

# *Basin Environmental Service Technologies, LLC*

3100 Plains Highway  
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## **REMEDIATION SUMMARY & SITE CLOSURE REQUEST**

**BOPCO, LP  
GOLDEN "D" FEDERAL Well #4 FLOW LINE  
Eddy County, New Mexico  
Unit Letter "O" (SW/SE), Section 8, Township 21 South, Range 29 East  
Latitude 32.488680° North, Longitude 104.008276° West  
NMOCD Reference #: 2RP-1625**

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**

**October 2014**



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**Ben J. Arguijo  
Project Manager**

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## 1.0 INTRODUCTION & BACKGROUND INFORMATION

Basin Environmental Service Technologies, LLC (Basin Environmental), on behalf of BOPCO, LP (BOPCO), has prepared this *Remediation Summary & Site Closure Request* for the release site known as Golden “D” Federal Well #4 Flow Line (Golden “D”). The legal description of the release site is Unit Letter “O” (SW/SE), Section 8, Township 21 South, Range 29 East, in Eddy County, New Mexico. The geographic coordinates of the release site are 32.488680° North latitude and 104.008276° West longitude. The property affected by the release is owned by The United States Department of the Interior - Bureau of Land Management (BLM). Please reference Figure 1 for a “Site Location Map”.

On March 16, 2013, BOPCO discovered a release had occurred along a two and seven-eighths-inch (2 7/8”) steel flow line connected to the Golden “D” Federal #4 well. The release was attributed to internal corrosion. During initial response activities, a vacuum truck was utilized to free-standing fluid. Heavily impacted soil was scraped up, and approximately eighteen cubic yards (18 yd<sup>3</sup>) of excavated soil was transported to Lea Land, Inc. (NMOCD Permit # WM-01-035), for disposal. The affected section of pipeline was also replaced.

The release was immediately reported to the New Mexico Oil Conservation Division (NMOCD) Artesia District Office. The “Release Notification and Corrective Action” (Form C-141) indicated approximately ten barrels (10 bbls) of crude oil and approximately ten barrels (10 bbls) of produced water were released, and approximately five barrels (5 bbls) of fluid were recovered. The release affected an area of the nearby lease road measuring approximately one thousand, four hundred forty square feet (1,440 ft<sup>2</sup>), as well as two thousand, seven hundred square feet (2,700 ft<sup>2</sup>) of the adjacent pastureland.

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 8, Township 21 South, Range 29 East. A depth to groundwater reference map utilized by the NMOCD indicates groundwater should be encountered at approximately one hundred and sixty feet (160') to one hundred and sixty-five feet (165') below ground surface (bgs). Based on the NMOCD ranking system, zero (0) points will be assigned to the site as a result of this criterion.

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

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

NMOCD guidelines indicate the Golden “D” release site has an initial ranking score of zero (0) points. The soil remediation levels for a site with a ranking score of zero (0) points are as follows:

- Benzene – 10 mg/Kg (ppm)
- Benzene, ethylbenzene, toluene, and xylenes (BTEX) – 50 mg/Kg (ppm)
- Total petroleum hydrocarbons (TPH) – 5,000 mg/Kg (ppm)

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

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

On March 19, 2013, a preliminary investigation of the release site was conducted. Soil samples were collected from the ground surface near the release point and in a pooling area on the caliche access road. A hand-augered soil boring was also advanced in the primary pooling area in the adjacent pastureland to a depth of approximately two feet (2') bgs. A total of five (5) soil samples (Release Point Surface, Pasture Area Surface, Pasture Area 1' bgs, Pasture Area 2' bgs, and Pond Area Road) were submitted Cardinal Laboratories in Hobbs, New Mexico, for analysis of TPH and chloride concentrations using Environmental Protection Agency (EPA) methods SW-846 8015M and 4500 Cl-B, respectively. Soil sample locations are depicted in Figure #2, "Site & Sample Location Map". Laboratory analytical results are summarized in Table 1, "Concentrations of Benzene, BTEX, TPH & Chloride in Soil".

Laboratory analytical results indicated TPH concentrations ranged from 11.8 mg/kg in soil sample Pasture Area 2' bgs to 51,830 mg/kg in soil sample Pond Area Road. Chloride concentrations ranged from 4,400 mg/kg in soil sample Pasture Area Surface to 11,400 mg/kg in soil sample Release Point Surface. Review of laboratory analytical results indicated additional delineation of the release would be required.

On July 2, 2014, delineation of the release site commenced. A series of hand-augered soil borings were advanced at the site to further investigate the horizontal and vertical extent of contaminated soil. The soil borings were advanced at one (1) to two-foot (2') increments, and soil samples were field-screened with a chloride field-test kit.

On July 3, 2014, excavation of the release site commenced. A chloride field-test kit was used to field-screen the horizontal and vertical extent of contaminated soil and to guide the excavation. To facilitate soil remediation activities, the excavation was divided into two (2) sections: Pasture and Road. Excavated soil was stockpiled on-site, pending final disposition.

Four (4) soil samples (Floor #1B, S. Wall #1, W. Wall #1, and E. Wall #1A) were collected from the floor and sidewalls of the Pasture Excavation and submitted to the laboratory for analysis of TPH and chloride concentrations, as well as BTEX concentrations using EPA Method SW-846 8021b. Laboratory analytical results indicated TPH and BTEX constituent concentrations were less than the appropriate laboratory method detection limit (MDL) in all submitted soil samples. Chloride concentrations ranged from 48.0 mg/kg in soil samples S. Wall #1 and E. Wall #1A to 912 mg/kg in soil sample W. Wall #1.

On July 7, 2014, two (2) soil samples (Floor #2 and Floor #3) were collected from the floor of the Pasture Excavation and submitted to the laboratory for analysis of TPH, BTEX, and chloride

concentrations. Laboratory analytical results indicated TPH and BTEX constituent concentrations were less than the appropriate laboratory MDL in all submitted soil samples. Chloride concentrations ranged from 128 mg/kg in soil sample Floor #2 to 480 mg/kg in soil sample Floor #3.

On July 8, 2014, four (4) soil samples (N. Wall #1C, E. Wall #2, W. Wall #2, and Floor #4) were collected from the floor and sidewalls of the Pasture Excavation and submitted to the laboratory for analysis of TPH, BTEX, and chloride concentrations. Laboratory analytical results indicated TPH and BTEX constituent concentrations were less than the appropriate laboratory MDL in all submitted soil samples, with the exception of soil sample Floor #4, which exhibited a TPH concentration of 11.3 mg/kg. Chloride concentrations ranged from 240 mg/kg in soil sample Floor #4 to 896 mg/kg in soil sample W. Wall #2.

On July 9, 2014, four (4) soil samples (Floor #5a, Floor #6, Floor #7, and Floor #8) were collected from the floor of the Road Excavation and submitted to the laboratory for analysis of TPH, BTEX, and chloride concentrations. Laboratory analytical results indicated TPH and BTEX constituent concentrations were less than the appropriate laboratory MDL in all submitted soil samples, with the exception of soil sample Floor #7, which exhibited a TPH concentration of 62.8 mg/kg. Chloride concentrations ranged from 32 mg/kg in soil sample Floor #6 to 736 mg/kg in soil sample Floor #8.

On July 10, 2014, one (1) soil sample (Floor #9) was collected from the floor of the Road Excavation and submitted to the laboratory for analysis of TPH, BTEX, and chloride concentrations. Laboratory analytical results indicated TPH and BTEX constituent concentrations were less than the appropriate laboratory MDL, and the chloride concentration was 512 mg/kg.

From July 7 through July 10, 2014, approximately six hundred cubic yards (600 yd<sup>3</sup>) of impacted soil was transported to Lea Land, Inc. (NMOCD Permit # WM-01-035), for disposal.

Based on laboratory analytical results and field-screens, from July 7 through July 10, 2014, the excavations were backfilled with non-impacted material, compacted, and contoured to fit the surrounding topography. Prior to backfilling, final dimensions of the Pasture Excavation were approximately one hundred and five feet (105') in length, varying in width from approximately twenty feet (20') to approximately ninety-five feet (95'), and varying in depth from approximately two feet (2') to approximately four feet (4') bgs. Final dimensions of the Road Excavation were approximately two hundred and seventy-five feet (275') in length, averaging approximately six feet (6') in width, and approximately one foot (1') in depth.

On August 28, 2014, the release site was seeded with a BLM-approved seed mixture.

#### **4.0 QUALITY ASSURANCE/QUALITY CONTROL (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 floors and sidewalls of the Golden “D” excavations were analyzed by an NMOCD-approved laboratory, and concentrations of benzene, BTEX, TPH, and chloride were less than the recommended remediation action levels established for the site by the NMOCD. Based on these laboratory analytical results, Basin Environmental recommends BOPCO provide the NMOCD Artesia District Office and the BLM a copy of this *Remediation Summary & Site Closure Request* and request the NMOCD grant site closure to the Golden “D” release site.

### **6.0 LIMITATIONS**

Basin Environmental Service Technologies, LLC, has prepared this *Remediation Summary & Site Closure Request* to the best of its ability. No other warranty, expressed or implied, is made or intended. Basin Environmental has examined and relied upon documents referenced in the report and on oral statements made by certain individuals. Basin Environmental has not conducted an independent examination of the facts contained in referenced materials and statements. Basin Environmental has presumed the genuineness of these documents and statements and that the information provided therein is true and accurate. Basin Environmental has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Basin Environmental 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, NM 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





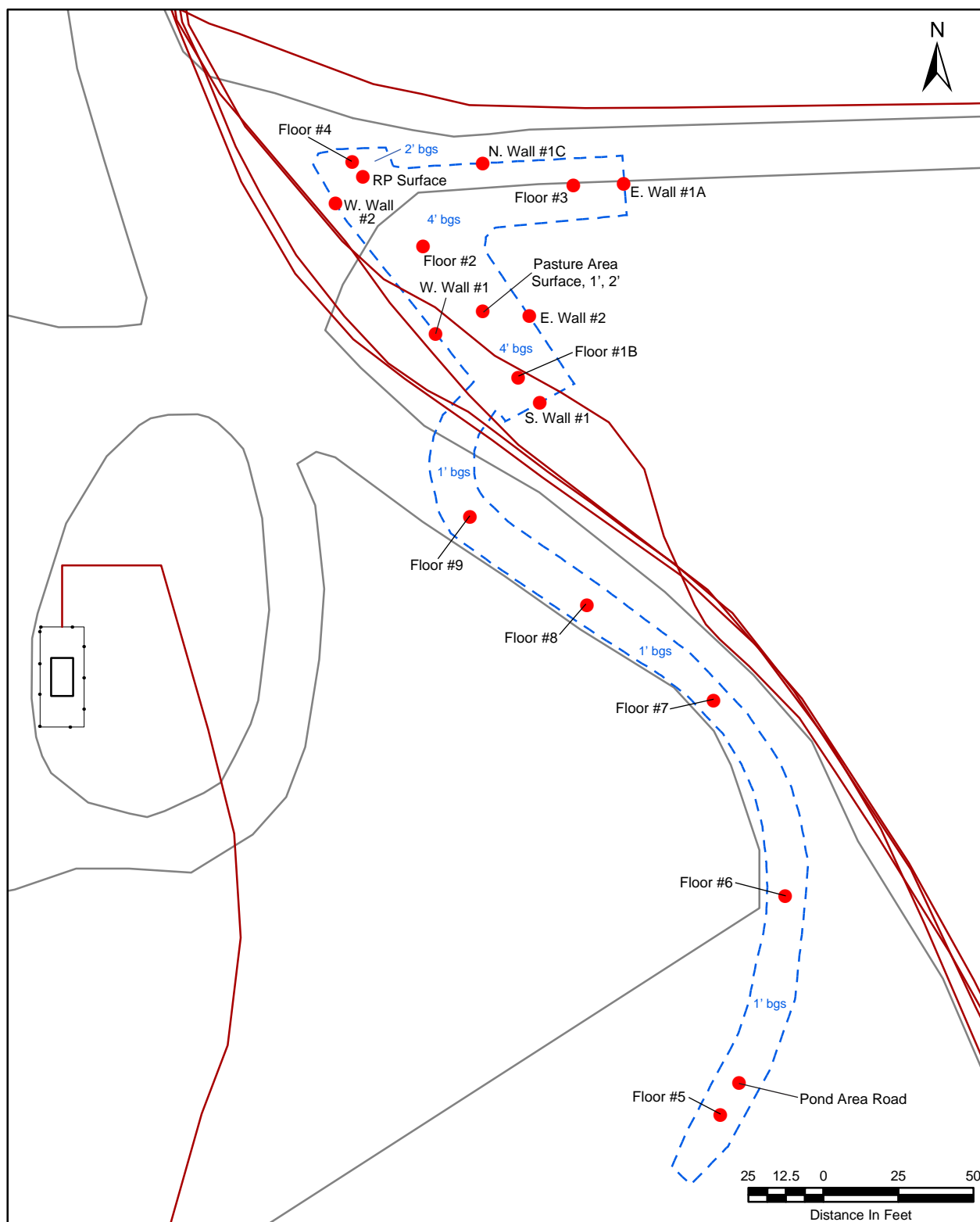
1,000 500 0 1,000 2,000  
 Distance in Feet

**Figure 1**  
**Site Location Map**  
**BOPCO, LP**  
**Golden "D" Federal Well #4 Flow Line**  
**Eddy County, New Mexico**  
**NMOCD Reference #: 2RP-1625**



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

Drawn By: BJA	Checked By: BRB
July 3, 2014	Scale: 1" = 2,000'



#### Legend:

- - - Excavation Extent
- Pipeline
- Caliche Road/Pad
- Fence
- Sample Location

**Figure 2**  
**Site & Sample Location Map**  
 BOPCO, LP  
 Golden "D" Federal Well #4 Flow Line  
 Eddy County, New Mexico  
 NMOCD Ref. #: 2RP-1625



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

Drawn By: BJA

Checked By: BRB

November 6, 2014

Scale: 1" = 50'

# Tables

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

**BOPCO, LP**  
**GOLDEN "D" FEDERAL WELL #4 FLOW LINE**  
**EDDY COUNTY, NEW MEXICO**  
**NMOCD REFERENCE #: 2RP-1625**

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
				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)		CHLORIDE (mg/Kg)
Release Point Surface	Surface	3/19/2013	Excavated	-	-	-	-	-	8,740	23,300	3,460	35,500	11,400
Pasture Area Surface	Surface	3/19/2013	Excavated	-	-	-	-	-	6,530	17,200	2,550	26,280	4,400
Pasture Area 1' bgs	1'	3/19/2013	Excavated	-	-	-	-	-	1,650	2,250	314	4,214	5,680
Pasture Area 2' bgs	2'	3/19/2013	Excavated	-	-	-	-	-	<10.0	11.8	<10.0	11.8	10,000
Pond Area Road	Surface	3/19/2013	Excavated	-	-	-	-	-	12,200	34,300	5,330	51,830	7,680
Floor #1B	4'	7/3/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	240
S. Wall #1	2.5'	7/3/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	48.0
W. Wall #1	2.5'	7/3/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	912
E. Wall #1A	2.5'	7/3/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	48.0
Floor #2	4'	7/7/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	128
Floor #3	4'	7/7/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	480
N. Wall #1C	2.5'	7/8/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	464
E. Wall #2	2.5'	7/8/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	256
W. Wall #2	2.5'	7/8/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	896
Floor #4	2'	7/8/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	11.3	<10.0	11.3	240
Floor #5A	1'	7/9/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	720
Floor #6	1'	7/9/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	32.0
Floor #7	1'	7/9/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	51.5	11.3	62.8	272
Floor #8	1'	7/9/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	736
Floor #9	1'	7/10/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	512
NMOCD Criteria				10					50			5,000	1,000

- = Not analyzed.

# **Appendices**

**Appendix A**  
**Release Notification &**  
**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 Brázos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

RECEIVED

16 2013

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

RECEIVED

APR 16 2013

NMOC D ARTESIA

Form C-141  
Revised August 8, 2011

Submit 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. 260737	Contact: Tony Savoie
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: Golden "D" Federal Well #4 Flow line	Facility Type: Exploration and Production
Release is 4630 ft. NW of well location in Section 8-21-29	

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-35636
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#### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	8	21S	29E					Eddy

Latitude N 32.488680 Longitude W 104.008276

#### NATURE OF RELEASE

Type of Release Crude oil and produced water	Volume of Release 10 bbls oil and 10 bbls produced water	Volume Recovered 5 bbls total fluid
Source of Release 27/8" Flow line	Date and Hour of Occurrence 3/16/13 time unknown	Date and Hour of Discovery 3/16/13 9:00 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 flow developed a leak due to internal corrosion; the bad section of pipe was replaced.

Describe Area Affected and Cleanup Action Taken.\* The spill impacted approximately 1440 sq. ft. of lease road and approximately 2700 ft. of pasture land. The free standing fluid was recovered with a vacuum truck and the saturated soil was scraped up, approximately 18 cubic yards of soil was hauled to Lea Lands for disposal. The impacted area will be remediated in accordance with the NMOCD and BLM spill remediation requirements for spills and releases.

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: Tony Savoie		OIL CONSERVATION DIVISION	
Printed Name: Tony Savoie		Approved by Environmental Specialist: Signed By Mike Benavides	
Title: Waste Management and Remediation Specialist		Approval Date: APR 17 2013	Expiration Date:
E-mail Address: tasavoie@basspet.com		Conditions of Approval:	
Date: 4/16/13 Phone: 432-556-8730		Remediation per OCD Rule & Guidelines. SUBMIT REMEDIATION PROPOSAL NO LATER THAN: May 17, 2013	
		Attached <input type="checkbox"/>	

\* Attach Additional Sheets If Necessary

2RP-1625

# **Appendix B**

## **Photographs**





Golden "D" Federal Well #4 Flow Line - Release Site



Golden "D" Federal Well #4 Flow Line - Release Site





Golden “D” Federal Well #4 Flow Line - Release Site



Golden “D” Federal Well #4 Flow Line – Pasture Excavation





Golden “D” Federal Well #4 Flow Line – Pasture Excavation



Golden “D” Federal Well #4 Flow Line – Pasture Excavation





Golden “D” Federal Well #4 Flow Line – Pasture Excavation (Near Release Point)



Golden “D” Federal Well #4 Flow Line – Road Excavation





Golden “D” Federal Well #4 Flow Line – Pasture Excavation (Following Backfill)



Golden “D” Federal Well #4 Flow Line – Pasture Excavation (Following Backfill)





Golden “D” Federal Well #4 Flow Line – Road Excavation (Following Backfill)



Golden “D” Federal Well #4 Flow Line – Road Excavation (Following Backfill)





Golden “D” Federal Well #4 Flow Line – Road Excavation (Following Backfill)



Golden “D” Federal Well #4 Flow Line – Pasture Excavation (Following Seeding)

# **Appendix C**

## **Laboratory Analytical Reports**





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

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March 25, 2013

TONY SAVOIE

Bass Enterprises

522 W. Mermod #709

Carlsbad, NM 88220

RE: GOLDEN D #4

Enclosed are the results of analyses for samples received by the laboratory on 03/20/13 9:08.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. 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 on 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:**

Bass Enterprises  
TONY SAVOIE  
522 W. Mermod #709  
Carlsbad NM, 88220  
Fax To: (505) 887-7473

Received:	03/20/2013	Sampling Date:	03/19/2013
Reported:	03/25/2013	Sampling Type:	Soil
Project Name:	GOLDEN D #4	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EAST OF CARLSBAD, NM		

**Sample ID: RELEASE POINT SURFACE (H300663-01)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>11400</b>	16.0	03/20/2013	ND	416	104	400	3.77	
TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>8740</b>	50.0	03/21/2013	ND	204	102	200	1.40	
<b>DRO &gt;C10-C28</b>	<b>23300</b>	50.0	03/21/2013	ND	205	103	200	2.54	
<b>EXT DRO &gt;C28-C35</b>	<b>3460</b>	50.0	03/21/2013	ND					
<hr/>									
Surrogate: 1-Chlorooctane	122 %	65.2-140							
Surrogate: 1-Chlorooctadecane	94.5 %	63.6-154							

**Sample ID: PASTURE AREA SURFACE (H300663-02)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>4400</b>	16.0	03/20/2013	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
<b>GRO C6-C10</b>	<b>6530</b>	50.0	03/21/2013	ND	204	102	200	1.40	
<b>DRO &gt;C10-C28</b>	<b>17200</b>	50.0	03/21/2013	ND	205	103	200	2.54	
<b>EXT DRO &gt;C28-C35</b>	<b>2550</b>	50.0	03/21/2013	ND					
<hr/>									
Surrogate: 1-Chlorooctane	85.3 %	65.2-140							
Surrogate: 1-Chlorooctadecane	108 %	63.6-154							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

Bass Enterprises  
TONY SAVOIE  
522 W. Mermod #709  
Carlsbad NM, 88220  
Fax To: (505) 887-7473

Received: 03/20/2013  
Reported: 03/25/2013  
Project Name: GOLDEN D #4  
Project Number: NONE GIVEN  
Project Location: EAST OF CARLSBAD, NM

Sampling Date: 03/19/2013  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: PASTURE AREA 1' BGS (H300663-03)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5680	16.0	03/20/2013	ND	432	108	400	0.00	
TPH 8015M	mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	1650	50.0	03/21/2013	ND	201	100	200	7.32	
DRO >C10-C28	2250	50.0	03/21/2013	ND	199	99.4	200	11.1	
EXT DRO >C28-C35	314	50.0	03/21/2013	ND					
Surrogate: 1-Chlorooctane									
	152 %	65.2-140							
Surrogate: 1-Chlorooctadecane									
	144 %	63.6-154							

**Sample ID: PASTURE AREA 2' BGS (H300663-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	10000	16.0	03/20/2013	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	03/21/2013	ND	201	100	200	7.32	
DRO >C10-C28	11.8	10.0	03/21/2013	ND	199	99.4	200	11.1	
EXT DRO >C28-C35	<10.0	10.0	03/21/2013	ND					
Surrogate: 1-Chlorooctane									
	103 %	65.2-140							
Surrogate: 1-Chlorooctadecane									
	112 %	63.6-154							

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

Bass Enterprises  
TONY SAVOIE  
522 W. Mermod #709  
Carlsbad NM, 88220  
Fax To: (505) 887-7473

Received:	03/20/2013	Sampling Date:	03/19/2013
Reported:	03/25/2013	Sampling Type:	Soil
Project Name:	GOLDEN D #4	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EAST OF CARLSBAD, NM		

**Sample ID: POND AREA ROAD (H300663-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: DW							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
Chloride	7680	16.0	03/20/2013	ND	432	108	400	0.00			
TPH 8015M		mg/kg		Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10	12200	50.0	03/21/2013	ND	201	100	200	7.32			
DRO >C10-C28	34300	50.0	03/21/2013	ND	199	99.4	200	11.1			
EXT DRO >C28-C35	5330	50.0	03/21/2013	ND							
Surrogate: 1-Chlorooctane	358 %	65.2-140									
Surrogate: 1-Chlorooctadecane	1070 %	63.6-154									

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: <b>BOPCO L.P.</b>		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>																							
Project Manager: <b>Tony Savoie</b>		P.O. #:		<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">SOILS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Chlorides</div> </div>																							
Address: <b>522 W. Marmad Suite 704</b>		Company:																									
City: <b>Carlsbad</b> State: <b>NM</b> Zip: <b>88220</b>		Attn: <b>JD</b>																									
Phone #: <b>432-556-8730</b> Fax #:		Address:																									
Project #: <b>—</b> Project Owner: <b>BOPCO L.P.</b>		City: <b>3/19</b>																									
Project Name: <b>Golden D #4</b>		State: Zip:																									
Project Location: <b>East of Carlsbad.</b>		Phone #:																									
Sampler Name: <b>Tony Savoie</b>		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												
	<b>H301063</b>																										
	<b>1</b>	<b>Release Point Surface</b>	<b>6</b>	<b>1</b>										<b>3/19/13</b>	<b>13:00</b>	<b>✓</b>	<b>✓</b>										
	<b>2</b>	<b>Pasture Area Surface</b>	<b>6</b>	<b>1</b>										<b>✓</b>	<b>13:04</b>	<b>✓</b>	<b>✓</b>										
	<b>3</b>	<b>Pasture Area 1' B6S</b>	<b>6</b>	<b>1</b>										<b>✓</b>	<b>13:15</b>	<b>✓</b>	<b>✓</b>										
	<b>4</b>	<b>Pasture Area 2' B6S</b>	<b>6</b>	<b>1</b>										<b>✓</b>	<b>13:20</b>	<b>✓</b>	<b>✓</b>										
	<b>5</b>	<b>Pond Area road</b>	<b>6</b>	<b>1</b>										<b>✓</b>	<b>13:08</b>	<b>✓</b>	<b>✓</b>										

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Relinquished By: <b>Tony Savoie</b>	Date: <b>3/20/13</b>	Received By: <b>Jodi Henson</b>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:	
	Time: <b>0908</b>		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:	
Relinquished By:	Date:	Received By:	REMARKS:		
	Time:				
Delivered By: (Circle One) Sampler - UPS - Bus - Other: <b>20</b>		Sample Condition Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	CHECKED BY: <b>[Signature]</b>		

July 11, 2014

BEN J. ARGUIJO

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: GOLDEN 'D' FEDERAL WELL #4

Enclosed are the results of analyses for samples received by the laboratory on 07/03/14 15:35.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	07/03/2014	Sampling Date:	07/03/2014
Reported:	07/11/2014	Sampling Type:	Soil
Project Name:	GOLDEN 'D' FEDERAL WELL #4	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Kathy Perez
Project Location:	EDDY CO., NM		

**Sample ID: FLOOR #1 B (H402039-01)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/10/2014	ND	1.81	90.5	2.00	9.20	
Toluene*	<0.050	0.050	07/10/2014	ND	1.82	91.1	2.00	9.37	
Ethylbenzene*	<0.050	0.050	07/10/2014	ND	1.81	90.5	2.00	9.72	
Total Xylenes*	<0.150	0.150	07/10/2014	ND	5.52	92.1	6.00	9.36	
Total BTX	<0.300	0.300	07/10/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.6 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	07/09/2014	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/08/2014	ND	190	95.1	200	0.320	
DRO >C10-C28	<10.0	10.0	07/08/2014	ND	199	99.7	200	4.31	
EXT DRO >C28-C35	<10.0	10.0	07/08/2014	ND					

Surrogate: 1-Chlorooctane 115 % 65.2-140

Surrogate: 1-Chlorooctadecane 127 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

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

Received:	07/03/2014	Sampling Date:	07/03/2014
Reported:	07/11/2014	Sampling Type:	Soil
Project Name:	GOLDEN 'D' FEDERAL WELL #4	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Kathy Perez
Project Location:	EDDY CO., NM		

**Sample ID: S. WALL #1 (H402039-02)**

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/10/2014	ND	1.81	90.5	2.00	9.20		
Toluene*	<0.050	0.050	07/10/2014	ND	1.82	91.1	2.00	9.37		
Ethylbenzene*	<0.050	0.050	07/10/2014	ND	1.81	90.5	2.00	9.72		
Total Xylenes*	<0.150	0.150	07/10/2014	ND	5.52	92.1	6.00	9.36		
Total BTX	<0.300	0.300	07/10/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	07/09/2014	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/08/2014	ND	190	95.1	200	0.320	
DRO >C10-C28	<10.0	10.0	07/08/2014	ND	199	99.7	200	4.31	
EXT DRO >C28-C35	<10.0	10.0	07/08/2014	ND					

Surrogate: 1-Chlorooctane 123 % 65.2-140

Surrogate: 1-Chlorooctadecane 134 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	07/03/2014	Sampling Date:	07/03/2014
Reported:	07/11/2014	Sampling Type:	Soil
Project Name:	GOLDEN 'D' FEDERAL WELL #4	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Kathy Perez
Project Location:	EDDY CO., NM		

**Sample ID: W. WALL #1 (H402039-03)**

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/10/2014	ND	1.81	90.5	2.00	9.20		
Toluene*	<0.050	0.050	07/10/2014	ND	1.82	91.1	2.00	9.37		
Ethylbenzene*	<0.050	0.050	07/10/2014	ND	1.81	90.5	2.00	9.72		
Total Xylenes*	<0.150	0.150	07/10/2014	ND	5.52	92.1	6.00	9.36		
Total BTEX	<0.300	0.300	07/10/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	912	16.0	07/09/2014	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/08/2014	ND	190	95.1	200	0.320	
DRO >C10-C28	<10.0	10.0	07/08/2014	ND	199	99.7	200	4.31	
EXT DRO >C28-C35	<10.0	10.0	07/08/2014	ND					

Surrogate: 1-Chlorooctane 120 % 65.2-140

Surrogate: 1-Chlorooctadecane 134 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	07/03/2014	Sampling Date:	07/03/2014
Reported:	07/11/2014	Sampling Type:	Soil
Project Name:	GOLDEN 'D' FEDERAL WELL #4	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Kathy Perez
Project Location:	EDDY CO., NM		

**Sample ID: E. WALL #1A (H402039-04)**

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/10/2014	ND	1.81	90.5	2.00	9.20		
Toluene*	<0.050	0.050	07/10/2014	ND	1.82	91.1	2.00	9.37		
Ethylbenzene*	<0.050	0.050	07/10/2014	ND	1.81	90.5	2.00	9.72		
Total Xylenes*	<0.150	0.150	07/10/2014	ND	5.52	92.1	6.00	9.36		
Total BTX	<0.300	0.300	07/10/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	07/09/2014	ND	400	100	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/08/2014	ND	190	95.1	200	0.320	
DRO >C10-C28	<10.0	10.0	07/08/2014	ND	199	99.7	200	4.31	
EXT DRO >C28-C35	<10.0	10.0	07/08/2014	ND					

Surrogate: 1-Chlorooctane 120 % 65.2-140

Surrogate: 1-Chlorooctadecane 133 % 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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Cardinal Laboratories

\*=Accredited Analyte

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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 7 of 7

Company Name: Basin Environmental Service Technologies, LLC				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																																	
Project Manager: <del>Ben J. Aguirre</del> Ben J. Aguirre				P.O. #:				<div style="display: flex; flex-direction: column; align-items: center;"> <div>Chloride</div> <div>TPH (8015M)</div> <div>BTEX (8021B) <i>added 7/10</i></div> </div>																																	
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: BOPCO, LP				City: Carlsbad																																					
Project Name: Golden "D" Federal Well #4 Flow Line				State: NM Zip: 88220																																					
Project Location: Eddy Co., NM				Phone #: (432)556-8730																																					
Sampler Name: Miguel Ramirez				Fax #:																																					
FOR LAB USE ONLY						MATRIX		PRESERV.		SAMPLING																															
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER		ACID/BASE		ICE / COOL		OTHER		DATE		TIME													
H402039				G		1						X								X						7/3/14		1110		X X X											
1		Floor #4 B		↓		↓																				1235		X X X													
2		S. Wall #1		↓		↓																				1300		X X X													
3		W. Wall #1		↓		↓																				1310		X X X													
4		E. Wall #1A		↓		↓																																			

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Relinquished By: <i>Miguel Ramirez</i>		Date: 7/3/14		Received By: <i>[Signature]</i>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:	
Time: 1330		Date: 7/3/14		Received By: <i>[Signature]</i>		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:	
Time: 1535		Date: 7/3/14		Received By: <i>[Signature]</i>		REMARKS: Run BTEX if TPH < 5,000 mg/kg			
Delivered By: (Circle One)		Sample Condition		CHECKED BY: (Initials)		Please email results to pm@basinenv.com, TASavoie@BassPet.com & SJWalters@BassPet.com			
Sample OR Bus - Other:		Cool Intact		[Initials]					
Revision 1.0		Yes No		Yes No					

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

July 15, 2014

BEN J. ARGUIJO

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: GOLDEN 'D' FEDERAL WELL #4

Enclosed are the results of analyses for samples received by the laboratory on 07/08/14 11:20.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	07/08/2014	Sampling Date:	07/07/2014
Reported:	07/15/2014	Sampling Type:	Soil
Project Name:	GOLDEN 'D' FEDERAL WELL #4	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: FLOOR #3 (H402063-01)**

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/11/2014	ND	1.89	94.3	2.00	21.5	
Toluene*	<0.050	0.050	07/11/2014	ND	1.89	94.7	2.00	21.9	
Ethylbenzene*	<0.050	0.050	07/11/2014	ND	1.88	93.8	2.00	22.4	
Total Xylenes*	<0.150	0.150	07/11/2014	ND	5.76	96.0	6.00	20.7	
Total BTEx	<0.300	0.300	07/11/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	480	16.0	07/10/2014	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	07/11/2014	ND	184	92.2	200	2.67	
DRO >C10-C28	<10.0	10.0	07/11/2014	ND	196	98.2	200	3.22	
EXT DRO >C28-C35	<10.0	10.0	07/11/2014	ND					

Surrogate: 1-Chlorooctane 96.6 % 65.2-140

Surrogate: 1-Chlorooctadecane 105 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

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

Received:	07/08/2014	Sampling Date:	07/07/2014
Reported:	07/15/2014	Sampling Type:	Soil
Project Name:	GOLDEN 'D' FEDERAL WELL #4	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: FLOOR #2 (H402063-02)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/11/2014	ND	1.89	94.3	2.00	21.5		
Toluene*	<0.050	0.050	07/11/2014	ND	1.89	94.7	2.00	21.9		
Ethylbenzene*	<0.050	0.050	07/11/2014	ND	1.88	93.8	2.00	22.4		
Total Xylenes*	<0.150	0.150	07/11/2014	ND	5.76	96.0	6.00	20.7		
Total BTEX	<0.300	0.300	07/11/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	07/10/2014	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	07/15/2014	ND	184	92.2	200	2.67	
DRO >C10-C28	<10.0	10.0	07/15/2014	ND	196	98.2	200	3.22	
EXT DRO >C28-C35	<10.0	10.0	07/15/2014	ND					

Surrogate: 1-Chlorooctane 120 % 65.2-140

Surrogate: 1-Chlorooctadecane 124 % 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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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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## Page 5 of 5

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-3.20

#54



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

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July 17, 2014

BEN J. ARGUIJO

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: GOLDEN 'D' FEDERAL WELL #4

Enclosed are the results of analyses for samples received by the laboratory on 07/09/14 10:41.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	07/09/2014	Sampling Date:	07/08/2014
Reported:	07/17/2014	Sampling Type:	Soil
Project Name:	GOLDEN 'D' FEDERAL WELL #4	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Celey D. Keene
Project Location:	EDDY CO., NM		

**Sample ID: N WALL #1C (H402081-01)**

BTX 8021B			mg/kg		Analyzed By: CK				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/17/2014	ND	2.06	103	2.00	12.6	
Toluene*	<0.050	0.050	07/17/2014	ND	2.06	103	2.00	12.3	
Ethylbenzene*	<0.050	0.050	07/17/2014	ND	2.13	106	2.00	12.2	
Total Xylenes*	<0.150	0.150	07/17/2014	ND	6.39	106	6.00	12.7	
Total BTX	<0.300	0.300	07/17/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 89.4-126

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	464	16.0	07/11/2014	ND	400	100	400	7.69	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/16/2014	ND	176	88.2	200	3.85	
DRO >C10-C28	<10.0	10.0	07/16/2014	ND	191	95.4	200	3.53	
EXT DRO >C28-C35	<10.0	10.0	07/16/2014	ND					

Surrogate: 1-Chlorooctane 109 % 65.2-140

Surrogate: 1-Chlorooctadecane 118 % 63.6-154

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	07/09/2014	Sampling Date:	07/08/2014
Reported:	07/17/2014	Sampling Type:	Soil
Project Name:	GOLDEN 'D' FEDERAL WELL #4	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Celey D. Keene
Project Location:	EDDY CO., NM		

**Sample ID: E WALL #2 (H402081-02)**

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/17/2014	ND	2.06	103	2.00	12.6		
Toluene*	<0.050	0.050	07/17/2014	ND	2.06	103	2.00	12.3		
Ethylbenzene*	<0.050	0.050	07/17/2014	ND	2.13	106	2.00	12.2		
Total Xylenes*	<0.150	0.150	07/17/2014	ND	6.39	106	6.00	12.7		
Total BTX	<0.300	0.300	07/17/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	256	16.0	07/11/2014	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/16/2014	ND	176	88.2	200	3.85	
DRO >C10-C28	<10.0	10.0	07/16/2014	ND	191	95.4	200	3.53	
EXT DRO >C28-C35	<10.0	10.0	07/16/2014	ND					

Surrogate: 1-Chlorooctane 109 % 65.2-140

Surrogate: 1-Chlorooctadecane 115 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 07/09/2014  
Reported: 07/17/2014  
Project Name: GOLDEN 'D' FEDERAL WELL #4  
Project Number: NOT GIVEN  
Project Location: EDDY CO., NM

Sampling Date: 07/08/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Celey D. Keene

**Sample ID: W WALL #2 (H402081-03)**

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/17/2014	ND	2.06	103	2.00	12.6		
Toluene*	<0.050	0.050	07/17/2014	ND	2.06	103	2.00	12.3		
Ethylbenzene*	<0.050	0.050	07/17/2014	ND	2.13	106	2.00	12.2		
Total Xylenes*	<0.150	0.150	07/17/2014	ND	6.39	106	6.00	12.7		
Total BTX	<0.300	0.300	07/17/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	896	16.0	07/11/2014	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/16/2014	ND	176	88.2	200	3.85	
DRO >C10-C28	<10.0	10.0	07/16/2014	ND	191	95.4	200	3.53	
EXT DRO >C28-C35	<10.0	10.0	07/16/2014	ND					

Surrogate: 1-Chlorooctane 110 % 65.2-140

Surrogate: 1-Chlorooctadecane 116 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	07/09/2014	Sampling Date:	07/08/2014
Reported:	07/17/2014	Sampling Type:	Soil
Project Name:	GOLDEN 'D' FEDERAL WELL #4	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Celey D. Keene
Project Location:	EDDY CO., NM		

**Sample ID: FLOOR #4 (H402081-04)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/17/2014	ND	2.06	103	2.00	12.6		
Toluene*	<0.050	0.050	07/17/2014	ND	2.06	103	2.00	12.3		
Ethylbenzene*	<0.050	0.050	07/17/2014	ND	2.13	106	2.00	12.2		
Total Xylenes*	<0.150	0.150	07/17/2014	ND	6.39	106	6.00	12.7		
Total BTEX	<0.300	0.300	07/17/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	07/11/2014	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/16/2014	ND	176	88.2	200	3.85	
DRO >C10-C28	11.3	10.0	07/16/2014	ND	191	95.4	200	3.53	
EXT DRO >C28-C35	<10.0	10.0	07/16/2014	ND					

Surrogate: 1-Chlorooctane 111 % 65.2-140

Surrogate: 1-Chlorooctadecane 121 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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



Celey D. Keene, Lab Director/Quality Manager



**Notes and Definitions**

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

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\*=Accredited Analyte

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.



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Celey D. Keene, Lab Director/Quality Manager





## Page 7 of 7

#54



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

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July 18, 2014

BEN J. ARGUIJO

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: GOLDEN 'D' FEDERAL WELL #4

Enclosed are the results of analyses for samples received by the laboratory on 07/11/14 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  
BEN J. ARGUIJO  
P.O. Box 301  
Lovington NM, 88260  
Fax To: (575) 396-1429

Received:	07/11/2014	Sampling Date:	07/09/2014
Reported:	07/18/2014	Sampling Type:	Soil
Project Name:	GOLDEN 'D' FEDERAL WELL #4	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: FLOOR #5A (H402111-01)**

BTEx 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/18/2014	ND	2.36	118	2.00	2.15	
Toluene*	<0.050	0.050	07/18/2014	ND	2.17	108	2.00	1.57	
Ethylbenzene*	<0.050	0.050	07/18/2014	ND	2.24	112	2.00	1.50	
Total Xylenes*	<0.150	0.150	07/18/2014	ND	6.76	113	6.00	1.44	
Total BTEx	<0.300	0.300	07/18/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	720	16.0	07/16/2014	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	07/17/2014	ND	179	89.7	200	2.05	
DRO >C10-C28	<10.0	10.0	07/17/2014	ND	194	96.8	200	2.02	
EXT DRO >C28-C35	<10.0	10.0	07/17/2014	ND					

Surrogate: 1-Chlorooctane 110 % 65.2-140

Surrogate: 1-Chlorooctadecane 116 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	07/11/2014	Sampling Date:	07/09/2014
Reported:	07/18/2014	Sampling Type:	Soil
Project Name:	GOLDEN 'D' FEDERAL WELL #4	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: FLOOR #6 (H402111-02)**

BTX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/18/2014	ND	2.36	118	2.00	2.15		
Toluene*	<0.050	0.050	07/18/2014	ND	2.17	108	2.00	1.57		
Ethylbenzene*	<0.050	0.050	07/18/2014	ND	2.24	112	2.00	1.50		
Total Xylenes*	<0.150	0.150	07/18/2014	ND	6.76	113	6.00	1.44		
Total BTX	<0.300	0.300	07/18/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/16/2014	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	07/17/2014	ND	179	89.7	200	2.05	
DRO >C10-C28	<10.0	10.0	07/17/2014	ND	194	96.8	200	2.02	
EXT DRO >C28-C35	<10.0	10.0	07/17/2014	ND					

Surrogate: 1-Chlorooctane 108 % 65.2-140

Surrogate: 1-Chlorooctadecane 116 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	07/11/2014	Sampling Date:	07/09/2014
Reported:	07/18/2014	Sampling Type:	Soil
Project Name:	GOLDEN 'D' FEDERAL WELL #4	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: FLOOR #7 (H402111-03)**

BTEx 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/18/2014	ND	2.36	118	2.00	2.15		
Toluene*	<0.050	0.050	07/18/2014	ND	2.17	108	2.00	1.57		
Ethylbenzene*	<0.050	0.050	07/18/2014	ND	2.24	112	2.00	1.50		
Total Xylenes*	<0.150	0.150	07/18/2014	ND	6.76	113	6.00	1.44		
Total BTEX	<0.300	0.300	07/18/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 119 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	272	16.0	07/16/2014	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	07/17/2014	ND	179	89.7	200	2.05	
DRO >C10-C28	51.5	10.0	07/17/2014	ND	194	96.8	200	2.02	
EXT DRO >C28-C35	11.3	10.0	07/17/2014	ND					

Surrogate: 1-Chlorooctane 101 % 65.2-140

Surrogate: 1-Chlorooctadecane 111 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	07/11/2014	Sampling Date:	07/09/2014
Reported:	07/18/2014	Sampling Type:	Soil
Project Name:	GOLDEN 'D' FEDERAL WELL #4	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: FLOOR #8 (H402111-04)**

BTX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/18/2014	ND	2.36	118	2.00	2.15		
Toluene*	<0.050	0.050	07/18/2014	ND	2.17	108	2.00	1.57		
Ethylbenzene*	<0.050	0.050	07/18/2014	ND	2.24	112	2.00	1.50		
Total Xylenes*	<0.150	0.150	07/18/2014	ND	6.76	113	6.00	1.44		
Total BTX	<0.300	0.300	07/18/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 119 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	736	16.0	07/16/2014	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	07/17/2014	ND	179	89.7	200	2.05		
DRO >C10-C28	<10.0	10.0	07/17/2014	ND	194	96.8	200	2.02		
EXT DRO >C28-C35	<10.0	10.0	07/17/2014	ND						

Surrogate: 1-Chlorooctane 109 % 65.2-140

Surrogate: 1-Chlorooctadecane 117 % 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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Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





101 East Marland, Hobbs, NM 88240

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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

**PLEASE NOTE: Liability and Damages.** Cardinal's liability and client's Section 1515 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>Michael Rainey</i> Relinquished By: <i>[Signature]</i> Delivered By: (Circle One) Sampler - UPS - Bus - Other: FORM-006		Date: <i>7/9/14</i> Time: <i>1700</i> Date: <i>7/11/14</i> Time: <i>1255</i> Received By: <i>Jodi Benson</i> Sample Condition Cool <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No -6.4°C		Received By: <i>[Signature]</i> CHECKED BY: <i>[Signature]</i> Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #: Add'l Fax #: REMARKS: ****Run TPH if chloride is <= 1,000. Run BTEX if TPH is <= 5,000.**** Please email results to bjarguijo@basinenv.com, Tony Savoie, Jody Walters & Amy Ruth	
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PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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July 18, 2014

BEN J. ARGUIJO

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: GOLDEN 'D' FEDERAL WELL #4

Enclosed are the results of analyses for samples received by the laboratory on 07/11/14 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,

A handwritten signature in black ink that reads "Coley D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	07/11/2014	Sampling Date:	07/10/2014
Reported:	07/18/2014	Sampling Type:	Soil
Project Name:	GOLDEN 'D' FEDERAL WELL #4	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

**Sample ID: FLOOR #9 (H402110-01)**

BTX 8021B			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/18/2014	ND	2.36	118	2.00	2.15	
Toluene*	<0.050	0.050	07/18/2014	ND	2.17	108	2.00	1.57	
Ethylbenzene*	<0.050	0.050	07/18/2014	ND	2.24	112	2.00	1.50	
Total Xylenes*	<0.150	0.150	07/18/2014	ND	6.76	113	6.00	1.44	
Total BTX	<0.300	0.300	07/18/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 116 % 89.4-126

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	512	16.0	07/14/2014	ND	400	100	400	3.92	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/17/2014	ND	179	89.7	200	2.05	
DRO >C10-C28	<10.0	10.0	07/17/2014	ND	194	96.8	200	2.02	
EXT DRO >C28-C35	<10.0	10.0	07/17/2014	ND					

Surrogate: 1-Chlorooctane 106 % 65.2-140

Surrogate: 1-Chlorooctadecane 111 % 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

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---

Celey D. Keene, Lab Director/Quality Manager



101 East Marland, Hobbs, NM 88240

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

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

[illegible]

**PLEASE NOTE:** Liability and Damages. Cardinal's liability and client's Section 552 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>Steve Taylor</i>		Date: <i>7/10/14</i>	Received By: <i>[Signature]</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:
Time: <i>1200</i>				Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Fax #:
Relinquished By: <i>[Signature]</i>		Date: <i>7/11/14</i>	Received By: <i>Jodi Henson</i>	REMARKS:
Time: <i>1255</i>				****Run TPH if chloride is <= 1,000. Run BTEX if TPH is <= 5,000.****
Delivered By: (Circle One)		Sample Condition	CHECKED BY:	Please email results to <a href="mailto:bjarguijo@basinenv.com">bjarguijo@basinenv.com</a> , Tony Savoie, Jody Walters & Amy Ruth
Sampler - UPS - Bus - Other:		Cool <input type="checkbox"/> Intact <input type="checkbox"/>	(Initials)	
FORM-006		<i>-6.4°</i>	<i>[Signature]</i>	
		<input type="checkbox"/> Yes <input type="checkbox"/> No		
		<input type="checkbox"/> No <input type="checkbox"/> No		

Revision 1.0

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

# 54