

# *Basin Environmental Service Technologies, LLC*

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Lovington, New Mexico 88260  
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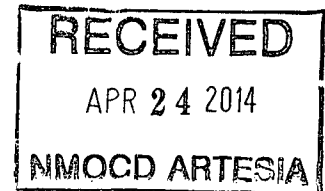


## **REMEDIATION SUMMARY AND SITE CLOSURE REQUEST**

**BOPCO, LP**  
**PLU PIERCE CANYON 17-24-30 USA #1H**  
**Eddy County, New Mexico**  
**Unit Letter "N" (SE/SW), Section 17 Township 24 South, Range 30 East**  
**Latitude 32.211095° North, Longitude 103.905918° West**  
**NMOCD Reference #2RP- 2199**

Prepared For:

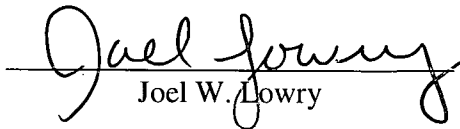
**BOPCO, LP**  
522 W. Mermod, Suite 704  
Carlsbad, New Mexico 88220



Prepared By:

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

**March 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 & Site Closure Proposal* for the release site known as PLU Pierce Canyon 17-24-30 USA #1H. The legal description of the release site is Unit Letter "N" (SE/SW), Section 17, Township 24 South, Range 30 East, in Eddy County, New Mexico. The geographic coordinates of the release site are 32.211095° North latitude and 103.905918° 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 February 14, 2014, during a routine inspection, BOPCO discovered a transport truck illegally dumped approximately one hundred and thirty barrels (130 bbls) of produced water on the PLU Pierce Canyon 17-24-30 USA #1H well pad. The "Release Notification and Corrective Action" (Form C-141) indicated approximately eighteen thousand, two hundred square feet (18,200 ft<sup>2</sup>) of caliche well pad were affected by the release. The New Mexico Oil Conservation Division (NMOCD) was notified immediately upon discovery. During initial response activities, berms were installed to prevent the fluid from leaving the well pad onto the recently downsized area around the well pad. 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 17, Township 24 South, Range 30 East. A depth to groundwater reference map utilized by the NMOCD indicates groundwater should be encountered at approximately one hundred and seventy-five feet (175') 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 Pierce Canyon 17-24-30 USA #1H 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 February 25, 2014, Basin began excavating impacted soil at the release site. The floor and sidewalls of the excavation were advanced until field tests suggested concentrations of BTEX, TPH and chloride were below NMOCD Regulatory Standards. Excavated soil was stockpiled on-site, pending final disposition.

On February 28, 2014, four (4) soil samples (Sec. 1 NSW, Sec. 1 ESW, Sec. 1 SSW and Sec. 1 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 16.0 ppm for soil sample Sec. 1 SSW to 624 ppm for soil sample Sec. 1 ESW. Soil sample Sec. 1 Floor was also analyzed for concentrations BTEX and TPH, which were determined to be less than the appropriate laboratory method detection limit (MDL). The excavation was advanced to the west. 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 March 6, 2014, eight (8) soil samples (Sec. 2 NSW, Sec. 2 SSW, Sec. 2 Floor, Sec. 3 NSW, Sec. 3 SSW, Sec. 3 Floor, Sec. 4 NSW and Sec. 4 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 less than the appropriate laboratory MDL for soil samples Sec. 2 SSW, Sec. 3 Floor and Sec. 4 Floor to 240 ppm for soil sample Sec. 3 NSW. Soil sample Sec. 3 Floor was also analyzed for concentrations BTEX and TPH, which were determined to be less than the appropriate laboratory MDL. The excavation was advanced to the west.

On March 7, 2014, four (4) soil samples (Sec. 4 WSW #1, Sec. 4 WSW #2, Sec. 4 SSW #1 and Sec. 4 Floor #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 less than the appropriate laboratory MDL for soil sample Sec. 4 WSW #2 to 448 ppm for soil sample Sec. 4 Floor #2.

Between March 6 and 11, 2014, approximately one thousand cubic yards (1,000 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 fifty (50) to seventy-five (75') in width, one hundred and seventy feet (170') in length and eighteen inches (18") to two feet (2') in depth. Upon receiving laboratory analytical data from confirmation soil samples, the excavated area was backfilled with locally purchased, non-impacted caliche. Following backfilling, areas affected by the remediation activities were compacted and contoured to meet the needs of the well pad.

## **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 Pierce Canyon 17-24-30 USA #1H 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. 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 Pierce Canyon 17-24-30 USA #1H 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.

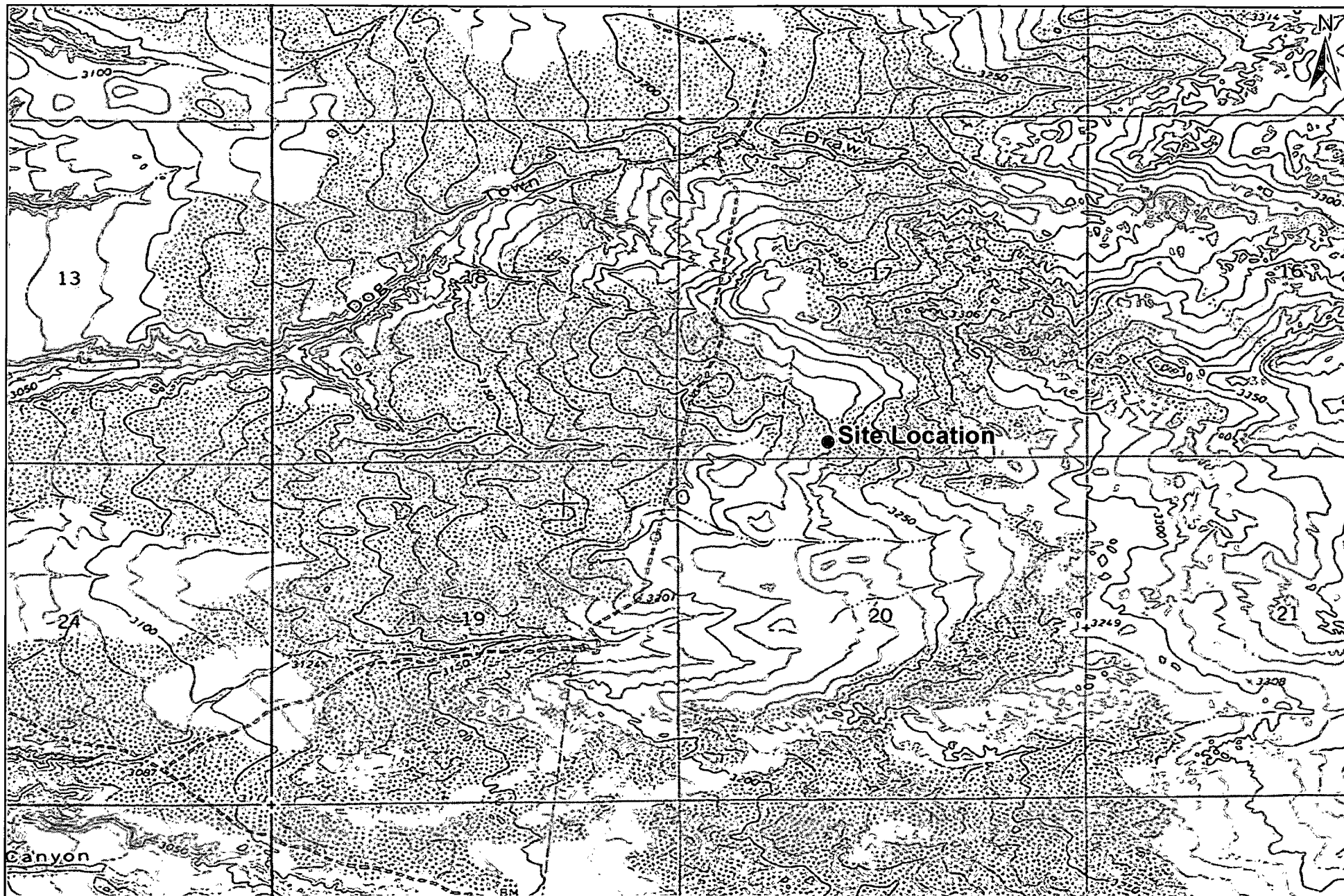
This report has been prepared for the benefit of BOPCO, LP. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of Basin Environmental Service Technologies, LLC, and/or BOPCO, LP.

**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**





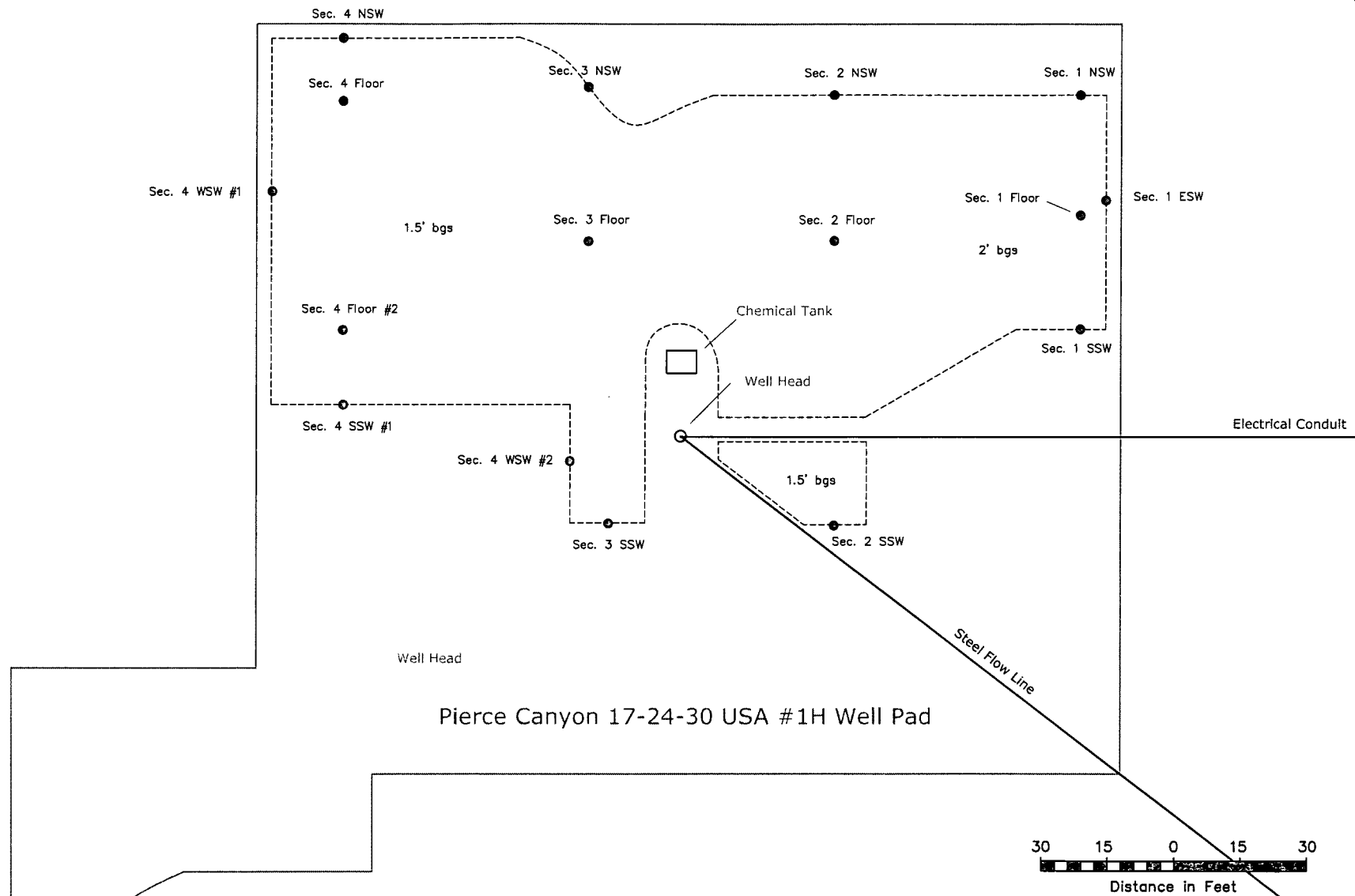
1,000 500 0 1,000 2,000  
 Distance in Feet

**Figure 1**  
**Site Location Map**  
**BOPCO, LP**  
**PLU Pierce Canyon 17-24-30 USA #1H**  
**Eddy County, New Mexico**



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

Drawn By: BJA	Checked By: BRB
March 24, 2014	Scale: 1" = 2000'



Legend:

- Excavation Extent
- Caliche Well Pad
- Pipeline
- Sample Location
- Electrical Conduit

Figure 2

Site & Sample Location Map  
BOPCO, L.P.  
PLU Pierce Canyon 17-24-30 USA #1H  
Eddy County, New Mexico

Basin Environmental Services

Prep By: JWJ	Checked By: BJA
March 17, 2014	Scale 1"=30'

# **TABLES**

TABLE 1

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

BOPCO, LP  
 PIERCE CANYON 17-24-30 USA #1H  
 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)		
Sec. 1 NSW	1.5'	2/28/2014	In-Situ	-	-	-	-	-	-	-	-	-	48.0
Sec. 1 ESW	1.5'	2/28/2014	In-Situ	-	-	-	-	-	-	-	-	-	624
Sec. 1 SSW	1.5'	2/28/2014	In-Situ	-	-	-	-	-	-	-	-	-	16.0
Sec. 1 Floor	2'	2/28/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	64.0
Sec. 2 NSW	1.5'	3/6/2014	In-Situ	-	-	-	-	-	-	-	-	-	48.0
Sec. 2 SSW	1.5'	3/6/2014	In-Situ	-	-	-	-	-	-	-	-	-	<16.0
Sec. 2 Floor	2'	3/6/2014	In-Situ	-	-	-	-	-	-	-	-	-	32.0
Sec. 3 NSW	1'	3/6/2014	In-Situ	-	-	-	-	-	-	-	-	-	240
Sec. 3 SSW	1'	3/6/2014	In-Situ	-	-	-	-	-	-	-	-	-	32.0
Sec. 3 Floor	1.5'	3/6/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<16.0
Sec. 4 NSW	1'	3/6/2014	In-Situ	-	-	-	-	-	-	-	-	-	176
Sec. 4 Floor	1.5'	3/6/2014	In-Situ	-	-	-	-	-	-	-	-	-	<16.0
Sec. 4 WSW #1	1'	3/7/2014	In-Situ	-	-	-	-	-	-	-	-	-	304
Sec. 4 WSW #2	1'	3/7/2014	In-Situ	-	-	-	-	-	-	-	-	-	<16.0
Sec. 4 SSW #1	1'	3/7/2014	In-Situ	-	-	-	-	-	-	-	-	-	96.0
Sec. 4 Floor #2	1.5'	3/7/2014	In-Situ	-	-	-	-	-	-	-	-	-	448
NMOCD Criteria				10				50				5,000	1,000

- = 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

Form C-141  
Revised August 8, 2011

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

### Release Notification and Corrective Action

#### OPERATOR

☒ Initial Report ☐ Final Report

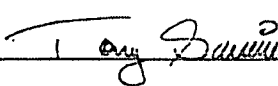
Name of Company: BOPCO, L.P.	Contact: Tony Savoie
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: PLU-Pierce Canyon 17-24-30 USA #1H	Facility Type: Exploration and Production
Surface Owner: Department of Interior BLM	Mineral Owner: BLM
API No. 30-015-40520	

#### LOCATION OF RELEASE

Unit Letter N	Section 17	Township 24S	Range 30E	Feet from the 237	North/South Line South	Feet from the 1980	East/West Line West	County Eddy
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Latitude N 32.211095 Longitude W 103.905918

#### NATURE OF RELEASE

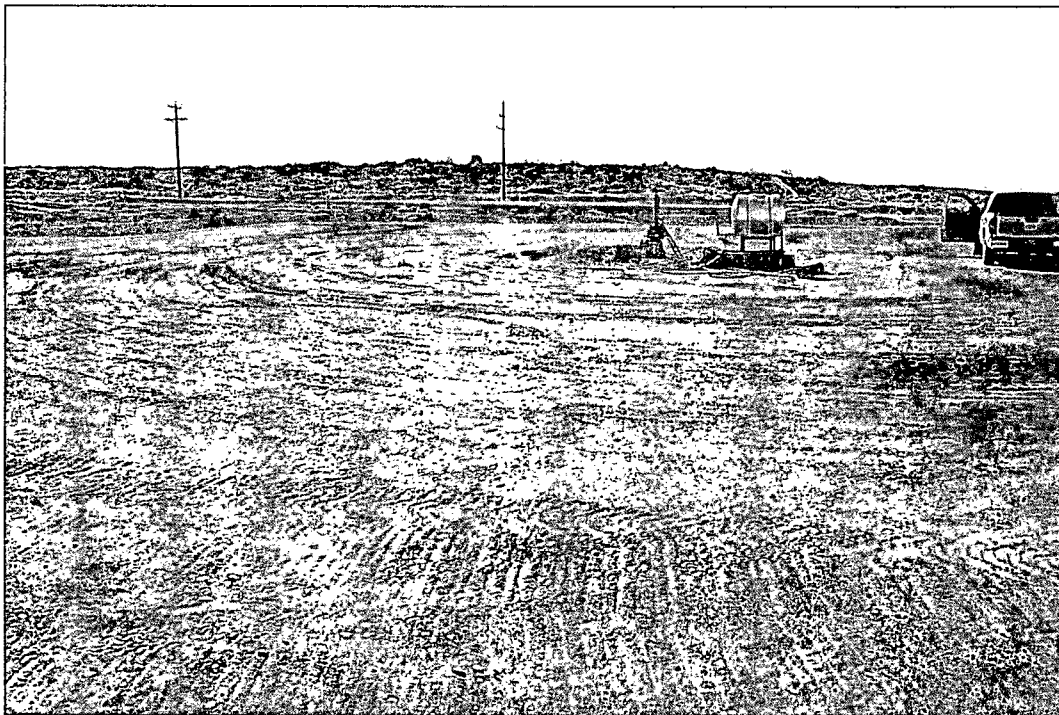
Type of Release: Produced Water	Volume of Release: 130 bbls	Volume Recovered: None
Source of Release: Unauthorized discharge from a transport truck	Date and Hour of Occurrence: Unknown	Date and Hour of Discovery: 2/14/14 at 10:30 a.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Randy Dade NMOCD and Jim Amos BLM	
By Whom? Tony Savoie	Date and Hour: 2/14/14 at 11:04 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.* The release was discovered during routine inspection of the well pad. The well has been shut in since 3/8/13		
Describe Area Affected and Cleanup Action Taken.* The impacted area covers approximately 18,200 sq.ft. of well pad, the edges of the pad were bermed preventing the fluid from leaving the well pad onto the recently downsized area around the pad. All of the fluid had soaked into the ground. The spill area will be cleaned up in accordance to the NMOCD and BLM 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.		
<div style="text-align: right;"><b>RECEIVED</b> FEB 18 2014 NMOCD ARTESIA</div>		
<b>OIL CONSERVATION DIVISION</b>		
Signature: 	Approved by Environmental Specialist:	
Printed Name: Tony Savoie	Approval Date:	
Title: Waste Management and Remediation Specialist	Expiration Date:	
E-mail Address: <a href="mailto:tasavoie@basspet.com">tasavoie@basspet.com</a>	Conditions of Approval:	
Date: 2/18/14	Attached <input type="checkbox"/>	
Phone: 432-556-8730		

\* Attach Additional Sheets If Necessary

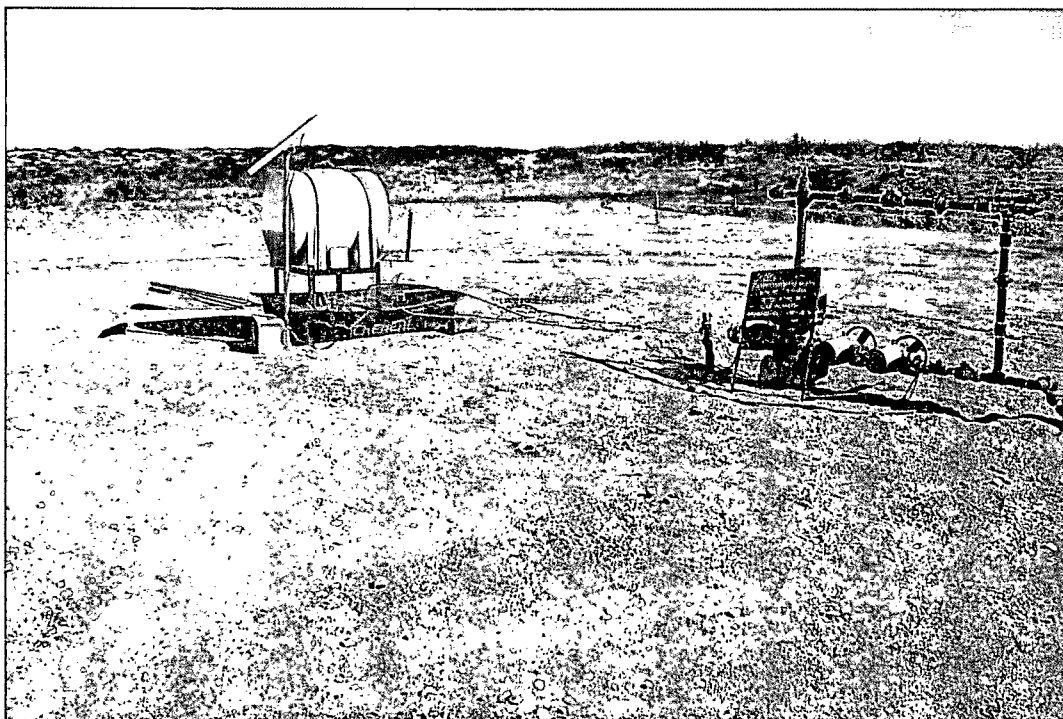
# **Appendix B**

## **Photographs**





Photograph of the initial release and surface staining at the Pierce Canyon 17-24-30 USA #1H Release Site.



Photograph of the initial release and surface staining at the Pierce Canyon 17-24-30 USA #1H Release Site.



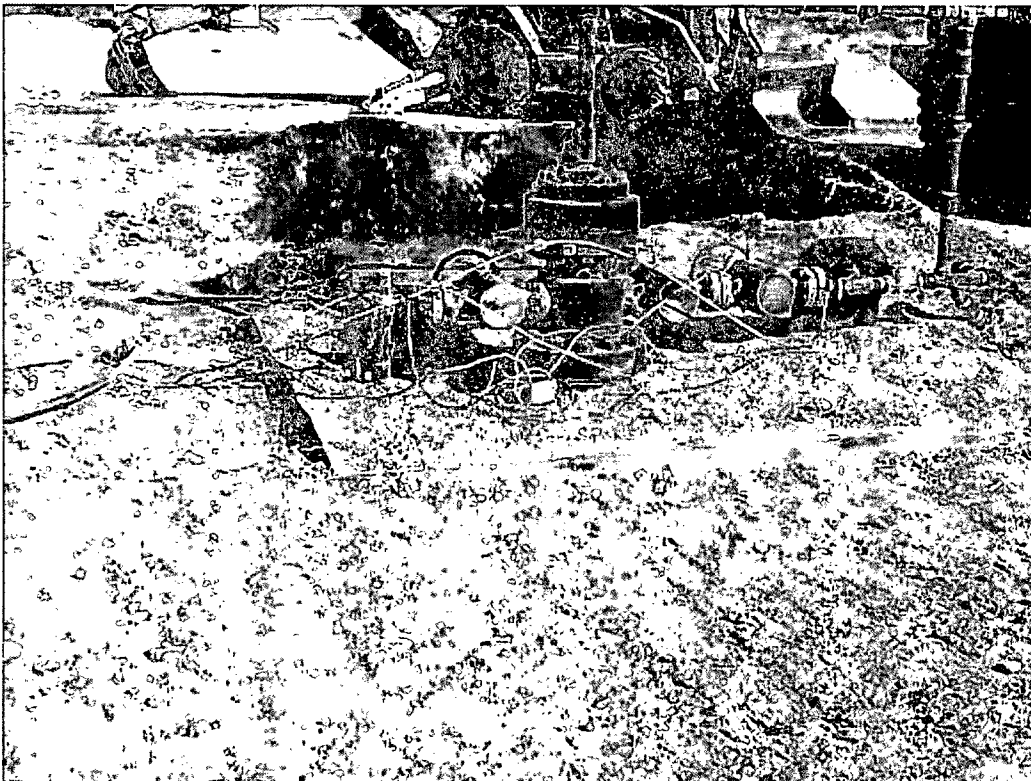
Photograph of excavation activities at the Pierce Canyon 17-24-30 USA #1H Release Site.



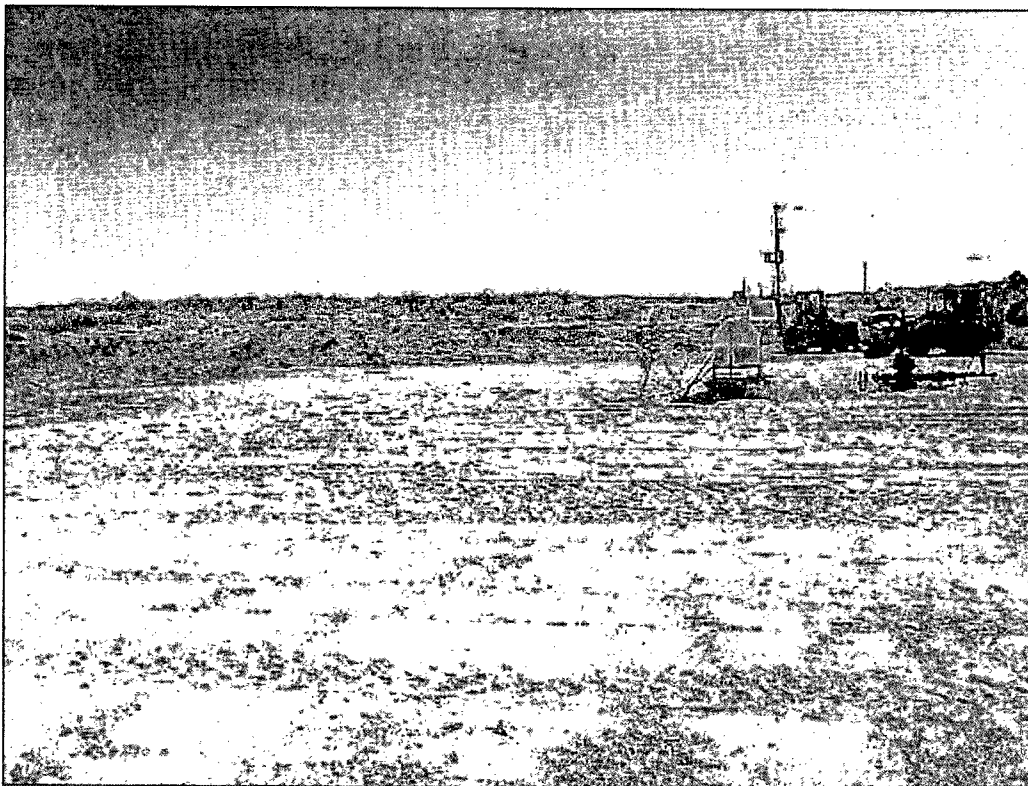
Photograph of excavation activities at the Pierce Canyon 17-24-30 USA #1H Release Site.



Photograph of excavation activities at the Pierce Canyon 17-24-30 USA #1H Release Site.



Photograph of excavation activities at the Pierce Canyon 17-24-30 USA #1H Release Site.



Photograph of backfilling activities at the Pierce Canyon 17-24-30 USA #1H Release Site.



Photograph of the Pierce Canyon 17-24-30 USA #1H Release Site after remediation activities.

# **Appendix C**

## **Laboratory Analytical Reports**

March 11, 2014

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU PIERCE CANYON 17-24-30

Enclosed are the results of analyses for samples received by the laboratory on 03/05/14 9:15.

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: 03/05/2014  
 Reported: 03/11/2014  
 Project Name: PLU PIERCE CANYON 17-24-30  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 02/28/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SEC. 1 NSW (H400666-01)**

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	03/07/2014	ND	432	108	400	0.00	

**Sample ID: SEC. 1 ESW (H400666-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	624	16.0	03/07/2014	ND	432	108	400	0.00	

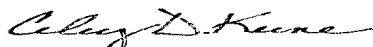
**Sample ID: SEC. 1 SSW (H400666-03)**

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	03/07/2014	ND	432	108	400	0.00	

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: 03/05/2014  
Reported: 03/11/2014  
Project Name: PLU PIERCE CANYON 17-24-30  
Project Number: NONE GIVEN  
Project Location: EDDY COUNTY, NM

Sampling Date: 02/28/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: SEC. 1 FLOOR (H400666-04)**

BTX 8260B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/10/2014	ND	1.92	95.9	2.00	1.04	
Toluene*	<0.050	0.050	03/10/2014	ND	1.91	95.7	2.00	4.25	
Ethylbenzene*	<0.050	0.050	03/10/2014	ND	1.83	91.6	2.00	4.77	
Total Xylenes*	<0.150	0.150	03/10/2014	ND	5.57	92.8	6.00	5.04	
Total BTX	<0.300	0.300	03/10/2014	ND					

Surrogate: Dibromofluoromethane 99.6 % 61.3-142

Surrogate: Toluene-d8 103 % 71.3-129

Surrogate: 4-Bromofluorobenzene 102 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	03/07/2014	ND	432	108	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	03/07/2014	ND	194	97.1	200	8.76	
DRO >C10-C28	<10.0	10.0	03/07/2014	ND	232	116	200	7.85	
EXT DRO >C28-C35	<10.0	10.0	03/07/2014	ND					


Surrogate: 1-Chlorooctane 108 % 65.2-140

Surrogate: 1-Chlorooctadecane 110 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Notes and Definitions**

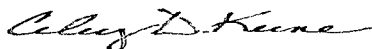
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received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

---

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---

Celey D. Keene, Lab Director/Quality Manager

## ARDINAL LABORATORIES

**101 East Marland, Hobbs, NM 88240**

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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 5 of 5

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Relinquished By:		Date: 3/5/14	Received By:	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:		Date: 3/5/14	Received By:	REMARKS:	
Time: 9:45					
Delivered By: (Circle One)		Sample Condition		CHECKED BY:	
<input checked="" type="checkbox"/> RPS-06 Bus - Other: <input type="checkbox"/> Revision 1.0		Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/>		(Initials) JH	

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476

#41

March 14, 2014

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU PIERCE CANYON 17-24-30

Enclosed are the results of analyses for samples received by the laboratory on 03/07/14 12:15.

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: 03/07/2014  
 Reported: 03/14/2014  
 Project Name: PLU PIERCE CANYON 17-24-30  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 03/06/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SEC. 2 NSW (H400714-01)**

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	03/11/2014	ND	432	108	400	0.00	

**Sample ID: SEC. 2 SSW (H400714-02)**

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	03/11/2014	ND	432	108	400	0.00	

**Sample ID: SEC. 2 FLOOR (H400714-03)**

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	03/11/2014	ND	432	108	400	0.00	

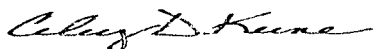
**Sample ID: SEC. 3 NSW (H400714-04)**

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	03/12/2014	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: 03/07/2014  
Reported: 03/14/2014  
Project Name: PLU PIERCE CANYON 17-24-30  
Project Number: NONE GIVEN  
Project Location: EDDY COUNTY, NM

Sampling Date: 03/06/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

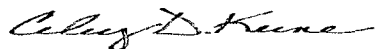
**Sample ID: SEC. 3 SSW (H400714-05)**

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	03/12/2014	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: 03/07/2014  
Reported: 03/14/2014  
Project Name: PLU PIERCE CANYON 17-24-30  
Project Number: NONE GIVEN  
Project Location: EDDY COUNTY, NM

Sampling Date: 03/06/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: SEC. 3 FLOOR (H400714-06)**

BTEX 8260B		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/13/2014	ND	0.428	107	0.400	3.69	
Toluene*	<0.050	0.050	03/13/2014	ND	0.419	105	0.400	1.43	
Ethylbenzene*	<0.050	0.050	03/13/2014	ND	0.430	108	0.400	5.19	
Total Xylenes*	<0.150	0.150	03/13/2014	ND	1.25	104	1.20	1.84	
Total BTEX	<0.300	0.300	03/13/2014	ND					

Surrogate: Dibromofluoromethane 96.4 % 61.3-142

Surrogate: Toluene-d8 103 % 71.3-129

Surrogate: 4-Bromofluorobenzene 103 % 65.7-141

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/12/2014	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	03/14/2014	ND	214	107	200	1.23	
DRO >C10-C28	<10.0	10.0	03/14/2014	ND	202	101	200	2.63	
EXT DRO >C28-C35	<10.0	10.0	03/14/2014	ND					

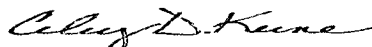
Surrogate: 1-Chlorooctane 99.5 % 65.2-140

Surrogate: 1-Chlorooctadecane 102 % 63.6-154

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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: 03/07/2014  
Reported: 03/14/2014  
Project Name: PLU PIERCE CANYON 17-24-30  
Project Number: NONE GIVEN  
Project Location: EDDY COUNTY, NM

Sampling Date: 03/06/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: SEC. 4 NSW (H400714-07)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	03/12/2014	ND	400	100	400	3.92	

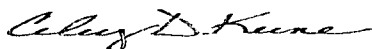
**Sample ID: SEC. 4 FLOOR (H400714-08)**

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	03/12/2014	ND	400	100	400	3.92	

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Celey D. Keene, Lab Director/Quality Manager

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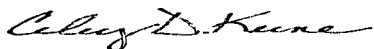
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RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received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

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Celestine D. Keene, Lab Director/Quality Manager





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March 13, 2014

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU PIERCE CANYON 17-24-30

Enclosed are the results of analyses for samples received by the laboratory on 03/10/14 11:05.

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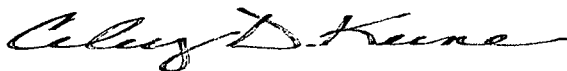
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Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

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: 03/10/2014  
 Reported: 03/13/2014  
 Project Name: PLU PIERCE CANYON 17-24-30  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

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

**Sample ID: SEC. 4 WSW #1 (H400721-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	03/12/2014	ND	400	100	400	3.92	

**Sample ID: SEC. 4 WSW #2 (H400721-02)**

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	03/12/2014	ND	400	100	400	0.00	

**Sample ID: SEC. 4 SSW #1 (H400721-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	03/12/2014	ND	400	100	400	0.00	

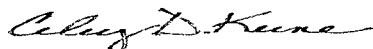
**Sample ID: SEC. 4 FLOOR #2 (H400721-04)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	448	16.0	03/12/2014	ND	400	100	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

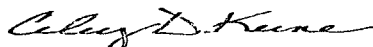
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RPD	Relative Percent Difference
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***	Insufficient time to reach temperature.
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---

Celey D. Keene, Lab Director/Quality Manager



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