



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 28th, 2010. Produced water was released from the collar of the injection line and an unknown amount of water was released.

Beginning on September 28th, 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 7th, 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 7th, 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 11th, 2011, RECS personnel field tested the excavation walls for chlorides and screened in the field with a photo-ionization 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 12th, 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 15th, 2010 with clean imported soil. Soil amendments were added to the site and the site was seeded with native vegetation on October 16th, 2010 (Appendix D).

On October 25th, 2011, monitor well #1 was installed 45 ft southeast of the line break. Monitor well #2 was installed on December 21st, 2010 56 ft NNW of the line break, and monitor well #3 was installed on April 13th, 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

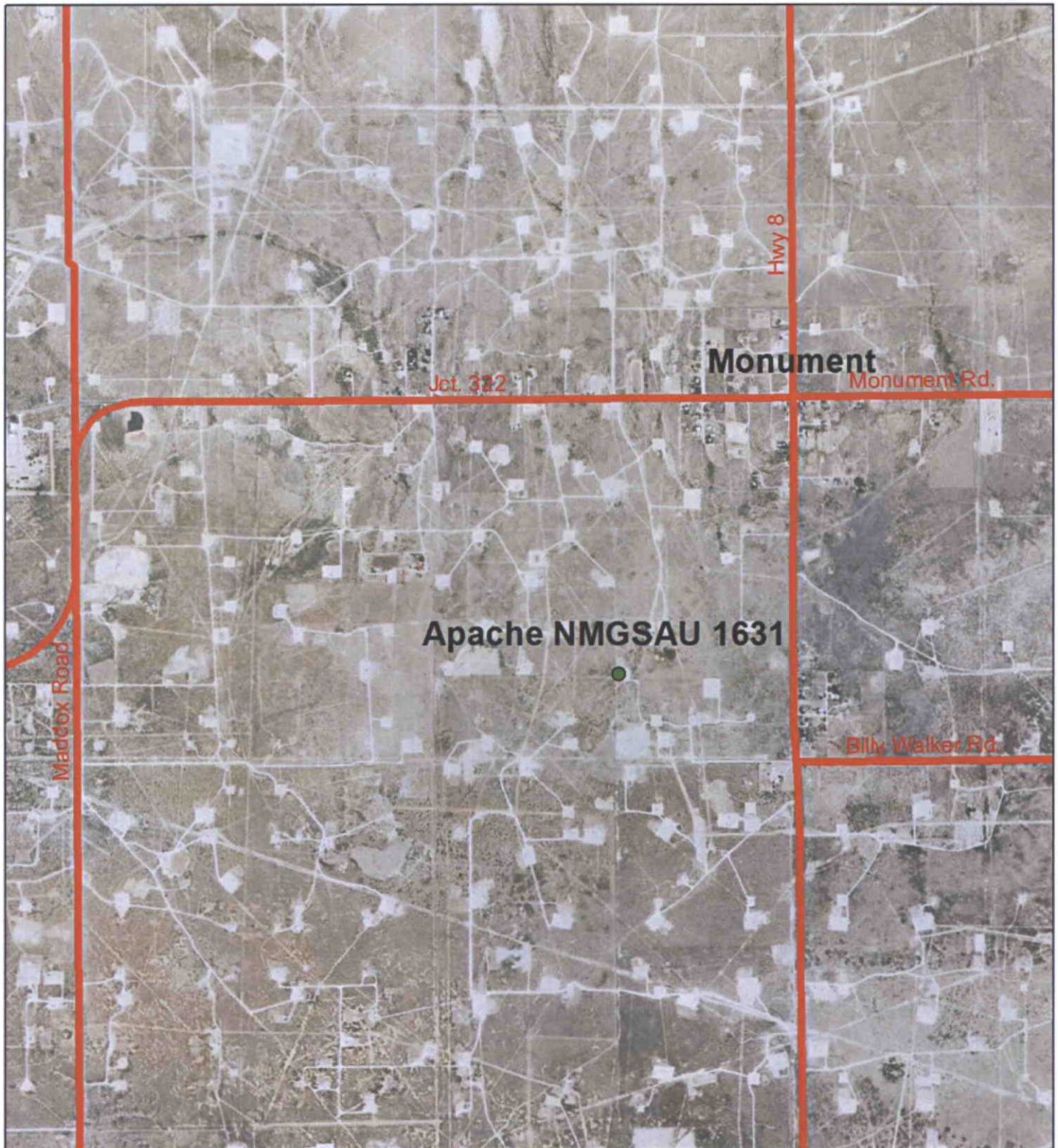
Appendix F – Monitor well sampling analysis



Figures

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

Site Map



Apache NMGSAU 1631

LEGALS:UL/J sec. 32
T19S R37E

Case #: 1RP 10-12-2627

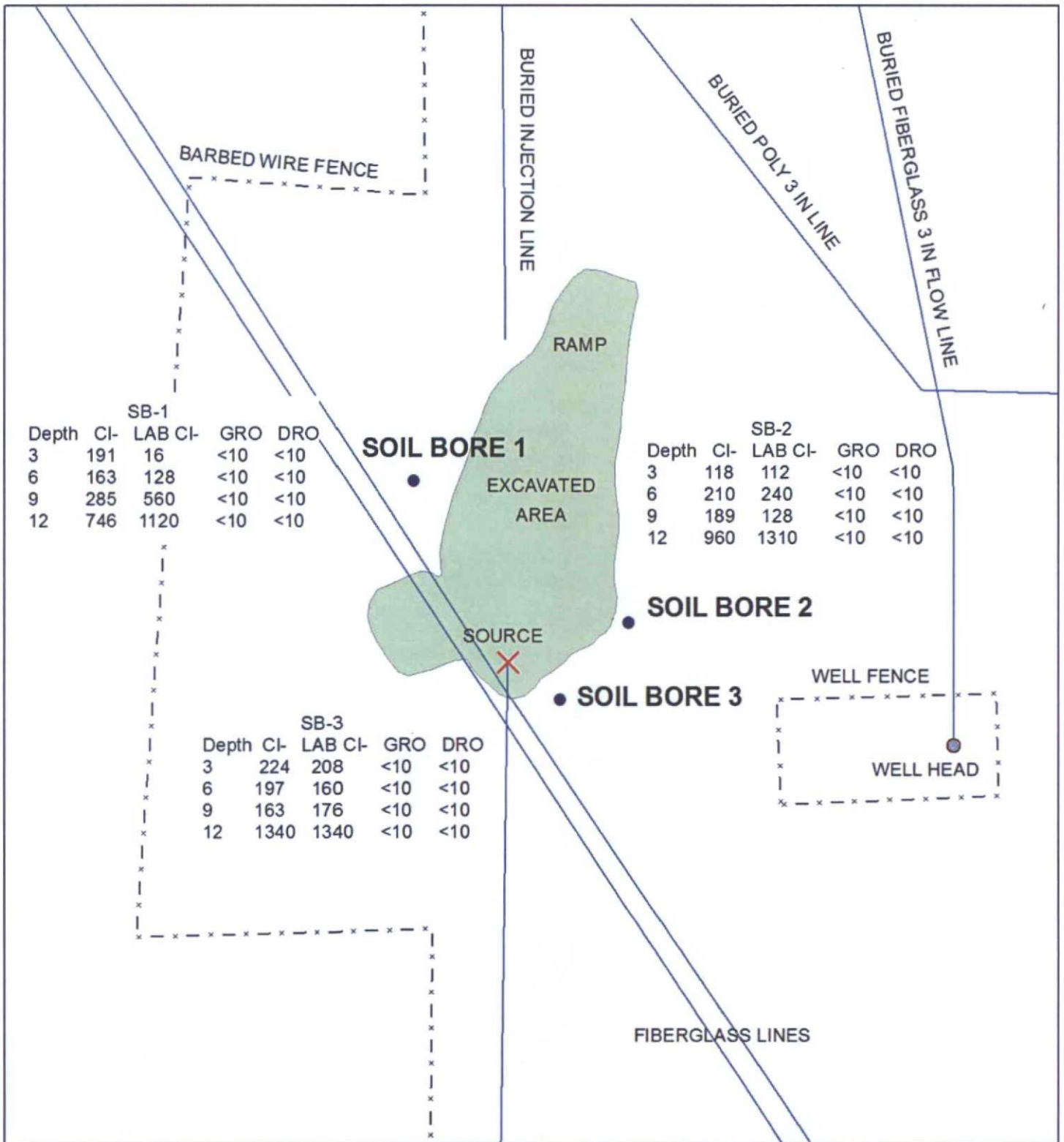
Figure 1



0 750 1,500 3,000
Feet

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

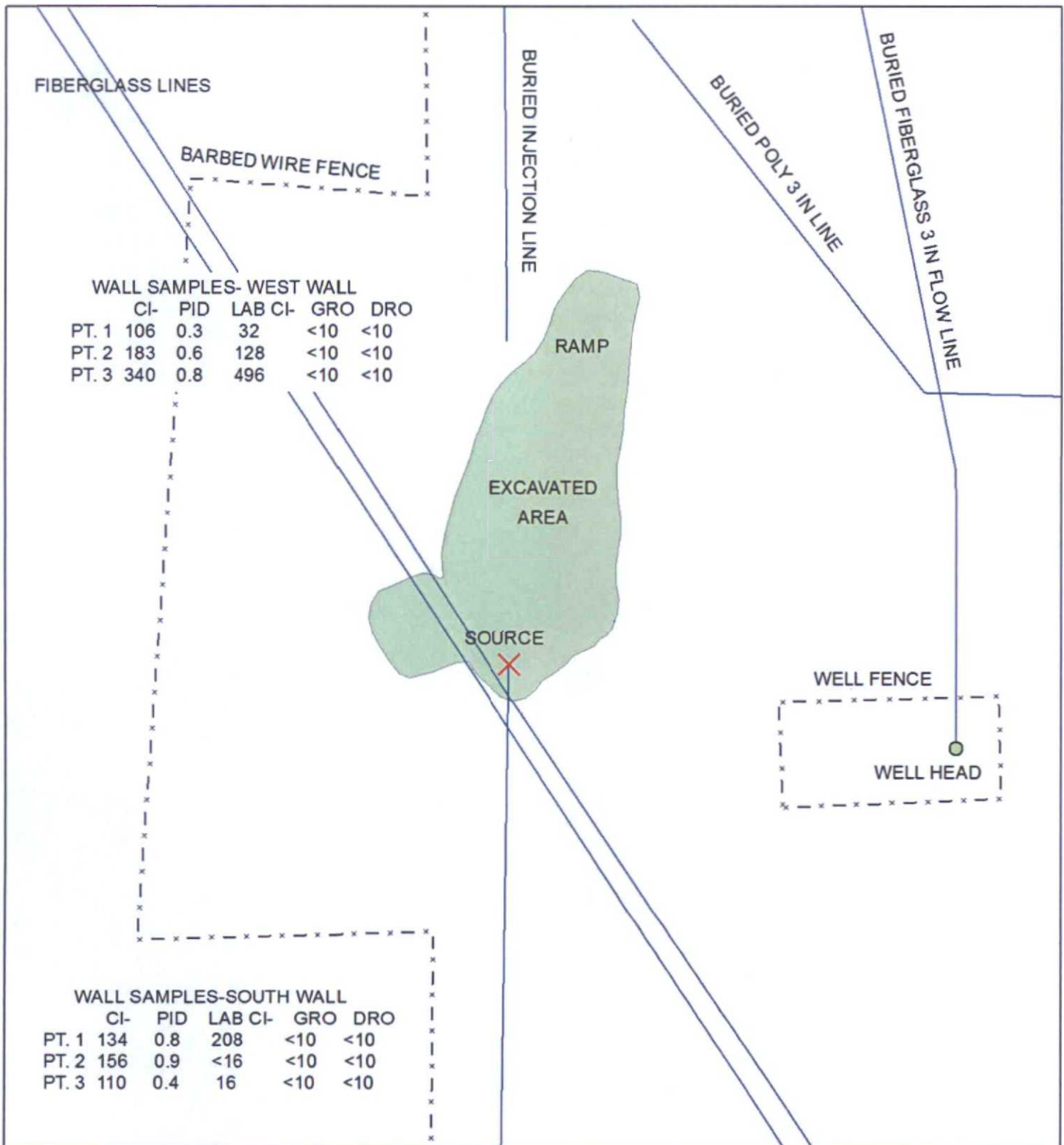
Figure 2



0 12.5 25 50
Feet

Projection: NAD 83/STATE PLANE
Drawing date: 10-20-10
Drafted by: L. Weinheimer

Wall Sampling Data



**Apache NMGSAU
1631**

**Legals: UL/J sec. 32
T19S R37E**

Case #: 1RP 10-12-2627

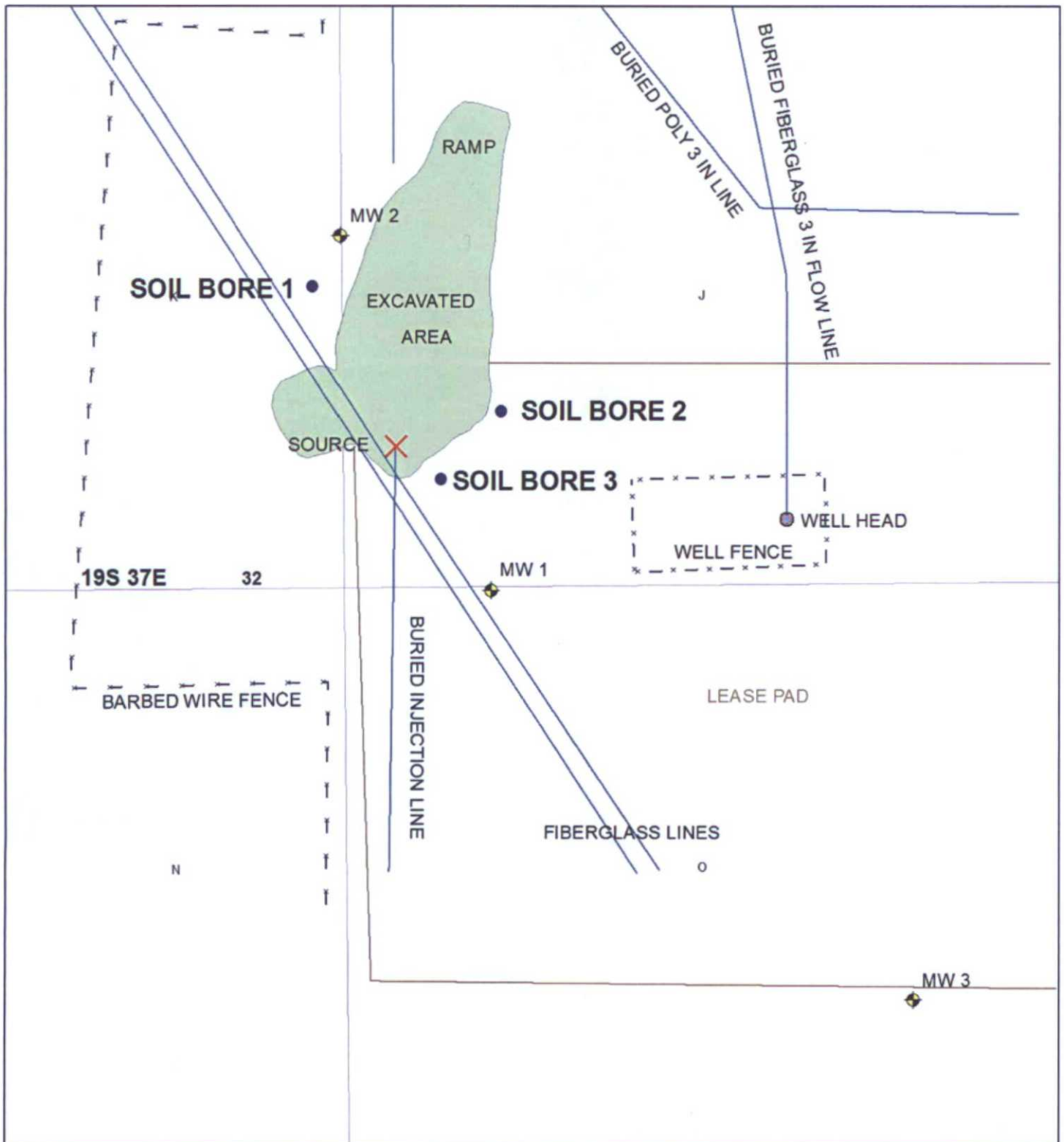
Figure 3



0 12.5 25 50
Feet

Projection: NAD 83/STATE PLANE
Drawing date: 5-10-11
Drafted by: L. Weinheimer

Monitor Well Installation



Apache NMGSAU 1631

Legals: UL/J sec. 32
T19S R37E

Case #: 1RP 10-12-2627

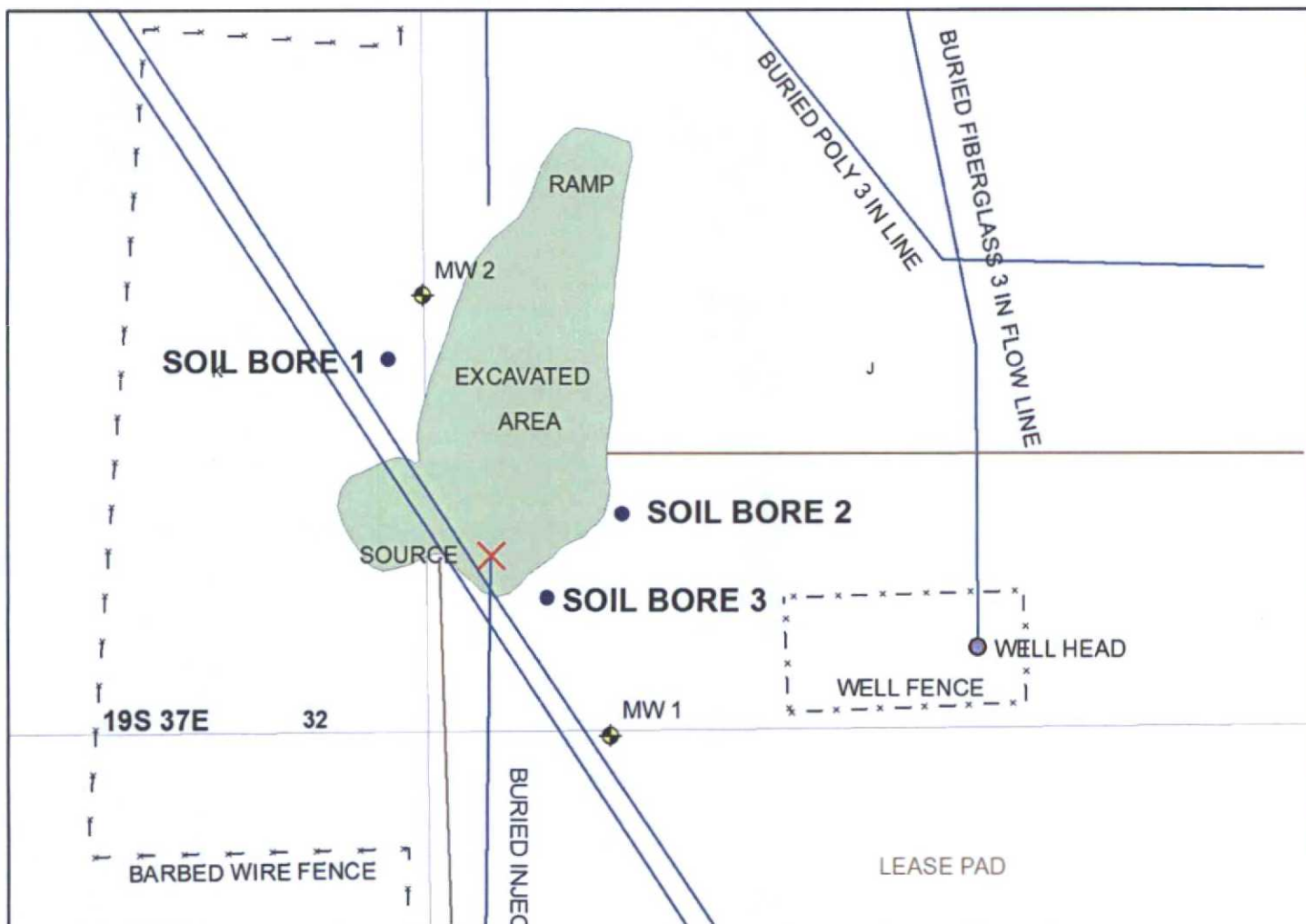
Figure 4



0 12.5 25 50
Feet

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

Monitor Well Sampling



| MW | Depth to Water | Total Depth | Well Volume | Volume Purged | Sample Date | CI | TDS | Benzene | Toluene | Ethyl Benzene | Total Xylenes | Sulfate | Comments |
|----|----------------|-------------|-------------|---------------|-------------|------|-------|---------|---------|---------------|---------------|---------|----------------------|
| 1 | 13.84 | 50.35 | 23.7 | 90 | 11/3/2010 | 6400 | 12700 | 0.015 | 0.001 | 0.004 | 0.01 | 1120 | Clear Strong odor |
| 1 | 13.83 | 50.35 | 23.7 | 90 | 1/6/2011 | 3250 | 6600 | 0.007 | <0.001 | 0.002 | 0.006 | 697 | Clear Strong odor |
| 1 | 13.86 | 50.36 | 23.7 | 90 | 5/19/2011 | 2420 | 4770 | <0.001 | <0.001 | <0.001 | <0.003 | 531 | Clear Strong odor |
| MW | Depth to Water | Total Depth | Well Volume | Volume Purged | Sample Date | CI | TDS | Benzene | Toluene | Ethyl Benzene | Total Xylenes | Sulfate | Comments |
| 2 | 13.47 | 61.15 | 31 | 100 | 1/6/2011 | 320 | 878 | <0.001 | <0.001 | <0.001 | <0.003 | 81.1 | Clear Strong odor |
| 2 | 13.52 | 61.15 | 31 | 100 | 5/19/2011 | 296 | 907 | <0.001 | <0.001 | <0.001 | <0.003 | 67.1 | Clear Strong odor |
| MW | Depth to Water | Total Depth | Well Volume | Volume Purged | Sample Date | CI | TDS | Benzene | Toluene | Ethyl Benzene | Total Xylenes | Sulfate | Comments |
| 3 | 18.69 | 30.05 | 1.8 | 8 | 5/19/2011 | 300 | 903 | <0.001 | <0.001 | <0.001 | <0.003 | 69.6 | Clear Strong odor |

MW 3



**Apache NMGSAU
1631**

**Legals: UL/J sec. 32
T19S R37E**

Case #: 1RP 10-12-2627

Figure 5



0 12.5 25 50
Feet

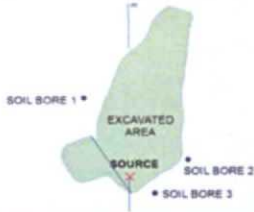


Projection: NAD 83/STATE PLANE
Drawing date: 4-27-11
Drafted by: L. Weinheimer

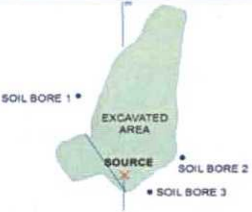







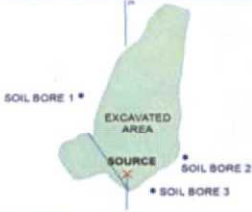

Appendix A

Soil bore installation and Laboratory analysis

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

| Logger: | B. Baker |  |  | | | |
|---|-------------------------|---|--|--|-----------|--|
| Driller: | Harrison & Cooper, Inc. | | | | | |
| Drilling Method: | Air rotary | | Project Name: | Well ID: | | |
| Start Date: | 10/7/2010 | | NMGSAU 1631 | SB-1 | | |
| End Date: | 10/7/2010 | Project Client: Apache | | Location: UL/J sec. 32 T19S R37E | | |
| Comments: Located 46 ft NW of the leak source. DRAFTED BY: Lara Weinheimer TD = 12 ft GW = 14 ft | | | Lat: 32°36'48.223"N County: LEA Long: 103°16'25.109"W State: NM | | | |
| Depth (feet) | chloride field tests | LAB | PID | Description | Lithology | Well Construction |
| | | | | Light brown very fine sand with caliche. Dry. No odor. | |  bentonite seal |
| 3 ft | 191 | CI-16 | 0.4 | | | |
| | | GRO <10 | | | | |
| | | DRO <10 | | Light brown very fine sand with substantial caliche and sandstone. Dry. No odor. | | |
| 6 ft | 163 | CI-128 | 0.2 | | | |
| | | GRO <10 | | | | |
| | | DRO <10 | | | | |
| 9 ft | 285 | CI-560 | 0 | | | |
| | | GRO <10 | | | | |
| | | DRO <10 | | Light tan very fine sand. Moist. No odor. | | |
| 12 ft | 746 | CI-1120 | 0.2 | | | |
| | | GRO <10 | | | | |
| | | DRO <10 | | | | |

| Logger: | B. Baker |  |  | | | | |
|---|-------------------------|---|---|--|---|--|----------------|
| Driller: | Harrison & Cooper, Inc. | | | | | | |
| Drilling Method: | Air rotary | | Project Name: | Well ID: | | | |
| Start Date: | 10/7/2010 | | NMGSAU 1631 | SB-2 | | | |
| End Date: | 10/7/2010 | Project Client: Apache | | 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 | | | | |
| TD = 12 ft | | | Long: 103°16'24.538" | | | | |
| GW = 14 ft | | | State: NM | | | | |
| Depth (feet) | chloride field tests | LAB | PID | Description | Lithology | Well Construction | |
| | | | | Tan very fine sand with substantial sandstone. Dry. No odor. |  |  | bentonite seal |
| 3 ft | 118 | CI-112 | 0.5 | | | | |
| | | GRO <10 | | | | | |
| | | DRO <10 | | Light orangey tan very fine sand with sandstone. Dry. No odor. |  | | |
| 6 ft | 210 | CI-240 | 0.4 | | | | |
| | | GRO <10 | | | | | |
| | | DRO <10 | | | | | |
| 9 ft | 189 | CI-128 | 0.4 | | | | |
| | | GRO <10 | | Orangey brown very fine sand. Moist. No odor. |  | | |
| | | DRO <10 | | | | | |
| 12 ft | 960 | CI-1310 | 0.3 | | | | |
| | | GRO <10 | | | | | |
| | | DRO <10 | | | | | |

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

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

APACHE - 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 1 @ 3' (H021003-01)

| Chloride, SM4500CI-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 | 10/08/2010 | ND | 432 | 108 | 400 | 3.77 | |
| TPH 8015M | | | mg/kg | | Analyzed 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 % 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 | | Analyzed 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

Surrogate: 1-Chlorooctadecane 89.1 % 70-130

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 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 1 @ 9' (H021003-03)

| Chloride, SM4500CI-B | | | mg/kg | | Analyzed 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 | | Analyzed 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 | | | | | | | |

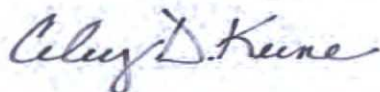
Sample ID: SB 1 @ 12' (H021003-04)

| 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 | | Analyzed 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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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 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 @ 3' (H021003-05)

| 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 | 10/08/2010 | ND | 400 | 100 | 400 | 0.00 | |
| TPH 8015M | | mg/kg | | Analyzed 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 | | Analyzed 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 | | | | | | | | |

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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, SM4500Cl-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 | 400 | 100 | 400 | 0.00 | |
| TPH 8015M | | | mg/kg | | Analyzed 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 | | | | | | | |

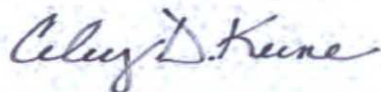
Sample ID: SB 2 @ 12' (H021003-08)

| Chloride, SM4500Cl-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 | | Analyzed 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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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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, SM4500Cl-B | | | mg/kg | | Analyzed 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 | | Analyzed 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 | | | | | | | |

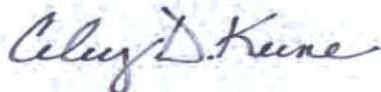
Sample ID: SB 3 @ 6' (H021003-10)

| Chloride, SM4500Cl-B | | | mg/kg | | Analyzed 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 | | Analyzed 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 | | | | | | | |
| Surrogate: 1-Chlorooctadecane | 82.2 % | 70-130 | | | | | | | |

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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 @ 9' (H021003-11)

| Chloride, SM4500Cl-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 | | Analyzed 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, SM4500Cl-B | | | mg/kg | | Analyzed 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 | | Analyzed 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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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

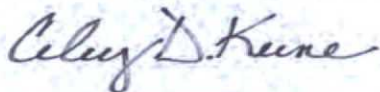
Notes and Definitions

| | |
|-------|--|
| 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 |

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Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

| BILL TO | | ANALYSIS REQUEST | | | | | | | | | | | | | | | | | | | |
|---|-------------|------------------|---------|----------|---------|----------------|---------|----------------|---------|---|---------|---|---------|----------------------------------|---------|----------|---------|----------|---------|----------|---------|
| Company Name: <u>Apache</u> | | P.O. #: | | Company: | | Attn: | | Address: | | City: | | State: | | Zip: | | Phone #: | | Fax #: | | | |
| Project Manager: <u>NATHE CHADRON</u> | | State: | | City: | | Project Owner: | | Project Name: | | Project Location: <u>Apache N.M. SAL 1631</u> | | Sampler Name: <u>Bruce Baker</u> | | Matrix: | | PRESERV | | SAMPLING | | | |
| Address: | | City: | | State: | | City: | | Project Owner: | | Project Name: | | Project Location: <u>Apache N.M. SAL 1631</u> | | Sampler Name: <u>Bruce Baker</u> | | Matrix: | | PRESERV | | SAMPLING | |
| Phone #: | | City: | | State: | | City: | | Project Owner: | | Project Name: | | Project Location: <u>Apache N.M. SAL 1631</u> | | Sampler Name: <u>Bruce Baker</u> | | Matrix: | | PRESERV | | SAMPLING | |
| Project #: | | City: | | State: | | City: | | Project Owner: | | Project Name: | | Project Location: <u>Apache N.M. SAL 1631</u> | | Sampler Name: <u>Bruce Baker</u> | | Matrix: | | PRESERV | | SAMPLING | |
| Project Name: | | City: | | State: | | City: | | Project Owner: | | Project Name: | | Project Location: <u>Apache N.M. SAL 1631</u> | | Sampler Name: <u>Bruce Baker</u> | | Matrix: | | PRESERV | | SAMPLING | |
| Project Location: <u>Apache N.M. SAL 1631</u> | | City: | | State: | | City: | | Project Owner: | | Project Name: | | Project Location: <u>Apache N.M. SAL 1631</u> | | Sampler Name: <u>Bruce Baker</u> | | Matrix: | | PRESERV | | SAMPLING | |
| Sampler Name: <u>Bruce Baker</u> | | City: | | State: | | City: | | Project Owner: | | Project Name: | | Project Location: <u>Apache N.M. SAL 1631</u> | | Sampler Name: <u>Bruce Baker</u> | | Matrix: | | PRESERV | | SAMPLING | |
| Lab I.D. | Sample I.D. | DATE | TIME | DATE | TIME | DATE | TIME | DATE | TIME | DATE | TIME | DATE | TIME | DATE | TIME | DATE | TIME | DATE | TIME | DATE | TIME |
| 1 | SB 1 @ 3' | 10-7-10 | 7:10 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM |
| 2 | SB 1 @ 6' | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM |
| 3 | SB 1 @ 9' | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM |
| 4 | SB 1 @ 12' | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM |
| 5 | SB 2 @ 3' | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM |
| 6 | SB 2 @ 6' | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM |
| 7 | SB 2 @ 9' | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM |
| 8 | SB 2 @ 13' | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM | 10-7-10 | 7:15 AM |

FOR LAB USE ONLY

Relinquished By: Bruce Baker Date: 10-7-10 Time: 12:17 PM

Relinquished By: Jodi Benson Date: 10/7/10 Time: 1:10

Delivered By: (Circle One) UPS

Sampler - UPS - Bus - Other: Other

REMARKS: rust!!

Phone Result: ☐ Yes ☐ No Add'l Phone #: 505-393-2476

Fax Result: ☐ Yes ☐ No Add'l Fax #: 505-393-2476

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



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



Appendix B

Wall sampling and imported backfill analysis

RICE Environmental Consulting and Safety (RECS)

P.O. Box 5630 Hobbs, NM 88241

Phone 575.393.4411 Fax 575.393.0293



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 Hydrocarbons |

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene
Lab Director/Quality Manager

Analytical Results For:

 APACHE - 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, SM4500Cl-B | | | mg/kg | | Analyzed 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 | | Analyzed 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, 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 | 416 | 104 | 400 | 0.00 | |
| TPH 8015M | | | mg/kg | | Analyzed 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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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 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. 3 (H021023-03)

| 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 | 416 | 104 | 400 | 0.00 | | |
| TPH 8015M | | | mg/kg | | Analyzed 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: 1-Chlorooctadecane | 109 % | 70-130 | | | | | | | | |

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

| Chloride, SM4500Cl-B | | | mg/kg | | Analyzed 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 | | Analyzed 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 | | | | | | | | |
| Surrogate: 1-Chlorooctadecane | 110 % | 70-130 | | | | | | | | |

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

| Chloride, SM4500Cl-B | | | mg/kg | | Analyzed By: HM | | | | |
|----------------------|------------|-----------------|------------|--------------|-----------------|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 128 | 16.0 | 10/11/2010 | ND | 416 | 104 | 400 | 0.00 | |
| TPH 8015M | | | mg/kg | | Analyzed 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 % 70-130

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

| Chloride, SM4500Cl-B | | | mg/kg | | Analyzed 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 | | Analyzed 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

Surrogate: 1-Chlorooctadecane 101 % 70-130

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

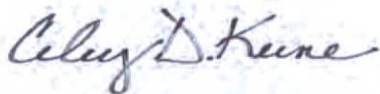
Notes and Definitions

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

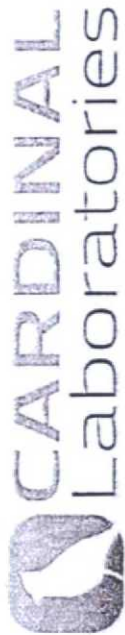
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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

| BILL TO | | ANALYSIS REQUEST | | | | | | | | | | | | | | | | | | |
|--|----------------------|------------------|--------------------|-------------|-------------|------------|------|----------|--------|-----------|------------|--------|----------|----------|----------|----------|--|--------|--|--|
| Company Name: <u>Apache</u> | | P.O. #: | | Company: | | Attn: | | Address: | | City: | | State: | | Zip: | | Phone #: | | Fax #: | | |
| Project Manager: <u>Nathalie Gladden</u> | | | | | | | | | | | | | | | | | | | | |
| Address: | | | | | | | | | | | | | | | | | | | | |
| City: | | | | | | | | | | | | | | | | | | | | |
| Phone #: | | | | | | | | | | | | | | | | | | | | |
| Project #: | | | | | | | | | | | | | | | | | | | | |
| Project Name: <u>APACHE NUC-SPEC</u> | | | | | | | | | | | | | | | | | | | | |
| Project Location: <u>APACHE NUC-SPEC 16-31</u> | | | | | | | | | | | | | | | | | | | | |
| Sampler Name: <u>Bruce Baker</u> | | | | | | | | | | | | | | | | | | | | |
| FOR LAB USE ONLY | | | | | | | | | | | | | | | | | | | | |
| Lab I.D. | Sample I.D. | # CONTAINERS | (G) RAB OR (C) OMP | MATRIX | GROUNDWATER | WASTEWATER | SOIL | SLUDGE | OTHER: | ACID/BASE | ICE / COOL | OTHER: | PRESERV. | SAMPLING | DATE | TIME | | | | |
| A24231 | South Wall Sample #1 | 1 | (G) | GROUNDWATER | ✓ | | ✓ | | | ✓ | | | ✓ | | 10-11-10 | 7:20 AM | | | | |
| 2 | South Wall Sample #2 | 1 | (G) | GROUNDWATER | ✓ | | ✓ | | | ✓ | | | ✓ | | 10-11-10 | 7:25 AM | | | | |
| 3 | South Wall Sample #3 | 1 | (G) | GROUNDWATER | ✓ | | ✓ | | | ✓ | | | ✓ | | 10-11-10 | 7:30 AM | | | | |
| 4 | West Wall Sample #1 | 1 | (G) | GROUNDWATER | ✓ | | ✓ | | | ✓ | | | ✓ | | 10-11-10 | 7:35 AM | | | | |
| 5 | West Wall Sample #2 | 1 | (G) | GROUNDWATER | ✓ | | ✓ | | | ✓ | | | ✓ | | 10-11-10 | 7:40 AM | | | | |
| 6 | West Wall Sample #3 | 1 | (G) | GROUNDWATER | ✓ | | ✓ | | | ✓ | | | ✓ | | 10-11-10 | 7:45 AM | | | | |

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| | | | |
|--|-----------------------|--|-----------------------|
| Relinquished By: <u>Bruce Baker</u> | Date: <u>10-11-10</u> | Received By: <u>Nathalie Gladden</u> | Date: <u>10-11-10</u> |
| Relinquished By: <u>Nathalie Gladden</u> | Time: <u>10:55 AM</u> | Received By: <u>Nathalie Gladden</u> | Time: <u>1:50 PM</u> |
| Delivered By: (Circle One) (Sampler - UPS - Bus - Other: <u>UPS</u>) | | Checked By: <u>Nathalie Gladden</u> | |
| | | Initials: <u>NG</u> | |
| | | Sample Condition: Cool / Intact Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| | | Remarks: <u>URGENT! RUSH!</u> | |
| | | Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #: <u>505-393-2476</u> | |
| | | Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Fax #: <u>505-393-2476</u> | |



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 Hydrocarbons |

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

APACHE - 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: 10/07/2010
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

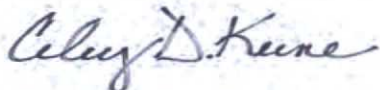
Sample ID: IMPORTED SOIL (H021024-01)

| 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 | | Analyzed 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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Celey D. Keene, Lab Director/Quality Manager

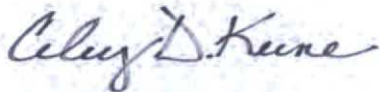
Notes and Definitions

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

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

[illegible]

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| | | | | | | | | | | | |
|------------------|--|----------|----------|--------------|-------|-------|------------------|-------|-------|----------------------------|------------------------------|
| Relinquished By: | | Date: | Time: | Received By: | Date: | Time: | Relinquished By: | Date: | Time: | Delivered By: (Circle One) | Sampler - UPS - Bus - Other: |
| Bruce Probst | | 10-11-10 | 10:56 AM | David Benson | | | | | | 156 | UPS |

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

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

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W Grand Avenue, Artesia, NM 88201
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S St Francis Dr., Santa Fe, NM 87505

RECEIVED

OCT 12 2010
HOBBSOCD

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

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate
District Office in accordance
with Rule 116 on back
side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

| | | | | | |
|-----------------|---------------------------------|-----|---------|-----------------|--------------|
| Name of Company | Apache Corporation | B73 | Contact | Natalie Gladden | |
| Address | P.O. Box 1849 Eunice, NM 8823 | | | Telephone No. | 575-390-4186 |
| Facility Name | NMGSAU #1631 (329) nearest well | | | Facility Type | |

| | | | | | |
|---------------|-------------|---------------|-------|-----------|--------------|
| 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 | 09/28/2010 11:26 | Date and Hour of Discovery | 09/28/2010 11:26 |
| Was Immediate Notice Given? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required | If YES, To Whom? | Larry Johnson | | |
| By Whom? | Natalie Gladden | Date and Hour | 09/28/2010 1pm | | |
| Was a Watercourse Reached? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | If YES, Volume Impacting the Watercourse. | | | |

If a Watercourse was Impacted, Describe Fully.*


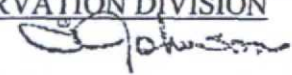
Describe Cause of Problem and Remedial Action Taken.*

Saturated area was found at the surface, once the line was excavated, it was determined that the leak had just surfaced. Unknown amount 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.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations, all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

| | | |
|--|--|-----------------------------------|
| Signature:  | OIL CONSERVATION DIVISION | |
| Printed Name: Natalie Gladden | Approved by District Supervisor  ENVIRONMENTAL ENGINEER | |
| Title: EHS Environmental Tech | Approval Date: 10.12.10 | Expiration Date: 12.12.10 |
| E-mail Address: natalie.gladden@apachecorp.com | Conditions of Approval: | Attached <input type="checkbox"/> |
| Date: 10/12/10 Phone: 575-390-4186 | SUBMIT FINAL C-141 to DES BY 10.12.2010 | |

* Attach Additional Sheets If Necessary

nLWJ1028751329
PLWJ1028751329
52067



Appendix D

Backfill and seed photos

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

Apache NMGSAU 1631
Backfilling and Seeding



pipeline 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





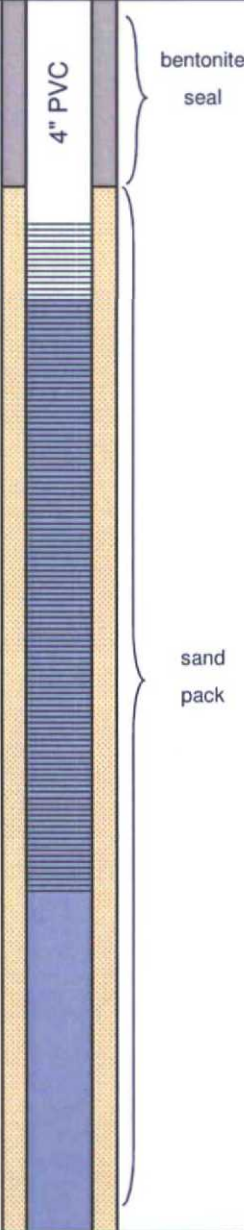
site complete, facing northwest 10/16/2010





Appendix E

Monitor well installation logs



RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

| Logger: | Jordan Woodfin |  |  | | | |
|--|-------------------------|---|---|---|-----------|--|
| Driller: | Harrison & Cooper, Inc. | | | | | |
| Drilling Method: | Air rotary | | Project Name: | Well ID: | | |
| Start Date: | 10/25/2010 | | Apache NMGS AU 1631 | MW-1 | | |
| End Date: | 10/25/2010 | Project Consultant: RECS | | Location: UL/O sec. 32 T19S R37E | | |
| Comments: Located 45 ft south east of the line break. DRAFTED BY: L. Weinheimer TD = 50 ft GW = 14 ft | | | Lat: 32°36'47.445"N County: LEA Long: 103°16'24.572" State: NM | | | |
| Depth (feet) | chloride field tests | LAB | PID | Description | Lithology | Well Construction |
| 5 ft | | | | NO SAMPLES TAKEN | |  |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 10 ft | | | | | | |
| | | | | | | |
| | | | | | | |
| 15 ft | | | | | | |
| | | | | | | |
| | | | | | | |
| 20 ft | | | | | | |
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| | | | | | | |
| 25 ft | | | | | | |
| | | | | | | |
| | | | | | | |
| 30 ft | | | | | | |
| | | | | | | |
| | | | | | | |
| 35 ft | | | | | | |
| | | | | | | |
| | | | | | | |
| 40 ft | | | | | | |
| | | | | | | |
| | | | | | | |
| 45 ft | | | | | | |
| | | | | | | |
| | | | | | | |
| 50 ft | | | | | | |
| | | | | | | |
| | | | | | | |

| | | | |
|--|-------------------------|---|---|
| Logger: | Jordan Woodfin |  |  |
| Driller: | Harrison & Cooper, Inc. | | |
| Drilling Method: | Air rotary | | |
| Start Date: | 12/21/2010 | | |
| End Date: | 12/21/2010 | | Project Name: Apache NMGSAU 1631 Well ID: MW-2 Project Consultant: RECS |
| Comments: Located 56 ft NNW of the leak source. DRAFTED BY: L. Weinheimer TD = 60 GW = 14 ft | | | Location: UL/K sec. 32 T19S R37E Lat: 32°36'48.341"N County: Lea Long: 103°16'25.035"W State: NM |

| Depth (feet) | chloride field tests | LAB | PID | Description | Lithology | Well Construction |
|--------------|----------------------|-----|-----|------------------|-----------|----------------------------|
| 5 ft | | | | NO SAMPLES TAKEN | | 4 in PVC bentonite seal |
| | | | | | | |
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| | | | | | | |
| 10 ft | | | | | | |
| 15 ft | | | | | | |
| 20 ft | | | | | | |
| 25 ft | | | | | | |
| 30 ft | | | | | | |
| 35 ft | | | | | | sand pack |
| 40 ft | | | | | | |
| | | | | | | |
| | | | | | | |

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

| | | | | |
|---|-------------------------|---|--|----------------------|
| Logger: | Jordan Woodfin |  |  | |
| Driller: | Harrison & Cooper, Inc. | | | |
| Drilling Method: | Air rotary | | Company: Apache | |
| Start Date: | 4/13/2011 | | Project Name: NMGSAU 1631 | Well ID: MW-3 |
| End Date: | 4/13/2011 | Project Consultant: RECS | Location: UL/O sec. 32 T19S R37E | |
| Comments: Located 199 feet south east of the leak source. The well was not sampled as it was going in. DRAFTED BY: L. Weinheimer TD = 28 ft GW = 14 ft | | | Lat: 32°36'46.375"N County: Lea Long: 103°16'23.291"W State: NM | |

| Depth (feet) | chloride field tests | LAB | PID | Description | Lithology | Well Construction |
|--------------|----------------------|-----|-----|------------------|-----------|-------------------|
| | | | | NO SAMPLES TAKEN | | bentonite seal |
| | | | | | | |
| 5 ft | | | | | | |
| | | | | | | |
| 10 ft | | | | | | |
| | | | | | | |
| 15 ft | | | | | | |
| | | | | | | |
| 20 ft | | | | | | |
| | | | | | | |
| 25 ft | | | | | | |
| | | | | | | |
| 28 ft | | | | | | sand pack |



Appendix F

Monitor well sampling analysis

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

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 Hydrocarbons |

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 APACHE - 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 NMGS AU 1631-ACCIDENTAL DI | 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 (H101041-01)

| BTEX 8021B | | mg/L | | Analyzed 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 (PIE) 89.0 % 80-120

| Chloride, SM4500Cl-B | | mg/L | | Analyzed 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 | | Analyzed 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 | | Analyzed 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 | | |

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 05/23/2011
Reported: 05/31/2011
Project Name: APACHE NMGS AU 1631-ACCIDENTAL DI:
Project Number: NONE GIVEN
Project Location: T19S-R37E-SEC32 J-LEA CTY., NM

Sampling Date: 05/19/2011
Sampling Type: Water
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

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

| BTEX 8021B | | mg/L | | Analyzed 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, SM4500Cl-B | | mg/L | | Analyzed 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 | | Analyzed 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 | | Analyzed 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 | | |

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/23/2011
 Reported: 05/31/2011
 Project Name: APACHE NMGS AU 1631-ACCIDENTAL DI
 Project Number: NONE GIVEN
 Project Location: T19S-R37E-SEC32 J-LEA CTY., NM

 Sampling Date: 05/19/2011
 Sampling Type: Water
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

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

| BTEX 8021B | | mg/L | | Analyzed 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, SM4500Cl-B | | mg/L | Analyzed 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 | | Analyzed 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 | | Analyzed 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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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager

[illegible]

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 |

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

[illegible]

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 Hydrocarbons |

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene
Lab Director/Quality Manager

Analytical Results For:

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

Received: 01/07/2011
Reported: 01/12/2011
Project Name: APACHE NMGSAU 1631-ACCIDENTAL DI
Project Number: NONE GIVEN
Project Location: 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 (H100052-01)

| Chloride, SM4500Cl-B | | mg/L | Analyzed By: HM | | | | | | | |
|----------------------|--------|-----------------|-----------------|--------------|------|------------|---------------|------|-----------|--|
| 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 | Analyzed 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 | Analyzed 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 | | |

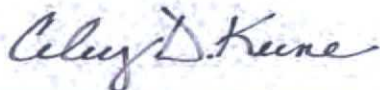
Sample ID: MONITOR WELL #2 (H100052-02)

| Chloride, SM4500Cl-B | | mg/L | Analyzed By: HM | | | | | | | |
|----------------------|--------|-----------------|-----------------|--------------|------|------------|---------------|------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Chloride | 320 | 4.00 | 01/11/2011 | ND | 104 | 104 | 100 | 3.77 | | |
| Sulfate 375.4 | | mg/L | Analyzed By: HM | | | | | | | |
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Sulfate | 81.1 | 10.0 | 01/11/2011 | ND | 40.4 | 101 | 40.0 | 7.90 | | |
| TDS 160.1 | | mg/L | Analyzed By: HM | | | | | | | |
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| TDS | 878 | 5.00 | 01/10/2011 | ND | | | | 2.76 | | |

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager


Notes and Definitions

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

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Cardinal Laboratories, Inc.

101 East Marland - Hobbs, New
Mexico 88240
Tel (575) 393-2326
Fax (575) 393-2476

[illegible]

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 Hydrocarbons |

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene
Lab Director/Quality Manager

Analytical Results For:

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

| | | | |
|-------------------|-----------------------------------|---------------------|---------------|
| Received: | 01/07/2011 | Sampling Date: | 01/06/2011 |
| Reported: | 01/14/2011 | 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 (H100051-01)

| BTEX 8021B | | mg/L | | Analyzed By: CMS | | | | | |
|----------------|--------|-----------------|------------|------------------|-------|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | 0.007 | 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* | 0.002 | 0.001 | 01/13/2011 | ND | 0.050 | 99.9 | 0.0500 | 9.37 | |
| Total Xylenes* | 0.006 | 0.003 | 01/13/2011 | ND | 0.156 | 104 | 0.150 | 9.38 | |

Surrogate: 4-Bromofluorobenzene (PII) 108 % 80-120

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

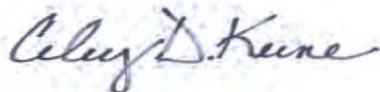
| BTEX 8021B | | mg/L | | Analyzed By: CMS | | | | | |
|----------------|--------|-----------------|------------|------------------|-------|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| 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 (PII) 110 % 80-120

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

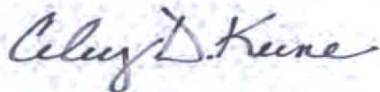
Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager

Cardinal Laboratories, Inc.

101 East Mariand - Hobbs, New
Mexico 88240
Tel (575) 393-2326
Fax (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID #

ANALYSIS REQUEST

(Circle or Specify Method No.)

[illegible]

| | | |
|---------------|-----|----|
| Phone Results | Yes | No |
| Fax Results | Yes | No |



REMARKS:

Email Results to: hconder@riceswd.com

kjones@priceswd.com

hweinheimer@rice-ecs.com

rozanne@valornet.com

| | | |
|--|---|---|
| Company Name: Apache (Project Manager) | BILL TO Company R.E.C.S. Address: 122 W Taylor Street ~ Hobbs, New Mexico 88240 Phone #: (575) 393-9174 Fax #: (575) 397-1471 | PO#  (Street, City, Zip) |
| Company Name: Hack Conder Address: 122 W Taylor Street ~ Hobbs, New Mexico 88240 Phone #: (575) 393-9174 Fax #: (575) 397-1471 | Project Name: Apache NMGSAU 1631-Accidental Discharge | |
| Project Location: T19S-R37E-Sec32 J ~ Lea County New Mexico | Sampler Signature:  Rozanne Johnson (575) 631-9310 rozanne@visionnet.com | |

[illegible]

| | | | | | | | | | | | |
|--|--|------------------|--|-------------|--|------|--------|---------------|--|--|--|
| Relinquished by: Rozanne Johnson Date: 1-7-2018 Time: 15:05 | Received by: Jodi Benson Date: 1/7/11 Time: 15:05 | | | | | | | | | | |
| Relinquished by: | Received By: (Laboratory Staff) | | | | | | | | | | |
| Delivered By: (Circle One) Sampler - UPS - Bus - Other: | <table border="1"> <tr> <td colspan="2">Sample Condition</td> <td colspan="2">CHECKED BY:</td> </tr> <tr> <td>Cool</td> <td>Intact</td> <td colspan="2" rowspan="2">(Initials) JH</td> </tr> <tr> <td> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No </td> <td> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No </td> </tr> </table> | Sample Condition | | CHECKED BY: | | Cool | Intact | (Initials) JH | | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Sample Condition | | CHECKED BY: | | | | | | | | | |
| Cool | Intact | (Initials) JH | | | | | | | | | |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | | | | | | | | |

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