inch pad of blow sand was placed below and above the liner for liner protection (Appendix B).

On October 12<sup>th</sup>, 2011, Apache submitted the initial C-141 to NMOCD-Hobbs, which was approved by Larry Johnson the same day (Appendix C). The site was then backfilled on October 15<sup>th</sup>, 2010 with clean imported soil. Soil amendments were added to the site and the site was seeded with native vegetation on October 16<sup>th</sup>, 2010 (Appendix D).

On October 25<sup>th</sup>, 2011, monitor well #1 was installed 45 ft southeast of the line break. Monitor well #2 was installed on December 21<sup>st</sup>, 2010 56 ft NNW of the line break, and monitor well #3 was installed on April 13<sup>th</sup>, 2011, 199 ft southeast of the line break (Figure 4, Appendix E). Depth to water was determined to be approximately 14 ft bgs. Monitor well #1 has been sampled three times since its installation. Monitor well #2 has been sampled twice since its installation and monitor well #3 has been sampled once (Figure 5). Sampling events of monitor well #1 showed chloride and TDS readings well above WQCC standards, although the reading are dropping. In addition, the well showed slight levels of BTEX in the water that have now dissipated. Monitor well #2's most recent readings showed chlorides of 296 mg/kg, a TDS reading of 907 mg/kg, and BTEX showed non-detect and monitor well #3 showed a laboratory reading of 300 mg/kg, a TDS reading of 903 mg/kg, and BTEX showed non-detect. (Appendix F).

### Recommendations

Apache has completed the vadose zone remedy at the site. The contaminated soils have been excavated and disposed of at an NMOCD approved facility. A 20-mil reinforced poly liner was installed to inhibit migration of residual chlorides in the vadose zone. However, monitor well sampling has shown that contamination is evident in the groundwater just down gradient of the site. Therefore, RECS recommends that the site be monitored for groundwater conditions while we prepare a groundwater remedy for the site that will include estimations for chloride mass removal.

RECS appreciates the opportunity to work with you on this project. Please call Hack Conder at (575) 393-9174 or me if you have any questions or wish to discuss the site.

Sincerely,

Lara Weinheimer Project Scientist

RECS

(575) 441-0431

### Attachments:

Figure 1 - Site location map

Figure 2 – Soil bore installation plat

Figure 3 – Wall sampling plat

Figure 4 – Monitor well installation plat

Figure 5 – Monitor well sampling plat

Appendix A - Soil bore installation and Laboratory analysis

Appendix B - Wall sampling and imported backfill analysis

Appendix C - Initial C-141

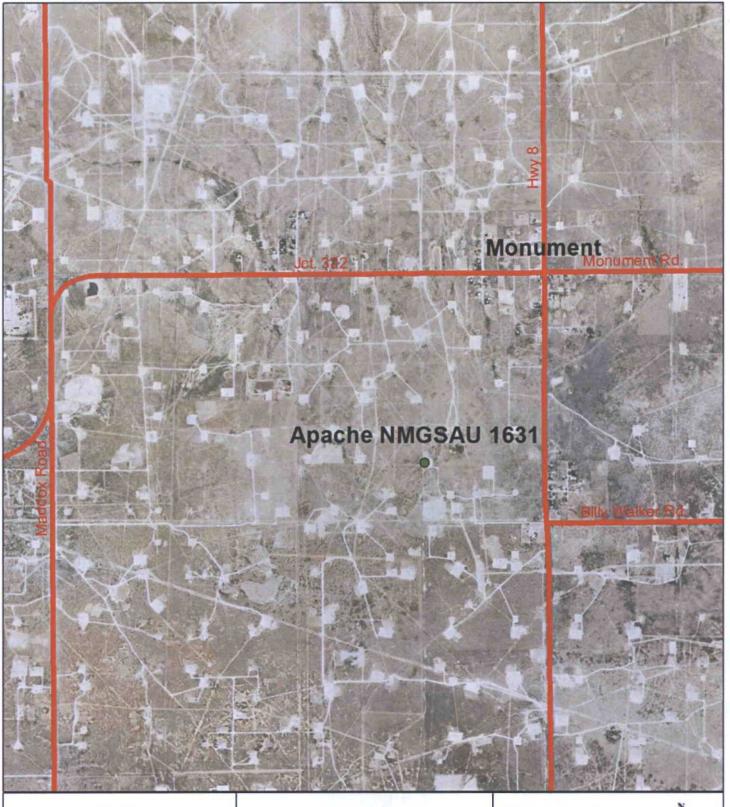
Appendix D - Backfill and seed photos

Appendix E – Monitor well installation logs

Appendix F – Monitor well sampling analysis

# Figures

# Site Map





# Apache NMGSAU 1631

LEGALS:UL/J sec. 32 T19S R37E

Case #: 1RP 10-12-2627

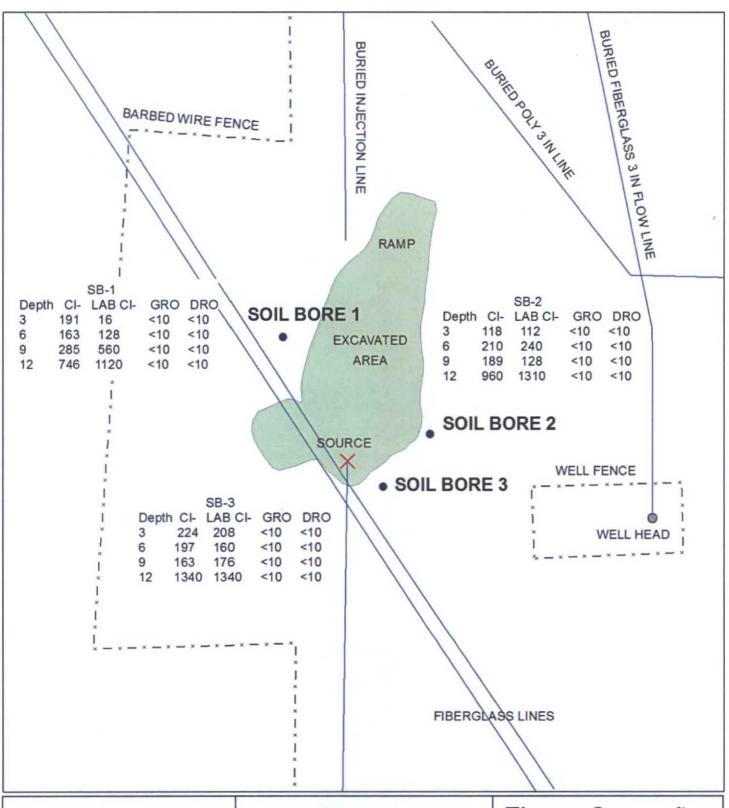
# Figure 1



0 750 1,500 3,000

Drawing date: 5-10-11 Drafted by: L. Weinheimer

## Soil Bore Information

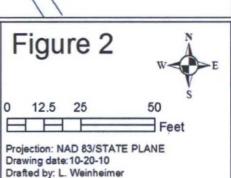




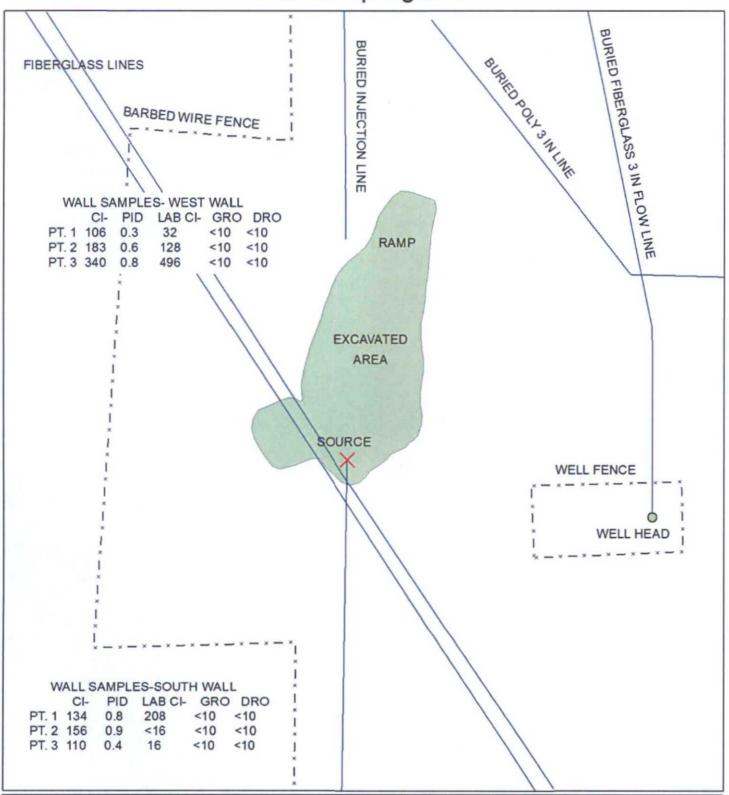
# Apache NMGSAU 1631

Legals: UL/J sec. 32 T19S R37E

Case #: 1RP 10-12-2627



# Wall Sampling Data



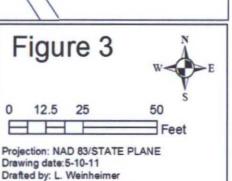


# Apache NMGSAU 1631

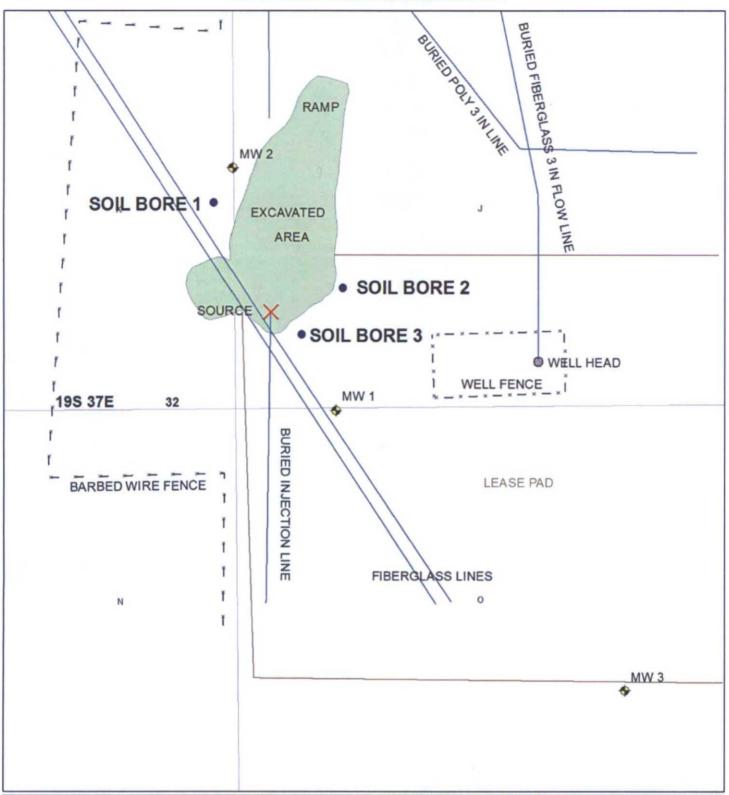
Legals: UL/J sec. 32

T19S R37E

Case #: 1RP 10-12-2627



# Monitor Well Installation



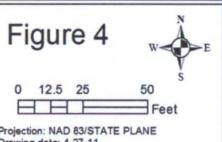


# Apache NMGSAU 1631

Legals: UL/J sec. 32

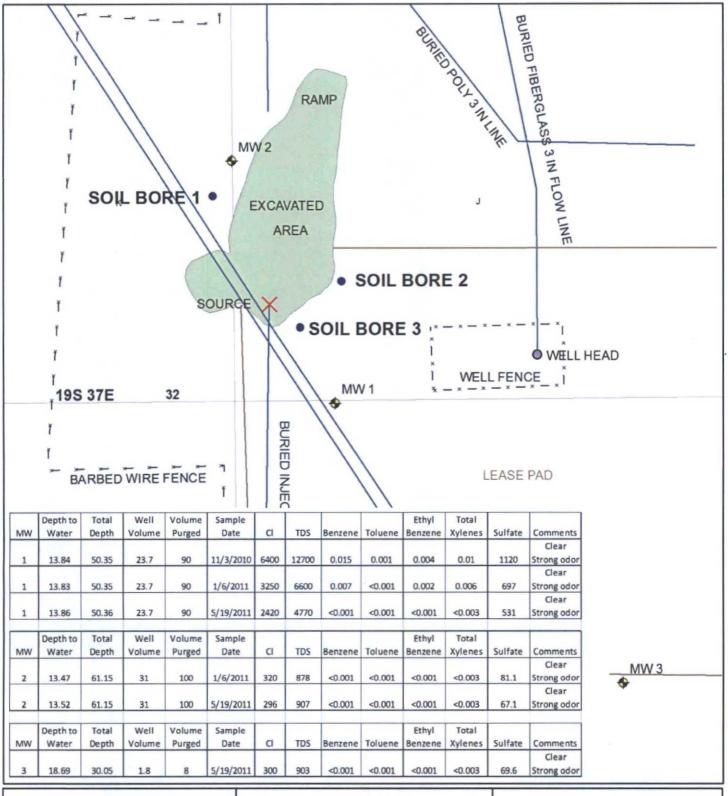
T19S R37E

Case #: 1RP 10-12-2627



Projection: NAD 83/STATE PLANE Drawing date: 4-27-11 Drafted by: L. Weinheimer

# Monitor Well Sampling





# Apache NMGSAU 1631

Legals: UL/J sec. 32 T19S R37E

Case #: 1RP 10-12-2627

Figure 5



0 12.5 25 50 Feet

Projection: NAD 83/STATE PLANE Drawing date: 4-27-11

Drafted by: L. Weinheimer



Soil bore installation and Laboratory analysis

Logger:

B. Baker

Driller:

Harrison & Cooper, Inc.

**Drilling Method:** 

Air rotary

Start Date:

10/7/2010

Comments: Located 46 ft NW of the leak source.

End Date: 10/7/2010





Project Name:

Well ID:

NMGSAU 1631

SB-1

Project Client: Apache

Location: UL/J sec. 32 T19S R37E

Lat: 32°36'48.223"N Long: 103°16'25.109"W

County: LEA

DRAFTED BY: Lara Weinheimer

	TD = 12			GW = 14 ft	Lo	<b>ng:</b> 103°16	25.	109"W	State: NM
Depth (feet)	chloride field tests	LAB	PID	Description		Lithology		Well C	Construction
				Light brown very fine sand with caliche. Dry. No odor.					
3 ft	191	CI- 16 GRO	0.4	7, 3, 2, 2, 3, 2, 2, 3, 2, 2, 3, 2, 2, 3, 2, 2, 3, 2, 3, 2, 3, 2, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3,					
		<10 DRO		Light brown very fine sand with substantial caliche and sandstone.					
6 ft	163	<10 CI- 128	0.2	Dry. No odor.					
		GRO <10							bentonite
		CI-							seal
9 ft	285	560 GRO <10	0						
		DRO <10		Light tan very fine sand. Moist. No odor.					
12 ft	746	CI- 1120 GRO	0.2						
		<10 DRO							
		<10							U

Logger: B. Baker Driller: Harrison & Cooper, Inc. **Project Name: Drilling Method:** Well ID: Air rotary Start Date: 10/7/2010 NMGSAU 1631 SB-2 . SOIL BORE 3 End Date: Project Client: Apache 10/7/2010 Location: UL/J sec. 32 T19S R37E Comments: Located 30 ft east of the leak source. Lat: 32°36'47.898" DRAFTED BY: Lara Weinheimer County: LEA Long: 103°16'24.538" TD = 12 ftGW = 14 ftState: NM Depth chloride LAB PID Description Lithology **Well Construction** field tests (feet) Tan very fine sand with substantial sandstone. Dry. No odor. CI-0.5 3 ft 118 112 GRO <10 Light orangey tan very fine sand with DRO sandstone. Dry. No odor. <10 CI-0.4 6 ft 210 240 GRO <10 bentonite DRO seal 9 ft 189 128 0.4 GRO <10 Orangey brown very fine sand. DRO Moist. No odor. <10 0.3 12 ft 960 1310 GRO DRO <10

Logger: B. Baker Driller: Harrison & Cooper, Inc. EXCAVATED Project Name: Well ID: **Drilling Method:** Air rotary Start Date: 10/7/2010 NMGSAU 1631 SB-3 \* SOIL BORE 3 End Date: 10/7/2010 Project Client: Apache Comments: Located 15 ft SE of the leak source. Location: UL/J sec. 32 T19S R37E Lat: 32°36'47.724"N DRAFTED BY: Lara Weinheimer County: LEA Long: 103°16'24.719"W State: NM TD = 12 ftGW = 14 ft Depth chloride LAB Lithology Well Construction PID Description (feet) field tests 3 ft 224 208 0.7 Light brown very fine sand with DRO sandstone. Dry. No odor. 1.2 6 ft 197 160 GRO <10 bentonite DRO <10 seal CI-162 9 ft 0.5 176 GRO <10 Orangey brown very fine sand with DRO <10 some sandstone. Moist. No odor. CI-12 ft 1,340 1840 1 GRO <10 DRO

<10



October 08, 2010

NATALIE GLADDEN

APACHE - EUNICE

P. O. BOX 1849

**EUNICE, NM 88231** 

RE: APACHE NM6SAU 1631

Enclosed are the results of analyses for samples received by the laboratory on 10/07/10 13:10.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021 Benzene, Toluene, Ethyl Benzene, and Total Xylenes

Method SW-846 8260

Benzene, Toluene, Ethyl Benzene, and Total Xylenes

Method TX 1005

Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

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 (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



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

Received:

10/07/2010

Reported:

10/08/2010

Project Name:

APACHE NM6SAU 1631

Project Number: Project Location: NONE GIVEN

Sampling Date:

10/07/2010

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: SB 1 @ 3' (H021003-01)

Chloride, SM4500CI-B

ma/ka

Analyzed By: HM

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/08/2010	ND	432	108	400	3.77	
TPH 8015M	mg	/kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/08/2010	ND	176	88.1	200	6.57	
DRO >C10-C28	<10.0	10.0	10/08/2010	ND	188	94.2	200	11.9	

Surrogate: 1-Chlorooctane

89.7 %

70-130

Surrogate: 1-Chlorooctadecane

90.3 %

89.1%

70-130

70-130

### Sample ID: SB 1 @ 6' (H021003-02)

Chloride, SM4500CI-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	10/08/2010	ND	432	108	400	3.77	
TPH 8015M	mg	/kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/08/2010	ND	176	88.1	200	6.57	
DRO >C10-C28	<10.0	10.0	10/08/2010	ND	188	94.2	200	11.9	
Surrogate: 1-Chlorooctane	88.5	% 70-130	)						

### Cardinal Laboratories

Surrogate: 1-Chlorooctadecane

\*=Accredited Analyte

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

Received:

10/07/2010

Reported:

10/08/2010

Project Name:

APACHE NM6SAU 1631

Project Number: Project Location: NONE GIVEN

NOT GIVEN

Sampling Date:

10/07/2010

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: SB 1 @ 9' (H021003-03)

Chlorida CMAEGOCI P

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	560	16.0	10/08/2010	ND	432	108	400	3.77	
TPH 8015M	mg	/kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/08/2010	ND	176	88.1	200	6.57	
DRO >C10-C28	<10.0	10.0	10/08/2010	ND	188	94.2	200	11.9	
Surrogate: 1-Chlorooctane	84.3	% 70-130							

Surrogate: 1-Chlorooctadecane

90.1%

70-130

### Sample ID: SB 1 @ 12' (H021003-04)

Chloride, SM4500CI-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1120	16.0	10/08/2010	ND	432	108	400	3.77	
TPH 8015M	mg	/kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/08/2010	ND	176	88.1	200	6.57	
DRO >C10-C28	<10.0	10.0	10/08/2010	ND	188	94.2	200	11.9	
Surrogate: 1-Chlorooctane	85.8	% 70-130							
Surrogate: 1-Chlorooctadecane	90.0	% 70-130							

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\*=Accredited Analyte

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

Received:

10/07/2010

Reported:

10/08/2010

Project Name:

APACHE NM6SAU 1631

Project Number: Project Location: NONE GIVEN

NOT GIVEN

Sampling Date:

10/07/2010

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

### Sample ID: SB 2 @ 3' (H021003-05)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: HM				-	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	10/08/2010	ND	400	100	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/08/2010	ND	176	88.1	200	6.57	
DRO >C10-C28	<10.0	10.0	10/08/2010	ND	188	94.2	200	11.9	
Surrogate: 1-Chlorooctane	83.0	% 70-130							
Surrogate: 1-Chlorooctadecane	81.1	% 70-130							

### Sample ID: SB 2 @ 6' (H021003-06)

Chloride, SM4500CI-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	10/08/2010	ND	400	100	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/08/2010	ND	176	88.1	200	6.57	
DRO >C10-C28	<10.0	10.0	10/08/2010	ND	188	94.2	200	11.9	
Surrogate: 1-Chlorooctane	82.8	% 70-130							
Surrogate: 1-Chlorooctadecane	81.9	% 70-130							

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

Received:

10/07/2010

Reported:

10/08/2010

Project Name:

APACHE NM6SAU 1631

Project Number:

NONE GIVEN

Project Location:

NOT GIVEN

Sampling Date:

10/07/2010

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

### Sample ID: SB 2 @ 9' (H021003-07)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	10/08/2010	ND	400	100	400	0.00	
TPH 8015M	mg	/kg	Analyze	ed By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/08/2010	ND	176	88.1	200	6.57	
DRO >C10-C28	<10.0	10.0	10/08/2010	ND	188	94.2	200	11.9	
Surrogate: 1-Chlorooctane	82.0	% 70-130							
Surrogate: 1-Chlorooctadecane	83.3	% 70-130							

### Sample ID: SB 2 @ 12' (H021003-08)

Chloride, SM4500CI-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1310	16.0	10/08/2010	ND	400	100	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/08/2010	ND	176	88.1	200	6.57	
DRO >C10-C28	<10.0	10.0	10/08/2010	ND	188	94.2	200	11.9	
Surrogate: 1-Chlorooctane	84.0	% 70-130							
Surrogate: 1-Chlorooctadecane	85.9	% 70-130							

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\*=Accredited Analyte

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

Received:

10/07/2010

Reported:

10/08/2010

Project Name:

APACHE NM6SAU 1631

Project Number:

NONE GIVEN

Project Location:

NOT GIVEN

Sampling Date:

10/07/2010

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

### Sample ID: SB 3 @ 3' (H021003-09)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	10/08/2010	ND	400	100	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/08/2010	ND	176	88.1	200	6.57	
DRO >C10-C28	<10.0	10.0	10/08/2010	ND	188	94.2	200	11.9	
Surrogate: 1-Chlorooctane	81.5	% 70-130							
Surrogate: 1-Chlorooctadecane	83.6	% 70-130							

### Sample ID: SB 3 @ 6' (H021003-10)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	10/08/2010	ND	400	100	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/08/2010	ND	176	88.1	200	6.57	
DRO >C10-C28	<10.0	10.0	10/08/2010	ND	188	94.2	200	11.9	
Surrogate: 1-Chlorooctane	84.6	% 70-130	8						
Surrogate: 1-Chlorooctadecane	82.2	% 70-130							

### Cardinal Laboratories

\*=Accredited Analyte

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

Received:

10/07/2010

Reported:

10/08/2010

Project Name:

APACHE NM6SAU 1631

Project Number: Project Location: NONE GIVEN

NOT GIVEN

Sampling Date:

10/07/2010

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

### Sample ID: SB 3 @ 9' (H021003-11)

Chloride, SM4500CI-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	10/08/2010	ND	400	100	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/08/2010	ND	176	88.1	200	6.57	
DRO >C10-C28	<10.0	10.0	10/08/2010	ND	188	94.2	200	11.9	
Surrogate: 1-Chlorooctane	82.4	% 70-130							
Surrogate: 1-Chlorooctadecane	77.2	% 70-130							

### Sample ID: SB 3 @ 12' (H021003-12)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1840	16.0	10/08/2010	ND	400	100	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/08/2010	ND	176	88.1	200	6.57	
DRO >C10-C28	<10.0	10.0	10/08/2010	ND	188	94.2	200	11.9	
Surrogate: 1-Chlorooctane	85.8	% 70-130							
Surrogate: 1-Chlorooctadecane	85.9	% 70-130							

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### **Notes and Definitions**

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.

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

Cardinal Laboratories

\*=Accredited Analyte

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# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 (505) 393-2326 FAX (505) 393-2476

Company Name:	APACAT		の大学の	BILL TO	70		ANALYSIS REQUEST	
Project Manager:	Project Manager: PATILIC CHADBILL	۲,	P.O. #:	2.0		_		
Address:	And been not been stated than the state of t		Company:	any:		_		
City:	State:	Zip:	Attn:			_		
Phone #:	Fax#:		Address:					
Project #:	Project Owner.	¥	City:					
Project Name:	management and "there's party property from the party (supplementary of the party party).		State:	Zip:				
Project Location:	Project Location: Aprehe NINESAL 1631	:31	Phone #:	**		L		
Sampler Name:	Bruce Baker		Fax#:			41.		
FOR LAB USE ONLY		MA	MATRIX PRE	PRESERV. S	SAMPLING	51		
Lab I.D.	Sample I.D.	# CONTENDERS # CONTENDERS # CONTENDERS # SALOWDYNATER # SALOWDYNATER # SALOWDYNATER	OIL SLUDGE OTHER:	CE / COOL	DATE TIME	7PH &C		
H20003-1 S	SB 1 @ 3'	-		1	10-7-10 7.10 Am	7		
2 58	581€ 61	7		1	7-10 7.15 am	7		
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2	56 1 6 131	- 0	_	10	7-10 7:21Mg	1		
5	582631	· ·	1	1	15-7-15 8:12 Am	1		
6 5	582661	- 0		13	15-7-10 4.1948	1		
2 5	7 582691			5	10-7-10 B.16 HM	7		
S	SB 3 6 13'	· ·		3	7-10 8:174m	1		
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PLEASE NOTE: Listolity and Cambagon. Cardinal's kalokity and clorif's exchance remady for any daim airesity whether to next and contract or but, build too kined on the amount paid by the client's for the amount paid by the client's analysis when considerable amount of days after completed or the applicable entries. The overall statis Caustin to be labeled to consomerable and completed or the applicable entries he over duals Caustin to let for the account of consomerable and any country by client, its enderdamen. The application of the application of the process and any account of the country of processing and any account of the processing and any accountry of the place reprocessing any otherwise.

Add'I Phone #:	Add'I Fax #:					
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Yes	J Yes					1
Phone Result:	Fax Result:	REMARKS:			<	Cus
Date: Received By:	10-1-10	Time: 13:1729 Hy Chuch	Date: 17/10 Received By:	TON NOW SON NOW	ole Condition CHEC	Cool Intact (Initials)
Relinquished By:	-	Bruce Barber	Relinquished By:		Delivered By: (Circle One)	Sampler - UPS - Bus - Other:

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

Page 9 of 10



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

88240	393-2476
Ž	393
Hopps,	(505)
-	FAX
Marland	393-2326
East	_
101	(505)

company Name:	Korsy Aralin	97			X.	7	BILL TO	10	Delivery.			ANALYSIS	YSIS		REQUEST	_			
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roject Location:	roject Location: Apache JM & SAU 1631	120			ď.	Phone #:				279	12				_				
sampler Name:	Bruce Baker				Fa	Fax #:					15				_		_		
FOR LAB USE CINLY		-		MATRIX		PRESERV		SAMPLING	1	10	10			_	_			_	
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rice of services hyrestrider by Cardinal regardless of shapings such claim is based upon any of the above stated reasons.    Page   Pag	10-7-10 Fax	Time: Typen Coll 12:17 p.m. RER	Dale; 7 1,77 Received By:	Trings: 10 10 11 10 11 10 11	Sample Condition CHECKED BY:	- 11 L 20 Ures Fres	NO NO NO CO
affects or successors are no of or related to the performant Relinquished By:		Bruce Bakel	Relinquished By:		Delivered By: (Circle One)	Sampler UPS - Bus - Other:	

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

Page 10 of 10

COM



Wall sampling and imported backfill analysis



October 12, 2010

NATALIE GLADDEN

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: APACHE NM6SAU 1631

Enclosed are the results of analyses for samples received by the laboratory on 10/11/10 10:55.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021 Benzene, Toluene, Ethyl Benzene, and Total Xylenes

Method SW-846 8260 Benzene, Toluene, Ethyl Benzene, and Total Xylenes

Method TX 1005

Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

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 (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



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

Received:

10/11/2010

Reported:

10/12/2010

Project Name:

APACHE NM6SAU 1631

Project Number:

NONE GIVEN

Project Location: NOT GIVEN

Sampling Date:

10/11/2010

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

### Sample ID: SOUTH WALL SAMPLE PT. 1 (H021023-01)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	10/11/2010	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/12/2010	ND	187	93.7	200	13.2	
DRO >C10-C28	<10.0	10.0	10/12/2010	ND	192	96.1	200	3.60	
Surrogate: 1-Chlorooctane	97.0	% 70-130							
Surrogate: 1-Chlorooctadecane	111	% 70-130							

### Sample ID: SOUTH WALL SAMPLE PT. 2 (H021023-02)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/11/2010	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/12/2010	ND	187	93.7	200	13.2	
DRO >C10-C28	<10.0	10.0	10/12/2010	ND	192	96.1	200	3.60	
Surrogate: 1-Chlorooctane	86.9	% 70-130							
Surrogate: 1-Chlorooctadecane	108	% 70-130							

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

Received:

10/11/2010

Reported:

10/12/2010

Project Name:

APACHE NM6SAU 1631

Project Number:

NONE GIVEN

Project Location:

NOT GIVEN

Sampling Date: Sampling Type:

pling Date:

10/11/2010

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

### Sample ID: SOUTH WALL SAMPLE PT. 3 (H021023-03)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/11/2010	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/12/2010	ND	187	93.7	200	13.2	
DRO >C10-C28	<10.0	10.0	10/12/2010	ND	192	96.1	200	3.60	
Surrogate: 1-Chlorooctane	90.9	% 70-130							
Surrogate: I-Chlorooctadecane	109	% 70-130							

### Sample ID: WEST WALL SAMPLE PT. 1 (H021023-04)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/11/2010	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/12/2010	ND	187	93.7	200	13.2	
DRO >C10-C28	<10.0	10.0	10/12/2010	ND	192	96.1	200	3.60	
Surrogate: 1-Chlorooctane	94.0	% 70-130		/W.					
Surrogate: 1-Chlorooctadecane	110	% 70-130							

### Cardinal Laboratories

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

Received:

10/11/2010

Reported:

10/12/2010

Project Name:

APACHE NM6SAU 1631

Project Number: Project Location: NONE GIVEN

NOT GIVEN

Sampling Date:

10/11/2010

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: WEST WALL SAMPLE PT. 2 (H021023-05)

Chloride, SM4500CI-B

ma/ka

Analyzed By: HM

Chioride, SM4500CI-B	mg	/ kg	Anaiyze	а ву: нм					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	10/11/2010	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/12/2010	ND	187	93.7	200	13.2	
DRO >C10-C28	<10.0	10.0	10/12/2010	ND	192	96.1	200	3.60	

Surrogate: 1-Chlorooctane

91.9%

70-130

Surrogate: 1-Chlorooctadecane

106%

101%

70-130

70-130

### Sample ID: WEST WALL SAMPLE PT. 3 (H021023-06)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	496	16.0	10/11/2010	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/12/2010	ND	187	93.7	200	13.2	
DRO >C10-C28	<10.0	10.0	10/12/2010	ND	192	96.1	200	3.60	
Surrogate: 1-Chlorooctane	88.8	% 70-130							

Cardinal Laboratories

Surrogate: 1-Chlorooctadecane

\*=Accredited Analyte

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### **Notes and Definitions**

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

Analyte NOT DETECTED at or above the reporting limit

ND

Cardinal Laboratories

\*=Accredited Analyte

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14



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

88240	393-2476
Ž	393
Hopps,	(505)
_	FAX (505)
Marland	
East N	393-2326
101 E	(202)

Company Name: Apply Ne				BI	BILL TO	E.M.	ANALYSI	ANALYSIS REQUEST	15	
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ity:	State:	Zip:	4	Attn:			_			
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ampler Name: Bruce	Bruce BAKEr			Fax#:		N.	_			
FOR LAB USE ONL.Y		В	MATRIX	PRESERV.	SAMPLING	5/7	_			
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	4	3	Sample Condition	Wes Pres
Date: 11-10 Received By:	Date: Received By:	Time:	Sam	-

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



October 12, 2010

NATALIE GLADDEN

APACHE - EUNICE

P. O. BOX 1849

**EUNICE, NM 88231** 

RE: APACHE NM6SAU 1631

Enclosed are the results of analyses for samples received by the laboratory on 10/11/10 10:56.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021 Benzene, Toluene, Ethyl Benzene, and Total Xylenes

Method SW-846 8260

Benzene, Toluene, Ethyl Benzene, and Total Xylenes

Method TX 1005

Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

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 (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



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

Received:

10/11/2010

Reported:

10/12/2010

Project Name:

APACHE NM6SAU 1631

Project Number: Project Location: NONE GIVEN

NOT GIVEN

Sampling Date:

10/07/2010

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: IMPORTED SOIL (H021024-01)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: HM

		-							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/11/2010	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/12/2010	ND	187	93.7	200	13.2	
DRO >C10-C28	<10.0	10.0	10/12/2010	ND	192	96.1	200	3.60	
Surrogate: 1-Chlorooctane	97.1	% 70-130							
Surrogate: 1-Chlorooctadecane	104	% 70-130							

Cardinal Laboratories

\*=Accredited Analyte

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### **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

\*=Accredited Analyte Cardinal Laboratories

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# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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(G)RAB OR (C)OMP.  # CONTAINERS  GROUNDWATER  WASTEWATER  SOIL  SOIL  OIL  ACID/BASE:  ICE / COOL  OTHER:  ACID/BASE:  ICE / COOL  OTHER:  ACID/BASE:	PRESERV. SAMPLING
C 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	SUDGE COOL DATE :
	7

NATALIE GLIDDEN C LESH. ApproxiC Hounder C. Rice - ecs. com Sample Condition Cool Infact Cool Infact Received By: Received By: Date: 11 - 10 16 - 11 - 10 Time: 55 484 Date: Time: Sampler - UPS - Bus - Other: Delivered By: (Circle One) Bruce Packer Relinquished By:

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

200 1 Jus

## Apache NMGSAU 1631

Liner Installation



collecting soil samples from the south wall, facing south 10/11/2010



collecting soil samples from the west wall, facing west 10/11/2010



padding the site with 6 inches of blow sand, facing north 10/11/2010



bedrock layer on the east wall, facing east 10/11/2010



48x55-ft, 20-mil reinforced liner installed at 4.5' bgs, facing southwest 10/11/2010



padding the liner with blow sand, facing north 10/11/2010

# Appendix C Initial C-141

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

State of New Mexico

Form C-141

Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance

with Rule 116 on back side of form

1301 W Grand Avenue, Artesia, NM 882f0CT 1 2 2010 Energy Minerals and Natural Resources 1000 Rio Brazos Road, Aztec, NM 87410 HOBBSCCD District IV
1220 S St Francis Dr., Santa Fe, NM 87505

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

**Release Notification and Corrective Action** 

Name of Company Apache Corporation					OPERA'	ГOR	1	Initia	al Report	☐ Final Report
Surface Owner Ed Johnston  Mineral Owner NMOCD  Lease No. 30-025-35608  LOCATION OF RELEASE  Unit Letter Section Township Range Feet from the North/South Line Feet from the East/West Line County  J 32 19S 37E 1330' FSL 2520' FEL Lea  Latitude Longitude  NATURE OF RELEASE  Type of Release PW Volume of Release >5 Volume Recovered 0  Date and Hour of Occurrence O9/28/2010 11:26  Was Immediate Notice Given? Ves No Not Required If YES, To Whom?  Larry Johnson  By Whom? Natalic Gladden Date and Hour 09/28/2010 1pm  Was a Watercourse Reached? Yes No Source of Problem and Remedial Action Taken.*	Name of Company Apache Co	rporation	873		Contact Na	talie Gladden				
Surface Owner Ed Johnston  Mineral Owner NMOCD  Lease No. 30-025-35608  LOCATION OF RELEASE  Unit Letter Section Township Range Feet from the North/South Line Feet from the East/West Line County  J 32 19S 37E 1330' FSL 2520' FEL Lea  Latitude Longitude  NATURE OF RELEASE  Type of Release PW Volume of Release >5 Volume Recovered 0 Source of Release collar on injection line Date and Hour of Occurrence Date and Hour of Discovery 09/28/2010 11:26  Was Immediate Notice Given? If YES, To Whom? Larry Johnson  By Whom? Natalie Gladden Date and Hour 09/28/2010 1pm  Was a Watercourse Reached? If YES, Volume Impacting the Watercourse.  If a Watercourse was Impacted, Describe Fully.*  Describe Cause of Problem and Remedial Action Taken.*	Address P.O. Box 1849 Eunic	e, NM 8823			Telephone N	No. 575-390-41	86			
Unit Letter   Section   Township   Range   Feet from the   North/South Line   Feet from the   East/West Line   County	Facility Name NMGSAU #16:	1 (329) near	rest well		Facility Typ	e				
Unit Letter   Section   Township   Range   Feet from the   North/South Line   Feet from the   East/West Line   County	Surface Owner Ed Johnston		Mineral O	wner 1	NMOCD			Lease N	No. 30-025-3	35608
Unit Letter   Section   Township   Range   Feet from the   North/South Line   Feet from the   East/West Line   County			LOCA	TION	OF REI	LEASE				
Latitude	Unit Letter   Section   Townsh	ip Range					East/\	West Line	County	
NATURE OF RELEASE  Type of Release PW  Source of Release collar on injection line  Date and Hour of Occurrence 09/28/2010 11:26  Was Immediate Notice Given?  Yes No Not Required  Date and Hour 09/28/2010 11:26  If YES, To Whom? Larry Johnson  By Whom? Natalie Gladden  Was a Watercourse Reached?  Yes No  If a Watercourse was Impacted, Describe Fully.*  Describe Cause of Problem and Remedial Action Taken.*	J 32 19S	37E	1330'	FSL		2520'	FEL		Lea	
NATURE OF RELEASE  Type of Release PW  Volume of Release >5  Volume Recovered 0  Date and Hour of Occurrence 09/28/2010 11:26  Was Immediate Notice Given?  Yes No Not Required  Date and Hour 09/28/2010 11:26  If YES, To Whom? Larry Johnson  By Whom? Natalie Gladden  Was a Watercourse Reached?  Yes No  If a Watercourse was Impacted, Describe Fully.*  Describe Cause of Problem and Remedial Action Taken.*		La	titude		Longitud	e				
Type of Release PW  Source of Release collar on injection line  Date and Hour of Occurrence 09/28/2010 11:26  Was Immediate Notice Given?  Yes No Not Required  Date and Hour of Occurrence 09/28/2010 11:26  If YES, To Whom?  Larry Johnson  By Whom? Natalie Gladden  Date and Hour 09/28/2010 1pm  Was a Watercourse Reached?  Yes No  If YES, Volume Impacting the Watercourse.  Describe Cause of Problem and Remedial Action Taken.*				TIRE						
Source of Release collar on injection line  Date and Hour of Occurrence 09/28/2010 11:26  Was Immediate Notice Given?  Yes No Not Required  Date and Hour of Occurrence 09/28/2010 11:26  If YES, To Whom? Larry Johnson  By Whom? Natalie Gladden  Date and Hour of Occurrence 09/28/2010 11:26  Date and Hour of Occurrence 09/28/2010 11:26  If YES, To Whom? Larry Johnson  Was a Watercourse Reached?  If YES, Volume Impacting the Watercourse.  If YES, Volume Impacting the Watercourse.  Describe Cause of Problem and Remedial Action Taken.*	Type of Release PW		TATE	ORE				Volume F	Recovered 0	
Was Immediate Notice Given?  Yes No Not Required Larry Johnson  By Whom? Natalie Gladden  Was a Watercourse Reached?  Yes No  If YES, To Whom?  Larry Johnson  Date and Hour 09/28/2010 1pm  If YES, Volume Impacting the Watercourse.		ion line			Date and H	lour of Occurrence	e	Date and	Hour of Disc	overy
By Whom? Natalie Gladden  Was a Watercourse Reached?  Yes No  If a Watercourse was Impacted, Describe Fully.*  Describe Cause of Problem and Remedial Action Taken.*	Was Immediate Notice Given?				If YES, To	Whom?				
Was a Watercourse Reached?  ☐ Yes ☒ No  If a Watercourse was Impacted, Describe Fully.*  Describe Cause of Problem and Remedial Action Taken.*	D 107 - 031 - 12 - 01 - 11	⊠ Yes L	No   Not Re	equired						
☐ Yes ☒ No  If a Watercourse was Impacted, Describe Fully.*  Describe Cause of Problem and Remedial Action Taken.*								required		
Describe Cause of Problem and Remedial Action Taken.*	was a watercourse Reaction:	☐ Yes 🛭	No		11 123, 40	nume impacting t	ne wat	reourse.		
	If a Watercourse was Impacted, D	escribe Fully.	•					-		
				ed, it wa	as determined	that the leak had	just sur	faced. Unk	cnown amoun	it released.
Describe Area Affected and Cleanup Action Taken.*  Site has been excavated according to NMOCD guidelines, a liner has been placed to prevent any future leaks only. All of the contaminated soil has been excavated and hauled to Sundance Services. Area has been backfilled after confirmation samples have been taken. Area will be reseeded per the landowners request. The saturated soil extended down 14'8 ft to ground water depth. Due to contamination of ground water, monitoring wells will be drilled in two weeks from today.	Site has been excavated according excavated and hauled to Sundance landowners request. The saturate	to NMOCD Services. At	guidelines, a liner l ea has been backfi	illed afte	er confirmatio	on samples have b	een tak	en. Area w	ill be reseede	ed per the
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.	regulations all operators are required public health or the environment, should their operations have failed or the environment. In addition, he	ed to report a The acceptan to adequately MOCD accep	nd/or file certain rece of a C-141 report investigate and re	elease no ort by the emediate	otifications as e NMOCD m e contaminati	nd perform correct arked as "Final Re on that pose a thre	tive act eport" d eat to gr	ons for rele oes not reli ound water	eases which n eve the opera , surface water	nay endanger ator of liability er, human health
OIL CONSERVATION DIVISION		0				OIL CONS	SERV	ATION	DIVISIO	N
Signature: ablic Galaden	Signature: hali	(200	oblen				5	30	D/w 30	~
Printed Name: Natalie Gladden  Approved by District Superviso ENVIRONMENTAL ENGINEER					Approved by	District Superviso	ENVI	RONME	NTAL ENG	SINEER
Title: EHS Environmental Tech Approval Date: 10-12-10 Expiration Date: 12-(2-10	Title: EHS Environmental Tech						T			
E-mail Address: natalie.gladden@apachecorp.com Conditions of Approval:	E-mail Address: natalie.gladden@	apachecorp.co			Conditions of	Approval:		/	7	
Date: 10/12/10 Phone: 575-390-4186 Signir Fiore C. HI Jos 34 1RP# 10.12. 2627	Date: 10/12/10 Pho	e: 575-390-4	186	-	<	EINSM. C. MI	1	7 2 U		_

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\* Attach Additional Sheets If Necessary

nLWJ1028751329 PLW5 (028701360) 52067

## Appendix D Backfill and seed photos

### Apache NMGSAU 1631 Backfilling and Seeding



pipepline installed and padded prior to backfilling, facing north 10/15/2010



hauling in top soil, facing northeast 10/15/2010



backfilling with top soil, facing north 10/15/2010



watering site for dust control, facing north 10/15/2010



leveling the site, facing southwest 10/15/2010



importing soil amendments, facing northeast 10/15/2010



spreading amendments and contouring site 10/15/2010



silt net fencing, facing west

10/16/2010



disking the site in preparation of seeding, facing southwest 10/16/2010



seeding the site, facing northeast 10/16/2010



covering seed, facing northeast

10/16/2010



site complete, facing northwest

10/16/2010

### Appendix E Monitor well installation logs

Logger:

Jordan Woodfin

Driller:

Harrison & Cooper, Inc.

**Drilling Method:** 

Air rotary

Start Date:

10/25/2010

End Date:

10/25/2010





Project Name:

Well ID:

Apache NMGSAU 1631

MW-1

Project Consultant: RECS
Location: UL/O sec. 32 T19S R37E

DRAFTED BY: L. Weinheimer

TD = 50 ft

GW = 14 ft

Lat: 32°36'47.445"N Long: 103°16'24.572" County: LEA State: NM

	TD = 50	П		$GVV = 14 \pi$	LO	ng: 103 16	24.	5/2 State: NM
Depth (feet)	chloride field tests	LAB	PID	Description		Lithology		Well Construction
5 ft				NO SAMPLES TAKEN				DVP seal peutonite
10 ft				NO SAMI LES TAKEN				
15 ft								
20 ft								
25 ft								
30 ft								sand pack
35 ft				,				
40 ft								
45 ft	1. 1.							
50 ft								

Logger: Jordan Woodfin Driller: Harrison & Cooper, Inc. **Drilling Method:** Air rotary Project Name: Well ID: Start Date: 12/21/2010 Apache NMGSAU 1631 MW-2 End Date: **Project Consultant: RECS** 12/21/2010 Comments: Located 56 ft NNW of the leak source. Location: UL/K sec. 32 T19S R37E Lat: 32°36'48.341"N DRAFTED BY: L. Weinheimer County: Lea Long: 103°16'25.035"W TD = 60GW = 14 ft State: NM Depth chloride Lithology **Well Construction** LAB PID Description (feet) field tests bentonite PVC 5 ft seal \_⊑ NO SAMPLES TAKEN 10 ft 15 ft 20 ft 25 ft 30 ft sand 35 ft pack 40 ft

Depth (feet)	chloride field tests	LAB	PID	Description	Lithology	Well Construc
45 ft						
50 ft						
55 ft						
60 ft						

Logger:

Jordan Woodfin

Harrison & Cooper,

Driller:

Inc.

**Drilling Method:** 

Air rotary

Start Date:

4/13/2011

End Date:

4/13/2011



Located 199 feet south east of the leak source. The well was not sampled as it was going in.

DRAFTED BY: L. Weinheimer





Company: Apache

Project Name:

Well ID:

NMGSAU 1631

MW-3

Project Consultant: RECS

Location: UL/O sec. 32 T19S R37E

Lat: 32°36'46.375"N

County: Lea

	TD = 28	ft		GW = 14 ft	Long: 103°16'2	3.291"W	State: NM
Depth (feet)	chloride field tests	LAB	PID	Description	Lithology	Well Co	nstruction
							bentonite
5 ft							
10 ft				NO SAMPLES TAKEN			
15 ft				NO SAWIFLES TAKEN			sand
20 ft							pack
25 ft							
28 ft							

### Appendix F

Monitor well sampling analysis



May 31, 2011

NATALIE GLADDEN

APACHE - EUNICE

P. O. BOX 1849

**EUNICE, NM 88231** 

RE: APACHE NMGSAU 1631-ACCIDENTAL DISCHARGE

Enclosed are the results of analyses for samples received by the laboratory on 05/23/11 14:16.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021 Benzene, Toluene, Ethyl Benzene, and Total Xylenes

Method SW-846 8260

Benzene, Toluene, Ethyl Benzene, and Total Xylenes

Method TX 1005

Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

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 (V2, V3)

Accreditation applies to public drinking water matrices.

Celeg D. Keine

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



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

Received:

05/23/2011

Sampling Date:

05/19/2011

Reported:

DTEV GAS1B

05/31/2011

Sampling Type:

Water

Project Name:

APACHE NMGSAU 1631-ACCIDENTAL DIS

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Project Location:

T19S-R37E-SEC32 J-LEA CTY., NM

Sample Received By:

Jodi Henson

### Sample ID: MONITOR WELL #1 (H101041-01)

BTEX 8021B	mg,	/L	Analyze	d By: CMS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	05/26/2011	ND	0.055	109	0.0500	7.04	
Toluene*	< 0.001	0.001	05/26/2011	ND	0.054	108	0.0500	6.44	
Ethylbenzene*	< 0.001	0.001	05/26/2011	ND	0.056	111	0.0500	6.44	
Total Xylenes*	<0.003	0.003	05/26/2011	ND	0.166	110	0.150	6.08	
Surrogate: 4-Bromofluorobenzene (PIL	89.0	% 80-120	)						
Chloride, SM4500CI-B	mg	/L	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2420	4.00	05/31/2011	ND	104	104	100	7.41	
Sulfate 375.4	mg	/L	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate	531	10.0	05/31/2011	ND	39.3	98.2	40.0	2.07	
TDS 160.1	mg	/L	Analyze	ed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS	4770	5.00	05/24/2011	ND				0.154	

Analysis of Day Chic

Cardinal Laboratories \*=Accredited Analyte

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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:

05/23/2011

Sampling Date:

05/19/2011

Reported:

Sampling Type:

Water

Project Name:

05/31/2011

APACHE NMGSAU 1631-ACCIDENTAL DIS NONE GIVEN

Sampling Condition:

Cool & Intact

Project Number:

Sample Received By:

Jodi Henson

Project Location:

T19S-R37E-SEC32 J-LEA CTY., NM

### Sample ID: MONITOR WELL #2 (H101041-02)

BTEX 8021B	mg/	L	Analyze	d By: CMS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	05/26/2011	ND	0.055	109	0.0500	7.04	
Toluene*	<0.001	0.001	05/26/2011	ND	0.054	108	0.0500	6.44	
Ethylbenzene*	<0.001	0.001	05/26/2011	ND	0.056	111	0.0500	6.44	
Total Xylenes*	<0.003	0.003	05/26/2011	ND	0.166	110	0.150	6.08	
Surrogate: 4-Bromofluorobenzene (PIL	95.1	% 80-120	)						
Chloride, SM4500CI-B	mg/	L	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	296	4.00	05/31/2011	ND	104	104	100	7.41	
Sulfate 375.4	mg/	L	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate	67.1	10.0	05/31/2011	ND	39.3	98.2	40.0	2.07	
TDS 160.1	mg/	L	Analyze	d By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS	907	5.00	05/24/2011	ND				0.154	

### Cardinal Laboratories

\*=Accredited Analyte

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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:

05/23/2011

Sampling Date:

05/19/2011

Reported:

05/31/2011

Sampling Type:

Water

Project Name:

APACHE NMGSAU 1631-ACCIDENTAL DIS

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

T19S-R37E-SEC32 J-LEA CTY., NM

Sample ID: MONITOR WELL #3 (H101041-03)

BTEX 8021B	mg/	L	Analyze	d By: CMS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	05/26/2011	ND	0.055	109	0.0500	7.04	
Toluene*	<0.001	0.001	05/26/2011	ND	0.054	108	0.0500	6.44	
Ethylbenzene*	<0.001	0.001	05/26/2011	ND	0.056	111	0.0500	6.44	
Total Xylenes*	<0.003	0.003	05/26/2011	ND	0.166	110	0.150	6.08	
Surrogate: 4-Bromofluorobenzene (PIL	94.4	% 80-120	)						
Chloride, SM4500CI-B	mg	L .	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	300	4.00	05/31/2011	ND	104	104	100	7.41	
Sulfate 375.4	mg,	/L	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate	69.6	10.0	05/31/2011	ND	39.3	98.2	40.0	2.07	
TDS 160.1	mg	/L	Analyze	d By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS	903	5.00	05/24/2011	ND				0.154	

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

\*=Accredited Analyte



ND

### **Notes and Definitions**

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

Analyte NOT DETECTED at or above the reporting limit

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

Das New	Cardinal Lab	Company Name: PO#	Apache	Project Manager: (Street, City, Zip)	Hack Conder	Address: (Street, City, Zip) Fax#: Fax#:	Taylor Street ~ Hobbs, New Mexico 88240		393-9174	Project #: Project Name:	1	TE-Sec32 J ~ Lea County New Mexico			SA:	FIELD CODE  COOMINOO	LAB USE  ONLY  ONL	{ Monitor Well #1 G 3 X   1	2. Monitor Well #2 G 3 X 1	3 Monitor Well #3 G 3 X   2   1			Date: Time: Received by: 11 Date:	14.15	Relinquished by: Date: Time: Received By: (Laboratory Staff) Date: Time:	- 1	Delivered By: (Circle One) Sample Condition CHECKED BY:	Yes TYes T (Initials)
	boratories, Inc.			Address:					71	4	Scharge	Sample Supartice: Rogana Johnson (5/5)831-9310	V DDECEDVATIVE			AOV Imo	ICE (1-11) HSOOF  NSHROOF  HNOOF  HCF (5 40)  SFUDGE  SOIF	2 1					Date:	NDBW 523	Date:		tact	नि
CHAIN-OF-CUSTODY	LAB Order ID #		ANALY	Cride or		2	7.00	74		9 6H	1 95	PP 3	Cr	bO si	OOS A	21B/60 00 als Ag talles attles	MTBE 802 TCLP 418. TCLP Met TCLP Met TCLP Met TCLP Sen TCLP Sen TCLP Sen		×	×			Phone Results Yes	Fax Results Yes	REMARKS:	Email Results to: hcon	Kione	rozar
Page 1 AND ANALYSIS REQUE			ANALYSIS REQUEST	Circle or Specify Method No.)									_	86 3, K)	98 1A/60 9. Va 9. Va 4, CC	82/608 82/608 8 8081 5, pH Conte Ca, Mg	RCI  SCAMS Vol  Cations (C	×	-	×			No	No Additional Fax Number:		hconder@riceswd.com	Kiones@riceswid.com	rozanne@valornet.com
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97#



### **Notes and Definitions**

S-LOW

Low surrogate recovery confirmed as a matrix effect by a second analysis.

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

Cardinal Laboratories

\*=Accredited Analyte

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MTBE 8021B/602   A BTEX 8021B/
를 중 를 없는 (C35)

\* SP



January 12, 2011

NATALIE GLADDEN

APACHE - EUNICE

P. O. BOX 1849

**EUNICE, NM 88231** 

RE: APACHE NMGSAU 1631-ACCIDENTAL DISCHARGE

Enclosed are the results of analyses for samples received by the laboratory on 01/07/11 15:05.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021 Benzene, Toluene, Ethyl Benzene, and Total Xylenes

Method SW-846 8260

Benzene, Toluene, Ethyl Benzene, and Total Xylenes

Method TX 1005

Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

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 (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



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

Received:

Chloride, SM4500CI-B

01/07/2011

Sampling Date:

01/06/2011

Reported:

01/12/2011

Sampling Type:

Water

Project Name:

APACHE NMGSAU 1631-ACCIDENTAL DIS

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

T19S-R37E-SEC32 J-LEA CTY., NM

Sample ID: MONITOR WELL #1 (H100052-01)

9 9									
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3250	4.00	01/11/2011	ND	104	104	100	3.77	
Sulfate 375.4	mg	/L	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate	697	10.0	01/11/2011	ND	40.4	101	40.0	7.90	
TDS 160.1	mg	/L	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS	6600	5.00	01/10/2011	ND				2.76	
Chioride, SM4500CI-B	mg	/L	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyze Analyzed	d By: HM Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Analyte				•	BS 104	% Recovery	True Value QC	RPD 3.77	Qualifier
Analyte Chloride	Result	Reporting Limit	Analyzed 01/11/2011	Method Blank			CONTRACTOR OF THE PARTY OF THE		Qualifier
Analyte Chloride	Result	Reporting Limit	Analyzed 01/11/2011	Method Blank			CONTRACTOR OF THE PARTY OF THE		Qualifier
Analyte  Chloride  Sulfate 375.4  Analyte	Result 320 mg	Reporting Limit 4.00	Analyzed 01/11/2011 Analyze	Method Blank ND d By: HM	104	104	100	3.77	
Analyte  Chloride  Sulfate 375.4  Analyte  Sulfate	Result 320 mg, Result	Reporting Limit 4.00 /L Reporting Limit 10.0	Analyzed 01/11/2011	Method Blank  ND  d By: HM  Method Blank	104 BS	104 % Recovery	100 True Value QC	3.77	
Chloride Sulfate 375.4	Result 320 mg, Result 81.1	Reporting Limit 4.00 /L Reporting Limit 10.0	Analyzed 01/11/2011	Method Blank ND d By: HM  Method Blank ND	104 BS	104 % Recovery	100 True Value QC	3.77	* 400.CH100**05
Analyte  Chloride  Sulfate 375.4  Analyte  Sulfate  TDS 160.1	Result 320 mg, Result 81.1	Reporting Limit 4.00 /L Reporting Limit 10.0	Analyzed 01/11/2011 Analyze Analyzed 01/11/2011 Analyze	Method Blank ND d By: HM  Method Blank ND d By: HM	BS 40.4	104 % Recovery 101	True Value QC 40.0	3.77 RPD 7.90	Qualifier

Analyzed By: HM

### Cardinal Laboratories

\*=Accredited Analyte

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### **Notes and Definitions**

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

\*\* Samples not received at proper temperature of 6°C or below.

\*\*\*

Insufficient time to reach temperature.

Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

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	Apache NMGSAU 1631-Accidental Discharge	рэри	_			
Project Location:	Sampler Signature: Rozzkhne Johnson (575)631-9310	T	_			
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( LAB USE )	S)rab or (CONTAI NATER NO3 SHSO4 SHSO4 NO3 SHSO4	ME TBE 80218 TEX 80218 TEX 80218 TABLE 418.11	AH 8270C Stal Metals SLP Volatild SLP Semi V	C/MS Vol. C/MS Semi CB's 8082/ Bsticides 8	ob, TSS, pointe Co oisture Coa, ations (Ca, Sulfates otal Dissolv nitates	ntn Around
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January 14, 2011

NATALIE GLADDEN

APACHE - EUNICE

P. O. BOX 1849

**EUNICE, NM 88231** 

RE: APACHE NMGSAU 1631-ACCIDENTAL DISCHARGE

Enclosed are the results of analyses for samples received by the laboratory on 01/07/11 15:05.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021 Benzene, Toluene, Ethyl Benzene, and Total Xylenes

Method SW-846 8260 Benzene, Toluene, Ethyl Benzene, and Total Xylenes

Method TX 1005

Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

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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 (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



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

Received:

01/07/2011

Reported: Project Name:

01/14/2011 APACHE NMGSAU 1631-ACCIDENTAL DIS

Project Number: Project Location: NONE GIVEN

T19S-R37E-SEC32 J-LEA CTY., NM

Sampling Date:

01/06/2011

Sampling Type:

Water

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

### Sample ID: MONITOR WELL #1 (H100051-01)

Result								
Kesuit	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
0.007	0.001	01/13/2011	ND	0.045	89.9	0.0500	10.2	
< 0.001	0.001	01/13/2011	ND	0.046	92.6	0.0500	8.87	
0.002	0.001	01/13/2011	ND	0.050	99.9	0.0500	9.37	
0.006	0.003	01/13/2011	ND	0.156	104	0.150	9.38	
	<0.001 <b>0.002</b>	<0.001 0.001 <b>0.002</b> 0.001	<0.001 0.001 01/13/2011 <b>0.002</b> 0.001 01/13/2011	<0.001 0.001 01/13/2011 ND 0.002 0.001 01/13/2011 ND	<0.001 0.001 01/13/2011 ND 0.046 <b>0.002</b> 0.001 01/13/2011 ND 0.050	<0.001 0.001 01/13/2011 ND 0.046 92.6 <b>0.002</b> 0.001 01/13/2011 ND 0.050 99.9	<0.001 0.001 01/13/2011 ND 0.046 92.6 0.0500 <b>0.002</b> 0.001 01/13/2011 ND 0.050 99.9 0.0500	<0.001 0.001 01/13/2011 ND 0.046 92.6 0.0500 8.87 <b>0.002</b> 0.001 01/13/2011 ND 0.050 99.9 0.0500 9.37

Surrogate: 4-Bromofluorobenzene (PIL

108 %

80-120

### Sample ID: MONITOR WELL #2 (H100051-02)

BTEX 8021B	mg	'L	Analyze	d By: CMS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	01/13/2011	ND	0.045	89.9	0.0500	10.2	
Toluene*	<0.001	0.001	01/13/2011	ND	0.046	92.6	0.0500	8.87	
Ethylbenzene*	< 0.001	0.001	01/13/2011	ND	0.050	99.9	0.0500	9.37	
Total Xylenes*	< 0.003	0.003	01/13/2011	ND	0.156	-104	0.150	9.38	

Surrogate: 4-Bromofluorobenzene (PIL

110%

80-120

Cardinal Laboratories

\*=Accredited Analyte

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### **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

\*=Accredited Analyte

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