

# *Basin Environmental Service Technologies, LLC*

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## **REMEDIATION SUMMARY AND RISK-BASED SITE CLOSURE REQUEST**

**BOPCO, LP  
JAMES RANCH UNIT #55 WELL PAD  
Eddy County, New Mexico  
Unit Letter "F" (SE/NW), Section 17, Township 23 South, Range 31 East  
Latitude 32.306285° North, Longitude 103.801920° West  
NMOCD References #2RP-548 & 1177**

Prepared For:

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

Prepared By:

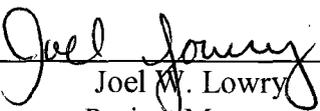
Basin Environmental Service Technologies, LLC  
3100 Plains Highway  
Lovington, New Mexico 88260

**June 2014**

**NM OIL CONSERVATION  
ARTESIA DISTRICT**

**JUL 01 2014**

**RECEIVED**

  
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 Risk-Based Site Closure Request* for the release site known as James Ranch Unit #55 Well Pad (JRU #55). The legal description of the release site is Unit Letter "F" (SE/NW), Section 17, Township 23 South, Range 31 East, in Eddy County, New Mexico. The geographic coordinates of the release site are 32.306285° North latitude and 103.801920° 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.

There have been two reportable releases on the JRU #55 Well Pad. The first reportable release occurred on March 9, 2010. The release was attributed to the failure of a temporary hose being used while circulating the well. The "Release Notification and Corrective Action" (Form C-141) indicated a release of approximately ten barrels (10 bbls) of produced water and ten barrels (10 bbls) of crude oil affected approximately two thousand, five hundred square feet (2,500 ft<sup>2</sup>) of caliche well pad, one thousand, six hundred and twenty square feet (1,620 ft<sup>2</sup>) of caliche road and five hundred and twenty-five square feet (525 ft<sup>2</sup>) of adjacent pasture land. During initial response activities approximately five barrels (5 bbls) of produced water and three barrels (3 bbls) of crude oil were recovered using a vacuum truck. Heavily saturated soil was excavated from the well pad and pasture and transported to an NMOCD-approved disposal facility. Between March 25 and 31, 2010, remediation activities were conducted by an alternative environmental contractor. Final closure was never sought as a non-reportable release occurred atop the previously remediated area. The Form C-141 for the March 9, 2010, release is provided as Appendix A.

The second reportable release occurred on May 18, 2012. The release was attributed to the failure of the packing in the stuffing box. The initial Form C-141 indicated a release of approximately five barrels (5 bbls) of produced water and three barrels (3 bbls) of crude oil affected approximately four hundred and ten square feet (410 ft<sup>2</sup>) of the caliche well pad. During initial response activities, approximately three barrels (3 bbls) of free-standing fluid were recovered using a vacuum truck. The Form C-141 for the May 18, 2012, release is provided as Appendix B. General photographs of the release site are provided as Appendix C.

As per the NMOCD, the releases were remediated simultaneously.

## **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 23 South, Range 31 East. A depth to groundwater reference map utilized by the NMOCD indicates groundwater should be encountered at approximately ninety feet (90') below ground surface (bgs). Based on the NMOCD ranking system, ten (10) 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 JRU #55 Well Pad release site has an initial ranking score of ten (10) points. The soil remediation levels for a site with a ranking score of ten (10) points are as follows:

- Benzene – 10 ppm
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) –ppm
- Total Petroleum Hydrocarbons (TPH) – 1,000 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 May 19, 2014, Basin began excavating impacted soil at the release site. The excavation floor and sidewalls 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 May 20, 2014, six (6) soil samples (NSW, SSW, ESW #1, WSW #1, WSW #2 and Floor #1 @ 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 method detection limit (MDL) for soil sample WSW #1 to 256 ppm for soil sample NSW. Soil sample Floor #1 @ 2' was also analyzed for concentrations of TPH, which were determined to be less than the appropriate laboratory MDL. A summary of "Concentrations of Benzene, BTEX, TPH & 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 D.

On May 21, 2014, a delineation trench (DT 1) was advanced south of the well head in area exhibiting elevated chloride concentrations at four feet (4') bgs. During the advancement of the delineation trench, four (4) soil samples (DT 1 @ 6', DT 1 @ 9', DT 1 @ 17' and DT 1 @ 18.5') were collected and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 2,600 ppm for soil sampled 1 @ 9' to 352 ppm for soil sample DT 1 @ 18.5'.

In addition, two (2) soil samples (ESW #2 and ESW #3) were collected from the excavated area and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated the concentration of chloride was 304 ppm for both samples.

On May 22, 2014, three (3) soil samples (NSW #2, NSW #3, and SSW #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 144 ppm for soil sample NSW #2 to 320 ppm for soil sample NSW #3.

On May 27, 2014, one (1) soil sample (NESW) was collected from the northeast edge of the environmental excavation and submitted to the laboratory for analysis of chloride, BTEX and TPH concentrations. Laboratory analytical results indicate soil sample NESW exhibited a chloride concentration of 32.0 ppm. BTEX and TPH concentrations were less than the appropriate laboratory MDL.

In addition, two (2) soil samples (Road #1, Road #2) were collected from the caliche road adjacent to the well pad affected by the May 9, 2010, release in an effort to determine if previous remediation activities were sufficient. Laboratory analytical results indicated soil sample Road #1 exhibited a chloride concentration of 288 ppm, soil sample Road #2 exhibited a chloride concentration of 272 ppm. Soil sample Road #2 was also analyzed for concentrations of BTEX and TPH, which were determined to be less than the appropriate laboratory MDL. Laboratory analytical results suggest previous remediation activities on the affected caliche road met the requirements of the NMOCD.

An initial investigation was conducted in an area of pasture adjacent to the PLU #55 Well Pad that was inferred to have been affected by the March 9, 2010, release. During the initial investigation, four (4) hand-augered soil bores (SP #1 through SP #4) were advanced in the disturbed area north of the well pad. Soil samples were collected from SP #1 at the surface, two feet (2') and four feet (4') bgs and field screened for concentrations of chloride. During the advancement of SP #1, a twenty-millimeter (20-mil) polyurethane liner was encountered at approximately four feet (4') bgs. Chloride field test results ranged from less than 120 ppm for the soil sample collected at the surface to 1,280 ppm for the soil sample collected at four feet (4') bgs. The remaining hand-augered soil bores (SP #2 through SP #4) were only advanced to two feet (2') bgs in an effort to maintain the integrity of the polyurethane liner. Soil samples collected from the surface and two feet (2') bgs from SP #2 through SP #4 were field screened for concentrations of chloride. Chloride field test results indicated chloride concentrations were less than 120 ppm in each of the field samples. Based on field test results it was determined that the soil column above the 20-mil polyurethane liner was not impacted above NMOCD regulatory standards. The liner was left undisturbed as per the NMOCD.

On May 28, 2014, upon receiving NMOCD approval, a 20-mil polyurethane liner was installed in the floor of the excavation atop areas exhibiting chloride concentrations above NMOCD regulatory standards. This engineering control was designed to inhibit the vertical migration of contaminants left in-situ and help mitigate any future releases on the well pad. Upon installing the approved liner, the remaining portion of the excavation was backfilled with non-impacted caliche.

Between May 22 and 28, 2014, approximately seven hundred and forty cubic yards (740 yd<sup>3</sup>) of impacted material was transported to Lea Land, LLC (NMOCD Permit #WM-01-035), for disposal. Prior to backfilling, the final dimensions of the excavation were approximately twelve (12) to thirty feet (30') in width, one hundred and thirty feet (130') in length and two (2) to four feet (4') in depth.

## **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**

Remediation activities at the JRU #55 Well Pad were conducted in accordance with an NMOCD-approved work plan. Confirmation soil samples collected from the excavation sidewalls were submitted to an NMOCD approved laboratory, which determined concentrations of BTEX, TPH and chloride were below NMOCD regulatory standards. A 20-mil polyurethane liner was installed in the floor of the excavation at approximately four feet (4') bgs. Based on laboratory analytical results and the installation of an approved engineering control, Basin recommends BOPCO provide the NMOCD-Artesia District Office and the BLM a copy of this *Remediation Summary and Risk-Based Site Closure Request* and request the NMOCD grant site closure to the JRU #55 Well Pad release site.

## 6.0 LIMITATIONS

Basin Environmental Service Technologies, LLC, has prepared this *Remediation Summary and Risk-Based 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:**

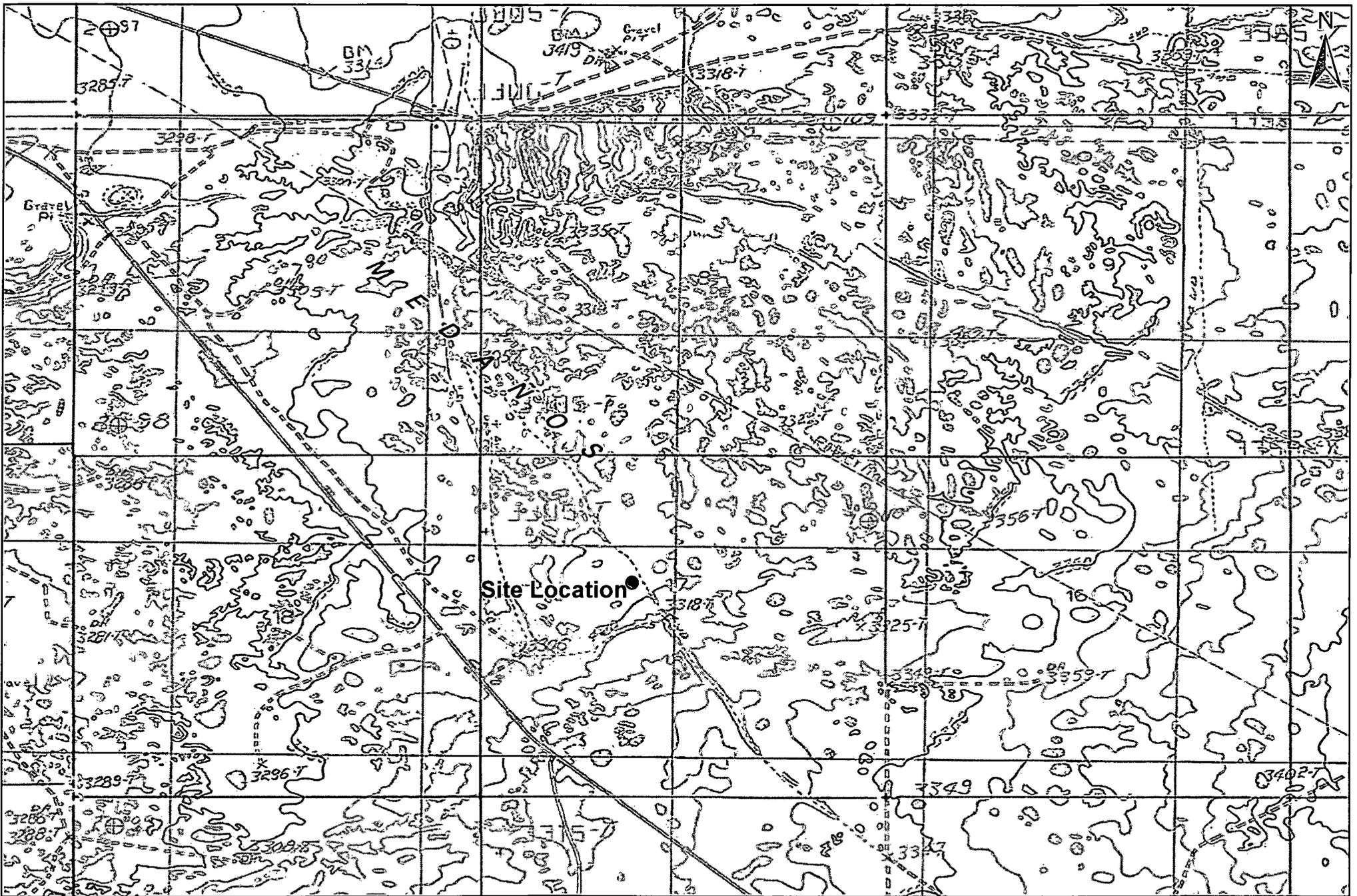
Copy 1: Mike Bratcher  
New Mexico Energy, Minerals and Natural Resources Department  
Oil Conservation Division (District 2)  
1301 E. Grand Avenue  
Artesia, NM 88210

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

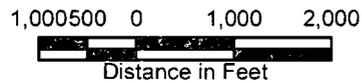
Copy 3: Tony Savoie  
BOPCO, LP  
522 W. Mermod, Suite 704  
Carlsbad, NM 88220

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

# FIGURES



Site Location

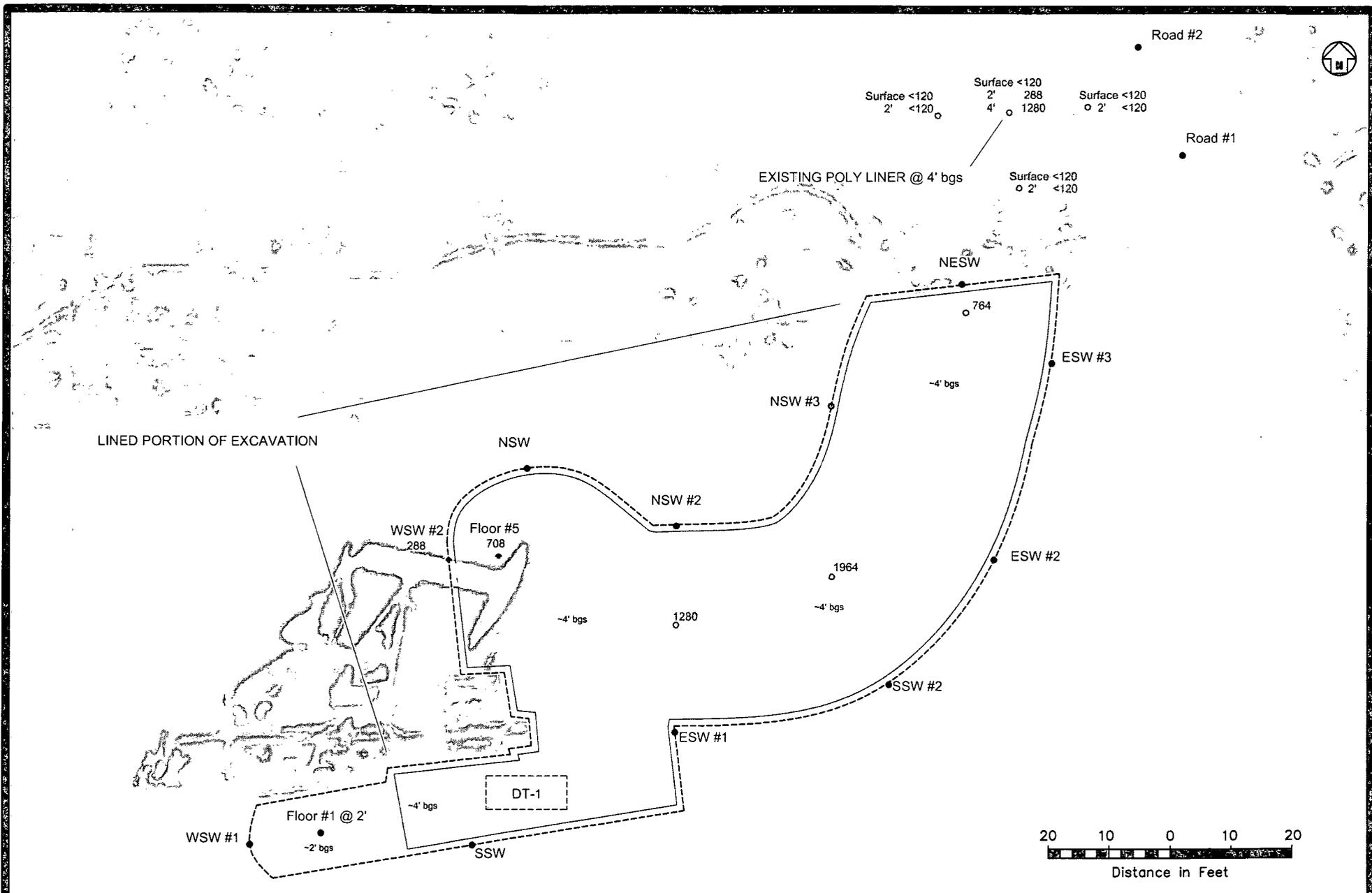


**Figure 1**  
**Site Location Map**  
**BOPCO, LP**  
**JRU #55 Well Pad**  
**Eddy County, New Mexico**  
**NMOCD Reference #'s: 2RP-548 & 2RP-1177**



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

Drawn By: BJA	Checked By: BRB
May 29, 2014	Scale: 1" = 2000'



**Legend:**

- Excavation Extent
- Confirmation Sample Location
- 2' bgs
- 400 ppm Chloride Field Result
- Test Trench
- Liner Extent

**Figure 2**  
 Site and Sample Location Map  
 BOPCO, L.P.  
 JRU #55 Well Pad  
 Eddy County, New Mexico  
 NMOCD Ref#s 2RP-548 & 1177

**Basin Environmental Services**

Prep By: JWL	Checked By: BJA
May 22, 2014	Scale 1"=20'

# **TABLES**

TABLE 1

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

BOPCO, LP  
JAMES RANCH UNIT #55 WELL PAD  
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	2'	5/20/2014	In-Situ	-	-	-	-	-	-	-	-	-	256
SSW	2'	5/20/2014	In-Situ	-	-	-	-	-	-	-	-	-	96.0
ESW #1	2'	5/20/2014	In-Situ	-	-	-	-	-	-	-	-	-	64.0
WSW #1	1.5'	5/20/2014	In-Situ	-	-	-	-	-	-	-	-	-	<16.0
WSW #2	2'	5/20/2014	In-Situ	-	-	-	-	-	-	-	-	-	176
Floor #1 @ 2'	2'	5/20/2014	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	112
DT 1 @ 6'	6'	5/21/2014	In-Situ	-	-	-	-	-	-	-	-	-	1,100
DT 1 @ 9'	9'	5/21/2014	In-Situ	-	-	-	-	-	-	-	-	-	2,600
DT 1 @ 17'	17'	5/21/2014	In-Situ	-	-	-	-	-	-	-	-	-	480
DT 1 @ 18.5'	18.5'	5/21/2014	In-Situ	-	-	-	-	-	-	-	-	-	352
ESW #2	2'	5/21/2014	In-Situ	-	-	-	-	-	-	-	-	-	304
ESW #3	2'	5/21/2014	In-Situ	-	-	-	-	-	-	-	-	-	304
NSW #2	2'	5/22/2014	In-Situ	-	-	-	-	-	-	-	-	-	144
NSW #3	2'	5/22/2014	In-Situ	-	-	-	-	-	-	-	-	-	320
SSW #2	2'	5/22/2014	In-Situ	-	-	-	-	-	-	-	-	-	160
Road #1	3'	5/27/2014	In-Situ	-	-	-	-	-	-	-	-	-	288
Road #2	3'	5/27/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	272
NESW	2'	5/27/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	32.0
<b>NMOCD Criteria</b>				<b>10</b>				<b>50</b>				<b>1,000</b>	<b>500</b>

- = Not analyzed.

# **APPENDICES**

**Appendix A**  
**Release Notification and Corrective Action**  
**(Form C-141) - March 9, 2010**

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

**RECEIVED**  
MAR 31 2010  
NMOCD ARTESIA

Form C-141  
Revised October 10, 2003  
Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

30-015-27589  
nkmw 1101253579

**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. 432-556-8730	
Facility Name James Ranch Unit #55	Facility Type E&P	
Surface Owner Federal	Mineral Owner Federal	Lease No.

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	17	23S	31E					Eddy

Latitude N 32.306285 Longitude W 103.801920

**NATURE OF RELEASE**

Type of Release: Produced water and crude oil	Volume of Release: 10 Bbls of Produced water and 10 Bbls of crude oil	Volume Recovered: 5 bbls water and 3 bbls crude oil
Source of Release: Faulty circulating hose on the wellhead	Date and Hour of Occurrence: 3/9/10 Approximately 2:00 p.m.	Date and Hour of Discovery: 3/24/10 8:00 a.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
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.* A temporary hose failed while circulating the well, the hose was removed and the well put back on production.		
Describe Area Affected and Cleanup Action Taken.* Approximately 2500 sq.ft. of caliche well pad, 1620 sq. ft. of caliche road, and 525 sq.ft. of pasture land were affected by the release. All of the free product was removed with a vacuum truck and the heavily saturated soil was excavated from the well pad and pasture, then transported to CRI. Soil samples were collected after the initial response and field tested for the presence of chlorides. Remediation activities will resume following the results of the soil sample results.		
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: <u>Tony Savoie</u>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Tony Savoie	Approved by District Supervisor	Signed By: <u>Mike Brannan</u>
Title: Waste Mgmt. & Remediation Specialist	Approval Date: <u>3/3/11</u>	Expiration Date:
E-mail Address: TAsavoie@BassPet.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 3/29/10 Phone: 432-556-8730	Remediation per OCD Rules & Guidelines. <b>SUBMIT REMEDIATION PROPOSAL NOT LATER THAN:</b>	

\* Attach Additional Sheets If Necessary

4/3/11  
2RP 548

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

Form C-141  
Revised August 8, 2011

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

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: James Ranch Unit #55 (2RP-548)	Facility Type: E & P
Surface Owner: Federal	Mineral Owner: Federal
API No. 30-015-27589	

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County:
F	17	23S	31E					Eddy

Latitude N 32.306285 Longitude W 103.801920

**NATURE OF RELEASE**

Type of Release: Produced water and crude oil	Volume of Release: 10 bbls of produced water and 10 bbls of crude oil	Volume Recovered: 5 bbls water and 3 bbls crude oil
Source of Release: Faulty circulating hose on the wellhead	Date and Hour of Occurrence: 3/9/10 approximately 2:00 p.m.	Date and Hour of Discovery: 3/24/10 8:00 a.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? <b>NM OIL CONSERVATION</b>	
By Whom? Tony Savoie	Date and Hour	ARTESIA DISTRICT
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. <b>JUL 01 2014</b>	

**RECEIVED**

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\* A temporary hose failed while circulating the well, the hose was removed and the well put back on production.

Describe Area Affected and Cleanup Action Taken.\* Approximately 2500 sq. ft. of caliche well pad, 1620 sq. ft. of caliche road, and 525 sq. ft. of pasture land were affected by the release. All of the free product was removed with a vacuum truck and the heavily saturated soil was excavated from the well pad and pasture, then transported to CRI. Soil samples were collected after the initial response and field tested for the presence of chlorides. Remediation activities will resume following the results of the soil sample.

Approximately 740 cu. yds of impacted soil was excavated from an area measuring approximately 12' to 30' in width, 130' in length, and 2' to 4' in depth. Impacted soil was hauled to an NMOCD-approved disposal facility. **Please reference the attached Remediation Summary and Risk-Based Site Closure Request for detail 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: 	<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: tasavoie@basspet.com	Conditions of Approval:	
Date: <del>4/9/14</del> 7/1/14 Phone: 432-556-8730	Attached <input type="checkbox"/>	

\* Attach Additional Sheets If Necessary

## **Appendix B**

**Release Notification and Corrective Action  
(Form C-141) – May 18, 2012**

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, 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 October 10, 2003

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

**Release Notification and Corrective Action**

*n-JMW 1217242281* 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. 432-556-8730
Facility Name James Ranch Unit #55	Facility Type E&P

Surface Owner Federal	Mineral Owner Federal	Lease No. <i>API 30-015-27589</i>
-----------------------	-----------------------	-----------------------------------

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	17	23S	31E					Eddy

Latitude N 32.306285 Longitude W 103.801920

**NATURE OF RELEASE**

Type of Release: Produced water and crude oil	Volume of Release: 5 Bbls of Produced water and 3 Bbls of crude oil	Volume Recovered: 3 Bbls total fluid
Source of Release: Stuffing box on the wellhead	Date and Hour of Occurrence: 5/18/12 Time unknown	Date and Hour of Discovery: 5/18/12 8:00 a.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
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 packing in the stuffing box failed. The packing was replaced.

Describe Area Affected and Cleanup Action Taken.\* Approximately 410 sq.ft. of caliche well pad. All of the free product was removed with a vacuum truck, the stained soil was left in place pending remediation activities that will follow the NMOCD and BLM guidelines for leaks and spills.

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:	Signed By: <i>Mike B...</i>
Title: Waste Mgmt. & Remediation Specialist	Approval Date: <b>JUN 20 2012</b>	Expiration Date:
E-mail Address: TAsavoie@BassPet.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 6/2/12 Phone: 432-556-8730		

\* Attach Additional Sheets If Necessary

**RECEIVED**  
 JUN 12 2012  
 NMOCD ARTESIA

*2RP 1177*  
 Remediation per OCD Rules &  
 Guidelines. **SUBMIT REMEDIATION**  
**PROPOSAL NOT LATER THAN:**  
7/20/12

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

Form C-141  
Revised August 8, 2011

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

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: James Ranch Unit #55 (2RP-1177)		Facility Type: E & P	
Surface Owner: Federal		Mineral Owner: Federal	
		API No. 30-015-27589	

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County:
F	17	23S	31E					Eddy

Latitude N 32.306285 Longitude W 103.801920

**NATURE OF RELEASE**

Type of Release: Produced water and crude oil	Volume of Release: 5 bbls of produced water and 3 bbls of crude oil	Volume Recovered: 3 bbls total fluid
Source of Release: Stuffing box on wellhead	Date and Hour of Occurrence: 5/18/12 Time unknown	Date and Hour of Discovery: 5/18/12 8:00 a.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom? Tony Savoie	Date and Hour	<b>NM OIL CONSERVATION</b>
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse <b>ARTESIA DISTRICT</b>	

JUL 01 2014

RECEIVED

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\* The packing in the stuffing box failed. The packing was replaced.

Describe Area Affected and Cleanup Action Taken.\* Approximately 410 sq. ft. of caliche well pad. All of the free product was removed with a vacuum truck, the stained soil was left in place pending remediation activities that will follow the NMOCD and BLM guidelines for leak and spills.

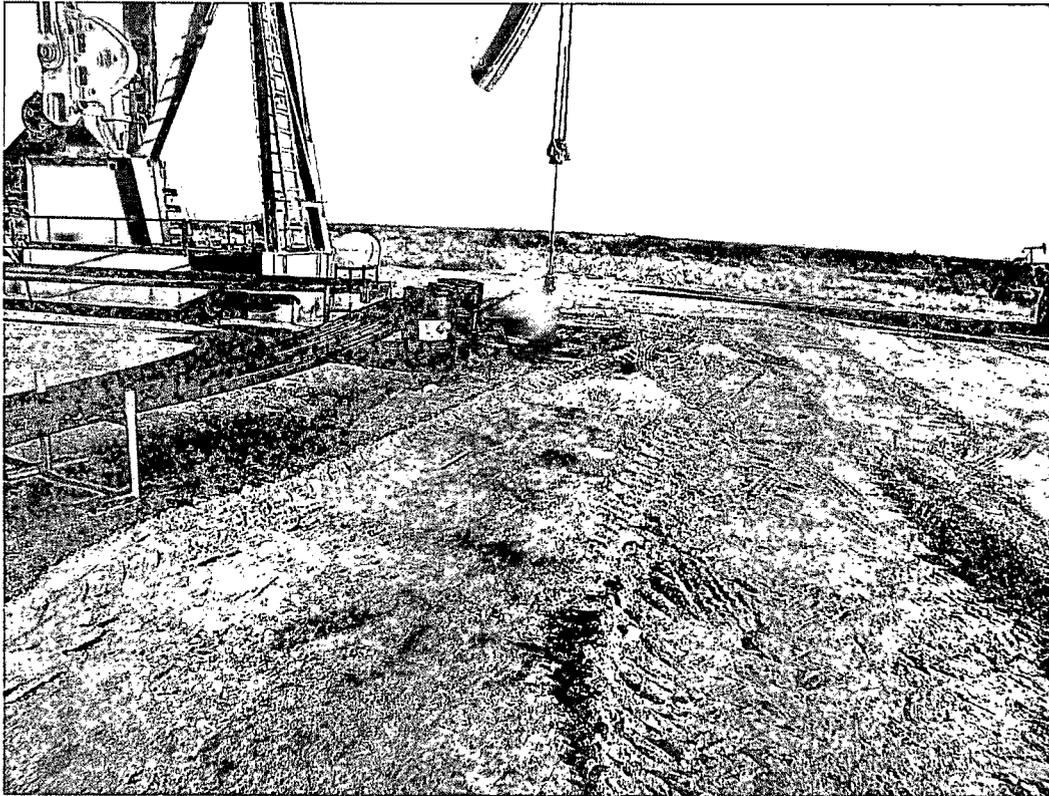
Approximately 740 cu. yds of impacted soil was excavated from an area measuring approximately 12' to 30' in width, 130' in length, and 2' to 4' in depth. Impacted soil was hauled to an NMOCD-approved disposal facility. **Please reference the attached Remediation Summary and Risk-Based Site Closure Request for detail 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 Environmental Specialist:	
Title: Waste Management and Remediation Specialist		Approval Date:	Expiration Date:
E-mail Address: tasavoie@basspet.com		Conditions of Approval:	
Date: <del>4/9/14</del> 7/1/14		Attached <input type="checkbox"/>	
Phone: 432-556-8730			

\* Attach Additional Sheets If Necessary

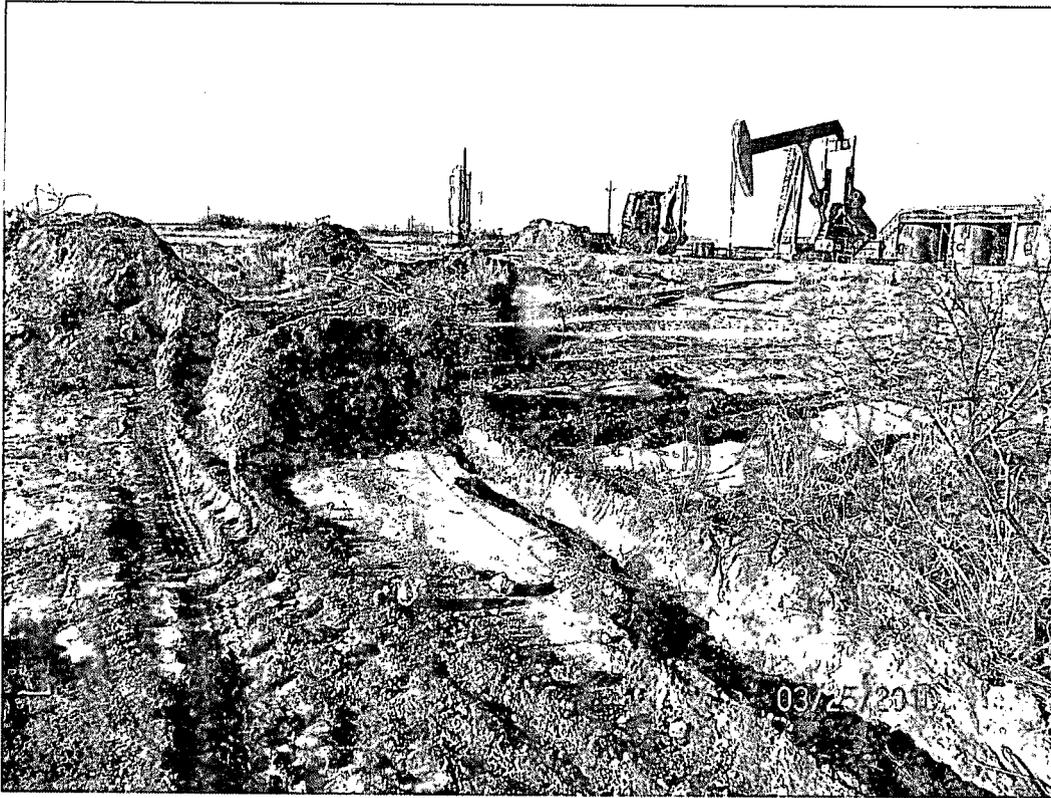
**Appendix C**  
**Photographs**



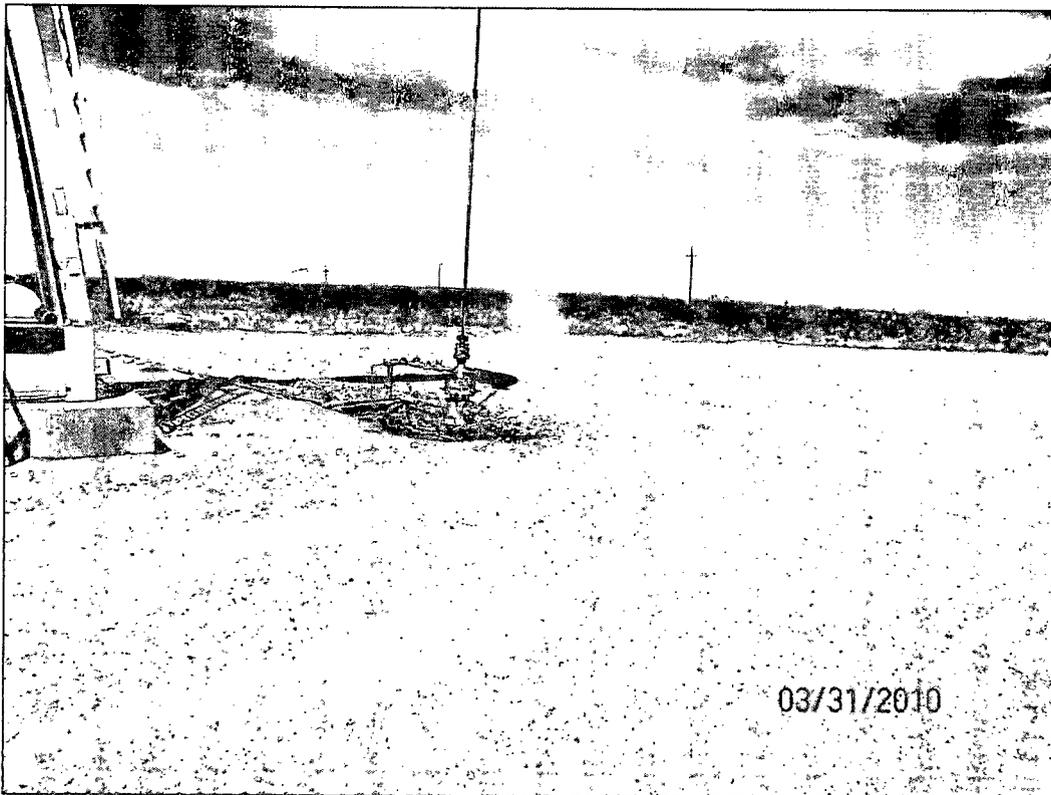
Photograph of surface staining from the March 9, 2013, release at the JRU #55 Well Pad.



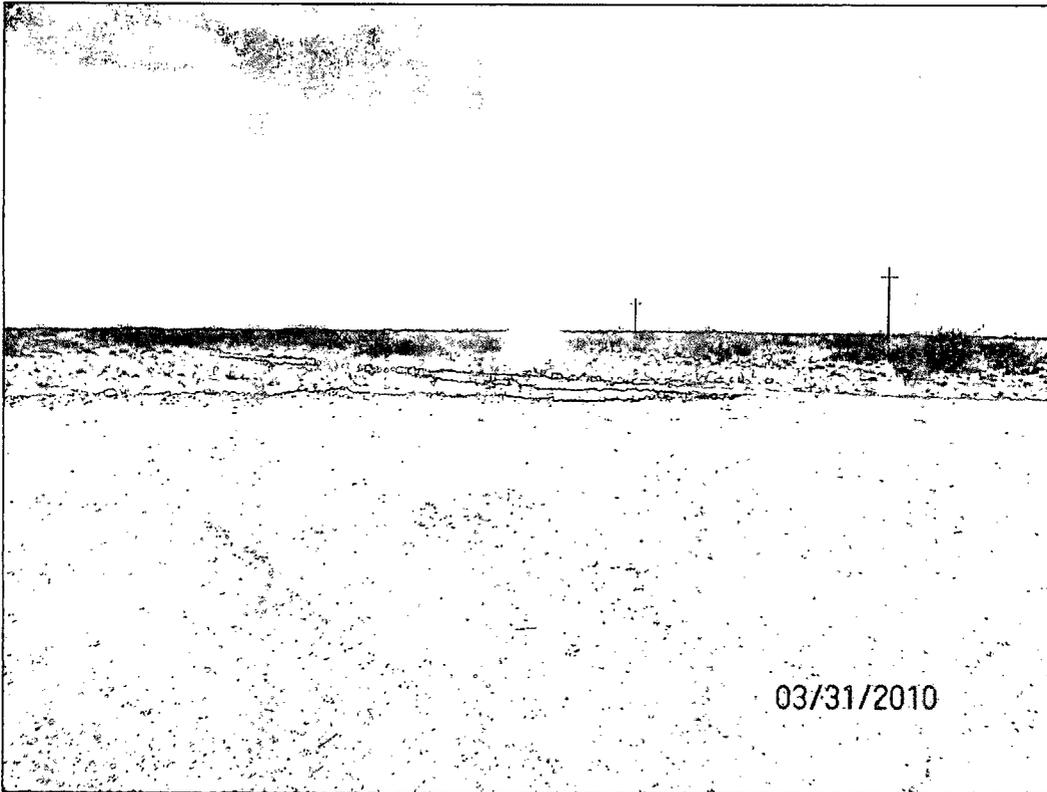
Photograph of remediation activities associated with the March 9, 2013, release at the JRU #55 Well Pad.



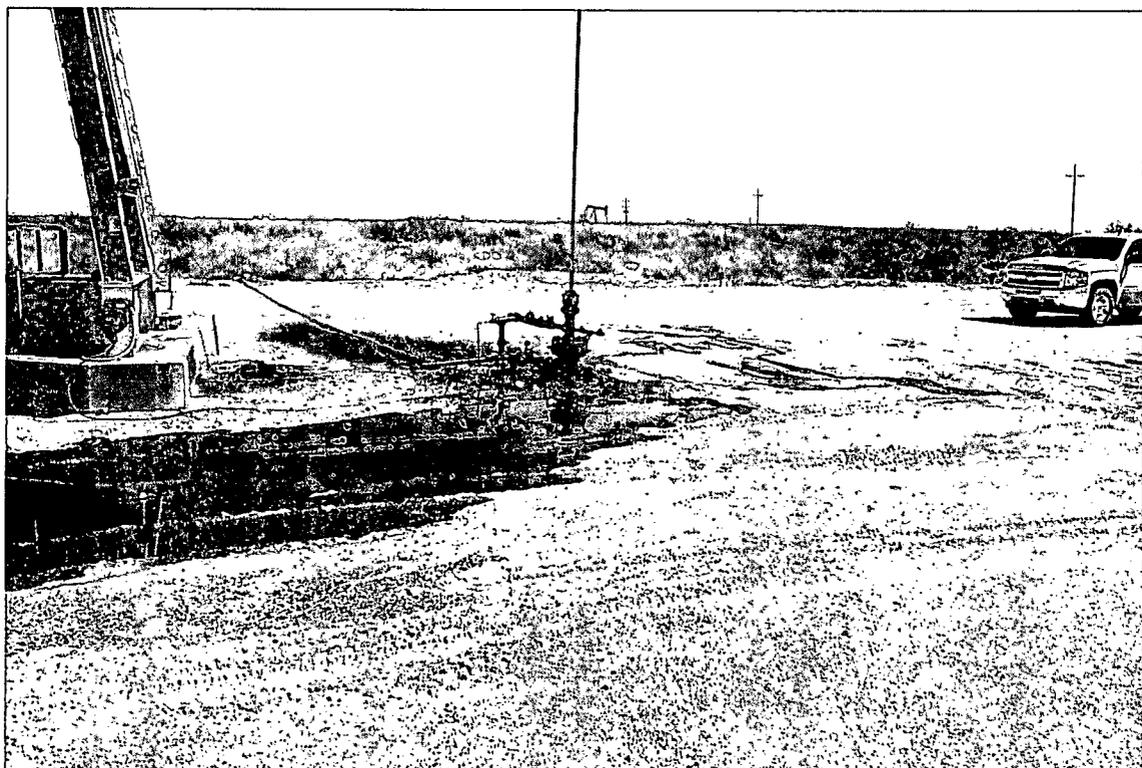
Photograph of remediation activities associated with the March 9, 2013, release at the JRU #55 Well Pad.



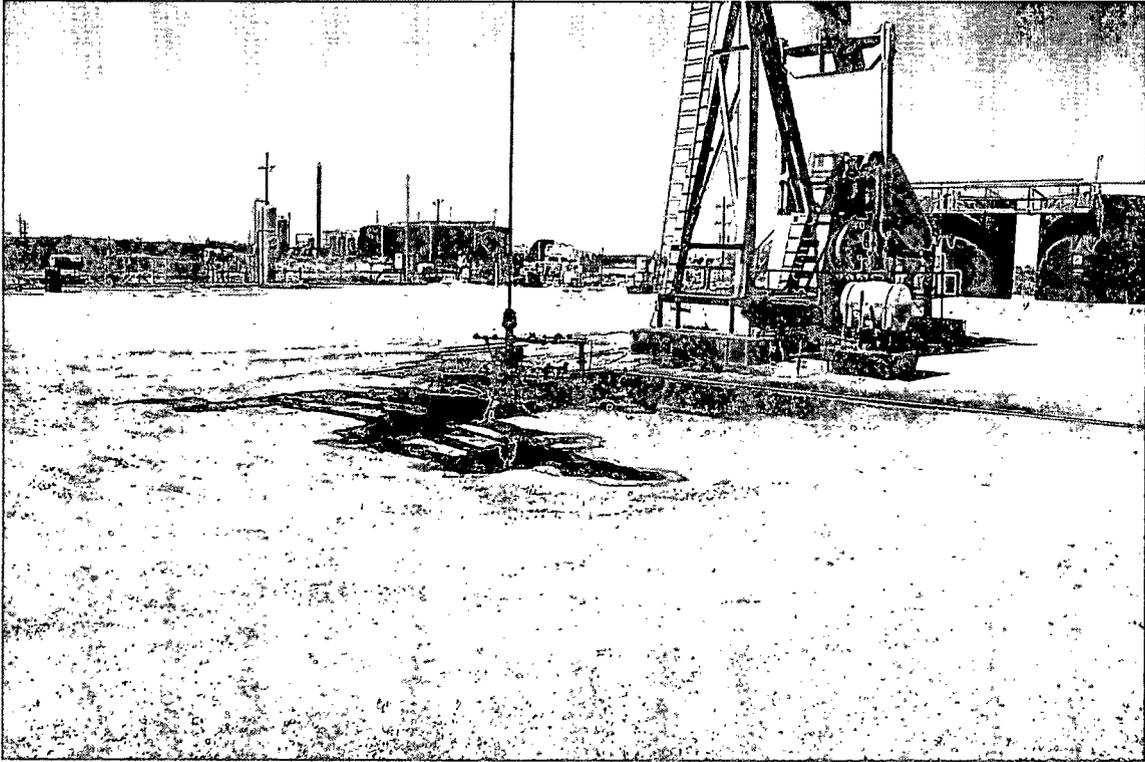
Photograph of JRU #55 Well Pad after remediation activities associated with the March 9, 2010, release.



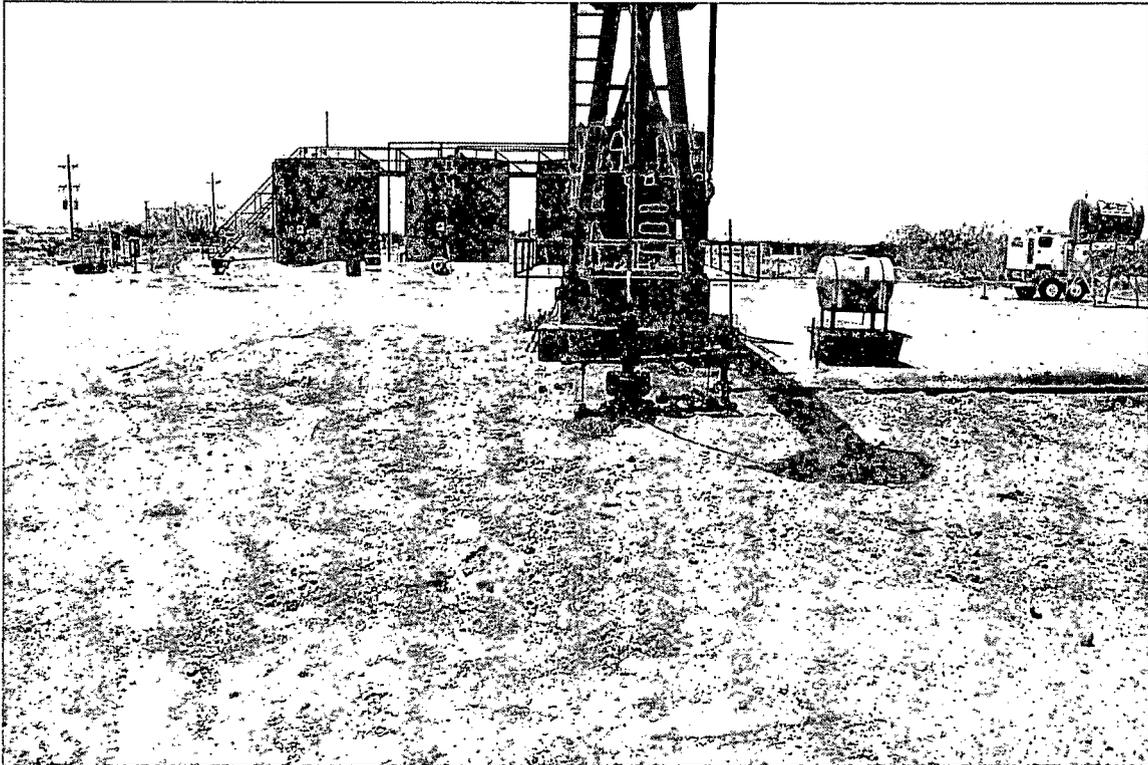
Photograph of JRU #55 Well Pad after remediation activities associated with the March 9, 2010, release.



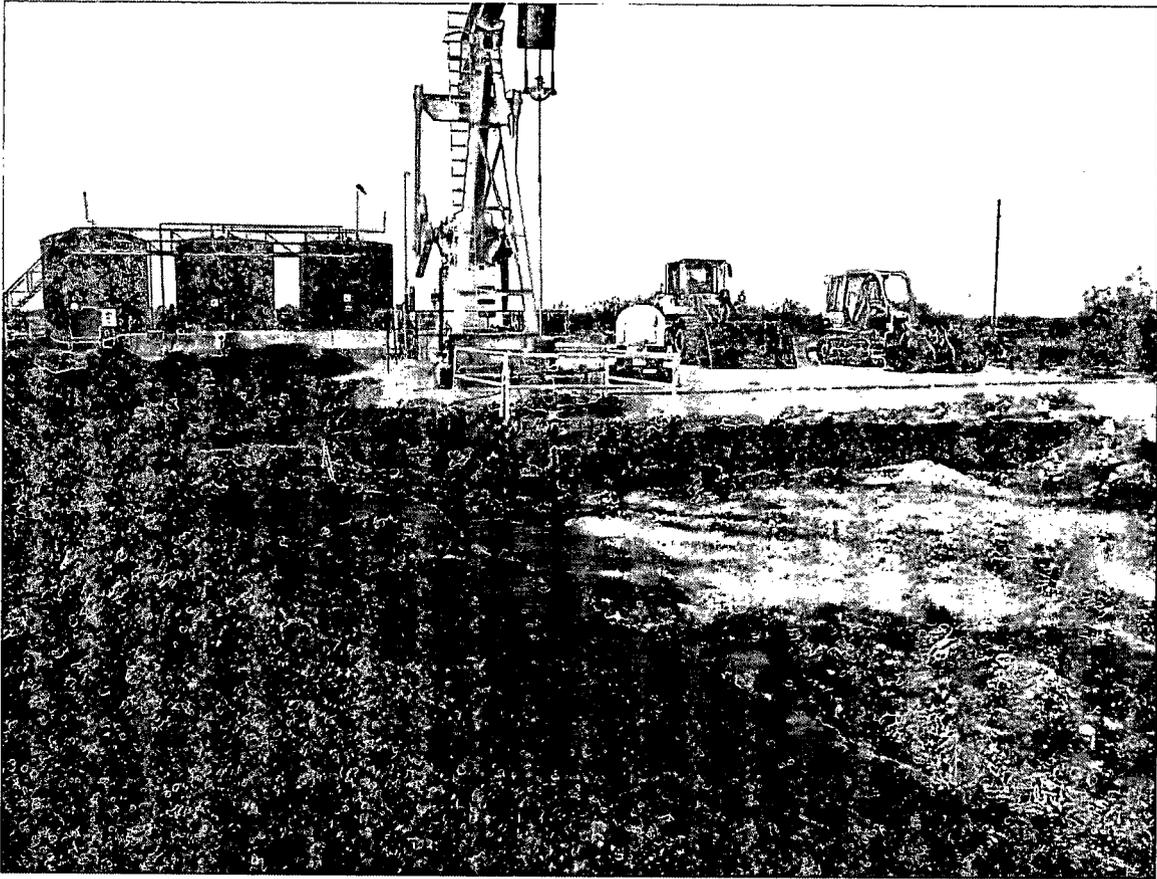
Photograph of the May 18, 2012, release at the JRU #55 Well Pad.



Photograph of the May 18, 2012, release at the JRU #55 Well Pad.



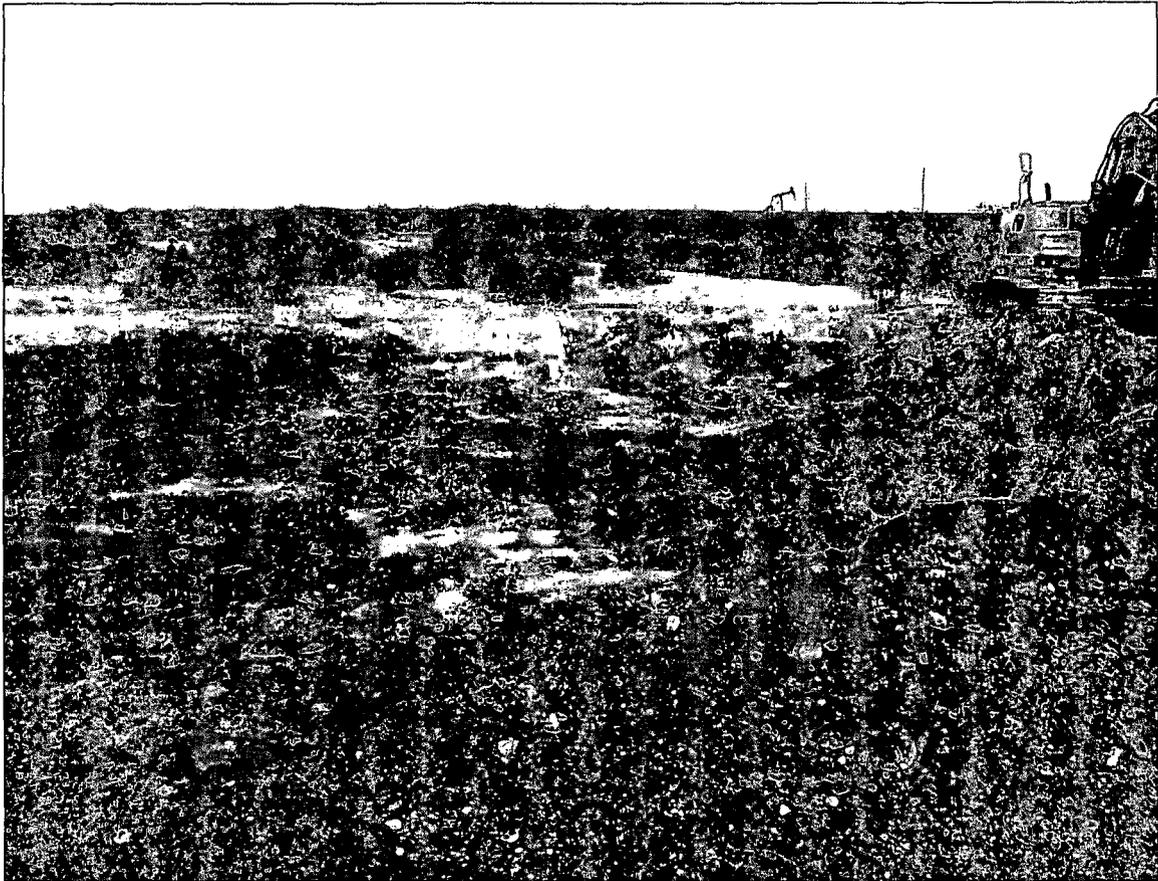
Photograph of surface staining after removing free-standing fluid at the JRU #55 Well Pad release site.



Photograph of recent excavation activities at the JRU #55 Well Pad.



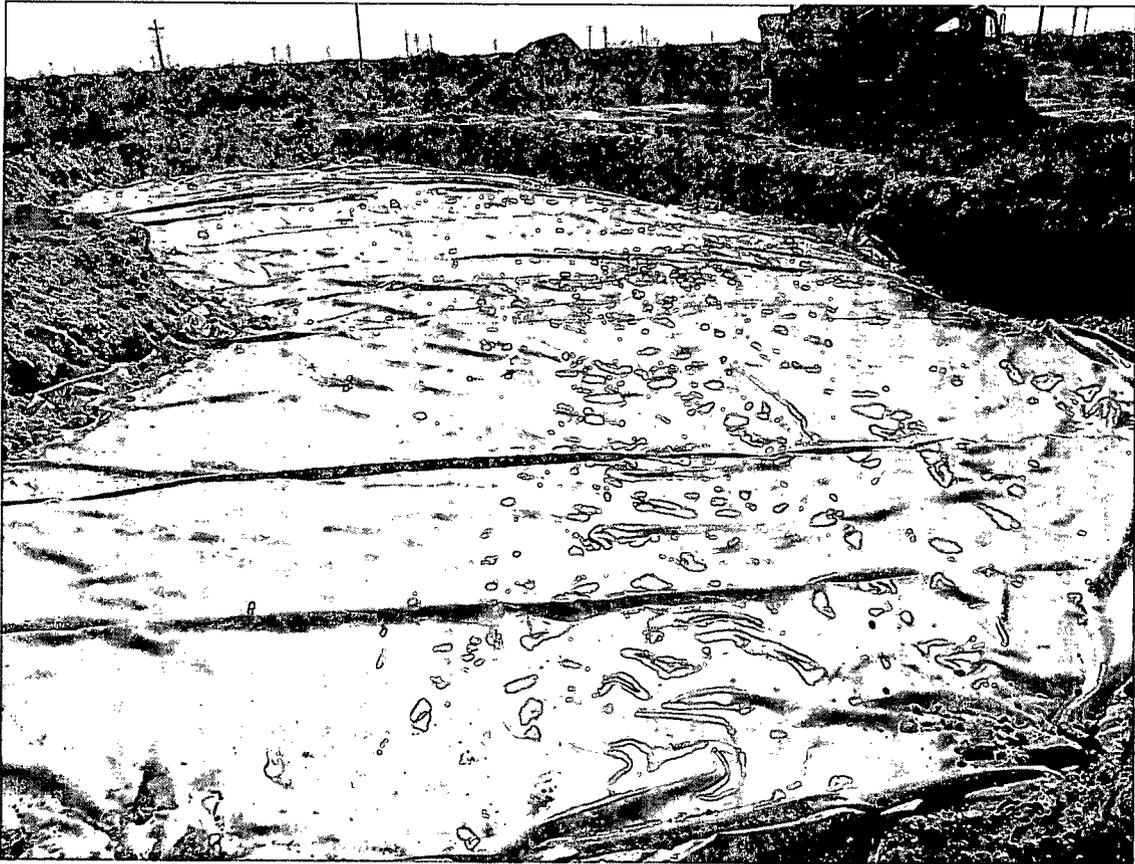
Photograph of the delineation trench at the JRU #55 Well Pad environmental remediation site.



Photograph of recent excavation activities at the JRU #55 Well Pad.



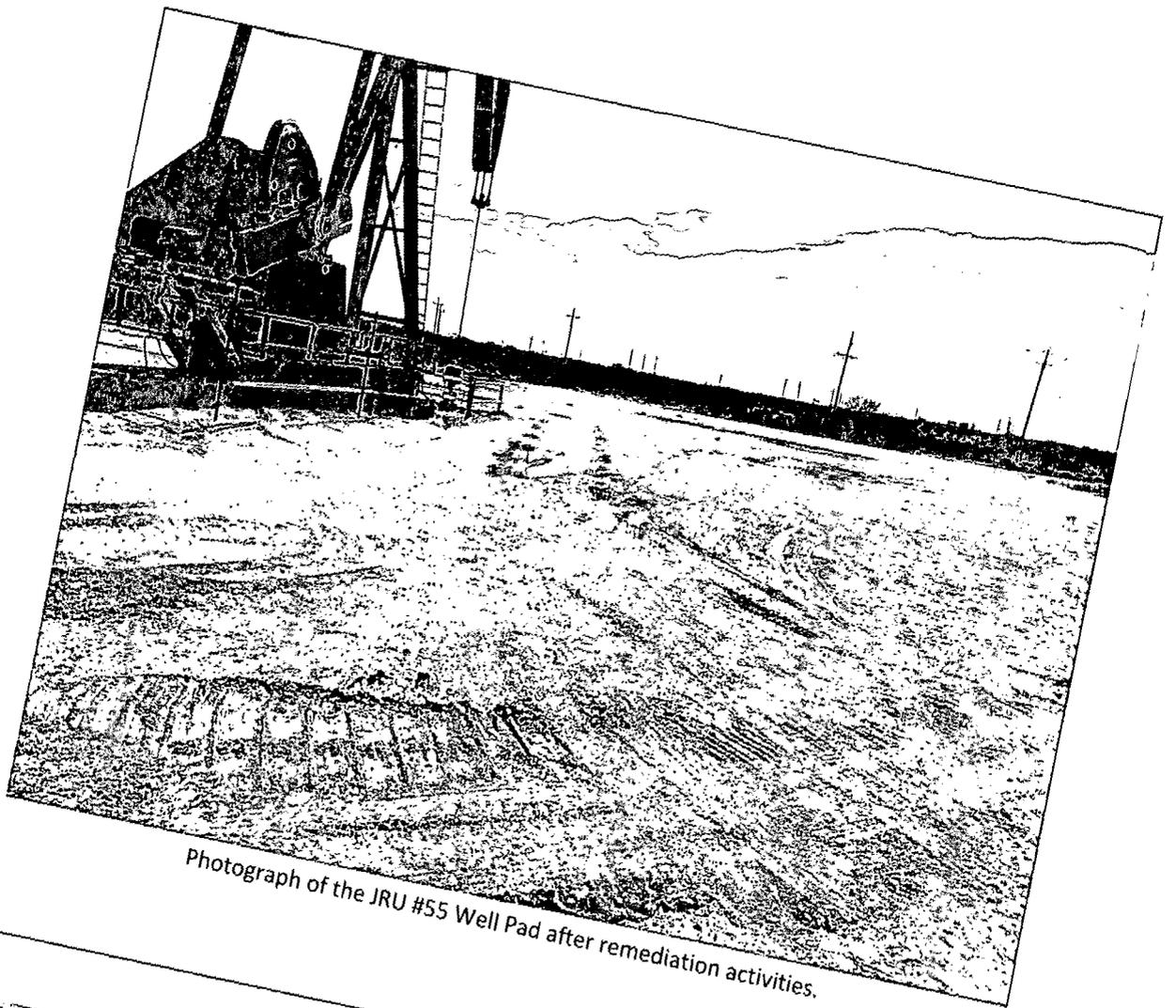
Photograph of the excavated area at the JRU #55 Well Pad.



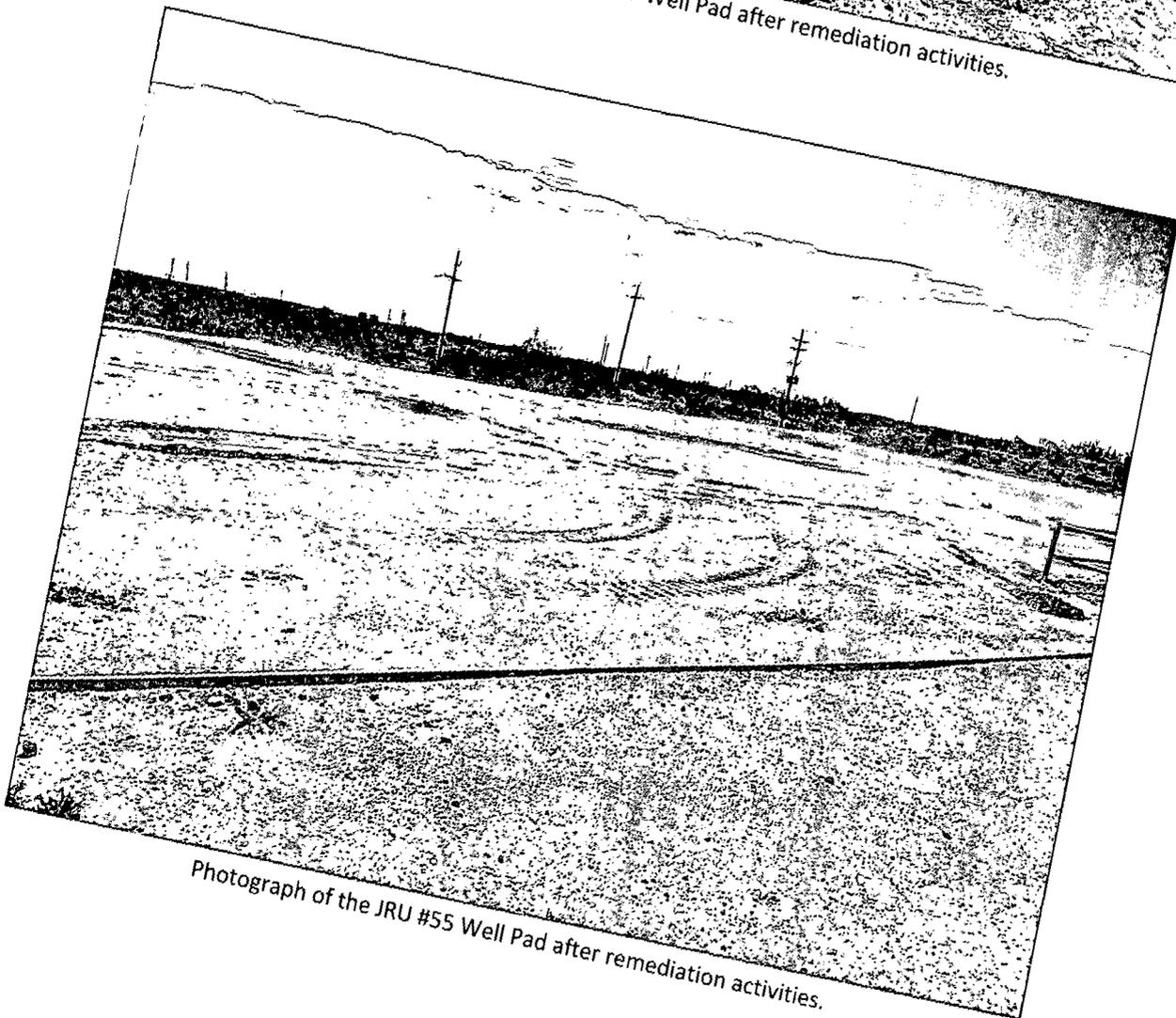
Photograph of the installation of the poly liner at the JRU #55 Well Pad.



Photograph of backfilling activities at the JRU #55 Well Pad.



Photograph of the JRU #55 Well Pad after remediation activities.



Photograph of the JRU #55 Well Pad after remediation activities.

**Appendix D**  
**Laboratory Analytical Reports**

May 28, 2014

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: JRU #55 WELL PAD

Enclosed are the results of analyses for samples received by the laboratory on 05/22/14 11:30.

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:	05/22/2014	Sampling Date:	05/21/2014
Reported:	05/28/2014	Sampling Type:	Soil
Project Name:	JRU #55 WELL PAD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: DT 1 @ 6' (H401571-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1100	16.0	05/28/2014	ND	416	104	400	0.00		

**Sample ID: DT 1 @ 9' (H401571-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2600	16.0	05/28/2014	ND	416	104	400	0.00		

**Sample ID: DT 1 @ 17' (H401571-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	480	16.0	05/28/2014	ND	416	104	400	0.00		

**Sample ID: DT 1 @ 18.5' (H401571-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	352	16.0	05/28/2014	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: 05/22/2014  
 Reported: 05/28/2014  
 Project Name: JRU #55 WELL PAD  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 05/21/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: ESW #2 (H401571-05)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	304	16.0	05/28/2014	ND	416	104	400	0.00		

**Sample ID: ESW #3 (H401571-06)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	304	16.0	05/28/2014	ND	416	104	400	0.00		

**Sample ID: NSW (H401571-07)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	05/28/2014	ND	416	104	400	0.00		

**Sample ID: SSW (H401571-08)**

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	05/28/2014	ND	416	104	400	0.00		

**Sample ID: ESW #1 (H401571-09)**

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	05/28/2014	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:	05/22/2014	Sampling Date:	05/20/2014
Reported:	05/28/2014	Sampling Type:	Soil
Project Name:	JRU #55 WELL PAD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: WSW #1 (H401571-10)**

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	05/28/2014	ND	416	104	400	0.00		

**Sample ID: WSW #2 (H401571-11)**

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	05/28/2014	ND	416	104	400	0.00		

**Sample ID: FLOOR #1 @ 2' (H401571-12)**

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	05/28/2014	ND	416	104	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	05/27/2014	ND	199	99.5	200	1.11		
DRO >C10-C28	<10.0	10.0	05/27/2014	ND	213	107	200	0.0136		
EXT DRO >C28-C35	<10.0	10.0	05/27/2014	ND						

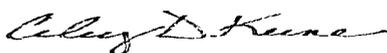
Surrogate: 1-Chlorooctane 119 % 65.2-140

Surrogate: 1-Chlorooctadecane 119 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

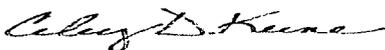
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported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

---

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



# CARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240

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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

1/2

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: JRU #55 Well Pad				State: NM								Zip: 88220															
Project Location: Eddy Co., NM				Phone #: (432)556-8730																							
Sampler Name: <i>50cc LOWRY</i>				Fax #:																							
FOR LAB USE ONLY	Lab I.D.	Sample I.D.	G/RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV.		SAMPLING															
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME												
	H401571																										
	1	DT 1 @ 6'	6	1			/				/			5/21/14	1115	x											
	2	DT 1 @ 9'	6	1			/				/			5/21/14	1130	x											
	3	DT 1 @ 17'	6	1			/				/			5/21/14	1145	x											
	4	DT 1 @ 18.5'	6	1			/				/			5/21/14	1200	x											
	5	ESW #2	6	1			/				/			5/21/14	1205	x											
	6	ESW #3	6	1			/				/			5/21/14	1210	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>Joel Lowry</i>	Date: 5/22/14 Time: 4:30	Received By: <i>BK Blakemore</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By: <i>BK Blakemore</i>	Date: 5-22-14 Time: 11:30	Received By: <i>Jodi Henson</i>	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	-4.6°	Sample Condition Cool Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	REMARKS:  HOLD FOR TPH Please email results to pm@basinenv.com, TASavoie@BassPet.com & SJWalters@BassPet.com	
		CHECKED BY: <i>JH</i>		

#54



May 29, 2014

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: JRU #55 WELL PAD

Enclosed are the results of analyses for samples received by the laboratory on 05/23/14 12:55.

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:	05/23/2014	Sampling Date:	05/22/2014
Reported:	05/29/2014	Sampling Type:	Soil
Project Name:	JRU #55 WELL PAD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: NSW #2 (H401586-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	05/29/2014	ND	432	108	400	3.77		

**Sample ID: NSW #3 (H401586-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	320	16.0	05/29/2014	ND	432	108	400	3.77		

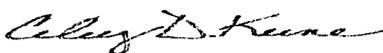
**Sample ID: SSW #2 (H401586-03)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	05/29/2014	ND	432	108	400	3.77		

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

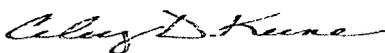
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received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

---

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**Celey D. Keene, Lab Director/Quality Manager**



# CARDINAL LABORATORIES

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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 4 of 4

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: JRU #55 Well Pad				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.	G/RAB OR (C)OMP.	# CONTAINERS	MATRIX							PRESERV.		SAMPLING													
					GROUNDWATER	WASTEWATER	SOIL					OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME								
	H40586																										
	1	NSW #2	g	1			x							5/22/14	1005	x											
	2	NSW #3	g	1			x							5/22/14	1010	x											
	3	SSW #2	g	1			x							5/22/14	1015	x											

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Relinquished By: <i>Joel Lowry</i>	Date: 5/23/14	Received By: <i>Jodi Henson</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By:	Time: 12:35	Received By:	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Date:	Time:	REMARKS:  HOLD FOR TPH Please email results to pm@basinenv.com, TASavoie@BassPet.com & SJWalters@BassPet.com	

-5.80

Sample Condition  
Cool Intact  
 Yes  No  
 No  No

CHECKED BY:  
(initials)  
*JH*

#54

June 10, 2014

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: JRU #55 WELL PAD

Enclosed are the results of analyses for samples received by the laboratory on 05/29/14 11:25.

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,



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:	05/29/2014	Sampling Date:	05/27/2014
Reported:	06/10/2014	Sampling Type:	Soil
Project Name:	JRU #55 WELL PAD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: ROAD #1 (H401646-01)**

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>288</b>	16.0	06/04/2014	ND	400	100	400	3.92		

**Sample ID: ROAD #2 (H401646-02)**

BTEX 8260B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/10/2014	ND	0.461	115	0.400	5.25		
Toluene*	<0.050	0.050	06/10/2014	ND	0.392	97.9	0.400	3.62		
Ethylbenzene*	<0.050	0.050	06/10/2014	ND	0.418	104	0.400	3.26		
Total Xylenes*	<0.150	0.150	06/10/2014	ND	1.22	101	1.20	2.16		
Total BTEX	<0.300	0.300	06/10/2014	ND						

Surrogate: Dibromofluoromethane 97.2 % 61.3-142

Surrogate: Toluene-d8 106 % 71.3-129

Surrogate: 4-Bromofluorobenzene 96.9 % 65.7-141

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>272</b>	16.0	06/04/2014	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	06/03/2014	ND	214	107	200	5.51		
DRO >C10-C28	<10.0	10.0	06/03/2014	ND	226	113	200	7.38		
EXT DRO >C28-C35	<10.0	10.0	06/03/2014	ND						

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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:	05/29/2014	Sampling Date:	05/27/2014
Reported:	06/10/2014	Sampling Type:	Soil
Project Name:	JRU #55 WELL PAD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

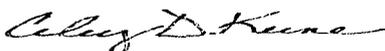
**Sample ID: ROAD #2 (H401646-02)**

TPH 8015M	mg/kg	Analyzed By: MS							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Surrogate: 1-Chlorooctane	103 %	65.2-140							
Surrogate: 1-Chlorooctadecane	110 %	63.6-154							

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: 05/29/2014  
 Reported: 06/10/2014  
 Project Name: JRU #55 WELL PAD  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 05/27/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: NESW (H401646-03)**

BTEX 8260B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/10/2014	ND	0.461	115	0.400	5.25		
Toluene*	<0.050	0.050	06/10/2014	ND	0.392	97.9	0.400	3.62		
Ethylbenzene*	<0.050	0.050	06/10/2014	ND	0.418	104	0.400	3.26		
Total Xylenes*	<0.150	0.150	06/10/2014	ND	1.22	101	1.20	2.16		
Total BTEX	<0.300	0.300	06/10/2014	ND						

Surrogate: Dibromofluoromethane 99.3 % 61.3-142

Surrogate: Toluene-d8 106 % 71.3-129

Surrogate: 4-Bromofluorobenzene 98.5 % 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	32.0	16.0	06/04/2014	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	06/10/2014	ND	204	102	200	5.28		
DRO >C10-C28	<10.0	10.0	06/10/2014	ND	215	107	200	7.85		
EXT DRO >C28-C35	<10.0	10.0	06/10/2014	ND						

Surrogate: 1-Chlorooctane 94.1 % 65.2-140

Surrogate: 1-Chlorooctadecane 105 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

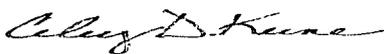
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported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

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Celey D. Keene, Lab Director/Quality Manager



# ARDINAL LABORATORIES

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## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 6 of 6

Company Name: Basin Environmental Service Technologies, LLC				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																					
Project Manager: Joel Lowry				P.O. #:				Chloride TPH (8015M) <i>Added 5/16</i> 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: JRU #55 Well Pad				State: NM Zip: 88220																									
Project Location: Eddy Co., NM				Phone #: (432)556-8730																									
Sampler Name: <i>SOEC Lowry</i>				Fax #:																									
FOR LAB USE ONLY																													
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV.			SAMPLING															
						GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME													
<i>H401646</i>																													
<i>1</i>		Road #1		<i>g</i>	<i>1</i>		<i>x</i>				<i>x</i>		<i>5/27/14</i>	<i>900</i>	<i>x</i>														
<i>2</i>		Road #2		<i>g</i>	<i>1</i>		<i>x</i>				<i>x</i>		<i>5/27/14</i>	<i>910</i>	<i>x</i>	<i>x</i>													
<i>3</i>		NESW		<i>g</i>	<i>1</i>		<i>x</i>				<i>x</i>		<i>5/27/14</i>	<i>920</i>	<i>x</i>	<i>X</i>	<i>X</i>												

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Relinquished By: <i>Joel Lowry</i>	Date: <i>5/29/14</i> Time: <i>8:00</i>	Received By: <i>BL Blackwood</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By: <i>BL Blackwood</i>	Date: <i>5-29-14</i> Time: <i>11:25</i>	Received By: <i>Jodi Henson</i>	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	Checked By: <i>JH</i> (Initials)	REMARKS:	
<i>-4.80</i>		Please email results to pm@basinenv.com, TASavoie@BassPet.com & SJWalters@BassPet.com		

#54