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**REMEDIATION SUMMARY  
AND SITE CLOSURE REQUEST**

**BOPCO, LP  
POKER LAKE UNIT #430H FRAC HOSE RELEASE  
Eddy County, New Mexico  
Unit Letter "H" (SE/NE), Section 22, Township 24 South, Range 30 East  
Latitude 32.20524° North, Longitude 103.86047° West  
NMOCD Reference #2RP-2466**

Prepared For:

**BOPCO, LP  
522 W. Mermod, Suite 704  
Carlsbad, New Mexico 88220**

**NM OIL CONSERVATION  
ARTESIA DISTRICT**

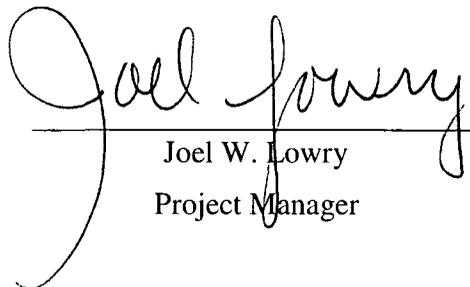
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Prepared By:

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3100 Plains Highway  
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**December 2014**

  
Joel W. Lowry  
Project Manager

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## 1.0 INTRODUCTION & BACKGROUND INFORMATION

Basin Environmental Service Technologies, LLC (Basin), on behalf of BOPCO, LP (BOPCO), has prepared this *Remediation Summary and Site Closure Request* for the release site known as the Poker Lake Unit #430H Frac Hose Release (PLU #430H Frac Hose). The legal description of the release site is Unit Letter "H" (SE/NE), Section 22, Township 24 South, Range 30 East, in Eddy County, New Mexico. The geographic coordinates of the release site are 32.20524° North latitude and 103.86047° West longitude. The property affected by the release is owned by the United States Department of the Interior - Bureau of Land Management (BLM). A "Site Location Map" is provided as Figure 1.

On August 20, 2014, a release occurred on an eight-inch (8") lay flat hose transferring water from a BOPCO salt water disposal line to a frac on the PLU #430H well. Failure of a Victaulic clamp that holds the lay-flat hose together resulted in the release of approximately four hundred barrels (400 bbls) of produced water. The New Mexico Oil Conservation Division (NMOCD)-Artesia District Office was notified of the release immediately upon discovery. The "Release Notification and Corrective Action" (Form C-141) indicated approximately one thousand, two hundred (1,200 ft<sup>2</sup>) of caliche road and thirty-eight thousand (38,000 ft<sup>2</sup>) pasture was affected by the release. During initial response activities, the transfer pumps were shut down, and the hose was pinched off to stop the water flow, allowing the clamp and a section of hose to be replaced. The Form C-141 is provided as Appendix A. General photographs of the release site are provided as Appendix B.

## 2.0 NMOCD SITE CLASSIFICATION

A search of the New Mexico Water Rights Reporting System (NMWRRS) database maintained by the New Mexico Office of the State Engineer (NMOSE) indicated information was unavailable for Section 22, Township 24 South, Range 30 East. A depth to groundwater reference map utilized by the NMOCD indicates groundwater should be encountered at approximately four hundred feet (400') below ground surface (bgs). Based on the NMOCD ranking system, zero (0) points will be assigned to the site as a result of this criterion.

A search of the NMWRRS database indicated there are no water wells within one thousand feet (1,000') of the release. Based on the NMOCD ranking system, zero (0) points will be assigned to the site as a result of this criterion.

There are no surface water bodies within one thousand feet (1,000') of the release. Based on the NMOCD ranking system, zero (0) points will be assigned to the site as a result of this criterion.

NMOCD guidelines indicate the PLU #430 Frac Hose release site has an initial ranking score of zero (0) points. The soil remediation levels for a site with a ranking score of zero (0) points are as follows:

- Benzene – 10 mg/Kg (ppm)
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) – 50 mg/Kg (ppm)
- Total Petroleum Hydrocarbons (TPH) – 5,000 mg/Kg (ppm)

The New Mexico Administrative Code (NMAC) does not currently specify a remediation level for chloride concentrations in soil. Chloride remediation levels are set by the NMOCD on a site-specific basis.

### **3.0 SUMMARY OF SOIL REMEDIATION ACTIVITIES**

On August 28, 2014, Basin conducted an initial investigation at the release site. During the investigation, six (6) soil samples (RP-1 @ 6", SP-1 @ 6", SP-2 @ 6", SP-3 @ 6", SP-4 @ 6" and SP-5 @ 18") were collected and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 1,280 ppm for soil sample SP-5 @ 18" to 19,400 ppm for soil sample SP-4 @ 6". Soil sample RP-1 @ 6" was also analyzed for concentrations of BTEX and TPH which were determined to be less than the appropriate laboratory method detection limit (MDL). A summary of "Concentrations of Benzene, BTEX, TPH & Chloride in Soil" is provided in Table 1. A "Site & Sample Location Map" is provided as Figure 2. Laboratory analytical reports are provided as Appendix C.

On September 15, 2014, Basin began excavation activities at the release site. The floor and sidewalls of the excavation were advanced until field tests suggested concentrations of BTEX, TPH and chloride were less than NMOCD regulatory standards. Excavated soil was stockpiled on-site, pending final disposition.

On September 17, 2014, eleven (11) confirmation soil samples (Floor A #1, Floor A #2, Floor A #3, Floor A #4, Floor A #5, Floor A #6, Floor B #1, WSW A, ESW A, ESW B and ESW C) were collected from the excavated area and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from less than the laboratory MDL for soil samples WSW A and ESW A to 1,040 ppm for soil sample ESW C. The excavation was advanced in the area represented by soil sample ESW C. Soil sample Floor A #3 was also analyzed for concentrations of BTEX and TPH, which were determined to be less than the appropriate laboratory MDL.

On September 26, 2014, five (5) confirmation soil samples (Floor B #2, Floor B #3, Floor B #4, Floor B #5 and Floor B #6) were collected from the floor of the excavation and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 64.0 ppm for soil sample Floor B #4 to 432 ppm for soil sample Floor B #5. Excavation activities continued toward the south.

On October 3, 2014, seven (7) confirmation soil samples (West Wall B, East Wall B, East Wall C, Floor C #1, Floor C #2, Floor C #3 and Floor C #4) were collected from the excavated area and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 32.0 ppm for soil samples West Wall B and East Wall C to 704 ppm for soil sample Floor C #3. Soil sample Floor C #4 was also analyzed for concentrations of BTEX and TPH, which were determined to be less than the appropriate laboratory MDL. Excavation activities continued toward the south.

On October 8, 2014, five (5) confirmation soil samples (C. West Wall, D. East Wall, D. West Wall, Floor D #2 and Floor D #3) were collected from the excavated area and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from less than the laboratory MDL for soil samples D. East Wall and D.

West Wall to 752 ppm for soil sample Floor D #2. Soil sample Floor D #3 was also analyzed for concentrations of BTEX and TPH, which were determined to be less than the appropriate laboratory MDL. Excavation activities continued toward the south.

On October 14, 2014, six (6) confirmation soil samples (ESW E, WSW E, Floor E #1, Floor E #2, Floor E #3 and Floor D #1) were collected from the excavated area and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from less than the laboratory MDL for soil sample WSW E to 336 ppm for soil sample Floor E #3. Soil sample Floor E #2 was also analyzed for concentrations of BTEX and TPH which were determined to be less than the appropriate laboratory MDL. Excavation activities continued toward the south.

On October 20, 2014, eight (8) confirmation soil samples (West Wall F, West Wall G, East Wall G, Floor F #1, Floor F #2, Floor F #3, Floor G #1 and Floor G #2) were collected from the excavated area and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from less than the laboratory MDL for soil samples West Wall G and Floor F #1 to 1,040 ppm for soil sample Floor G #1. Soil sample Floor F #2 was also analyzed for concentrations of BTEX and TPH, which were determined to be less than the laboratory MDL and 11.2 ppm, respectively. Excavation activities continued toward the south.

On October 22, 2014, eighteen (18) confirmation soil samples (East Wall Cb, South Wall #1, South Wall #2, East Wall F, East Wall H, West Wall H, East Wall I, West Wall I, East Wall J, West Wall J, East Wall K, Floor H #1, Floor H #2, Floor I #1, Floor I #2, Floor J #1, Floor J #2 and Floor K #1) were collected from the excavated area and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from less than the laboratory MDL for soil samples East Wall Cb, South Wall #2, East Wall F, East Wall H, West Wall H, East Wall I, West Wall I, West Wall J, East Wall K, and Floor I #1 to 80.0 ppm for soil sample Floor H #2. Excavation activities resumed in the affected pipeline right-of-way in the northern portion of the release site.

On November 10, 2014, five (5) confirmation soil samples (North SW #1, North SW #2, West SW #1, Floor #1 and Floor #2) were collected from the excavated area and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 32.0 ppm for soil samples West SW #1 and Floor #1 to 560 ppm for soil sample Floor #2. Soil sample Floor #2 was also analyzed for concentrations of BTEX and TPH which were determined to be less than the appropriate laboratory MDL.

On November 12, 2014, three (3) confirmation soil samples (North SW #3, Floor #3 and Floor #4) were collected from the excavated area and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 64.0 ppm for soil sample Floor #4 to 160 ppm for soil sample North SW #3. Soil sample Floor #4 was also analyzed for concentrations of BTEX and TPH which were determined to be less than the appropriate laboratory MDL.

On November 13, 2014, ten (10) confirmation soil samples (East SW, North SW #4, North SW #5, North SW #6, Floor #5, Floor #6, West Road, East Road, North Road and Road Floor #1) were collected from the excavated area and submitted to the laboratory for analysis of chloride

concentrations. Laboratory analytical results indicated chloride concentrations ranged from 32.0 ppm for soil sample North Road to 528 ppm for soil sample Floor #5. Soil sample Floor #6 was also analyzed for concentrations of BTEX and TPH which were determined to be less than the appropriate laboratory MDL.

In addition, one (1) soil sample (South SW In-Situ) was collected to help characterize impacted soil left in-situ adjacent to the active oil and natural gas pipelines south of the affected caliche road. Soil sample South SW In-Situ was submitted to the laboratory for analysis of chloride concentrations, which were determined to be 5,920 ppm.

Between September 16, and November 19, 2014, approximately eight thousand, twenty cubic yards (8,020 yd<sup>3</sup>) of impacted material was transported to Lea Land, Inc. (NMOCD Permit #WM-01-035) for disposal. The final dimensions of the excavation were approximately fifty (50) to two hundred and fifty feet (250') in width, four hundred and fifty feet (450') in length and thirty inches (30") in depth. Upon receiving laboratory analytical data from confirmation soil samples, the excavated area was backfilled with locally purchased, non-impacted soil. Following backfilling, areas affected by the remediation activities were compacted and contoured to match the surrounding topography.

The site will be reseeded with a BLM-approved seed mixture at a time more conducive to germination.

#### **4.0 QA/QC PROCEDURES**

##### **4.1 Soil Sampling**

Soil samples were delivered to Cardinal Laboratories, Inc., in Hobbs, New Mexico, for BTEX, TPH and/or chloride analyses using the methods described below:

- BTEX concentrations in accordance with EPA Method SW-846 8021b
- TPH concentrations in accordance with EPA Method SW-846 8015M
- Chloride concentrations in accordance with EPA Method 4500 Cl-B

##### **4.2 Decontamination of Equipment**

Cleaning of the sampling equipment was the responsibility of the environmental technician. Prior to use, and between each sample, the sampling equipment was cleaned with Liqui-Nox® detergent and rinsed with distilled water.

##### **4.3 Laboratory Protocol**

The laboratory was responsible for proper QA/QC procedures after signing the chain-of-custody form(s). These procedures were either transmitted with the laboratory reports or are on file at the laboratory.

## **5.0 SITE CLOSURE REQUEST**

Confirmation soil samples collected from the floor and sidewalls of the PLU #430 Frac Hose excavation were analyzed by an NMOCD-approved laboratory, which determined concentrations of BTEX, TPH and chloride were less than NMOCD regulatory standards in each of the submitted soil samples, with the exception of soil samples Floor G #1 and South SW (In-Situ). Based on these laboratory analytical results, Basin recommends BOPCO provide the NMOCD-Artesia District Office and the BLM a copy of this *Remediation Summary and Site Closure Request* and request the NMOCD grant site closure to the PLU #430 Frac Hose release site.

## **6.0 LIMITATIONS**

Basin Environmental Service Technologies, LLC, has prepared this *Remediation Summary and Site Closure Request* to the best of its ability. No other warranty, expressed or implied, is made or intended. Basin has examined and relied upon documents referenced in the report and on oral statements made by certain individuals. Basin has not conducted an independent examination of the facts contained in referenced materials and statements. Basin has presumed the genuineness of these documents and statements and that the information provided therein is true and accurate. Basin has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Basin notes that the facts and conditions referenced in this report may change over time, and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of BOPCO, LP. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of Basin Environmental Service Technologies, LLC, and/or BOPCO, LP.

**7.0 DISTRIBUTION:**

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# FIGURES

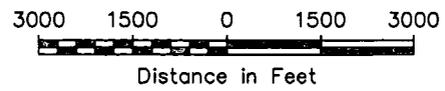
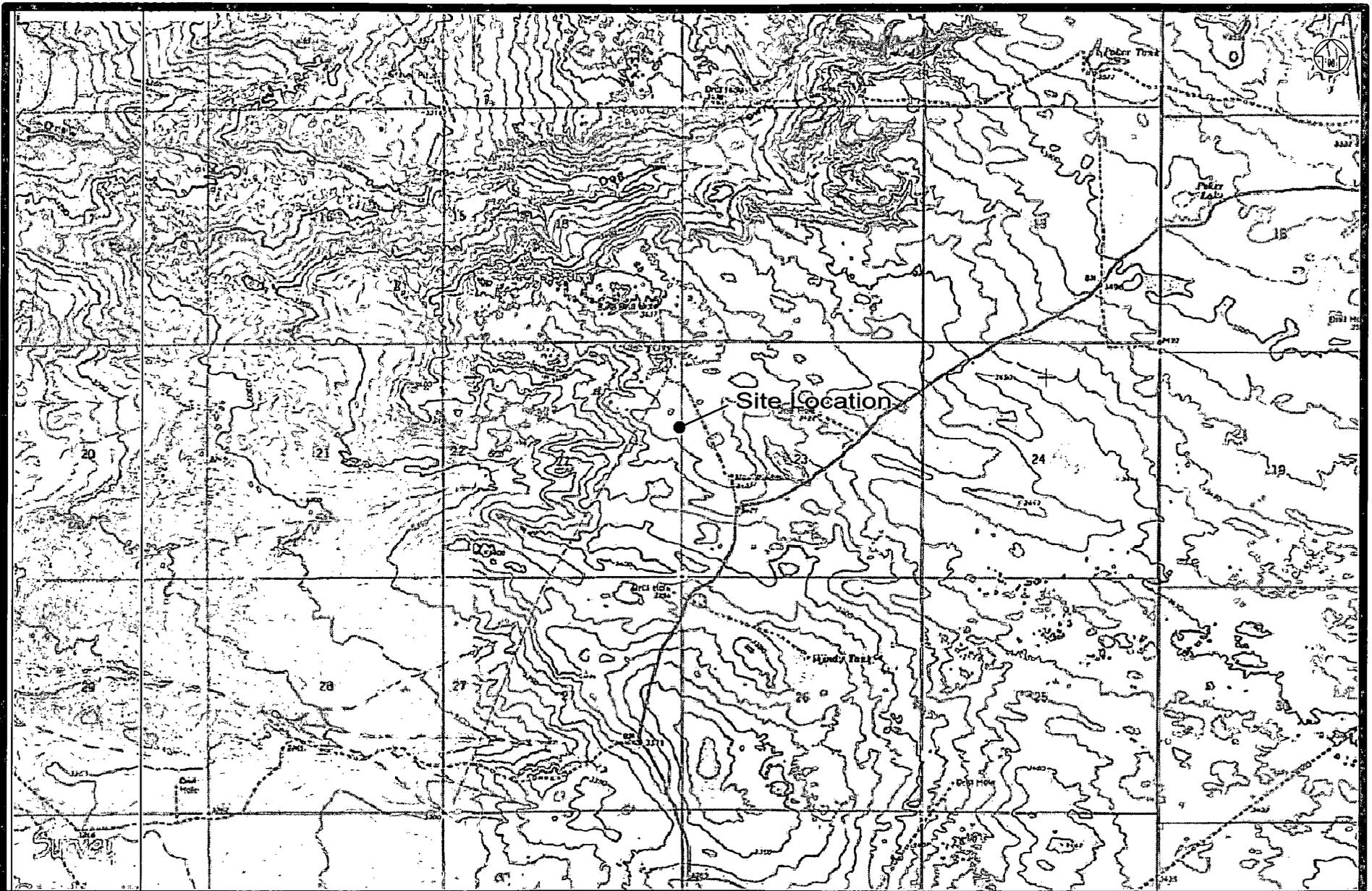
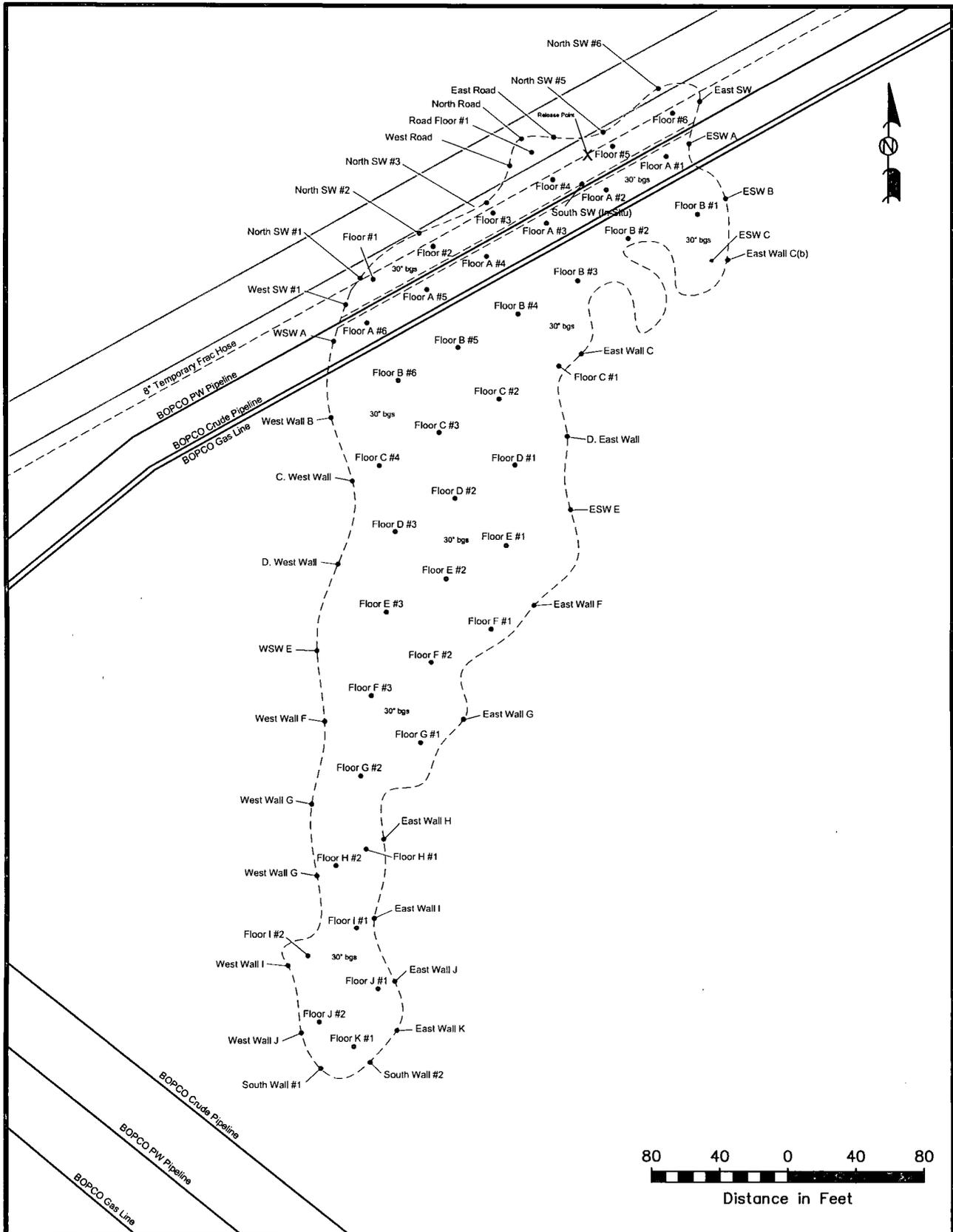


Figure 1  
 Site Location Map  
 BOPCO, LP  
 PLU #430 Frac Hose  
 Eddy County, New Mexico

Basin Environmental Service Technologies

Prep By: JWJ	Checked By: BJA
December 9, 2014	Scale 1"=3000'



**LEGEND:**

----- Excavation Extent	—— Road
—— Pipeline	----- Frac Hose
● Sample Location	X Release Point

**Figure 2**  
**Site & Sample Location Map**  
**BOPCO, L.P**  
**PLU #430 Frac Hose Release**  
**Eddy County, NM**  
**NMOCD Ref # 2RP-2466**

Basin Environmental Services Technologies

Scale: 1" = 80'	Drawn By: JWL	Checked By: BJA
December 13, 2012		

# TABLES

TABLE 1  
CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL

BOPCO, LP  
PLU #430H FRAC HOSE RELEASE  
EDDY COUNTY, NEW MEXICO  
NMOCD REFERENCE #: 2RP-2466

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 845-8021B, 5030				METHOD: 8015M				TOTAL CHLORIDE (mg/kg)
				BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL- BENZENE (mg/kg)	TOTAL XYLENES (mg/kg)	TOTAL BTEX (mg/kg)	GRO C <sub>1</sub> -C <sub>4</sub> (mg/kg)	DRO C <sub>1</sub> -C <sub>8</sub> (mg/kg)	ORO C <sub>9</sub> -C <sub>24</sub> (mg/kg)	
RP-1 @ 5"	5"	8/28/2014	Excavated	<0.050	<0.050	<0.050	<0.150	<0.300	<20.0	<20.0	<20.0	17,200
SP-1 @ 5"	5"	8/28/2014	Excavated	-	-	-	-	-	-	-	-	19,200
SP-2 @ 5"	5"	8/28/2014	Excavated	-	-	-	-	-	-	-	-	14,200
SP-3 @ 5"	5"	8/28/2014	Excavated	-	-	-	-	-	-	-	-	14,000
SP-4 @ 5"	5"	8/28/2014	Excavated	-	-	-	-	-	-	-	-	19,400
SP-5 @ 18"	18"	8/28/2014	Excavated	-	-	-	-	-	-	-	-	1,280
Floor A #1	30"	9/17/2014	In-Situ	-	-	-	-	-	-	-	-	96.0
Floor A #2	30"	9/17/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	64.0
Floor A #3	30"	9/17/2014	In-Situ	-	-	-	-	-	-	-	-	48.0
Floor A #4	30"	9/17/2014	In-Situ	-	-	-	-	-	-	-	-	80.0
Floor A #5	30"	9/17/2014	In-Situ	-	-	-	-	-	-	-	-	96.0
Floor A #6	30"	9/17/2014	In-Situ	-	-	-	-	-	-	-	-	64.0
Floor B #1	30"	9/17/2014	In-Situ	-	-	-	-	-	-	-	-	224
WSW A	24"	9/17/2014	In-Situ	-	-	-	-	-	-	-	-	<16.0
ESW A	24"	9/17/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<16.0
ESW B	24"	9/17/2014	In-Situ	-	-	-	-	-	-	-	-	560
ESW C	24"	9/17/2014	Excavated	-	-	-	-	-	-	-	-	1,040
Floor B #2	30"	9/25/2014	In-Situ	-	-	-	-	-	-	-	-	224
Floor B #3	30"	9/25/2014	In-Situ	-	-	-	-	-	-	-	-	4.6
Floor B #4	30"	9/25/2014	In-Situ	-	-	-	-	-	-	-	-	64.0
Floor B #5	30"	9/25/2014	In-Situ	-	-	-	-	-	-	-	-	432
Floor B #6	30"	9/25/2014	In-Situ	-	-	-	-	-	-	-	-	176
West Wall B	24"	10/9/2014	In-Situ	-	-	-	-	-	-	-	-	32.0
East Wall B	24"	10/9/2014	In-Situ	-	-	-	-	-	-	-	-	672
East Wall C	24"	10/9/2014	In-Situ	-	-	-	-	-	-	-	-	32.0
Floor C #1	30"	10/9/2014	In-Situ	-	-	-	-	-	-	-	-	80.0
Floor C #2	30"	10/9/2014	In-Situ	-	-	-	-	-	-	-	-	160
Floor C #3	30"	10/9/2014	In-Situ	-	-	-	-	-	-	-	-	704
Floor C #4	30"	10/9/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	336
C West Wall	24"	10/9/2014	In-Situ	-	-	-	-	-	-	-	-	384
D East Wall	24"	10/9/2014	In-Situ	-	-	-	-	-	-	-	-	<16.0
E West Wall	24"	10/9/2014	In-Situ	-	-	-	-	-	-	-	-	<16.0
Floor D #2	30"	10/9/2014	In-Situ	-	-	-	-	-	-	-	-	752
Floor D #3	30"	10/9/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	64.0
ESW E	24"	10/14/2014	In-Situ	-	-	-	-	-	-	-	-	64.0
WSW E	24"	10/14/2014	In-Situ	-	-	-	-	-	-	-	-	<16.0
Floor E #1	30"	10/14/2014	In-Situ	-	-	-	-	-	-	-	-	288
Floor E #2	30"	10/14/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	272
Floor E #3	30"	10/14/2014	In-Situ	-	-	-	-	-	-	-	-	336
Floor D #1	30"	10/14/2014	In-Situ	-	-	-	-	-	-	-	-	48.0
West Wall E	24"	10/20/2014	In-Situ	-	-	-	-	-	-	-	-	32.0
West Wall F	24"	10/20/2014	In-Situ	-	-	-	-	-	-	-	-	<16.0
East Wall G	24"	10/20/2014	In-Situ	-	-	-	-	-	-	-	-	176
Floor F #1	30"	10/20/2014	In-Situ	-	-	-	-	-	-	-	-	<16.0
Floor F #2	30"	10/20/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	368
Floor G #1	30"	10/20/2014	In-Situ	-	-	-	-	-	-	-	-	1,040
Floor G #2	30"	10/20/2014	In-Situ	-	-	-	-	-	-	-	-	32.0
East Wall Gb	24"	10/22/2014	In-Situ	-	-	-	-	-	-	-	-	<16.0
South Wall #1	24"	10/22/2014	In-Situ	-	-	-	-	-	-	-	-	32.0
South Wall #2	24"	10/22/2014	In-Situ	-	-	-	-	-	-	-	-	<16.0
East Wall F	24"	10/22/2014	In-Situ	-	-	-	-	-	-	-	-	<16.0
East Wall H	24"	10/22/2014	In-Situ	-	-	-	-	-	-	-	-	<16.0
East Wall I	24"	10/22/2014	In-Situ	-	-	-	-	-	-	-	-	<16.0
West Wall I	24"	10/22/2014	In-Situ	-	-	-	-	-	-	-	-	64.0
East Wall J	24"	10/22/2014	In-Situ	-	-	-	-	-	-	-	-	<16.0
East Wall K	24"	10/22/2014	In-Situ	-	-	-	-	-	-	-	-	<16.0
Floor H #1	30"	10/22/2014	In-Situ	-	-	-	-	-	-	-	-	32.0
Floor H #2	30"	10/22/2014	In-Situ	-	-	-	-	-	-	-	-	80.0
Floor I #1	30"	10/22/2014	In-Situ	-	-	-	-	-	-	-	-	<16.0
Floor I #2	30"	10/22/2014	In-Situ	-	-	-	-	-	-	-	-	32.0
Floor J #1	30"	10/22/2014	In-Situ	-	-	-	-	-	-	-	-	32.0
Floor J #2	30"	10/22/2014	In-Situ	-	-	-	-	-	-	-	-	32.0
Floor K #1	30"	10/22/2014	In-Situ	-	-	-	-	-	-	-	-	16.0
North SW #1	24"	11/10/2014	In-Situ	-	-	-	-	-	-	-	-	48.0
North SW #2	24"	11/10/2014	In-Situ	-	-	-	-	-	-	-	-	544
West SW #1	24"	11/10/2014	In-Situ	-	-	-	-	-	-	-	-	32.0
Floor #1	30"	11/10/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	560
North SW #3	24"	11/12/2014	In-Situ	-	-	-	-	-	-	-	-	160
Floor #3	30"	11/12/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	80.0
Floor #4	30"	11/12/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	64.0
East SW #4	24"	11/13/2014	In-Situ	-	-	-	-	-	-	-	-	336
North SW #4	24"	11/13/2014	In-Situ	-	-	-	-	-	-	-	-	176
North SW #5	24"	11/13/2014	In-Situ	-	-	-	-	-	-	-	-	60.0
North SW #6	24"	11/13/2014	In-Situ	-	-	-	-	-	-	-	-	528
Floor #5	30"	11/13/2014	In-Situ	-	-	-	-	-	-	-	-	80.0
Floor #6	30"	11/13/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	176
West Road	24"	11/13/2014	In-Situ	-	-	-	-	-	-	-	-	128
East Road	24"	11/13/2014	In-Situ	-	-	-	-	-	-	-	-	32.0
North Road	24"	11/13/2014	In-Situ	-	-	-	-	-	-	-	-	224
Road Floor #1	30"	11/13/2014	In-Situ	-	-	-	-	-	-	-	-	5,920
South SW (In-Situ)	24"	11/13/2014	In-Situ	-	-	-	-	-	-	-	-	1,000
NMOCD Criteria				10				50				5,000

\* = Not analyzed.

# **APPENDICES**

**Appendix A**  
**Release Notification and Corrective Action**  
**(Form 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

**NM OIL CONSERVATION**

Form C-141  
Revised August 8, 2011  
ARTESIA DISTRICT  
Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.  
SEP 02 2014

**Release Notification and Corrective Action RECEIVED**

*NAB1424633443*

<b>OPERATOR</b>		<input checked="" type="checkbox"/> Initial Report	<input type="checkbox"/> Final Report
Name of Company: BOPCO, L.P. <i>2100737</i>		Contact: Tony Savoie	
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220		Telephone No. 575-887-7329	
Facility Name: PLU-430H The release point was 2,984 ft. southwest of the well pad. The well is in section 14 the spill was in section 22		Facility Type: Exploration and Production	

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-42374
------------------------	------------------------	----------------------

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	22	24S	30E					Eddy

Latitude N 32.20524 Longitude W 103.86047

**NATURE OF RELEASE**

Type of Release: Produced water	Volume of Release: 400 bbls	Volume Recovered: None
Source of Release: 8" lay flat frac hose	Date and Hour of Occurrence 8/20/14 between 3:30 a.m. and 5:30 a.m.	Date and Hour of Discovery 8/20/14 at about 6:13 a.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher NMOCD and Jim Amos BLM	
By Whom? Tony Savoie	Date and Hour: 8/20/14 at 7:07 a.m.	
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.\*  
Produced water was being transferred from a BOPCO SWD line to a frac at the PLU-430H well. The Victaulic clamp that holds the lay-flat hose together failed due to a combination of loosened bolts on the clamp and a possible spike in pressure at or near the time of the clamp failure. The transfer pumps were shut down and the hose was pinched off to stop the water flow. The clamp was replaced along with a new section of hose.

Describe Area Affected and Cleanup Action Taken.\*  
The spill impacted approximately 1200 sq.ft. of caliche road and approximately 38,000 sq.ft. of pasture. Basin Env. Collected soil samples from several points along the flow path to determine the horizontal extent. The hand auger used in the sampling event could not penetrate the caliche that ranged from 6" to 18" in depth. The remediation will begin as soon as the BLM clears the Arch survey. The spill will be cleaned up in accordance to the NMOCD and BLM remediation guidelines.

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>Tony Savoie</i>		<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Tony Savoie		Approved by Environmental Specialist: <i>[Signature]</i>	
Title: Waste Management and Remediation Specialist		Approval Date: <i>9/3/14</i>	Expiration Date: <i>N/A</i>
E-mail Address: <i>tasavoie@basspet.com</i>		Conditions of Approval:	
Date: 9/2/14 Phone: 432-556-8730		Remediation per OCD Rule & Guidelines. <b>SUBMIT REMEDIATION PROPOSAL NO LATER THAN:</b>	
		Attached <input type="checkbox"/>	

\* Attach Additional Sheets If Necessary

*2RP-2466*

9/3/14

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

**NM OIL CONSERVATION**

ARTESIA DISTRICT Form C-141  
Revised August 8, 2011

**JAN 06 2015**  
Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

**RECEIVED**

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

Name of Company: BOPCO, L.P.	Contact: Tony Savoie
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: PLU-430H The release point was 2,984 ft. southwest of the well pad. The well is in section 14 the spill was in section 22 <b>(2RP-2466)</b>	Facility Type: Exploration and Production

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-42374
------------------------	------------------------	----------------------

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	22	24S	30E					Eddy

Latitude N 32.20524 Longitude W 103.86047

**NATURE OF RELEASE**

Type of Release: Produced water	Volume of Release: 400 bbls	Volume Recovered: None
Source of Release: 8" lay flat frac hose	Date and Hour of Occurrence 8/20/14 between 3:30 a.m. and 5:30 a.m.	Date and Hour of Discovery 8/20/14 at about 6:13 a.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher NMOCD and Jim Amos BLM	
By Whom? Tony Savoie	Date and Hour: 8/20/14 at 7:07 a.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

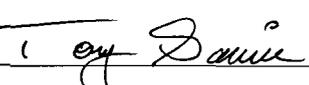
If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*  
Produced water was being transferred from a BOPCO SWD line to a frac at the PLU-430H well. The Victaulic clamp that holds the lay-flat hose together failed due to a combination of loosened bolts on the clamp and a possible spike in pressure at or near the time of the clamp failure. The transfer pumps were shut down and the hose was pinched off to stop the water flow. The clamp was replaced along with a new section of hose.

Describe Area Affected and Cleanup Action Taken.\*  
The spill impacted approximately 1200 sq.ft. of caliche road and approximately 38,000 sq.ft. of pasture. Basin Env. Collected soil samples from several points along the flow path to determine the horizontal extent. The hand auger used in the sampling event could not penetrate the caliche that ranged from 6" to 18" in depth.

**The spill was cleaned up in accordance to the NMOCD and BLM remediation guidelines. Please reference the attached Site Closure Request Dated December 2014 prepared by Basin Environmental.**

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: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Tony Savoie	Approved by Environmental Specialist:	
Title: Waste Management and Remediation Specialist	Approval Date:	Expiration Date:
E-mail Address: <a href="mailto:tasavoie@basspet.com">tasavoie@basspet.com</a>	Conditions of Approval:	
Date: 1/6/15	Phone: 432-556-8730	Attached <input type="checkbox"/>

\* Attach Additional Sheets If Necessary

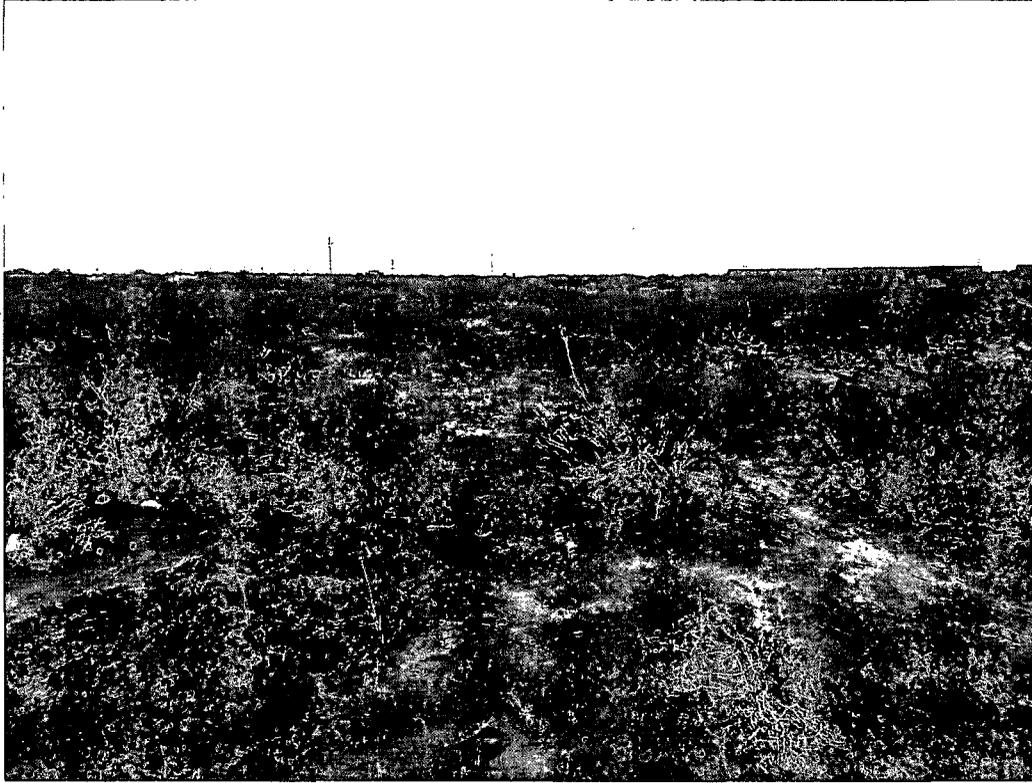
**Appendix B**  
**Photographs**



Photograph of the initial release at the PLU #430 Frac Hose Release Site.



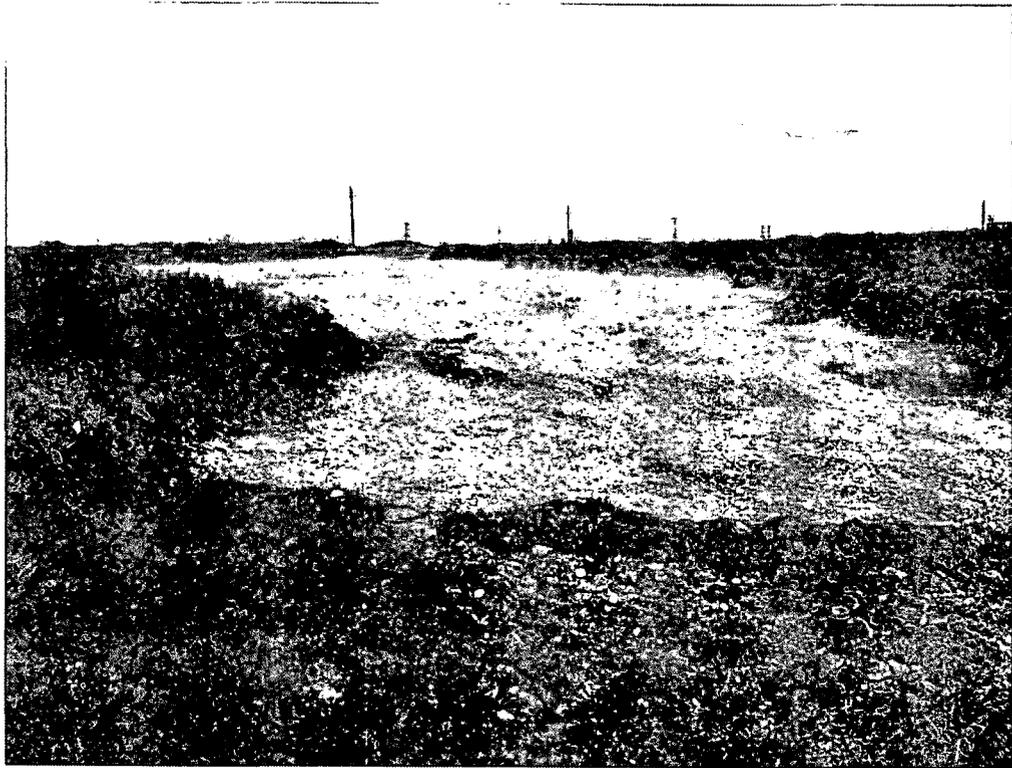
Photograph of the initial release at the PLU #430 Frac Hose Release Site.



Photograph of the initial release at the PLU #430 Frac Hose Release Site.



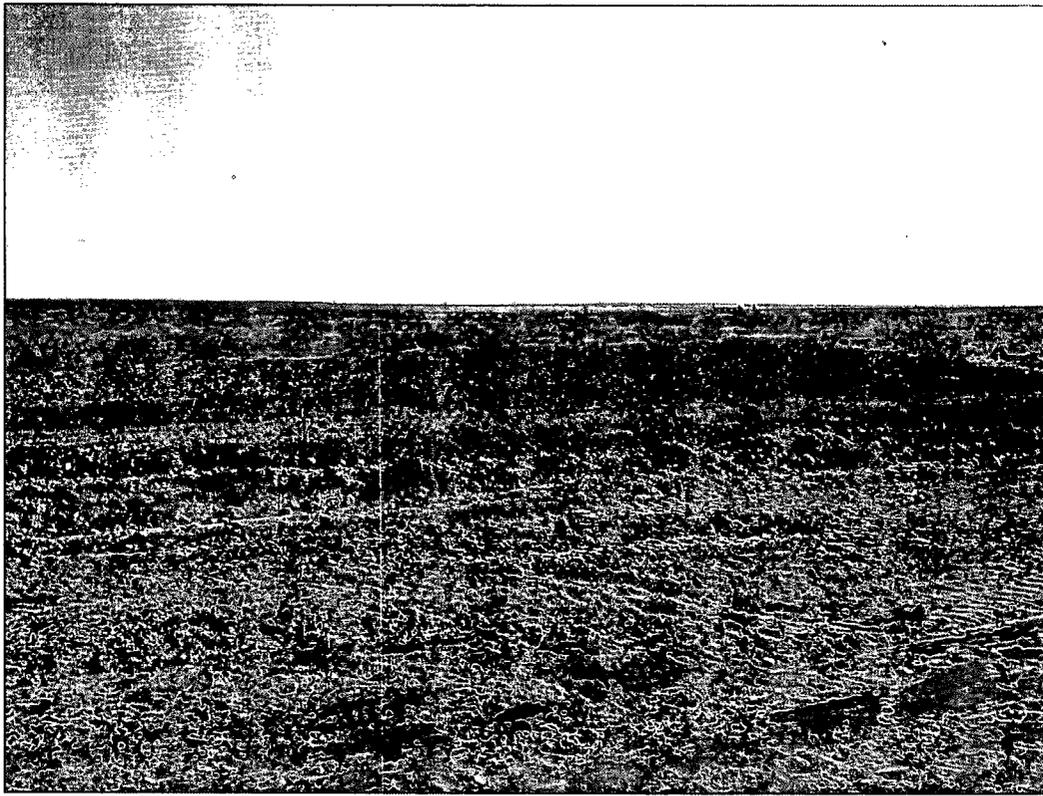
Photograph of the excavated area at the PLU #430 Frac Hose Release Site.



Photograph of the excavated area at the PLU #430 Frac Hose Release Site.



Photograph of the excavated area at the PLU #430 Frac Hose Release Site.



Photograph of the PLU #430 Frac Hose Release Site after remediation activities.



Photograph of the PLU #430 Frac Hose Release Site after remediation activities.

**Appendix C**  
**Laboratory Analytical Reports**

September 08, 2014

BEN J. ARGUJO

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU #430 FRAC SPILL

Enclosed are the results of analyses for samples received by the laboratory on 08/29/14 15:04.

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:**

 Basin Environmental Service  
 BEN J. ARGUIJO  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 08/29/2014  
 Reported: 09/08/2014  
 Project Name: PLU #430 FRAC SPILL  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 08/28/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: RP-1 @ 6" (H402682-01)**

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	09/04/2014	ND	1.93	96.5	2.00	4.03		
Toluene*	<0.050	0.050	09/04/2014	ND	1.74	86.9	2.00	4.69		
Ethylbenzene*	<0.050	0.050	09/04/2014	ND	1.87	93.4	2.00	6.04		
Total Xylenes*	<0.150	0.150	09/04/2014	ND	5.55	92.5	6.00	6.72		
Total BTEX	<0.300	0.300	09/04/2014	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	17200	16.0	09/04/2014	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	<20.0	20.0	09/03/2014	ND	182	91.2	200	3.74		
DRO >C10-C28	<20.0	20.0	09/03/2014	ND	185	92.5	200	12.0		
EXT DRO >C28-C35	<20.0	20.0	09/03/2014	ND						

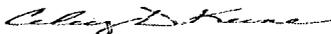
Surrogate: 1-Chlorooctane 101 % 65.2-140

Surrogate: 1-Chlorooctadecane 120 % 63.6-154

Cardinal Laboratories

\* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 BEN J. ARGUIJO  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

Received:	08/29/2014	Sampling Date:	08/28/2014
Reported:	09/08/2014	Sampling Type:	Soil
Project Name:	PLU #430 FRAC SPILL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: SP-1 @ 6" (H402682-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	19200	16.0	09/04/2014	ND	416	104	400	3.92		

**Sample ID: SP-2 @ 6" (H402682-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	14200	16.0	09/04/2014	ND	416	104	400	3.92		

**Sample ID: SP-3 @ 6" (H402682-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	14000	16.0	09/04/2014	ND	416	104	400	3.92		

**Sample ID: SP-4 @ 6" (H402682-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	19400	16.0	09/04/2014	ND	416	104	400	3.92		

**Sample ID: SP-5 @ 18" (H402682-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1280	16.0	09/04/2014	ND	416	104	400	3.92		

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



September 24, 2014

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU #430 FRAC SPILL

Enclosed are the results of analyses for samples received by the laboratory on 09/22/14 9:07.

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:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 09/22/2014  
 Reported: 09/24/2014  
 Project Name: PLU #430 FRAC SPILL  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 09/17/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: FLOOR A #1 (H402908-01)**

Chloride, SM4500CI-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	09/22/2014	ND	416	104	400	3.92		

**Sample ID: FLOOR A #2 (H402908-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	09/22/2014	ND	416	104	400	3.92		

**Sample ID: FLOOR A #3 (H402908-03)**

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/22/2014	ND	1.75	87.5	2.00	9.30		
Toluene*	<0.050	0.050	09/22/2014	ND	1.65	82.6	2.00	8.36		
Ethylbenzene*	<0.050	0.050	09/22/2014	ND	1.56	78.1	2.00	8.07		
Total Xylenes*	<0.150	0.150	09/22/2014	ND	4.64	77.4	6.00	8.19		
Total BTEX	<0.300	0.300	09/22/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	48.0	16.0	09/22/2014	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	

Cardinal Laboratories

\* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

Received:	09/22/2014	Sampling Date:	09/17/2014
Reported:	09/24/2014	Sampling Type:	Soil
Project Name:	PLU #430 FRAC SPILL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: FLOOR A #3 (H402908-03)**

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	09/22/2014	ND	183	91.5	200	1.25	
DRO >C10-C28	<10.0	10.0	09/22/2014	ND	190	94.9	200	4.20	
EXT DRO >C28-C35	<10.0	10.0	09/22/2014	ND					
<i>Surrogate: 1-Chlorooctane</i>									
	80.6 %	65.2-140							
<i>Surrogate: 1-Chlorooctadecane</i>									
	77.5 %	63.6-154							

**Sample ID: FLOOR A #4 (H402908-04)**

Chloride, SM4500CI-B	mg/kg	Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	09/22/2014	ND	416	104	400	3.92	

**Sample ID: FLOOR A #5 (H402908-05)**

Chloride, SM4500CI-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	09/22/2014	ND	416	104	400	3.92	

**Sample ID: FLOOR A #6 (H402908-06)**

Chloride, SM4500CI-B	mg/kg	Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	09/22/2014	ND	416	104	400	3.92	

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

Received:	09/22/2014	Sampling Date:	09/17/2014
Reported:	09/24/2014	Sampling Type:	Soil
Project Name:	PLU #430 FRAC SPILL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: FLOOR B #1 (H402908-07)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	224	16.0	09/22/2014	ND	416	104	400	3.92		

**Sample ID: WSW A (H402908-08)**

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	09/22/2014	ND	416	104	400	3.92		

**Sample ID: ESW A (H402908-09)**

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	09/22/2014	ND	416	104	400	3.92		

**Sample ID: ESW B (H402908-10)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	560	16.0	09/22/2014	ND	416	104	400	3.92		

**Sample ID: ESW C (H402908-11)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1040	16.0	09/22/2014	ND	416	104	400	3.92		

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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

101 East Marland, Hobbs, NM 88240

(575) 393-2326 FAX (575) 393-2476

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 6 of 7

Company Name: Basin Environmental Service Technologies, LLC		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>							
Project Manager: Joel Lowry		P.O. #:		Chloride TPH (8015M) BTEX (8021B) HOLD FOR TPH							
Address: P.O. Box 301		Company: BOPCO, LP									
City: Lovington State: NM Zip: 88260		Attn: Tony Savoie									
Phone #: (575)396-2378 Fax #: (575)396-1429		Address: 522 W. Marland									
Project #: Project Owner:		City: Carlsbad									
Project Name: PLU #430H Frac Spill		State: NM Zip: 88220									
Project Location: Eddy Co., NM		Phone #: (432)556-8730									
Sampler Name: <i>Soil sample</i>		Fax #:									

FOR LAB USE ONLY		GRAB OR (COMP. # CONTAINERS	MATRIX					PRESERV		SAMPLING		DATE	TIME	Chloride	TPH (8015M)	BTEX (8021B)	HOLD FOR TPH
Lab I.D.	Sample I.D.		GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:						
H402908																	
1	Floor A #1	g 1		x				x			9/17/14	1100	x				
2	Floor A #2	g 1		x				x			9/17/14	1105	x				
3	Floor A #3	g 1		x				x			9/17/14	1110	x	x	x		
4	Floor A #4	g 1		x				x			9/17/14	1115	x				
5	Floor A #5	g 1		x				x			9/17/14	1120	x				
6	Floor A #6	g 1		x				x			9/17/14	1125	x				
7	Floor B #1	g 1		x				x			9/17/14	1130	x				
8	WSW A	g 1		x				x			9/17/14	1135	x				
9	ESW A	g 1		x				x			9/17/14	1140	x				
10	ESW B	g 1		x				x			9/17/14	1145	x				

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Relinquished By: <i>Joel Lowry</i>	Date: 9/22/14	Received By: <i>Thomas Ryan</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By: <i>Thomas Ryan</i>	Time: 8:00	Received By: <i>Joel Lowry</i>	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One)	Date: 9/22/14	Time: 9:07	REMARKS:	
Sampler - UPS - Bus - Other:	-9.40	Sample Condition: Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>	HOLD FOR TPH	
		Checked: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Please email results to pm@basinenv.com, TASavoie@BassPet.com & SJWalters@BassPet.com	
		Checked BY: <i>JA</i>		

#54



# CARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240

(575) 393-2326 FAX (575) 393-2476

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Basin Environmental Service Technologies, LLC		<b>BILL TO</b>		ANALYSIS REQUEST																					
Project Manager: Joel Lowry		P.O. #:		Chloride TPH (8015M) BTEX (8021B) HOLD FOR TPH																					
Address: P.O. Box 301		Company: BOPCO, LP																							
City: Lovington State: NM Zip: 88260		Attn: Tony Savoie																							
Phone #: (575)396-2378 Fax #: (575)396-1429		Address: 522 W. Marland																							
Project #: Project Owner:		City: Carlsbad																							
Project Name: PLU #430H Frac Spill		State: NM Zip: 88220																							
Project Location: Eddy Co., NM		Phone #: (432)556-8730																							
Sampler Name: <i>SOIL LOWRY</i>		Fax #:																							
FOR LAB USE ONLY				MATRIX		PRESERV.		SAMPLING																	
Lab I.D.	Sample I.D.	(GRAB OR C)COMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME											
H402908													9/17/14	1150	x										
11	ESW C	g	1			x																			

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Relinquished By: <i>Joel Lowry</i>	Date: 9/22/14	Received By: <i>Thomas Ryan</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By: <i>Thomas Ryan</i>	Date: 9/22/14	Received By: <i>Jodi Benson</i>	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One)	Time: 8:00	Time: 9:07	REMARKS:	
Sampler - UPS - Bus - Other:	-9.4°C	Sample Condition: Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>	HOLD FOR TPH	
		Checked: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Please email results to pm@basinenv.com, TASavoie@BassPet.com & SJWalters@BassPet.com	
		Checked: Yes <input type="checkbox"/> No <input type="checkbox"/>		

#54

October 01, 2014

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU #430 H FRAC HOSE

Enclosed are the results of analyses for samples received by the laboratory on 09/30/14 10:00.

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

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

Received:	09/30/2014	Sampling Date:	09/26/2014
Reported:	10/01/2014	Sampling Type:	Soil
Project Name:	PLU #430 H FRAC HOSE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: FLOOR B #2 (H402974-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	224	16.0	10/01/2014	ND	400	100	400	0.00		

**Sample ID: FLOOR B #3 (H402974-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	416	16.0	10/01/2014	ND	400	100	400	0.00		

**Sample ID: FLOOR B #4 (H402974-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	10/01/2014	ND	400	100	400	0.00		

**Sample ID: FLOOR B #5 (H402974-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	432	16.0	10/01/2014	ND	400	100	400	0.00		

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

Received:	09/30/2014	Sampling Date:	09/26/2014
Reported:	10/01/2014	Sampling Type:	Soil
Project Name:	PLU #430 H FRAC HOSE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: FLOOR B #6 (H402974-05)**

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>176</b>	16.0	10/01/2014	ND	400	100	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

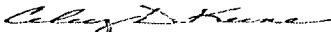
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported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

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Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



**CARDINAL LABORATORIES**

101 East Marland, Hobbs, NM 88240  
 (575) 393-2326 FAX (575) 393-2476

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

Page 5 of 5

Company Name: Basin Environmental Service Technologies, LLC				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																				
Project Manager: Joel Lowry				P.O. #:				Chloride TPH (8015M) BTEX (8021B) HOLD FOR TPH																				
Address: P.O. Box 301				Company: BOPCO, LP																								
City: Lovington		State: NM		Zip: 88260		Attn: Tony Savoie																						
Phone #: (575)396-2378		Fax #: (575)396-1429		Address: 522 W. Marland																								
Project #:		Project Owner:		City: Carlsbad																								
Project Name: PLU #430H Frac Hose				State: NM																Zip: 88220								
Project Location: Eddy Co., NM				Phone #: (432)556-8730																								
Sampler Name:				Fax #:																								
FOR LAB USE ONLY	Lab I.D.	Sample I.D.	GRAB OR (C)OMP.	# CONTAINERS	MATRIX				PRESERV.			SAMPLING																
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME													
	H402974																											
	1	Floor B #2	g	1			x				x			9/26/14	900	x												
	2	Floor B #3	g	1			x				x			9/26/14	1010	x												
	3	Floor B #4	g	1			x				x			9/26/14	1125	x												
	4	Floor B #5	g	1			x				x			9/26/14	1300	x												
	5	Floor B #6	g	1			x				x			9/26/14	1350	x												

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: <i>Jaljoury</i>		Date: 9/30/14	Received By: <i>Jodi Henson</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Time: 10:00				Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By:		Date:	Received By:	REMARKS:	
Time:				HOLD FOR TPH	
Delivered By: (Circle One)		Sample Condition		CHECKED BY: <i>[Signature]</i>	
Sampler - UPS - Bus - Other: 2c		Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>			
		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			

Please email results to pm@basinenv.com, TASavoie@BassPet.com & SJWalters@BassPet.com

#54



October 10, 2014

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU #430 H FRAC HOSE

Enclosed are the results of analyses for samples received by the laboratory on 10/07/14 12:20.

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,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 10/07/2014  
 Reported: 10/10/2014  
 Project Name: PLU #430 H FRAC HOSE  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 10/03/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Kathy Perez

**Sample ID: WEST WALL B (H403069-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/08/2014	ND	400	100	400	0.00		

**Sample ID: EAST WALL B (H403069-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	672	16.0	10/08/2014	ND	400	100	400	0.00		

**Sample ID: EAST WALL C (H403069-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/08/2014	ND	400	100	400	0.00		

**Sample ID: FLOOR C #1 (H403069-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	10/08/2014	ND	400	100	400	0.00		

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

Received:	10/07/2014	Sampling Date:	10/03/2014
Reported:	10/10/2014	Sampling Type:	Soil
Project Name:	PLU #430 H FRAC HOSE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Kathy Perez
Project Location:	EDDY COUNTY, NM		

**Sample ID: FLOOR C #2 (H403069-05)**

Chloride, SM4500CI-B	mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>160</b>	16.0	10/08/2014	ND	400	100	400	0.00	

**Sample ID: FLOOR C #3 (H403069-06)**

Chloride, SM4500CI-B	mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>704</b>	16.0	10/08/2014	ND	400	100	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 10/07/2014  
 Reported: 10/10/2014  
 Project Name: PLU #430 H FRAC HOSE  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 10/03/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Kathy Perez

**Sample ID: FLOOR C #4 (H403069-07)**

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/09/2014	ND	1.82	90.9	2.00	7.96		
Toluene*	<0.050	0.050	10/09/2014	ND	1.73	86.7	2.00	8.96		
Ethylbenzene*	<0.050	0.050	10/09/2014	ND	1.67	83.5	2.00	9.71		
Total Xylenes*	<0.150	0.150	10/09/2014	ND	5.00	83.4	6.00	9.86		
Total BTEX	<0.300	0.300	10/09/2014	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	336	16.0	10/08/2014	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	10/08/2014	ND	181	90.6	200	2.75		
DRO >C10-C28	<10.0	10.0	10/08/2014	ND	184	92.1	200	4.38		
EXT DRO >C28-C35	<10.0	10.0	10/08/2014	ND						

Surrogate: 1-Chlorooctane 98.3 % 47.2-157

Surrogate: 1-Chlorooctadecane 97.8 % 52.1-176

Cardinal Laboratories

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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**  
 101 East Marland, Hobbs, NM 88240  
 (575) 393-2326 FAX (575) 393-2476

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

Company Name: Basin Environmental Service Technologies				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																							
Project Manager: Joel Lowry				P.O. #:				Chloride TPH (8015M) BTEX (8021B) HOLD FOR TPH																							
Address: P.O. Box 301				Company: BOPCO, LP																											
City: Lovington State: NM Zip: 88260				Attn: Tony Savoie																											
Phone #: (575)396-2378 Fax #: (575)396-1429				Address:																											
Project #: Project Owner:				City:																											
Project Name: PLU #430 Frac Hose				State: NM Zip:																											
Project Location: Eddy Co., NM				Phone #: 432-556-8730																											
Sampler Name: Joel Lowry				Fax #:																											
FOR LAB USE ONLY																															
Lab I.D.		Sample I.D.		GRAB OR (C)OMP.	# CONTAINERS	MATRIX														PRESERV.		SAMPLING									
						GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE/COOL	OTHER:	DATE	TIME															
H403069				g	1		x					x		10/3/14	1150	x															
		West Wall B		g	1		x					x		10/3/14	1155	x															
		East Wall B		g	1		x					x		10/3/14	1200	x															
		East Wall C		g	1		x					x		10/3/14	1205	x															
		Floor C #1		g	1		x					x		10/3/14	1210	x															
		Floor C #2		g	1		x					x		10/3/14	1215	x															
		Floor C #3		g	1		x					x		10/3/14	1220	x	x	x													
		Floor C #4		g	1		x					x		10/3/14	1220	x	x	x													

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Relinquished By: <i>Joel Lowry</i>		Date: 10-7-14		Received By: <i>[Signature]</i>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:	
		Time: 8:00				Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:	
Relinquished By: <i>[Signature]</i>		Date: 10-7-14		Received By: <i>[Signature]</i>		REMARKS:  HOLD FOR TPH Please email results to pm@basinenv.com, TASavoie@BassPet.com & SJWalters@BassPet.com			
		Time: 12:20							
Delivered By: (Circle One)									
Sampler - UPS - Bus - Other:		3.6°C		Sample Condition					
				Cool Intact		CHECKED BY: <i>[Signature]</i>			
				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(Initials) <i>[Initials]</i>			
				<input type="checkbox"/> No <input type="checkbox"/> No					

#54



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

---

October 15, 2014

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU #430 H

Enclosed are the results of analyses for samples received by the laboratory on 10/09/14 16:11.

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,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 10/09/2014  
 Reported: 10/15/2014  
 Project Name: PLU #430 H  
 Project Number: NONE GIVEN  
 Project Location: EDDY CO. NM

 Sampling Date: 10/08/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Kathy Perez

**Sample ID: C. WEST WALL (H403114-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	384	16.0	10/13/2014	ND	400	100	400	0.00		

**Sample ID: D. EAST WALL (H403114-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/13/2014	ND	400	100	400	0.00		

**Sample ID: D. WEST WALL (H403114-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/13/2014	ND	400	100	400	0.00		

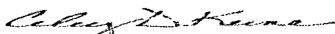
**Sample ID: FLOOR D #2 (H403114-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	752	16.0	10/13/2014	ND	400	100	400	0.00		

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 10/09/2014  
 Reported: 10/15/2014  
 Project Name: PLU #430 H  
 Project Number: NONE GIVEN  
 Project Location: EDDY CO. NM

 Sampling Date: 10/08/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Kathy Perez

**Sample ID: FLOOR D #3 (H403114-05)**

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/14/2014	ND	1.88	93.9	2.00	4.94		
Toluene*	<0.050	0.050	10/14/2014	ND	1.79	89.4	2.00	4.98		
Ethylbenzene*	<0.050	0.050	10/14/2014	ND	1.70	85.1	2.00	4.62		
Total Xylenes*	<0.150	0.150	10/14/2014	ND	5.06	84.3	6.00	4.69		
Total BTEX	<0.300	0.300	10/14/2014	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	10/13/2014	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	10/13/2014	ND	173	86.4	200	3.06		
DRO >C10-C28	<10.0	10.0	10/13/2014	ND	173	86.6	200	4.38		
EXT DRO >C28-C35	<10.0	10.0	10/13/2014	ND						

Surrogate: 1-Chlorooctane 93.9 % 47.2-157

Surrogate: 1-Chlorooctadecane 104 % 52.1-176

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

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

---

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**ARDINAL LABORATORIES**  
 101 East Marland, Hobbs, NM 88240  
 (575) 393-2326 FAX (575) 393-2476

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

Company Name:				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																		
Project Manager: Joel Lowry				P.O. #:				Chloride	TPH (8015M)	BTEX (8021B)	HOLD FOR TPH															
Address: P.O. Box 301				Company: BOPCO, LP																						
City: Lovington		State: NM		Zip: 88260		Attn: Tony Savoie																				
Phone #: (575)396-2378		Fax #: (575)396-1429		Address:																						
Project #:		Project Owner:		City:																						
Project Name: <del>Hudson Federal #1 Battery</del> <b>PLU #430 H *</b>				State: NM								Zip:														
Project Location: Eddy Co., NM				Phone #:																						
Sampler Name: <b>Matt Taylor</b>				Fax #:																						
FOR LAB USE ONLY																										
Lab I.D.	Sample I.D.	(GRAB OR C/COMP.	# CONTAINERS	MATRIX								PRESERV			SAMPLING											
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME												
H403114	C. West Wall	g	1		x					x			10/8/14	1210	x											
	D. East Wall	g	1		x					x			10/8/14	1220	x											
	D. West Wall	g	1		x					x			10/8/14	1230	x											
	Floor D #2	g	1		x					x			10/8/14	1300	x											
	Floor D #3	g	1		x					x			10/8/14	1310	x	x	x									

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Relinquished By: <i>Joel Lowry</i>	Date: <i>10/9/14</i>	Received By: <i>Daniel...</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Time: <i>3:15</i>	Date: <i>10/9/14</i>	Received By: <i>Matt Taylor</i>	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By: <i>Daniel...</i>	Date: <i>10/9/14</i>	Received By: <i>Matt Taylor</i>	REMARKS:	
Time: <i>4:11</i>			HOLD FOR TPH	
Delivered By: (Circle One) <i>UPS</i>	Sampler - UPS - Bus - Other: <i>-1.80</i>	Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	CHECKED BY: (Initials) <i>JP</i>	
			Please email results to pm@basinenv.com, TASavoie@BassPet.com & SJWalters@BassPet.com	
			<i>* Project name changed as per Joel. 10/14/14 ds</i>	

#51



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

---

October 17, 2014

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU #430H FRAC RELEASE

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

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

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, sweeping initial "C".

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

Received:	10/15/2014	Sampling Date:	10/14/2014
Reported:	10/17/2014	Sampling Type:	Soil
Project Name:	PLU #430H FRAC RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Kathy Perez
Project Location:	EDDY COUNTY, NM		

**Sample ID: ESW E (H403164-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	10/16/2014	ND	416	104	400	3.92		

**Sample ID: WSW E (H403164-02)**

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	10/16/2014	ND	416	104	400	3.92		

**Sample ID: FLOOR E #1 (H403164-03)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	288	16.0	10/16/2014	ND	416	104	400	3.92		

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 10/15/2014  
 Reported: 10/17/2014  
 Project Name: PLU #430H FRAC RELEASE  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 10/14/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Kathy Perez

**Sample ID: FLOOR E #2 (H403164-04)**

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/16/2014	ND	1.82	90.9	2.00	6.29		
Toluene*	<0.050	0.050	10/16/2014	ND	1.70	85.1	2.00	6.51		
Ethylbenzene*	<0.050	0.050	10/16/2014	ND	1.60	80.1	2.00	6.78		
Total Xylenes*	<0.150	0.150	10/16/2014	ND	4.74	79.0	6.00	7.31		
Total BTEX	<0.300	0.300	10/16/2014	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	272	16.0	10/16/2014	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	10/16/2014	ND	175	87.5	200	1.53		
DRO >C10-C28	<10.0	10.0	10/16/2014	ND	176	87.8	200	5.17		
EXT DRO >C28-C35	<10.0	10.0	10/16/2014	ND						

Surrogate: 1-Chlorooctane 91.8 % 47.2-157

Surrogate: 1-Chlorooctadecane 104 % 52.1-176

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

Received:	10/15/2014	Sampling Date:	10/14/2014
Reported:	10/17/2014	Sampling Type:	Soil
Project Name:	PLU #430H FRAC RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Kathy Perez
Project Location:	EDDY COUNTY, NM		

**Sample ID: FLOOR E #3 (H403164-05)**

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	10/16/2014	ND	416	104	400	3.92	

**Sample ID: FLOOR P #1 (H403164-06)**

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/16/2014	ND	416	104	400	3.92	

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

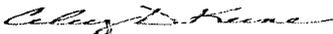
- QM-4X      The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
- ND            Analyte NOT DETECTED at or above the reporting limit
- RPD          Relative Percent Difference
- \*\*            Samples not received at proper temperature of 6°C or below.
- \*\*\*          Insufficient time to reach temperature.
- Chloride by 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





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

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October 27, 2014

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU #430H FRAC RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 10/22/14 13:25.

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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 10/22/2014  
 Reported: 10/27/2014  
 Project Name: PLU #430H FRAC RELEASE  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 10/20/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Kathy Perez

**Sample ID: WEST WALL F (H403253-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/23/2014	ND	400	100	400	0.00		

**Sample ID: WEST WALL G (H403253-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/23/2014	ND	400	100	400	0.00		

**Sample ID: EAST WALL G (H403253-03)**

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	10/23/2014	ND	400	100	400	0.00		

**Sample ID: FLOOR F #1 (H403253-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/23/2014	ND	400	100	400	0.00		

Cardinal Laboratories

\*—Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 10/22/2014  
 Reported: 10/27/2014  
 Project Name: PLU #430H FRAC RELEASE  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 10/20/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Kathy Perez

**Sample ID: FLOOR F #2 (H403253-05)**

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/24/2014	ND	1.99	99.3	2.00	2.06		
Toluene*	<0.050	0.050	10/24/2014	ND	1.89	94.6	2.00	1.81		
Ethylbenzene*	<0.050	0.050	10/24/2014	ND	1.79	89.3	2.00	2.72		
Total Xylenes*	<0.150	0.150	10/24/2014	ND	5.33	88.9	6.00	2.78		
Total BTEX	<0.300	0.300	10/24/2014	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	10/23/2014	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	10/23/2014	ND	179	89.6	200	4.26		
DRO >C10-C28	<10.0	10.0	10/23/2014	ND	195	97.5	200	7.17		
EXT DRO >C28-C35	11.2	10.0	10/23/2014	ND						

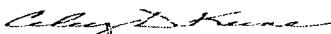
Surrogate: 1-Chlorooctane 100 % 47.2-157

Surrogate: 1-Chlorooctadecane 134 % 52.1-176

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

Received:	10/22/2014	Sampling Date:	10/20/2014
Reported:	10/27/2014	Sampling Type:	Soil
Project Name:	PLU #430H FRAC RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Kathy Perez
Project Location:	EDDY COUNTY, NM		

**Sample ID: FLOOR F #3 (H403253-06)**

Chloride, SM4500CI-B	mg/kg	Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	10/23/2014	ND	400	100	400	0.00	

**Sample ID: FLOOR G #1 (H403253-07)**

Chloride, SM4500CI-B	mg/kg	Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1040	16.0	10/23/2014	ND	400	100	400	0.00	

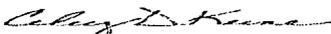
**Sample ID: FLOOR G #2 (H403253-08)**

Chloride, SM4500CI-B	mg/kg	Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/23/2014	ND	400	100	400	0.00	

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



October 27, 2014

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU #430H FRAC RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 10/23/14 10:05.

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:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

Received:	10/23/2014	Sampling Date:	10/22/2014
Reported:	10/27/2014	Sampling Type:	Soil
Project Name:	PLU #430H FRAC RELEASE	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: EAST WALL CB (H403264-01)**

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	10/23/2014	ND	400	100	400	3.92		

**Sample ID: SOUTH WALL #1 (H403264-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/23/2014	ND	400	100	400	3.92		

**Sample ID: SOUTH WALL #2 (H403264-03)**

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	10/23/2014	ND	400	100	400	3.92		

**Sample ID: EAST WALL F (H403264-04)**

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	10/23/2014	ND	400	100	400	3.92		

Cardinal Laboratories

\*--Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

Received:	10/23/2014	Sampling Date:	10/22/2014
Reported:	10/27/2014	Sampling Type:	Soil
Project Name:	PLU #430H FRAC RELEASE	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: EAST WALL H (H403264-05)**

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	10/23/2014	ND	400	100	400	3.92		

**Sample ID: WEST WALL H (H403264-06)**

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	10/23/2014	ND	400	100	400	3.92		

**Sample ID: EAST WALL I (H403264-07)**

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	10/23/2014	ND	400	100	400	3.92		

**Sample ID: WEST WALL I (H403264-08)**

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	10/23/2014	ND	400	100	400	3.92		

**Sample ID: EAST WALL J (H403264-09)**

Chloride, SM4500CI-B	mg/kg		Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<b>64.0</b>	16.0	10/23/2014	ND	400	100	400	3.92		

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

Received:	10/23/2014	Sampling Date:	10/22/2014
Reported:	10/27/2014	Sampling Type:	Soil
Project Name:	PLU #430H FRAC RELEASE	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: WEST WALL J (H403264-10)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/23/2014	ND	400	100	400	3.92		

**Sample ID: EAST WALL K (H403264-11)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/23/2014	ND	400	100	400	3.92		

**Sample ID: FLOOR H #1 (H403264-12)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/23/2014	ND	400	100	400	3.92		

**Sample ID: FLOOR H #2 (H403264-13)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	10/23/2014	ND	400	100	400	3.92		

**Sample ID: FLOOR I #1 (H403264-14)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/23/2014	ND	400	100	400	3.92		

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

Received:	10/23/2014	Sampling Date:	10/22/2014
Reported:	10/27/2014	Sampling Type:	Soil
Project Name:	PLU #430H FRAC RELEASE	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: FLOOR I #2 (H403264-15)**

Chloride, SM4500CI-B	mg/kg	Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/23/2014	ND	400	100	400	3.92	

**Sample ID: FLOOR J #1 (H403264-16)**

Chloride, SM4500CI-B	mg/kg	Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/23/2014	ND	400	100	400	3.92	

**Sample ID: FLOOR J #2 (H403264-17)**

Chloride, SM4500CI-B	mg/kg	Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/23/2014	ND	400	100	400	3.92	

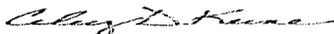
**Sample ID: FLOOR K #1 (H403264-18)**

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	10/23/2014	ND	400	100	400	3.92	

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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Cardinal Laboratories

\*=Accredited Analyte

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Caley D. Keene, Lab Director/Quality Manager



**ARDINAL LABORATORIES**  
 101 East Marland, Hobbs, NM 88240  
 (575) 393-2326 FAX (575) 393-2476

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

Company Name:				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																			
Project Manager: Joel Lowry				P.O. #:				Chloride TPH (8015M) BTEX (8021B) HOLD FOR TPH																			
Address: P.O. Box 301				Company: BOPCO, LP																							
City: Lovington		State: NM		Zip: 88260		Attn: Tony Savoie																					
Phone #: (575)396-2378		Fax #: (575)396-1429		Address:																							
Project #:		Project Owner:		City:																							
Project Name: PLU #430H Frac Release				State: NM																Zip:							
Project Location: Eddy Co., NM				Phone #:																							
Sampler Name: Steve Taylor				Fax #:																							
FOR LAB USE ONLY																											
Lab I.D.		Sample I.D.		(GRAB OR (C)OMP. # CONTAINERS)		MATRIX														PRESERV.		SAMPLING					
						GROUNDWATER			ACID/BASE:		DATE		TIME														
						WASTEWATER			ICE / COOL																		
						SOIL			OTHER:																		
						OIL																					
						SLUDGE																					
						OTHER:																					
H403264																											
1 East Wall Cb				g 1		x			x		10/22/14		1005		x												
2 South Wall #1				g 1		x			x		10/22/14		1010		x												
3 South Wall #2				g 1		x			x		10/22/14		1015		x												
4 East Wall F				g 1		x			x		10/22/14		1020		x												
5 East Wall H				g 1		x			x		10/22/14		1025		x												
6 West Wall H				g 1		x			x		10/22/14		1030		x												
7 East Wall I				g 1		x			x		10/22/14		1035		x												
8 West Wall I				g 1		x			x		10/22/14		1040		x												
9 East Wall J				g 1		x			x		10/22/14		1045		x												
10 West Wall J				g 1		x			x		10/22/14		1050		x												

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Relinquished By: <i>Joel Lowry</i>		Date: 10-23-14	Received By: <i>Daley Sefka</i>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:	
		Time: 9:26am			Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:	
Relinquished By: <i>Daley Sefka</i>		Date: 10-23-14	Received By: <i>Jodi Henson</i>		REMARKS:  HOLD FOR TPH Please email results to pm@basinenv.com, TASavoie@BassPet.com & SJWalters@BassPet.com			
		Time: 10:05						
Delivered By: (Circle One)								
Sampler - UPS - Bus - Other:		Sample Condition		CHECKED BY:				
		Cool Intact		(Initials)				
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<i>JH</i>				
		10:20						

#54



November 14, 2014

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU #430 H FRAC HOSE

Enclosed are the results of analyses for samples received by the laboratory on 11/11/14 13:15.

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

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

Received:	11/11/2014	Sampling Date:	11/10/2014
Reported:	11/14/2014	Sampling Type:	Soil
Project Name:	PLU #430 H FRAC HOSE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Kathy Perez
Project Location:	EDDY COUNTY, NM		

**Sample ID: NORTH SW #1 (H403456-01)**

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	11/12/2014	ND	400	100	400	3.92	

**Sample ID: NORTH SW #2 (H403456-02)**

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	544	16.0	11/12/2014	ND	400	100	400	3.92	

**Sample ID: WEST SW #1 (H403456-03)**

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	11/12/2014	ND	400	100	400	3.92	

**Sample ID: FLOOR #1 (H403456-04)**

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	11/12/2014	ND	400	100	400	3.92	

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

Received:	11/11/2014	Sampling Date:	11/10/2014
Reported:	11/14/2014	Sampling Type:	Soil
Project Name:	PLU #430 H FRAC HOSE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Kathy Perez
Project Location:	EDDY COUNTY, NM		

**Sample ID: FLOOR #2 (H403456-05)**

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/13/2014	ND	1.74	87.0	2.00	10.0		
Toluene*	<0.050	0.050	11/13/2014	ND	1.65	82.6	2.00	10.2		
Ethylbenzene*	<0.050	0.050	11/13/2014	ND	1.61	80.5	2.00	10.3		
Total Xylenes*	<0.150	0.150	11/13/2014	ND	4.82	80.4	6.00	10.9		
Total BTEX	<0.300	0.300	11/13/2014	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 93.5 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	560	16.0	11/12/2014	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	11/12/2014	ND	188	93.9	200	0.555		
DRO >C10-C28	<10.0	10.0	11/12/2014	ND	196	98.2	200	2.55		
EXT DRO >C28-C35	<10.0	10.0	11/12/2014	ND						

Surrogate: 1-Chlorooctane 109 % 47.2-157

Surrogate: 1-Chlorooctadecane 117 % 52.1-176

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

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

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Celey D. Keene, Lab Director/Quality Manager



November 17, 2014

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU #430 H FRAC HOSE

Enclosed are the results of analyses for samples received by the laboratory on 11/13/14 11:20.

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).

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 11/13/2014  
 Reported: 11/17/2014  
 Project Name: PLU #430 H FRAC HOSE  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 11/12/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Celey D. Keene

**Sample ID: NORTH SW #3 (H403489-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	11/14/2014	ND	400	100	400	3.92		

**Sample ID: FLOOR #3 (H403489-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	11/14/2014	ND	400	100	400	3.92		

**Sample ID: FLOOR #4 (H403489-03)**

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/13/2014	ND	1.83	91.3	2.00	6.10		
Toluene*	<0.050	0.050	11/13/2014	ND	1.77	88.4	2.00	5.96		
Ethylbenzene*	<0.050	0.050	11/13/2014	ND	1.71	85.3	2.00	7.07		
Total Xylenes*	<0.150	0.150	11/13/2014	ND	5.12	85.3	6.00	7.69		
Total BTEX	<0.300	0.300	11/13/2014	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 98.6 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	11/14/2014	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

Received:	11/13/2014	Sampling Date:	11/12/2014
Reported:	11/17/2014	Sampling Type:	Soil
Project Name:	PLU #430 H FRAC HOSE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Celey D. Keene
Project Location:	EDDY COUNTY, NM		

**Sample ID: FLOOR #4 (H403489-03)**

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	11/14/2014	ND	186	92.8	200	0.855	
DRO >C10-C28	<10.0	10.0	11/14/2014	ND	188	94.1	200	1.14	
EXT DRO >C28-C35	<10.0	10.0	11/14/2014	ND					
<hr/>									
Surrogate: 1-Chlorooctane	118 %	47.2-157							
Surrogate: 1-Chlorooctadecane	129 %	52.1-176							

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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- 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





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

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November 18, 2014

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU #430 H FRAC HOSE

Enclosed are the results of analyses for samples received by the laboratory on 11/14/14 10:40.

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,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

Received:	11/14/2014	Sampling Date:	11/13/2014
Reported:	11/18/2014	Sampling Type:	Soil
Project Name:	PLU #430 H FRAC HOSE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: EAST SW (H403514-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	336	16.0	11/17/2014	ND	400	100	400	3.92		

**Sample ID: NORTH SW #4 (H403514-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	11/17/2014	ND	400	100	400	3.92		

**Sample ID: NORTH SW #5 (H403514-03)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	11/17/2014	ND	400	100	400	3.92		

**Sample ID: NORTH SW #6 (H403514-04)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	11/17/2014	ND	400	100	400	3.92		

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

Received:	11/14/2014	Sampling Date:	11/13/2014
Reported:	11/18/2014	Sampling Type:	Soil
Project Name:	PLU #430 H FRAC HOSE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: FLOOR #5 (H403514-05)**

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	528	16.0	11/17/2014	ND	400	100	400	3.92	

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

Received:	11/14/2014	Sampling Date:	11/13/2014
Reported:	11/18/2014	Sampling Type:	Soil
Project Name:	PLU #430 H FRAC HOSE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: FLOOR #6 (H403514-06)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2014	ND	1.83	91.4	2.00	8.21	
Toluene*	<0.050	0.050	11/18/2014	ND	1.76	88.2	2.00	6.70	
Ethylbenzene*	<0.050	0.050	11/18/2014	ND	1.75	87.4	2.00	6.66	
Total Xylenes*	<0.150	0.150	11/18/2014	ND	5.27	87.9	6.00	6.78	
Total BTEX	<0.300	0.300	11/18/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 99.0 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	11/17/2014	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/14/2014	ND	212	106	200	1.79	
DRO >C10-C28	<10.0	10.0	11/14/2014	ND	213	107	200	1.12	
EXT DRO >C28-C35	<10.0	10.0	11/14/2014	ND					

Surrogate: 1-Chlorooctane 106 % 47.2-157

Surrogate: 1-Chlorooctadecane 105 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 JOEL LOWRY  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 11/14/2014  
 Reported: 11/18/2014  
 Project Name: PLU #430 H FRAC HOSE  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 11/13/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: WEST ROAD (H403514-07)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	11/17/2014	ND	400	100	400	3.92		

**Sample ID: EAST ROAD (H403514-08)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	11/17/2014	ND	400	100	400	3.92		

**Sample ID: NORTH ROAD (H403514-09)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	11/17/2014	ND	400	100	400	3.92		

**Sample ID: ROAD FLOOR #1 (H403514-10)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	224	16.0	11/17/2014	ND	400	100	400	3.92		

**Sample ID: SOUTH SW (IN-SITU) (H403514-11)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5920	16.0	11/17/2014	ND	400	100	400	3.92		

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

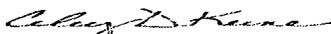
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported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

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