



EXPLORING WHAT'S POSSIBLE

# APACHE CORPORATION

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

EL Federal #8  
(2RP-2278)

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## Termination Request

API No. 30-015-30262

Release Date: April 8<sup>th</sup>, 2014

Unit Letter P, Section 21, Township 17S, Range 30E

**October 7<sup>th</sup>, 2014**

**Mike Bratcher**

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

**RE: Termination Request  
Apache EL Federal #8 (2RP-2278)  
UL/P sec. 21 T17S R30E  
API No. 30-015-30262**

Mr. Bratcher:

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

**Background and Previous Work**

The site is located approximately 0.6 miles southeast of Loco Hills, New Mexico at UL/P sec. 21 T17S R30E. Soil bore installations conducted by RECS near the release site indicate that there is no groundwater located beneath the site (Figure 1).

On April 8<sup>th</sup>, 2014, Apache discovered a release of produced water from a rupture in a flow line located 400 feet north of the well head. A total of 25 barrels of produced water was released over 3,799 square feet of pasture land. None of this fluid was recovered. The well was shut in, and the line was repaired. NMOCD and BLM were notified of the release on April 9<sup>th</sup>, 2014, and an initial C-141 was submitted to both agencies on April 21<sup>st</sup>, 2014. NMOCD approved the initial C-141 on May 1<sup>st</sup>, 2014 (Appendix A).

RECS personnel were on site beginning on April 9<sup>th</sup>, 2014. The release was mapped and photographed (Figure 2). An initial surface sample from the release was taken and field tested for chlorides and organic vapors. Based on the elevated field chloride reading of 3,238 mg/kg, a vertical was installed at the site to determine the depth of contamination. Vertical 1 was installed to a depth of 15 ft bgs, and the 11 ft bgs, 14 ft bgs and 15 ft bgs samples were taken to a commercial laboratory for analysis. The 11 ft bgs sample returned a laboratory chloride reading of 5,680 mg/kg. The chloride values decreased to 336 mg/kg at 14 ft bgs and 352 mg/kg at 15 ft bgs. Gasoline Range Organics (GRO) readings, Diesel Range Organic (DRO) readings and BTEX readings for all samples returned values of non-detect (Appendix B).

Based on the laboratory analysis, the area around Vertical 1 was excavated to 4 ft bgs (Figure 3). Once the excavation was completed, final wall and bottom grab samples were taken and field

tested for chlorides and hydrocarbons. The wall samples were taken to a commercial laboratory for analysis and returned chloride values ranging from 96 mg/kg to 1,040 mg/kg. GRO, DRO and BTEX results returned values of non-detect. The bottom samples returned field chloride readings above 1,000 mg/kg in Bottom 1 and Bottom 2. The remainder of the bottom samples returned field chloride readings below 1,000 mg/kg. The bottom samples were not taken to a commercial laboratory for analysis. Two surface samples in the overspray were also taken and field tested for chlorides and organic vapors. Both samples were then taken to a commercial laboratory for analysis. Both samples returned chloride, GRO, DRO and BTEX values at or near non-detectable levels.

On July 29<sup>th</sup>, 2014, a Path Forward was submitted to NMOCD and BLM. The Path Forward stated that since the field data from the bottom of the excavation showed elevated chloride readings, a 20-mil reinforced poly liner would be installed and properly seated into the base of the excavation. Clean soil would be imported to the site, and the excavation would be backfilled. The site would be contoured to the surrounding location, and the disturbed area would be seeded with a blend of native vegetation. NMOCD and BLM approved the Path Forward on July 31<sup>st</sup>, 2014.

A 20-mil reinforced poly liner was installed and properly seated into the base of the excavation. All excavated soil was taken to a NMOCD approved facility for disposal. Clean top soil was imported to the site to use as backfill. The excavation was backfilled to ground surface and contoured to the surrounding location. On September 15<sup>th</sup>, 2014, the disturbed area was seeded with LPC mix, and the seed was raked into the soil.

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

Given that Apache completed the work as approved in the Path Forward, Apache respectfully requests 'remediation termination' and site closure. A final C-141 for the site can be found in Appendix D.

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

Sincerely,

A handwritten signature in dark ink, appearing to read 'L. Weinheimer', with a long, horizontal, wavy line extending to the right.

Lara Weinheimer  
Project Scientist  
RECS  
(575) 441-0431

Attachments:

Figure 1 – Depth to Groundwater

Figure 2 – Initial Sampling Data

Figure 3 – Excavation Data

Appendix A – Initial C-141

Appendix B – Laboratory Analyses

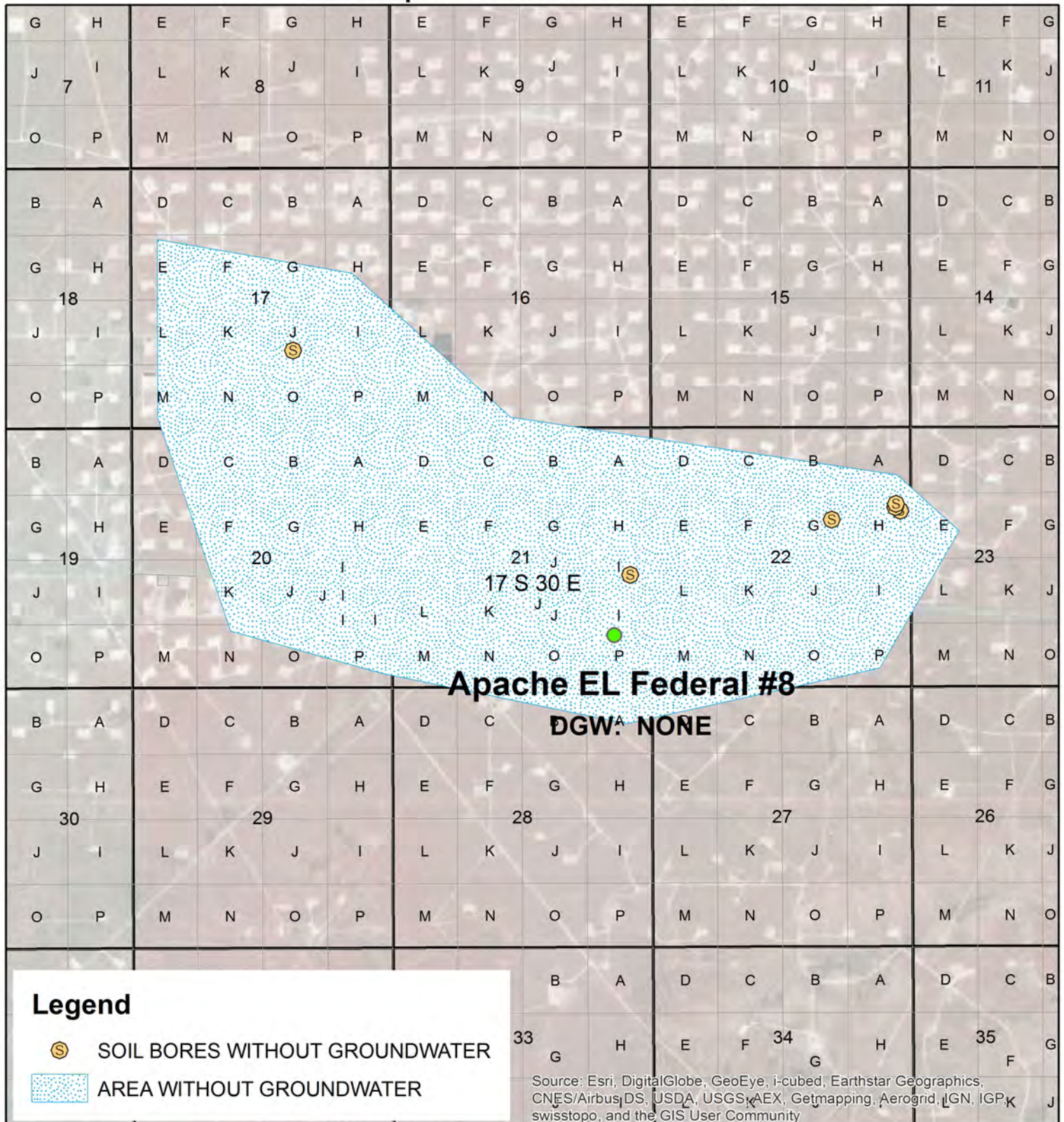
Appendix C – Photo Documentation

Appendix D – Final C-141

# Figures



# Depth to Groundwater



## APACHE EL FEDERAL #8

UL P SECTION 21  
T-17-S R-30-E  
EDDY COUNTY, NM

Figure 1



0 0.3 0.6  
Miles

Drawing date: 4/23/14  
Drafted by: L. Weinheimer



# Initial Sampling Data

| VERTICAL 1 |      |      |     |     |       |       |       |       |      |
|------------|------|------|-----|-----|-------|-------|-------|-------|------|
|            | CI-  | PID  | GRO | DRO | B     | T     | E     | X     | BTEX |
| SS         | 2923 | 45.2 |     |     |       |       |       |       |      |
| 1'         | 200  | 60.4 |     |     |       |       |       |       |      |
| 2'         | 576  | 28.7 |     |     |       |       |       |       |      |
| 3'         | 1302 | 14.1 |     |     |       |       |       |       |      |
| 4'         | 5139 | 36.3 |     |     |       |       |       |       |      |
| 5'         | 5244 | 4.8  |     |     |       |       |       |       |      |
| 6'         | 5155 | 3    |     |     |       |       |       |       |      |
| 7'         | 3228 | 7.3  |     |     |       |       |       |       |      |
| 8'         | 5237 | 1.2  |     |     |       |       |       |       |      |
| 9'         | 715  | 2.4  |     |     |       |       |       |       |      |
| 10'        | 603  | 2.1  |     |     |       |       |       |       |      |
| 11'        | 5680 | 3.4  | <10 | <10 | <0.05 | <0.05 | <0.05 | <0.15 | <0.3 |
| 12'        | 1336 | 1.2  |     |     |       |       |       |       |      |
| 13'        | 794  | 10.3 |     |     |       |       |       |       |      |
| 14'        | 336  | 4.2  | <10 | <10 | <0.05 | <0.05 | <0.05 | <0.15 | <0.3 |
| 15'        | 352  | 1.9  | <10 | <10 | <0.05 | <0.05 | <0.05 | <0.15 | <0.3 |

## Point 1

|    | CI-  | PID |
|----|------|-----|
| SS | 3238 | 6.7 |



## Legend

- ▲ VERTICAL
- ▲ SAMPLE POINT
- WELLHEAD
- PAD/ROAD EDGE
- SURFACE PIPELINE
- STAIN (3,799 SQ FT)

Landowner: BLM  
DGW: NONE

Source: Esri, DigitalGlobe, GeoEye, i  
CNES/Airbus DS, USDA, USGS, AEX  
swisstopo, and the GIS User Commu



## APACHE EL FEDERAL #8

UL P SECTION 21  
T-17-S R-30-E  
EDDY COUNTY, NM

## Figure 2



0 60 120  
Feet

GPS date: 4/9/14 AG  
Drawing date: 4/11/14  
Drafted by: T. Grieco



# Excavation Data

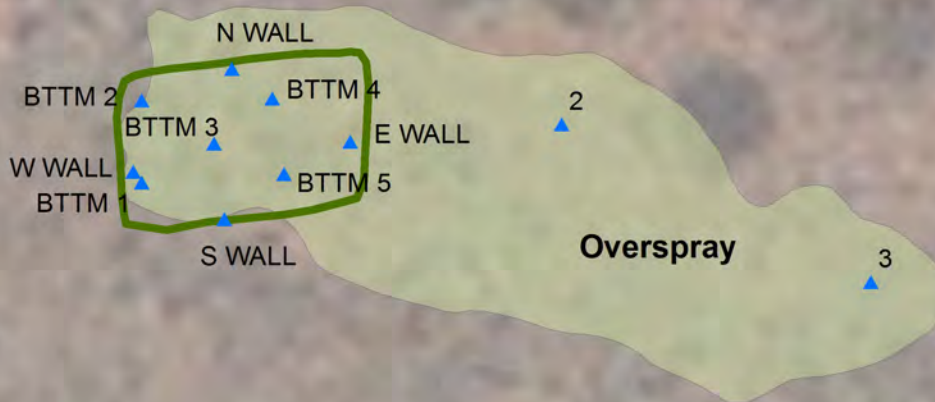
|            | CI-  | PID | GRO | DRO | B     | T     | E     | X     | BTEX |
|------------|------|-----|-----|-----|-------|-------|-------|-------|------|
| NORTH WALL | 112  | 2.5 | <10 | <10 | <0.05 | <0.05 | <0.05 | <0.15 | <0.3 |
| EAST WALL  | 512  | 1.2 | <10 | <10 | <0.05 | <0.05 | <0.05 | <0.15 | <0.3 |
| SOUTH WALL | 1040 | 3.5 | <10 | <10 | <0.05 | <0.05 | <0.05 | <0.15 | <0.3 |
| WEST WALL  | 96   | 4.4 | <10 | <10 | <0.05 | <0.05 | <0.05 | <0.15 | <0.3 |

## Point 2

|    | CI- | PID | GRO | DRO | B     | T     | E     | X     | BTEX |
|----|-----|-----|-----|-----|-------|-------|-------|-------|------|
| SS | 144 | 3.8 | <10 | <10 | <0.05 | <0.05 | <0.05 | <0.15 | <0.3 |

## Point 3

|    | CI- | PID | GRO | DRO | B     | T     | E     | X     | BTEX |
|----|-----|-----|-----|-----|-------|-------|-------|-------|------|
| SS | <16 | 1.6 | <10 | <10 | <0.05 | <0.05 | <0.05 | <0.15 | <0.3 |



CI- FIELD DATA

CI- LAB DATA

## Legend

▲ SAMPLE POINT

▭ LINED EXCAVATION @ 4 FT

■ STAIN (3,799 SQ FT)

Landowner: BLM  
DGW: NONE

Source: Esri, Digital  
GNES/Airbus DS,  
swisstopo, and the



**APACHE EL  
FEDERAL #8**

UL P SECTION 21  
T-17-S R-30-E  
EDDY COUNTY, NM

**Figure 3**



0 25 50  
Feet

GPS date: 7/21/14 KH  
Drawing date: 7/29/14  
Drafted by: L. Weinheimer



# Appendix A

Initial C-141

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

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

RECEIVED

APR 21 2014

Form C-141  
Revised August 8, 2011

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

Release Notification and Corrective Action

nHMP1412149243 OPERATOR ☒ Initial Report ☐ Final Report

|   |               |                              |
|---|---------------|------------------------------|
| Name of Company Apache Corporation      | 873           | Contact Bruce Baker          |
| Address 8 Ellison Lane Eunice, NM 88231 |               | Telephone No. (432) 631-6982 |
| Facility Name EL Federal # 8            |               | Facility Type Injection Well |
| Surface Owner Federal                   | Mineral Owner | API No. 30-015-30262         |

LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|-------------|---------|----------|-------|---------------|------------------|---------------|----------------|--------|
| P           | 21      | 17S      | 30E   | 380'          | FSL              | 990'          | FEL            | Eddy   |

Latitude Longitude

NATURE OF RELEASE

|  |  |   |
|--|--|---|
| Type of Release Produced Water   | Volume of Release 25 Barrels of water                        | Volume Recovered 0                            |
| Source of Release Flow-line  | Date and Hour of Occurrence 4-8-14 at 12:00 pm               | Date and Hour of Discovery 4-8-14 at 12:00 pm |
| Was Immediate Notice Given?<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required   | If YES, To Whom?<br>Mike Bratcher (NMOCD) and Jim Amos (BLM) |   |
| By Whom? Bruce Baker   | Date and Hour 4-9-14 at 8:25 a.m.                            |   |
| Was a Watercourse Reached?<br><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.*<br>Rupture in flow line 400 feet north of well. The well was shut in and the line was repaired.  |  |   |
| Describe Area Affected and Cleanup Action Taken.*<br>The release affected 3,799 square feet of pasture. The release has been mapped and surface sample collected.  |  |   |
| I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. |  |   |

|  |  |  |                     |
|--|--|--|---------------------|
| Signature: Bruce Baker                     |  | OIL CONSERVATION DIVISION  |                     |
| Printed Name: Bruce Baker                  |  | Approved by Environmental Specialist: [Signature]  |                     |
| Title: Environmental Technician            |  | Approval Date: 5/1/14  | Expiration Date: NA |
| E-mail Address: larry.baker@apachecorp.com |  | Conditions of Approval:  |                     |
| Date: 4/21/14 Phone: 432-631-6982          |  | Remediation per OCD Rule & Guidelines, & like approval by BLM. SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 6/1/14 |                     |
|  |  | Attached <input type="checkbox"/>  |                     |

\* Attach Additional Sheets If Necessary

2RP-2278

# Appendix B

## Laboratory Analyses

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



July 09, 2014

BRUCE BAKER

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: E. L. FEDERAL #8

Enclosed are the results of analyses for samples received by the laboratory on 07/02/14 8:20.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 07/02/2014  
Reported: 07/09/2014  
Project Name: E. L. FEDERAL #8  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 06/27/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: VERTICAL 1 @ 11' (H402011-01)**

| BTEX 8260B     |        | mg/kg           |            | Analyzed By: ms/ |      |            |               |      |           |
|----------------|--------|-----------------|------------|------------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank     | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.050 | 0.050           | 07/07/2014 | ND               | 2.16 | 108        | 2.00          | 1.57 |           |
| Toluene*       | <0.050 | 0.050           | 07/07/2014 | ND               | 1.78 | 89.0       | 2.00          | 2.82 |           |
| Ethylbenzene*  | <0.050 | 0.050           | 07/07/2014 | ND               | 1.69 | 84.3       | 2.00          | 3.97 |           |
| Total Xylenes* | <0.150 | 0.150           | 07/07/2014 | ND               | 5.25 | 87.5       | 6.00          | 2.78 |           |
| Total BTEX     | <0.300 | 0.300           | 07/07/2014 | ND               |      |            |               |      |           |

Surrogate: Dibromofluoromethane 93.4 % 61.3-142

Surrogate: Toluene-d8 99.7 % 71.3-129

Surrogate: 4-Bromofluorobenzene 96.8 % 65.7-141

| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |  |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |  |
| Chloride             | 5680   | 16.0            | 07/09/2014 | ND              | 416 | 104        | 400           | 3.92 |           |  |

| TPH 8015M    |        | mg/kg           |            | Analyzed By: MS |     |            |               |        |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|--------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD    | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 07/04/2014 | ND              | 180 | 90.2       | 200           | 1.72   |           |
| DRO >C10-C28 | <10.0  | 10.0            | 07/04/2014 | ND              | 193 | 96.4       | 200           | 0.0794 |           |

Surrogate: 1-Chlorooctane 114 % 65.2-140

Surrogate: 1-Chlorooctadecane 122 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 07/02/2014  
Reported: 07/09/2014  
Project Name: E. L. FEDERAL #8  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 06/27/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: VERTICAL 1 @ 14' (H402011-02)**

| BTEX 8260B     |        |                 | mg/kg      |              | Analyzed By: ms/ |            |               |      |           |  |
|----------------|--------|-----------------|------------|--------------|------------------|------------|---------------|------|-----------|--|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank | BS               | % Recovery | True Value QC | RPD  | Qualifier |  |
| Benzene*       | <0.050 | 0.050           | 07/07/2014 | ND           | 2.16             | 108        | 2.00          | 1.57 |           |  |
| Toluene*       | <0.050 | 0.050           | 07/07/2014 | ND           | 1.78             | 89.0       | 2.00          | 2.82 |           |  |
| Ethylbenzene*  | <0.050 | 0.050           | 07/07/2014 | ND           | 1.69             | 84.3       | 2.00          | 3.97 |           |  |
| Total Xylenes* | <0.150 | 0.150           | 07/07/2014 | ND           | 5.25             | 87.5       | 6.00          | 2.78 |           |  |
| Total BTEX     | <0.300 | 0.300           | 07/07/2014 | ND           |                  |            |               |      |           |  |

Surrogate: Dibromofluoromethane 99.2 % 61.3-142  
Surrogate: Toluene-d8 103 % 71.3-129  
Surrogate: 4-Bromofluorobenzene 96.0 % 65.7-141

| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | 336    | 16.0            | 07/09/2014 | ND              | 416 | 104        | 400           | 3.92 |           |

| TPH 8015M    |        | mg/kg           |            | Analyzed By: MS |     |            |               |        |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|--------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD    | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 07/04/2014 | ND              | 180 | 90.2       | 200           | 1.72   |           |
| DRO >C10-C28 | <10.0  | 10.0            | 07/04/2014 | ND              | 193 | 96.4       | 200           | 0.0794 |           |

Surrogate: 1-Chlorooctane 117 % 65.2-140  
Surrogate: 1-Chlorooctadecane 128 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

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

Received: 07/02/2014  
Reported: 07/09/2014  
Project Name: E. L. FEDERAL #8  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 06/27/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: VERTICAL 1 @ 15' (H402011-03)**

| BTEX 8260B     |        |                 | mg/kg      |              | Analyzed By: ms/ |            |               |      |           |  |
|----------------|--------|-----------------|------------|--------------|------------------|------------|---------------|------|-----------|--|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank | BS               | % Recovery | True Value QC | RPD  | Qualifier |  |
| Benzene*       | <0.050 | 0.050           | 07/07/2014 | ND           | 2.16             | 108        | 2.00          | 1.57 |           |  |
| Toluene*       | <0.050 | 0.050           | 07/07/2014 | ND           | 1.78             | 89.0       | 2.00          | 2.82 |           |  |
| Ethylbenzene*  | <0.050 | 0.050           | 07/07/2014 | ND           | 1.69             | 84.3       | 2.00          | 3.97 |           |  |
| Total Xylenes* | <0.150 | 0.150           | 07/07/2014 | ND           | 5.25             | 87.5       | 6.00          | 2.78 |           |  |
| Total BTEX     | <0.300 | 0.300           | 07/07/2014 | ND           |                  |            |               |      |           |  |

Surrogate: Dibromofluoromethane 93.5 % 61.3-142

Surrogate: Toluene-d8 105 % 71.3-129

Surrogate: 4-Bromofluorobenzene 98.4 % 65.7-141

| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | 352    | 16.0            | 07/09/2014 | ND              | 416 | 104        | 400           | 3.92 |           |

| TPH 8015M    |        | mg/kg           |            | Analyzed By: MS |     |            |               |        |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|--------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD    | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 07/04/2014 | ND              | 180 | 90.2       | 200           | 1.72   |           |
| DRO >C10-C28 | <10.0  | 10.0            | 07/04/2014 | ND              | 193 | 96.4       | 200           | 0.0794 |           |

Surrogate: 1-Chlorooctane 117 % 65.2-140

Surrogate: 1-Chlorooctadecane 127 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**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<br>Samples reported on an as received basis (wet) unless otherwise noted on report |

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Celey D. Keene, Lab Director/Quality Manager



# CARDINAL LABORATORIES

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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

|   |  |                          |  |                |  |                   |  |   |  |        |  |     |  |          |  |          |  |            |  |            |  |        |  |      |  |      |  |
|---|--|--------------------------|--|----------------|--|-------------------|--|---|--|--------|--|-----|--|----------|--|----------|--|------------|--|------------|--|--------|--|------|--|------|--|
| Company Name: <u>Apco</u>                 |  |                          |  | <b>BILL TO</b> |  |                   |  | <b>ANALYSIS REQUEST</b>   |  |        |  |     |  |          |  |          |  |            |  |            |  |        |  |      |  |      |  |
| Project Manager: <u>Bruce Baker</u>       |  |                          |  | P.O. #:        |  |                   |  | <div>Chlorides</div> <div>TPH 8015 M</div> <div>BTEX</div> <div>Texas TPH</div> <div>Complete Cations/Anions</div> <div>TDS</div> |  |        |  |     |  |          |  |          |  |            |  |            |  |        |  |      |  |      |  |
| Address:                                  |  |                          |  | Company:       |  |                   |  |   |  |        |  |     |  |          |  |          |  |            |  |            |  |        |  |      |  |      |  |
| City: Hobbs State: NM Zip: 88240          |  |                          |  | Attn:          |  |                   |  |   |  |        |  |     |  |          |  |          |  |            |  |            |  |        |  |      |  |      |  |
| Phone #: Fax #:                           |  |                          |  | Address:       |  |                   |  |   |  |        |  |     |  |          |  |          |  |            |  |            |  |        |  |      |  |      |  |
| Project #: Project Owner:                 |  |                          |  | City:          |  |                   |  |   |  |        |  |     |  |          |  |          |  |            |  |            |  |        |  |      |  |      |  |
| Project Name:                             |  |                          |  | State: Zip:    |  |                   |  |   |  |        |  |     |  |          |  |          |  |            |  |            |  |        |  |      |  |      |  |
| Project Location: <u>E.L. Federal # 8</u> |  |                          |  | Phone #:       |  |                   |  |   |  |        |  |     |  |          |  |          |  |            |  |            |  |        |  |      |  |      |  |
| Sampler Name: Kyle Humphrey               |  |                          |  | Fax #:         |  |                   |  |   |  |        |  |     |  |          |  |          |  |            |  |            |  |        |  |      |  |      |  |
| FOR LAB USE ONLY                          |  | Lab I.D.                 |  | Sample I.D.    |  | (G)RAB OR (C)OMP. |  | # CONTAINERS  |  | MATRIX |  |     |  | PRESERV. |  | SAMPLING |  |            |  |            |  |        |  |      |  |      |  |
|   |  |                          |  |                |  | GROUNDWATER       |  | WASTEWATER  |  | SOIL   |  | OIL |  | SLUDGE   |  | OTHER:   |  | ACID/BASE: |  | ICE / COOL |  | OTHER: |  | DATE |  | TIME |  |
| <u>H402011</u>                            |  |                          |  |                |  |                   |  |   |  |        |  |     |  |          |  |          |  |            |  |            |  |        |  |      |  |      |  |
| <u>1</u>                                  |  | <u>Ver-1. 1 @ 12 ft.</u> |  | <u>6</u>       |  | <u>1</u>          |  |   |  |        |  |     |  |          |  |          |  |            |  |            |  |        |  |      |  |      |  |
| <u>2</u>                                  |  | <u>Ver-1. 1 @ 14 ft.</u> |  | <u>6</u>       |  | <u>1</u>          |  |   |  |        |  |     |  |          |  |          |  |            |  |            |  |        |  |      |  |      |  |
| <u>3</u>                                  |  | <u>Ver-1. 1 @ 15 ft.</u> |  | <u>6</u>       |  | <u>1</u>          |  |   |  |        |  |     |  |          |  |          |  |            |  |            |  |        |  |      |  |      |  |

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|                                       |  |                     |  |   |  |   |  |  |  |
|---------------------------------------|--|---------------------|--|---|--|---|--|--|--|
| Relinquished By: <u>Kyle Humphrey</u> |  | Date: <u>7/2/14</u> |  | Received By: <u>Jodi Benson</u>                                     |  | Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |  | Add'l Phone #:   |  |
| Relinquished By:                      |  | Time: <u>8:20</u>   |  | Received By:  |  | Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No   |  | Add'l Fax #:   |  |
| Delivered By: (Circle One)            |  | Time:               |  | Sample Condition  |  | CHECKED BY: (Initials)  |  | REMARKS:   |  |
| Sampler - UPS - Bus - Other:          |  |                     |  | Cool Intact   |  | <u>HA</u>   |  | email results  |  |
|                                       |  |                     |  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |   |  | Knorman@rice-ecs.com   |  |
|                                       |  |                     |  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |  |   |  | Kjones@riceswd.com; jkamplain@rice-ecs.com hconder@rice-ecs.com; |  |
|                                       |  |                     |  |   |  |   |  | Lweinheimer@rice-ecs.com   |  |
|                                       |  |                     |  |   |  |   |  | Khumphrey@rice-ecs.com   |  |
|                                       |  |                     |  |   |  |   |  | sedwards@rice-ecs.com, lflores@rice-ecs.com                      |  |

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

#54





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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July 10, 2014

BRUCE BAKER

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: E. L. FEDERAL #8

Enclosed are the results of analyses for samples received by the laboratory on 07/03/14 16:45.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

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

 Received: 07/03/2014  
 Reported: 07/10/2014  
 Project Name: E. L. FEDERAL #8  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 07/03/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: NORTH WALL (H402042-01)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: MS |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.050 | 0.050           | 07/08/2014 | ND              | 1.85 | 92.6       | 2.00          | 7.12 |           |
| Toluene*       | <0.050 | 0.050           | 07/08/2014 | ND              | 1.94 | 97.2       | 2.00          | 7.57 |           |
| Ethylbenzene*  | <0.050 | 0.050           | 07/08/2014 | ND              | 1.72 | 86.2       | 2.00          | 8.12 |           |
| Total Xylenes* | <0.150 | 0.150           | 07/08/2014 | ND              | 5.35 | 89.2       | 6.00          | 7.60 |           |
| Total BTEX     | <0.300 | 0.300           | 07/08/2014 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PID) 104 % 89.4-126

| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | 112    | 16.0            | 07/09/2014 | ND              | 400 | 100        | 400           | 0.00 |           |

| TPH 8015M    |        | mg/kg           |            | Analyzed By: MS |     |            |               |       |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD   | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 07/08/2014 | ND              | 190 | 95.1       | 200           | 0.320 |           |
| DRO >C10-C28 | <10.0  | 10.0            | 07/08/2014 | ND              | 199 | 99.7       | 200           | 4.31  |           |

Surrogate: 1-Chlorooctane 114 % 65.2-140

Surrogate: 1-Chlorooctadecane 133 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 07/03/2014  
Reported: 07/10/2014  
Project Name: E. L. FEDERAL #8  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 07/03/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: EAST WALL (H402042-02)**

| BTX 8021B      |        | mg/kg           |            | Analyzed By: MS |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.050 | 0.050           | 07/08/2014 | ND              | 1.85 | 92.6       | 2.00          | 7.12 |           |
| Toluene*       | <0.050 | 0.050           | 07/08/2014 | ND              | 1.94 | 97.2       | 2.00          | 7.57 |           |
| Ethylbenzene*  | <0.050 | 0.050           | 07/08/2014 | ND              | 1.72 | 86.2       | 2.00          | 8.12 |           |
| Total Xylenes* | <0.150 | 0.150           | 07/08/2014 | ND              | 5.35 | 89.2       | 6.00          | 7.60 |           |
| Total BTX      | <0.300 | 0.300           | 07/08/2014 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PID) 103 % 89.4-126

| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | 512    | 16.0            | 07/09/2014 | ND              | 400 | 100        | 400           | 0.00 |           |

| TPH 8015M    |        | mg/kg           |            | Analyzed By: MS |     |            |               |       |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD   | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 07/08/2014 | ND              | 190 | 95.1       | 200           | 0.320 |           |
| DRO >C10-C28 | <10.0  | 10.0            | 07/08/2014 | ND              | 199 | 99.7       | 200           | 4.31  |           |

Surrogate: 1-Chlorooctane 120 % 65.2-140

Surrogate: 1-Chlorooctadecane 133 % 63.6-154

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

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

Received: 07/03/2014  
Reported: 07/10/2014  
Project Name: E. L. FEDERAL #8  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 07/03/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: SOUTH WALL (H402042-03)**

| BTX 8021B      |        | mg/kg           |            | Analyzed By: MS |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.050 | 0.050           | 07/08/2014 | ND              | 1.85 | 92.6       | 2.00          | 7.12 |           |
| Toluene*       | <0.050 | 0.050           | 07/08/2014 | ND              | 1.94 | 97.2       | 2.00          | 7.57 |           |
| Ethylbenzene*  | <0.050 | 0.050           | 07/08/2014 | ND              | 1.72 | 86.2       | 2.00          | 8.12 |           |
| Total Xylenes* | <0.150 | 0.150           | 07/08/2014 | ND              | 5.35 | 89.2       | 6.00          | 7.60 |           |
| Total BTX      | <0.300 | 0.300           | 07/08/2014 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PID) 103 % 89.4-126

| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | 1040   | 16.0            | 07/09/2014 | ND              | 400 | 100        | 400           | 0.00 |           |

| TPH 8015M    |        | mg/kg           |            | Analyzed By: MS |     |            |               |       |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD   | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 07/08/2014 | ND              | 190 | 95.1       | 200           | 0.320 |           |
| DRO >C10-C28 | <10.0  | 10.0            | 07/08/2014 | ND              | 199 | 99.7       | 200           | 4.31  |           |

Surrogate: 1-Chlorooctane 120 % 65.2-140

Surrogate: 1-Chlorooctadecane 135 % 63.6-154

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**Analytical Results For:**

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

Received: 07/03/2014  
Reported: 07/10/2014  
Project Name: E. L. FEDERAL #8  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 07/03/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: WEST WALL (H402042-04)**

| BTX 8021B      |        | mg/kg           |            | Analyzed By: MS |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.050 | 0.050           | 07/08/2014 | ND              | 1.85 | 92.6       | 2.00          | 7.12 |           |
| Toluene*       | <0.050 | 0.050           | 07/08/2014 | ND              | 1.94 | 97.2       | 2.00          | 7.57 |           |
| Ethylbenzene*  | <0.050 | 0.050           | 07/08/2014 | ND              | 1.72 | 86.2       | 2.00          | 8.12 |           |
| Total Xylenes* | <0.150 | 0.150           | 07/08/2014 | ND              | 5.35 | 89.2       | 6.00          | 7.60 |           |
| Total BTX      | <0.300 | 0.300           | 07/08/2014 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PID) 104 % 89.4-126

| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | 96.0   | 16.0            | 07/09/2014 | ND              | 400 | 100        | 400           | 0.00 |           |

| TPH 8015M    |        | mg/kg           |            | Analyzed By: MS |     |            |               |       |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD   | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 07/08/2014 | ND              | 190 | 95.1       | 200           | 0.320 |           |
| DRO >C10-C28 | <10.0  | 10.0            | 07/08/2014 | ND              | 199 | 99.7       | 200           | 4.31  |           |

Surrogate: 1-Chlorooctane 117 % 65.2-140

Surrogate: 1-Chlorooctadecane 132 % 63.6-154

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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<br>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



# CARDINAL LABORATORIES

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(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

|  |                |                   |                   |  |             |            |                                     |     |        |       |                                     |            |       |               |             |
|--|----------------|-------------------|-------------------|--|-------------|------------|-------------------------------------|-----|--------|-------|-------------------------------------|------------|-------|---------------|-------------|
| Company Name: <b>Apache</b>              |                | <b>BILL TO</b>    |                   | <b>ANALYSIS REQUEST</b>  |             |            |                                     |     |        |       |                                     |            |       |               |             |
| Project Manager: <b>Bruce Baker</b>      |                | P.O. #:           |                   | Chlorides<br>TPH 8015 M<br>BTEX<br>Texas TPH<br>Complete Cations/Anions<br>TDS |             |            |                                     |     |        |       |                                     |            |       |               |             |
| Address:                                 |                | Company:          |                   |  |             |            |                                     |     |        |       |                                     |            |       |               |             |
| City: Hobbs State: NM Zip: 88240         |                | Attn:             |                   |  |             |            |                                     |     |        |       |                                     |            |       |               |             |
| Phone #: Fax #:                          |                | Address:          |                   |  |             |            |                                     |     |        |       |                                     |            |       |               |             |
| Project #: Project Owner:                |                | City:             |                   |  |             |            |                                     |     |        |       |                                     |            |       |               |             |
| Project Name:                            |                | State: Zip:       |                   |  |             |            |                                     |     |        |       |                                     |            |       |               |             |
| Project Location: <b>E.L. Federal #8</b> |                | Phone #:          |                   |  |             |            |                                     |     |        |       |                                     |            |       |               |             |
| Sampler Name: Kyle Humphrey              |                | Fax #:            |                   |  |             |            |                                     |     |        |       |                                     |            |       |               |             |
| FOR LAB USE ONLY                         | Lab I.D.       | Sample I.D.       | (G)RAB OR (C)OMP. | # CONTAINERS   | GROUNDWATER | WASTEWATER | SOIL                                | OIL | SLUDGE | OTHER | ACID/BASE                           | ICE / COOL | OTHER | DATE          | TIME        |
|  | <b>H402042</b> |                   |                   |  |             |            |                                     |     |        |       |                                     |            |       |               |             |
|  | <b>1</b>       | <b>North wall</b> | <b>6</b>          | <b>1</b>   |             |            | <input checked="" type="checkbox"/> |     |        |       | <input checked="" type="checkbox"/> |            |       | <b>7-3-14</b> | <b>2:00</b> |
|  | <b>2</b>       | <b>East wall</b>  | <b>6</b>          | <b>1</b>   |             |            | <input checked="" type="checkbox"/> |     |        |       | <input checked="" type="checkbox"/> |            |       | <b>7-3-14</b> | <b>2:05</b> |
|  | <b>3</b>       | <b>South wall</b> | <b>6</b>          | <b>1</b>   |             |            | <input checked="" type="checkbox"/> |     |        |       | <input checked="" type="checkbox"/> |            |       | <b>7-3-14</b> | <b>2:10</b> |
|  | <b>4</b>       | <b>West wall</b>  | <b>6</b>          | <b>1</b>   |             |            | <input checked="" type="checkbox"/> |     |        |       | <input checked="" type="checkbox"/> |            |       | <b>7-3-14</b> | <b>2:15</b> |

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|                                       |   |                                 |   |                |
|---------------------------------------|---|---------------------------------|---|----------------|
| Relinquished By: <b>Kyle Humphrey</b> | Date: <b>7/3/14</b>   | Received By: <b>Jodi Henson</b> | Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Add'l Phone #: |
|                                       | Time: <b>4:45</b>   |                                 | Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No   | Add'l Fax #:   |
| Relinquished By:                      | Date:   | Received By:                    | REMARKS:  |                |
|                                       | Time:   |                                 | email results <b>Larry.Baker@apachecorp.com</b>                                   |                |
| Delivered By: (Circle One)            | Sample Condition  | CHECKED BY: <b>[Signature]</b>  | Knorman@rice-ecs.com  |                |
| Sampler - UPS - Bus - Other:          | Cool Intact   |                                 | Kjones@riceswd.com; jkamplain@rice-ecs.com hconder@rice-ecs.com;                  |                |
|                                       | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |                                 | Lweinheimer@rice-ecs.com  |                |
|                                       | <input type="checkbox"/> No <input type="checkbox"/> No             |                                 | Khumphrey@rice-ecs.com  |                |
|                                       |   |                                 | sedwards@rice-ecs.com, lflores@rice-ecs.com                                       |                |

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

**#54**



July 28, 2014

BRUCE BAKER

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: E. L. FEDERAL #8

Enclosed are the results of analyses for samples received by the laboratory on 07/21/14 16:10.

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

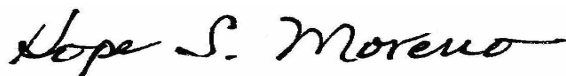
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Hope S. Moreno For Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 07/21/2014  
Reported: 07/28/2014  
Project Name: E. L. FEDERAL #8  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 07/21/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: PT. 2 @ SURFACE (H402212-01)**

| BTEX 8021B     |        |                 | mg/kg      |              | Analyzed By: CK/ |            |               |       |           |
|----------------|--------|-----------------|------------|--------------|------------------|------------|---------------|-------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank | BS               | % Recovery | True Value QC | RPD   | Qualifier |
| Benzene*       | <0.050 | 0.050           | 07/25/2014 | ND           | 1.87             | 93.7       | 2.00          | 1.24  |           |
| Toluene*       | <0.050 | 0.050           | 07/25/2014 | ND           | 1.87             | 93.5       | 2.00          | 0.842 |           |
| Ethylbenzene*  | <0.050 | 0.050           | 07/25/2014 | ND           | 1.87             | 93.5       | 2.00          | 1.33  |           |
| Total Xylenes* | <0.150 | 0.150           | 07/25/2014 | ND           | 5.92             | 98.6       | 6.00          | 2.11  |           |
| Total BTEX     | <0.300 | 0.300           | 07/25/2014 | ND           |                  |            |               |       |           |

Surrogate: 4-Bromofluorobenzene (PID) 102 % 89.4-126

| Chloride, SM4500Cl-B |        |                 | mg/kg      |              | Analyzed By: AP |            |               |      |           |
|----------------------|--------|-----------------|------------|--------------|-----------------|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank | BS              | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | 144    | 16.0            | 07/23/2014 | ND           | 400             | 100        | 400           | 0.00 |           |

| TPH 8015M    |        |                 | mg/kg      |              | Analyzed By: MS |            |               |      |           |
|--------------|--------|-----------------|------------|--------------|-----------------|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank | BS              | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 07/23/2014 | ND           | 192             | 96.1       | 200           | 8.16 |           |
| DRO >C10-C28 | <10.0  | 10.0            | 07/23/2014 | ND           | 208             | 104        | 200           | 6.40 |           |

Surrogate: 1-Chlorooctane 110 % 65.2-140

Surrogate: 1-Chlorooctadecane 127 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Hope S. Moreno For Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 07/21/2014  
Reported: 07/28/2014  
Project Name: E. L. FEDERAL #8  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 07/21/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: PT. 3 @ SURFACE (H402212-02)**

| BTEx 8021B     |        | mg/kg           |            | Analyzed By: CK/ |      |            |               |       |           |  |
|----------------|--------|-----------------|------------|------------------|------|------------|---------------|-------|-----------|--|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank     | BS   | % Recovery | True Value QC | RPD   | Qualifier |  |
| Benzene*       | <0.050 | 0.050           | 07/25/2014 | ND               | 1.87 | 93.7       | 2.00          | 1.24  |           |  |
| Toluene*       | <0.050 | 0.050           | 07/25/2014 | ND               | 1.87 | 93.5       | 2.00          | 0.842 |           |  |
| Ethylbenzene*  | <0.050 | 0.050           | 07/25/2014 | ND               | 1.87 | 93.5       | 2.00          | 1.33  |           |  |
| Total Xylenes* | <0.150 | 0.150           | 07/25/2014 | ND               | 5.92 | 98.6       | 6.00          | 2.11  |           |  |
| Total BTEx     | <0.300 | 0.300           | 07/25/2014 | ND               |      |            |               |       |           |  |

Surrogate: 4-Bromofluorobenzene (PID) 103 % 89.4-126

| Chloride, SM4500CI-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |  |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |  |
| Chloride             | <16.0  | 16.0            | 07/23/2014 | ND              | 400 | 100        | 400           | 0.00 |           |  |

| TPH 8015M    |        | mg/kg           |            | Analyzed By: MS |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 07/23/2014 | ND              | 192 | 96.1       | 200           | 8.16 |           |
| DRO >C10-C28 | <10.0  | 10.0            | 07/23/2014 | ND              | 208 | 104        | 200           | 6.40 |           |

Surrogate: 1-Chlorooctane 126 % 65.2-140

Surrogate: 1-Chlorooctadecane 138 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Hope S. Moreno For 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<br>Samples reported on an as received basis (wet) unless otherwise noted on report |

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Cardinal Laboratories

\*=Accredited Analyte

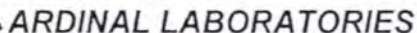
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Hope S. Moreno For Celey D. Keene, Lab Director/Quality Manager





## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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|   |  |                      |  |   |  |  |  |                |  |
|---|--|----------------------|--|---|--|--|--|----------------|--|
| Relinquished By: <i>K. L. [Signature]</i> |  | Date: <i>7/21/14</i> |  | Received By: <i>Jodi Benson</i>   |  | Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  |  | Add'l Phone #: |  |
|   |  | Time: <i>4:10</i>    |  |   |  | Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  |  | Add'l Fax #:   |  |
| Relinquished By:                          |  | Date:                |  | Received By:  |  | REMARKS: <i>Larry. Baker @ <del>rice</del>chp corp.com</i>   |  |                |  |
|   |  | Time:                |  |   |  |  |  |                |  |
| Delivered By: (Circle One)                |  |                      |  | Sample Condition  |  | email results<br>Knorman@rice-ecs.com<br>Kjones@riceswd.com; jkamplain@rice-ecs.com hconder@rice-ecs.com;<br>Lweinheimer@rice-ecs.com<br>Khumphrey@rice-ecs.com<br>sedwards@rice-ecs.com, lflores@rice-ecs.com |  |                |  |
| Sampler - UPS - Bus - Other:              |  |                      |  | Cool Intact<br><input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No <input type="checkbox"/> No |  |  |  |                |  |
|   |  |                      |  | CHECKED BY: <i>[Signature]</i>  |  |  |  |                |  |

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

# Appendix C

Photo Documentation

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



# Apache EL Federal #8

Unit Letter P, Section 21, T17S, R30E



Source of release

4/9/14



Initial release area, facing northeast

4/9/14



Initial release area, facing south

4/9/14



Sampling release area

4/9/14





Installing a vertical, facing northeast 6/27/14



Excavating to 4 ft bgs, facing south 7/2/14



Exporting soil, facing southwest 7/2/14



Excavation to 4 ft bgs completed, facing west 7/23/14





Installing liner, facing north

7/23/14



Liner installation completed, facing west

7/23/14



Backfilling site, facing southwest

7/23/14



Importing soil, facing south

7/23/14





Site backfilled, facing east

9/15/14



Raking site to prepare for seeding, facing south

9/15/14



Seeding site, facing south

9/15/14



Raking seed into soil, facing northwest

9/15/14



Site completed, facing east

9/15/14



Site completed, facing west

9/15/14

# Appendix D

Final C-141

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

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

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

Form C-141  
Revised August 8, 2011

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

## Release Notification and Corrective Action

### OPERATOR

☐ Initial Report ☒ Final Report

|  |                              |
|--|------------------------------|
| Name of Company Apache Corporation             | Contact Bruce Baker          |
| Address 2350 W Marland Street, Hobbs, NM 88240 | Telephone No. (432) 631-6982 |
| Facility Name EL Federal #8                    | Facility Type Injection Well |

|                       |               |                      |
|-----------------------|---------------|----------------------|
| Surface Owner Federal | Mineral Owner | API No. 30-015-30262 |
|-----------------------|---------------|----------------------|

### LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|-------------|---------|----------|-------|---------------|------------------|---------------|----------------|--------|
| P           | 21      | 17S      | 30E   | 380'          | FSL              | 990'          | FEL            | Eddy   |

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

### NATURE OF RELEASE

|  |  |   |
|--|--|---|
| Type of Release Produced Water   | Volume of Release 25 Barrels of water                        | Volume Recovered 0                            |
| Source of Release Flow line  | Date and Hour of Occurrence 4-8-14 at 12:00 pm               | Date and Hour of Discovery 4-8-14 at 12:00 pm |
| Was Immediate Notice Given?<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required | If YES, To Whom?<br>Mike Bratcher (NMOCD) and Jim Amos (BLM) |   |
| By Whom? Bruce Baker   | Date and Hour 4-9-14 at 8:25 a.m.                            |   |
| Was a Watercourse Reached?<br><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.\* Rupture in flow line 400 feet north of well. The well was shut in and the line was repaired.

Describe Area Affected and Cleanup Action Taken.\* The release affected 3,799 square feet of pasture land. RECS personnel were on site beginning on April 9<sup>th</sup>, 2014. An initial surface sample from the release was taken and field tested for chlorides and organic vapors. Based on the elevated field chloride reading of 3,238 mg/kg, a vertical was installed at the site to determine the depth of contamination. Vertical 1 was installed to a depth of 15 ft bgs, and samples were taken to a commercial laboratory for analysis. The 11 ft bgs sample returned a laboratory chloride reading of 5,680 mg/kg. The chloride values decreased to 336 mg/kg at 14 ft bgs and 352 mg/kg at 15 ft bgs. GRO readings, DRO and BTEX readings for all samples returned values of non-detect. Based on the laboratory analysis, the area around Vertical 1 was excavated to 4 ft bgs. Once the excavation was completed, final wall and bottom grab samples were taken and field tested for chlorides and hydrocarbons. The wall samples were taken to a commercial laboratory for analysis and returned chloride values ranging from 96 mg/kg to 1,040 mg/kg. GRO, DRO and BTEX results returned values of non-detect. The bottom samples returned field chloride readings above 1,000 mg/kg in Bottom 1 and Bottom 2. The remainder of the bottom samples returned field chloride readings below 1,000 mg/kg. The bottom samples were not taken to a commercial laboratory for analysis. Two surface samples in the overspray were also taken and field tested for chlorides and organic vapors. Both samples were then taken to a commercial laboratory for analysis. Both samples returned chloride, GRO, DRO and BTEX values at or near non-detectable levels. On July 29<sup>th</sup>, 2014, a Path Forward was submitted to NMOCD and BLM. NMOCD and BLM approved the Path Forward on July 31<sup>st</sup>, 2014. Per the Path Forward, a 20-mil reinforced poly liner was installed and properly seated into the base of the excavation. All excavated soil was taken to a NMOCD approved facility for disposal. Clean top soil was imported to the site to use as backfill. The excavation was backfill to ground surface and contoured to the surrounding location. On September 15<sup>th</sup>, 2014, the disturbed area was seeded with LPC mix, and the seed was raked into the soil.

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

|  |                                       |                                   |
|--|---------------------------------------|-----------------------------------|
| Signature: <i>Bruce Baker</i>              | <b>OIL CONSERVATION DIVISION</b>      |                                   |
| Printed Name: Bruce Baker                  | Approved by Environmental Specialist: |                                   |
| Title: Environmental Technician            | Approval Date:                        | Expiration Date:                  |
| E-mail Address: larry.baker@apachecorp.com | Conditions of Approval:               | Attached <input type="checkbox"/> |
| Date: 10-7-14                              | Phone: (432) 631-6982                 |                                   |