

# *Basin Environmental Service Technologies, LLC*

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## **REMEDIATION SUMMARY AND SITE CLOSURE REQUEST**

**BOPCO, LP  
POKER LAKE UNIT #387 FRAC SPILL  
Eddy County, New Mexico  
Unit Letter "D" (NW/NW), Section 12, Township 25 South, Range 30 East  
Latitude 32.14954° North, Longitude 103.84270° West  
NMOCD Reference #2RP-2077**

Prepared For:

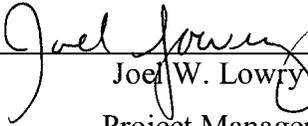
BOPCO, LP  
522 W. Mermod, Suite 704  
Carlsbad, New Mexico 88220



Prepared By:

Basin Environmental Service Technologies, LLC  
3100 Plains Highway  
Lovington, New Mexico 88260

**November 2013**

  
\_\_\_\_\_  
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 & Site Closure Request* for the release site known as Poker Lake Unit (PLU) #387 Frac Spill. The legal description of the release site is Unit Letter "D" (NW/NW), Section 12, Township 25 South, Range 30 East, in Eddy County, New Mexico. The geographic coordinates of the release site are 32.14954° North latitude and 103.84270° 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 November 18, 2013, BOPCO discovered a release had occurred on an eight-inch (8") frac hose being used to transfer produced water from the Harrison SWD to the PLU #387H. The release was attributed to a small damaged area near one of the Victaulic connections. The release was reported to the New Mexico Oil Conservation Division (NMOCD) Artesia District Office and BLM immediately upon discovery. The "Release Notification and Corrective Action" (Form C-141) indicated approximately sixty-five barrels (65 bbls) of produced water was released, affecting approximately sixteen hundred square feet (1,600 ft<sup>2</sup>) of pasture land. During initial response activities, the affected segment of hose was repaired and a vacuum truck was utilized to recover approximately fifteen barrels (15 bbls) of produced water. 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 12, Township 25 South, Range 30 East. A depth to groundwater reference map utilized by the NMOCD indicates groundwater should be encountered at approximately three hundred and eighty feet (380') 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 1,000 feet 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 1,000 feet 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 #387 Frac Spill 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)
- BTEX – 50 mg/Kg (ppm)
- 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 November 19, 2013, Basin began excavating impacted soil at the release site. The floor and sidewalls of the excavation were advanced until field tests suggested concentrations of benzene, toluene, ethylbenzene and xylene (BTEX), total petroleum hydrocarbons (TPH) and chloride were less than NMOCD Regulatory Standards. Confirmation soil samples were collected at fifty-foot (50') intervals and submitted to Cardinal Laboratories of Hobbs, New Mexico, for analysis of BTEX concentrations in accordance with EPA Method SW-846-8021b, TPH concentrations in accordance with EPA Method SW-846-8015M and/or chloride in accordance with EPA Method 4500 Cl-b. A summary of "Concentrations of Benzene, BTEX, TPH and Chloride in Soil" is provided in Table 1. A "Site and Sample Location Map" is provided as Figure 2. Laboratory analytical reports are provided as Appendix C.

On November 26, 2013, seven (7) confirmation soil samples (NSW #1, ESW #1, Floor #1, WSW #1, ESW #2, Floor #2 and WSW #2) were collected from the floor and sidewalls of the excavation and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 96.0 ppm for soil sample ESW #2 to <16.0 ppm for soil sample WSW#1. Soil samples Floor #1 and Floor #2 were also analyzed for concentrations of TPH and BTEX, which were determined to be less than the appropriate laboratory method detection limit (MDL). Chloride, TPH and BTEX concentrations were below NMOCD Regulatory Standards in each of the submitted soil samples. The excavation was advanced toward the south.

On December 3, 2013, nine (9) confirmation soil samples (West Wall C, West Wall D, West Wall E, East Wall C, East Wall D, East Wall E, Floor C, Floor D and Floor E) were collected from the floor and sidewalls of the excavation and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 240 ppm for soil sample Floor E to <16.0 ppm for soil samples West Wall D, East Wall C, East Wall D, East Wall E and Floor D. Soil samples Floor C, Floor D, and Floor E were also analyzed for concentrations of TPH and BTEX, which were determined to be less than the appropriate laboratory MDL. Chloride, TPH and BTEX concentrations were below NMOCD Regulatory Standards in each of the submitted soil samples. The excavation was advanced toward the south.

On December 4, 2013, four (4) confirmation soil samples (South Wall, RP West Wall, RP East Wall and RP Floor) were collected from the floor and sidewalls of the excavation and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 144 ppm for soil sample South Wall to <16.0 ppm for soil samples RP East Wall and RP Floor. Soil sample RP Floor was also analyzed for concentrations of TPH and BTEX, which were determined to be 19.4 ppm and less than the laboratory MDL, respectively. Chloride, TPH and BTEX concentrations were below NMOCD Regulatory Standards in each of the submitted soil samples.

Between December 3 and 6, 2013, approximately one thousand, twenty cubic yards (1,020 yd<sup>3</sup>) of impacted material was transported to Lea Land, LLC (NMOCD Permit #WM-01-035) for disposal.

The final dimensions of the excavation were approximately eight feet (8') to fifteen feet (15') in width, two hundred and seventy feet (270') in length and three feet (3') to ten feet (10') in depth.

On December 9, 2013, upon receiving laboratory analytical data from confirmation soil samples and NMOCD permission, Basin began backfilling the excavation with locally purchased, non-impacted material. Following backfilling, areas affected by the remediation activities were contoured to fit the surrounding topography.

The site will be reseeded at a time 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**

Soil samples collected from the floor and sidewalls of the PLU #387 Frac Spill excavation were analyzed by an NMOCD-approved laboratory. Laboratory analytical results indicated concentrations of BTEX, TPH and chloride were below NMOCD Regulatory Standards in each of the submitted soil samples. Based on these laboratory analytical results, Basin recommends BOPCO provide the NMOCD Artesia District Office and BML a copy of this *Remediation Summary and Site Closure Request* and request the NMOCD grant site closure to the PLU #387 Frac Spill 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:**

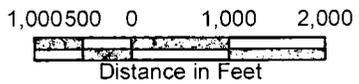
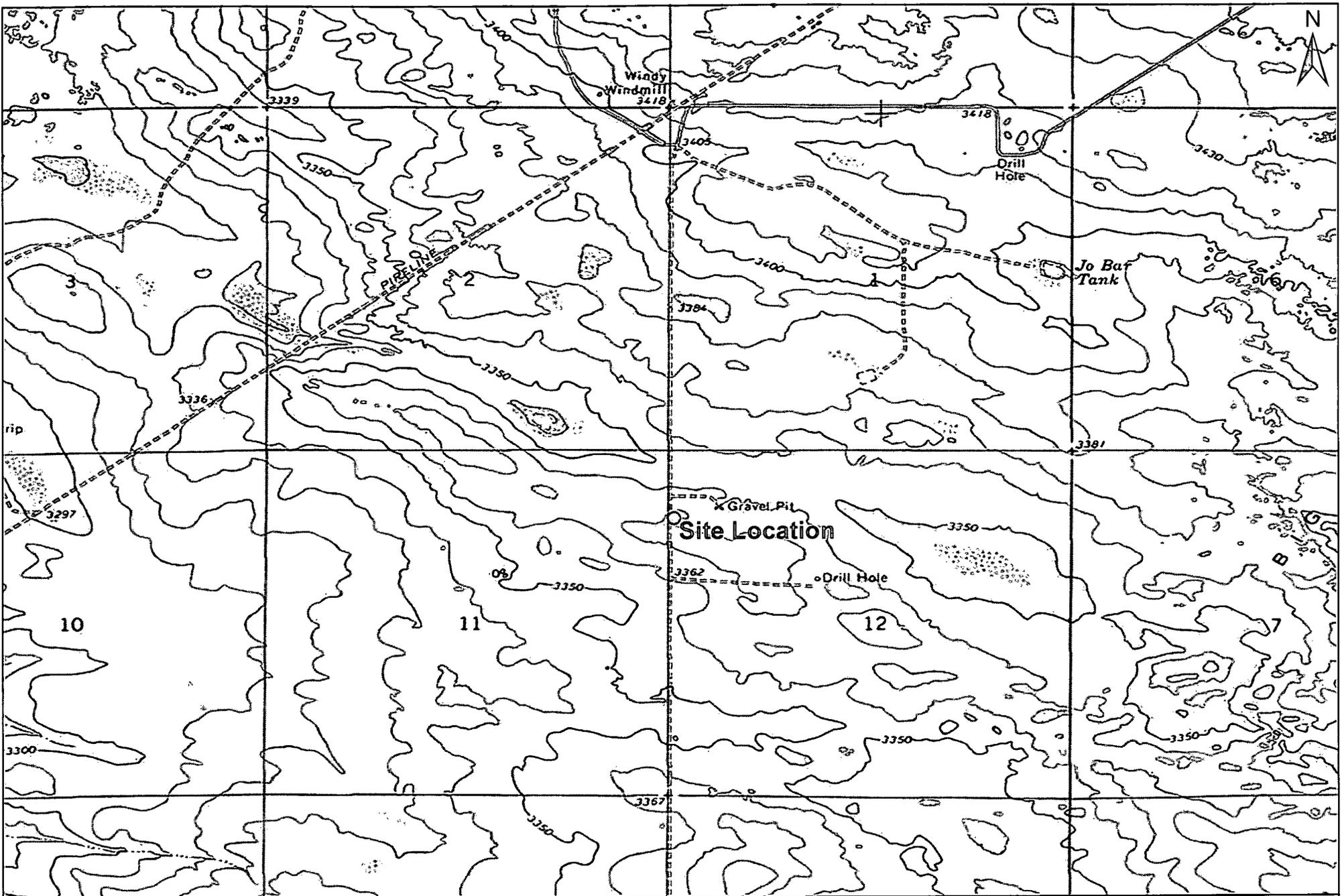
Copy 1: Mike Bratcher  
New Mexico Energy, Minerals and Natural Resources Department  
Oil Conservation Division (District 2)  
1301 E. Grand Avenue  
Artesia, NM 88210

Copy 2: James Amos  
Bureau of Land Management  
602 E. Greene Street  
Carlsbad, New Mexico 88220

Copy 3: Tony Savoie  
BOPCO, LP  
522 W. Mermod, Suite 704  
Carlsbad, NM 88220

Copy 4: Basin Environmental Service Technologies, LLC  
P.O. Box 301  
Lovington, NM 88260

## **FIGURES**

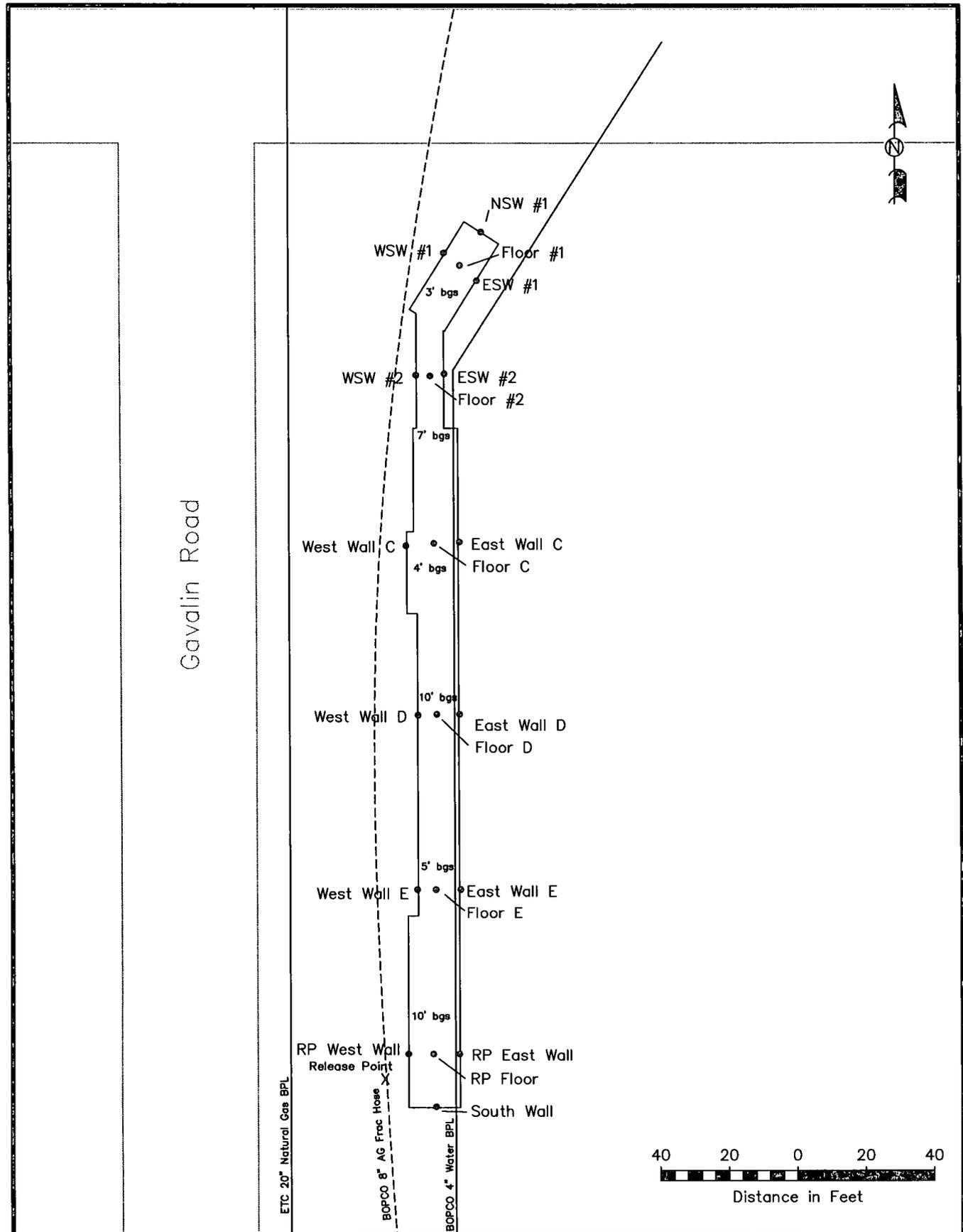


**Figure 1**  
**Site Location Map**  
 BOPCO, LP  
 PLU-387H  
 Eddy County, New Mexico  
 NMOCD Reference #: 2RP-2077



Basin Environmental Service Technologies, LLC  
 3100 Plains Hwy.  
 Lovington, NM 88260

Drawn By: BJA	Checked By: BRB
December 12, 2013	Scale: 1" = 2,000'



**LEGEND:**

- Excavation Extent
- Pipeline
- Sample Location
- Road
- Frac Hose

Figure 2  
 Site & Sample Location Map  
 BOPCO, L.P.  
 PLU #387 Frac Spill  
 Eddy County, NM

Basin Environmental Services

Scale: 1" = 40'	Drawn By: JWL	Prepared By: BJA
December 13, 2012		

# TABLES

TABLE 1

## CONCENTRATIONS OF BENZENE, BTEX, TPH &amp; CHLORIDES IN SOIL

BOPCO, LP  
 PLU #387 FRAC SPILL  
 EDDY COUNTY, NEW MEXICO

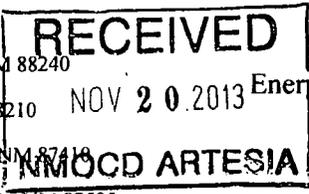
SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030					METHOD: 8015M			TOTAL TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg)	4500 CI-B CHLORIDE (mg/Kg)	
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C <sub>6</sub> -C <sub>12</sub> (mg/Kg)	DRO C <sub>12</sub> -C <sub>28</sub> (mg/Kg)	ORO C <sub>28</sub> -C <sub>35</sub> (mg/Kg)			
NSW #1	2'	11/26/2013	In-Situ	-	-	-	-	-	-	-	-	-	-	32.0
ESW #1	2'	11/26/2013	In-Situ	-	-	-	-	-	-	-	-	-	-	48.0
Floor #1	3'	11/26/2013	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
WSW #1	2'	11/26/2013	In-Situ	-	-	-	-	-	-	-	-	-	-	<16.0
ESW #2	6'	11/26/2013	In-Situ	-	-	-	-	-	-	-	-	-	-	96.0
Floor #2	7'	11/26/2013	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
WSW #2	6'	11/26/2013	In-Situ	-	-	-	-	-	-	-	-	-	-	48.0
West Wall C	3'	12/3/2013	In-Situ	-	-	-	-	-	-	-	-	-	-	112
West Wall D	9'	12/3/2013	In-Situ	-	-	-	-	-	-	-	-	-	-	<16.0
West Wall E	4'	12/3/2013	In-Situ	-	-	-	-	-	-	-	-	-	-	176
East Wall C	3'	12/3/2013	In-Situ	-	-	-	-	-	-	-	-	-	-	<16.0
East Wall D	9'	12/3/2013	In-Situ	-	-	-	-	-	-	-	-	-	-	<16.0
East Wall E	4'	12/3/2013	In-Situ	-	-	-	-	-	-	-	-	-	-	<16.0
Floor C	4'	12/3/2013	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
Floor D	10'	12/3/2013	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
Floor E	5'	12/3/2013	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	240.0
South Wall	8'	12/4/2013	In-Situ	-	-	-	-	-	-	-	-	-	-	144
RP West Wall	9'	12/4/2013	In-Situ	-	-	-	-	-	-	-	-	-	-	32.0
RP East Wall	9'	12/4/2013	In-Situ	-	-	-	-	-	-	-	-	-	-	<16.0
RP Floor	10'	12/4/2013	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	19.4	19.4	19.4	<16.0
<b>NMOCD Criteria</b>				<b>10</b>				<b>50</b>					<b>5,000</b>	<b>1,000</b>

- = 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 87418  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505



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

Form C-141  
Revised August 8, 2011

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

**Release Notification and Corrective Action**

*nJMW1333031416*

**OPERATOR**  Initial Report  Final Report

Name of Company: BOPCO, L.P. <i>260737</i>	Contact: Tony Savoie
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: PLU-387H, the spill location is 1.42 miles N.W. of the well location.	Facility Type: Exploration and Production

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-41185
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**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	12	25S	30E					Eddy

Latitude N 32.14954 Longitude W 103.84270

**NATURE OF RELEASE**

Type of Release: Produced Water	Volume of Release: 65 Bbls	Volume Recovered: 15 Bbls
Source of Release: 8" Frac Hose	Date and Hour of Occurrence: 11/18/13 at approximately 3:10 p.m.	Date and Hour of Discovery: 11/18/13 at 3:30 p.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? NMOCD emergency #104 and BLM "Jim Amos"	
By Whom? Tony Savoie	Date and Hour 11/18/13 at 3:51 p.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.\*

The 8" flat line was being used to transfer produced water from the Harrison SWD to the PLU-387H for frac water. The line had a small damaged area near one of the Victaulic connections. The affected area was cut out and a sleeve was clamped in place.

Describe Area Affected and Cleanup Action Taken.\*

A vacuum truck was standing by during the frac operations and used to recover approximately 15 bbls of water, the spill affected an area in the pasture of approximately 1600 sq.ft. This area is directly on top of a buried 4" poly salt water disposal line operated by BOPCO. Basin environmental issued a one-call and began clean-up operations on 11/19/13. The spill area will be remediated in accordance to the NMOCD and BLM requirements.

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>Mike Brannon</i> Signed By	
Title: Waste Management and Remediation Specialist	Approval Date: <b>NOV 26 2013</b>	Expiration Date:
E-mail Address: tasavoie@basspet.com	Conditions of Approval: Remediation per OCD Rule & Guidelines, & like approval by BLM. <b>SUBMIT REMEDIATION</b>	Attached <input type="checkbox"/>
Date: 11/20/13	Phone: 432-556-8730	

\* Attach Additional Sheets If Necessary

PROPOSAL NO LATER THAN:  
*December 26, 2013*

*2RP-2077*

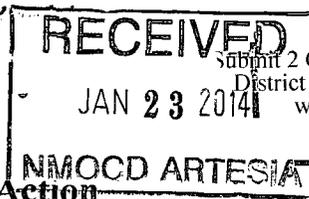
District I  
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1301 W. Grand Avenue, Artesia, NM 88210  
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1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Form C-141

Revised October 10, 2003

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



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

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report

Final Report

Name of Company BOPCO, L.P.	Contact Tony Savoie
Address 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: PLU-387H, the spill location is 1.42 miles N.W of the well location (2RP-2077)	Facility Type Exploration and Production

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-41185
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**LOCATION OF RELEASE**

Unit Letter D	Section 12	Township 25S	Range 30E	Feet from the	North/South Line	Feet from the	East/West Line	County Eddy
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**Latitude N32.14954 Longitude W103.84270**

**NATURE OF RELEASE**

Type of Release: Produced Water	Volume of Release 65 bbls	Volume Recovered 15 bbls
Source of Release: 8" Frac Hose	Date and Hour of Occurrence 11/18/13 at approximately 3:10 p.m.	Date and Hour of Discovery: 11/18/13 at 3:30 p.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? NMOCD emergency #104 and BLM "Jim Amos"	
By Whom? Tony Savoie	Date and Hour: 11/18/13 at 3:51 p.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:  
The 8" flat line was being used to transfer produced water from the Harrison SWD to the PLU-387H for frac water. The line had a small damaged area near one of the Victaulic connections. The affected area was cut out and a sleeve was clamped in place.

Describe Area Affected and Cleanup Action Taken.\*  
A vacuum truck was standing by during the frac operations and used to recover approximately 15 bbls of water, the spill affected an area in the pasture of approximately 1600 sq. ft. This area is directly on top of a buried 10" poly salt water disposal line operated by BOPCO. Basin Environmental issued a one-call and began clean-up operations on 11/19/13. The spill area will be remediated in accordance to the NMOCD and BLM requirements.

Remediation activities conducted at the PLU #387 Frac Spill Remediation Site met the objectives set forth by the NMOCD and BLM. Soil samples collected from the floor and sidewalls of the excavation were analyzed by an NMOCD-approved laboratory which determined concentrations of BTEX, TPH and Chloride were less than NMOCD Regulatory Standards. Between December 3 and 6, 2013, approximately 1,020 cy of impacted soil was excavated and transported to an NMOCD-approved disposal facility. Prior to backfilling, the final dimensions of the excavation were approximately 8'-15' in width, 270' in length and 2'-10' in depth. **Please reference the attached Basin Environmental Services Technologies Remediation Summary and Site Closure Request for details of remediation activities.**

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 District Supervisor:	
Title: Waste Mgmt. & Remediation Specialist		Approval Date:	Expiration Date:
E-mail Address: TASavoie@BassPet.com		Conditions of Approval:	
Date: 11/23/14	Phone: 432-556-8730		

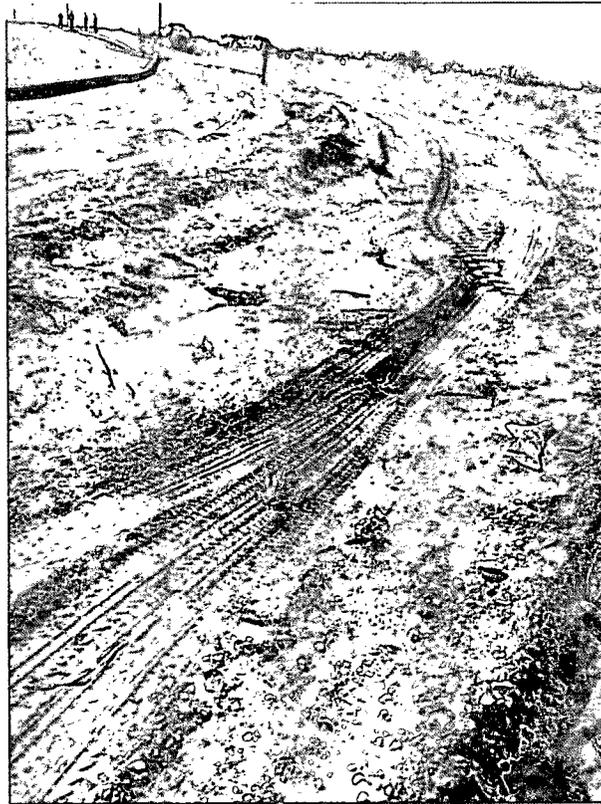
**Appendix B**  
**Photographs**



Photograph of the initial release at the PLU #387 Release Site. (Looking Southwest)



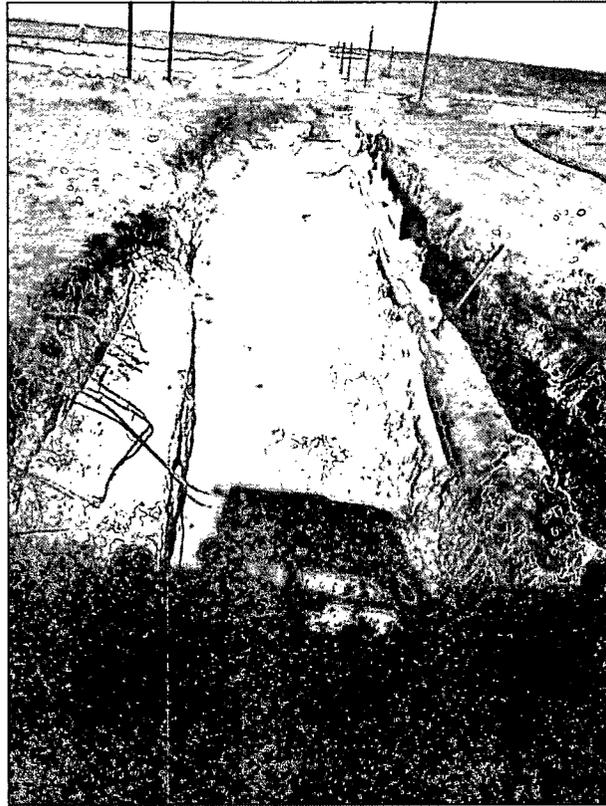
Photograph of the initial release and narrow flowpath at the PLU #387 Release Site. (Looking South)



Photograph of the northern terminus of soil impact at the PLU #387 Release Site. (Looking Northeast)



Photograph of excavation activities at the PLU #387 Release Site. (Looking Southeast)



Photograph of the excavation at the PLU #387 Release Site. (Looking North)



Photograph of the excavation at the PLU #387 Release Site. (Looking North)



Photograph of backfilling activities at the PLU #387 Release Site. (Looking South)



Photograph of backfilling activities at the PLU #387 Release Site. (Looking North)



Photograph of PLU #387 Release Site after remediation activities. (Looking Southwest)



Photograph of PLU #387 Release Site after remediation activities. (Looking South)

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

December 05, 2013

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: FRAC SPILL #387

Enclosed are the results of analyses for samples received by the laboratory on 11/27/13 8:20.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	11/27/2013	Sampling Date:	11/26/2013
Reported:	12/05/2013	Sampling Type:	Soil
Project Name:	FRAC SPILL #387	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: NSW #1 (H302902-01)**

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>32.0</b>	16.0	12/04/2013	ND	416	104	400	3.92		

**Sample ID: ESW #1 (H302902-02)**

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>48.0</b>	16.0	12/04/2013	ND	416	104	400	3.92		

**Sample ID: FLOOR #1 (H302902-03)**

BTEX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/02/2013	ND	2.19	110	2.00	0.949		
Toluene*	<0.050	0.050	12/02/2013	ND	2.17	108	2.00	0.646		
Ethylbenzene*	<0.050	0.050	12/02/2013	ND	2.15	107	2.00	0.0399		
Total Xylenes*	<0.150	0.150	12/02/2013	ND	6.23	104	6.00	0.167		
Total BTEX	<0.300	0.300	12/02/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 120 % 89.4-126

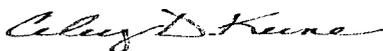
Chloride, SM4500CI-B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>32.0</b>	16.0	12/04/2013	ND	416	104	400	3.92		

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

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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: 11/27/2013  
 Reported: 12/05/2013  
 Project Name: FRAC SPILL #387  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 11/26/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: FLOOR #1 (H302902-03)**

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	11/27/2013	ND	205	102	200	10.5	
DRO >C10-C28	<10.0	10.0	11/27/2013	ND	202	101	200	13.7	
EXT DRO >C28-C35	<10.0	10.0	11/27/2013	ND					
<i>Surrogate: 1-Chlorooctane</i>	<i>107 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>108 %</i>	<i>63.6-154</i>							

**Sample ID: WSW #1 (H302902-04)**

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	12/04/2013	ND	416	104	400	3.92	

**Sample ID: ESW #2 (H302902-05)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>96.0</b>	16.0	12/04/2013	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:	11/27/2013	Sampling Date:	11/26/2013
Reported:	12/05/2013	Sampling Type:	Soil
Project Name:	FRAC SPILL #387	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: FLOOR #2 (H302902-06)**

BTEX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/02/2013	ND	2.19	110	2.00	0.949		
Toluene*	<0.050	0.050	12/02/2013	ND	2.17	108	2.00	0.646		
Ethylbenzene*	<0.050	0.050	12/02/2013	ND	2.15	107	2.00	0.0399		
Total Xylenes*	<0.150	0.150	12/02/2013	ND	6.23	104	6.00	0.167		
Total BTEX	<0.300	0.300	12/02/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 118 % 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	
<b>Chloride</b>	<b>64.0</b>	16.0	12/04/2013	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	11/27/2013	ND	205	102	200	10.5		
DRO >C10-C28	<10.0	10.0	11/27/2013	ND	202	101	200	13.7		
EXT DRO >C28-C35	<10.0	10.0	11/27/2013	ND						

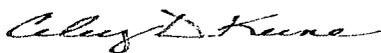
Surrogate: 1-Chlorooctane 110 % 65.2-140

Surrogate: 1-Chlorooctadecane 109 % 63.6-154

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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:	11/27/2013	Sampling Date:	11/26/2013
Reported:	12/05/2013	Sampling Type:	Soil
Project Name:	FRAC SPILL #387	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

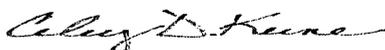
**Sample ID: WSW #2 (H302902-07)**

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>48.0</b>	16.0	12/04/2013	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



December 09, 2013

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU #387 FRAC SPILL

Enclosed are the results of analyses for samples received by the laboratory on 12/04/13 10:20.

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

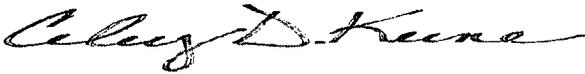
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	12/04/2013	Sampling Date:	12/03/2013
Reported:	12/09/2013	Sampling Type:	Soil
Project Name:	PLU #387 FRAC SPILL	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: WEST WALL C (H302932-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	12/05/2013	ND	416	104	400	0.00		

**Sample ID: WEST WALL D (H302932-02)**

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	12/05/2013	ND	416	104	400	0.00		

**Sample ID: WEST WALL E (H302932-03)**

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	12/05/2013	ND	416	104	400	0.00		

**Sample ID: EAST WALL C (H302932-04)**

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	12/05/2013	ND	416	104	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: 12/04/2013  
 Reported: 12/09/2013  
 Project Name: PLU #387 FRAC SPILL  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 12/03/2013  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Jodi Henson

**Sample ID: EAST WALL D (H302932-05)**

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	12/05/2013	ND	416	104	400	0.00	

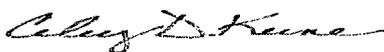
**Sample ID: EAST WALL E (H302932-06)**

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	12/05/2013	ND	416	104	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: 12/04/2013  
 Reported: 12/09/2013  
 Project Name: PLU #387 FRAC SPILL  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 12/03/2013  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Jodi Henson

**Sample ID: FLOOR C (H302932-07)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/04/2013	ND	2.11	105	2.00	0.576	
Toluene*	<0.050	0.050	12/04/2013	ND	2.11	106	2.00	1.07	
Ethylbenzene*	<0.050	0.050	12/04/2013	ND	2.09	105	2.00	1.21	
Total Xylenes*	<0.150	0.150	12/04/2013	ND	6.21	104	6.00	0.415	
Total BTEX	<0.300	0.300	12/04/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 123 % 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	32.0	16.0	12/09/2013	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: ck					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/04/2013	ND	193	96.6	200	3.60	
DRO >C10-C28	<10.0	10.0	12/04/2013	ND	190	95.0	200	6.49	
EXT DRO >C28-C35	<10.0	10.0	12/04/2013	ND					

Surrogate: 1-Chlorooctane 95.0 % 65.2-140

Surrogate: 1-Chlorooctadecane 98.6 % 63.6-154

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: 12/04/2013  
 Reported: 12/09/2013  
 Project Name: PLU #387 FRAC SPILL  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 12/03/2013  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Jodi Henson

**Sample ID: FLOOR D (H302932-08)**
**BTEX 8021B**

mg/kg

Analyzed By: CK

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/04/2013	ND	2.11	105	2.00	0.576	
Toluene*	<0.050	0.050	12/04/2013	ND	2.11	106	2.00	1.07	
Ethylbenzene*	<0.050	0.050	12/04/2013	ND	2.09	105	2.00	1.21	
Total Xylenes*	<0.150	0.150	12/04/2013	ND	6.21	104	6.00	0.415	
Total BTEX	<0.300	0.300	12/04/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID) 122 % 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	<16.0	16.0	12/09/2013	ND	416	104	400	3.77	

**TPH 8015M**

mg/kg

Analyzed By: ck

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/04/2013	ND	193	96.6	200	3.60	
DRO >C10-C28	<10.0	10.0	12/04/2013	ND	190	95.0	200	6.49	
EXT DRO >C28-C35	<10.0	10.0	12/04/2013	ND					

Surrogate: 1-Chlorooctane 107 % 65.2-140

Surrogate: 1-Chlorooctadecane 103 % 63.6-154

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:	12/04/2013	Sampling Date:	12/03/2013
Reported:	12/09/2013	Sampling Type:	Soil
Project Name:	PLU #387 FRAC SPILL	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: FLOOR E (H302932-09)**

BTEX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/04/2013	ND	2.11	105	2.00	0.576		
Toluene*	<0.050	0.050	12/04/2013	ND	2.11	106	2.00	1.07		
Ethylbenzene*	<0.050	0.050	12/04/2013	ND	2.09	105	2.00	1.21		
Total Xylenes*	<0.150	0.150	12/04/2013	ND	6.21	104	6.00	0.415		
Total BTEX	<0.300	0.300	12/04/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 122 % 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	240	16.0	12/09/2013	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: ck						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	12/04/2013	ND	193	96.6	200	3.60		
DRO >C10-C28	<10.0	10.0	12/04/2013	ND	190	95.0	200	6.49		
EXT DRO >C28-C35	<10.0	10.0	12/04/2013	ND						

Surrogate: 1-Chlorooctane 104 % 65.2-140

Surrogate: 1-Chlorooctadecane 103 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

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

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Celey D. Keene, Lab Director/Quality Manager



December 10, 2013

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU #387 FRAC SPILL

Enclosed are the results of analyses for samples received by the laboratory on 12/05/13 8:45.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	12/05/2013	Sampling Date:	12/04/2013
Reported:	12/10/2013	Sampling Type:	Soil
Project Name:	PLU #387 FRAC SPILL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: SOUTH WALL (H302947-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	12/09/2013	ND	432	108	400	3.64		

**Sample ID: RP WEST WALL (H302947-02)**

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	12/09/2013	ND	432	108	400	3.64		

**Sample ID: RP EAST WALL (H302947-03)**

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	12/09/2013	ND	432	108	400	3.64		

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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: 12/05/2013  
 Reported: 12/10/2013  
 Project Name: PLU #387 FRAC SPILL  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 12/04/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: RP FLOOR (H302947-04)**

BTEX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/05/2013	ND	2.37	119	2.00	0.0493		
Toluene*	<0.050	0.050	12/05/2013	ND	2.38	119	2.00	0.812		
Ethylbenzene*	<0.050	0.050	12/05/2013	ND	2.36	118	2.00	0.924		
Total Xylenes*	<0.150	0.150	12/05/2013	ND	6.91	115	6.00	0.971		
Total BTEX	<0.300	0.300	12/05/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 124 % 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	<16.0	16.0	12/09/2013	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: ck						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	12/05/2013	ND	188	93.8	200	1.52		
DRO >C10-C28	<10.0	10.0	12/05/2013	ND	184	92.1	200	1.31		
<b>EXT DRO &gt;C28-C35</b>	<b>19.4</b>	10.0	12/05/2013	ND						

Surrogate: 1-Chlorooctane 98.6 % 65.2-140

Surrogate: 1-Chlorooctadecane 100 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

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Celey D. Keene, Lab Director/Quality Manager

