



PO Box 301 | Lovington, NM 88260 | Phone 575.396.2378

February 21, 2018

Attn. Mike Bratcher
NMOCD, District 2
811 South First Street
Artesia, NM 88210

**RE: Corrective Action Plan
XTO Energy
Big Eddy Unit #74
UL/B Sec25, T21S R28E
32.456770, -104.037534
NMOCD Reference # 2RP – 2664, 2RP - 3213**

Mr. Bratcher:

XTO Energy (XTO) has retained Basin Environmental Service Technologies (Basin) to address potential environmental concerns at the above-referenced site.

Background and Previous Work

The site is located approximately eleven and one-half (11.5) miles northeast of Carlsbad, New Mexico at Unit Letter B of Section 25 in Township 21 South of Range 28 East. (See Figure 1) This site is located in an area where groundwater can be anticipated to be found at a depth of over two-hundred feet (200') below ground surface (bgs) (See Figure 2).

On December 4th, 2014, XTO discovered a release of approximately one barrel (bbl) of crude oil and four (4) bbls of produced water when a float valve failed causing fluid to escape the flare stack. The valve was repaired. An estimated one bbl of total fluid was recovered. An estimated five hundred square feet (500 ft²) of pasture was misted and approximately six-hundred forty-eight square feet (648 ft²) of earthen containment around the flare stack was impacted. Micro-Blaze® was applied to the pasture area. The New Mexico Oil Conservation Division (NMOCD) was notified of the release on December 16th, 2014. An initial Release Notification and Corrective Action form (C-141) was submitted to NMOCD on December 16th, 2014, for approval.

On August 13th, 2015, XTO discovered a release of approximately twelve (12) barrels (bbls) of crude oil when the heater began leaking. The heater was removed from production. An estimated ten (10) bbls of crude were recovered. Approximately five-hundred forty-five square feet (545 ft²) of the gypsum (caliche) pad area were impacted. The New Mexico Oil Conservation Division (NMOCD) was notified of the release on August 20th, 2015. An initial Release Notification and Corrective Action form (C-141) was submitted to NMOCD on August 20th, 2015, for approval.

Basin personnel were on site beginning January 4th, 2017, to begin delineation activities and reapply Micro-Blaze® to the flare release area (2RP-2664). Two (2) soil sample points were established. The soil sample points, (SP 1, SP 2) were advanced to one-foot bgs. Discrete soil samples were retrieved at the surface and at one foot. The soil samples were delivered to an NMOCD approved laboratory for concentration analysis of Benzene, Toluene, Ethyl-benzene, Xylenes (BTEX), Gasoline Range Organics (GRO), Diesel Range Organics (DRO), Oil Range Organics (ORO) [Total Petroleum Hydrocarbons (TPH)] and chloride concentrations. (See Soil Chemistry Table).

In addition, two (2) soil sample points were established for the heater release (2RP-3213). The soil sample points, (SP 1, SP 2) were advanced in one-foot increments to 2' bgs. Discrete soil samples were collected at the surface and at 2' to be delivered to an NMOCD approved laboratory for concentration analysis of Benzene, Toluene, Ethyl-benzene, Xylenes (BTEX), Gasoline Range Organics (GRO), Diesel Range Organics (DRO), Oil Range Organics (ORO) [Total Petroleum Hydrocarbons (TPH)] and chloride concentrations.

Corrective Action Plan

Analytical results indicate the concentrations of TPH, BTEX, and chlorides were below the recommended remediation action levels (RRALs) for the flare release area (2RP-2664).

The impacted area for the heater release will be excavated to 2' bgs outside of the fence on the pad. The contaminated area within the fence line will be excavated to approximately six inches (6") or the depth practical. The contaminated soils will be removed and disposed of at an NMOCD approved facility. Floor soil samples will be retrieved at the completion of remediation to ensure the impacted soils have been removed from the release area outside the fence. Floor samples will be retrieved inside the fence for clarity of remaining contamination (if any) to be remediated at the time of abandonment. The excavated area will then be backfilled with clean, imported, non-impacted soils and contoured to the surrounding area.

The supporting documentation for this Corrective Action Plan is attached.

Basin appreciates the opportunity to work with you on this project. Please contact me if you have any questions or wish to discuss the site.

Sincerely,



Robbie Runnels
Project Manager
Basin Environmental Service Technologies
(575) 396-2378

Attachments:

Figure 1 – Site Location Map

Figure 2 – Depth to Groundwater Map

Figure 3 - Area Sampling and Proposed Excavation Map

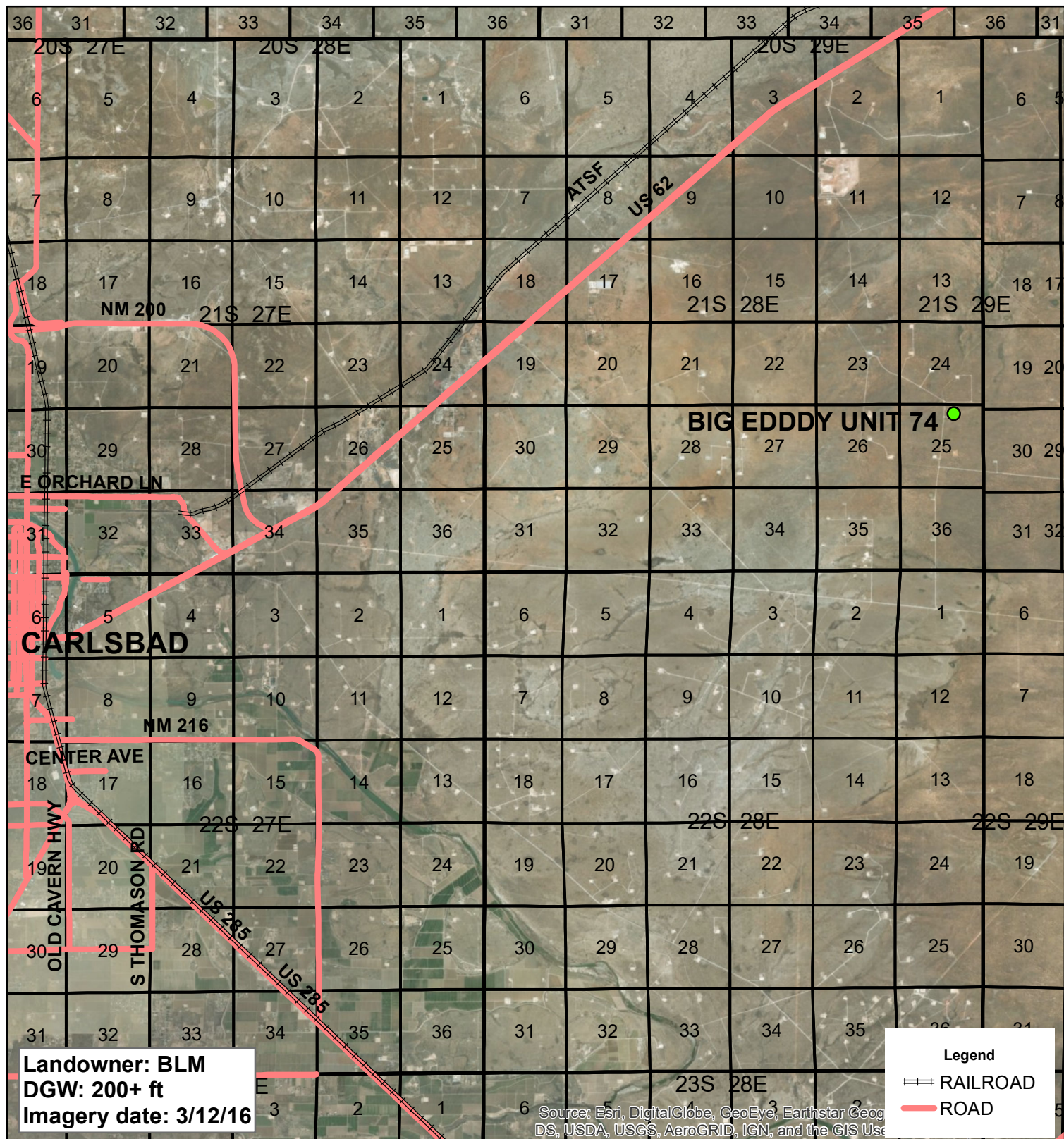
Figure 4 - Soil Chemistry Table

Appendix A – Initial C-141

Appendix B - Photo Documentation

Appendix C - Laboratory Analysis

Geographic Location



XTO BIG EDDY UNIT 74

**UL B SECTION 25
 T-21-S R-28-E
 EDDY COUNTY, NM**

GPS: 32.456770 -104.037534

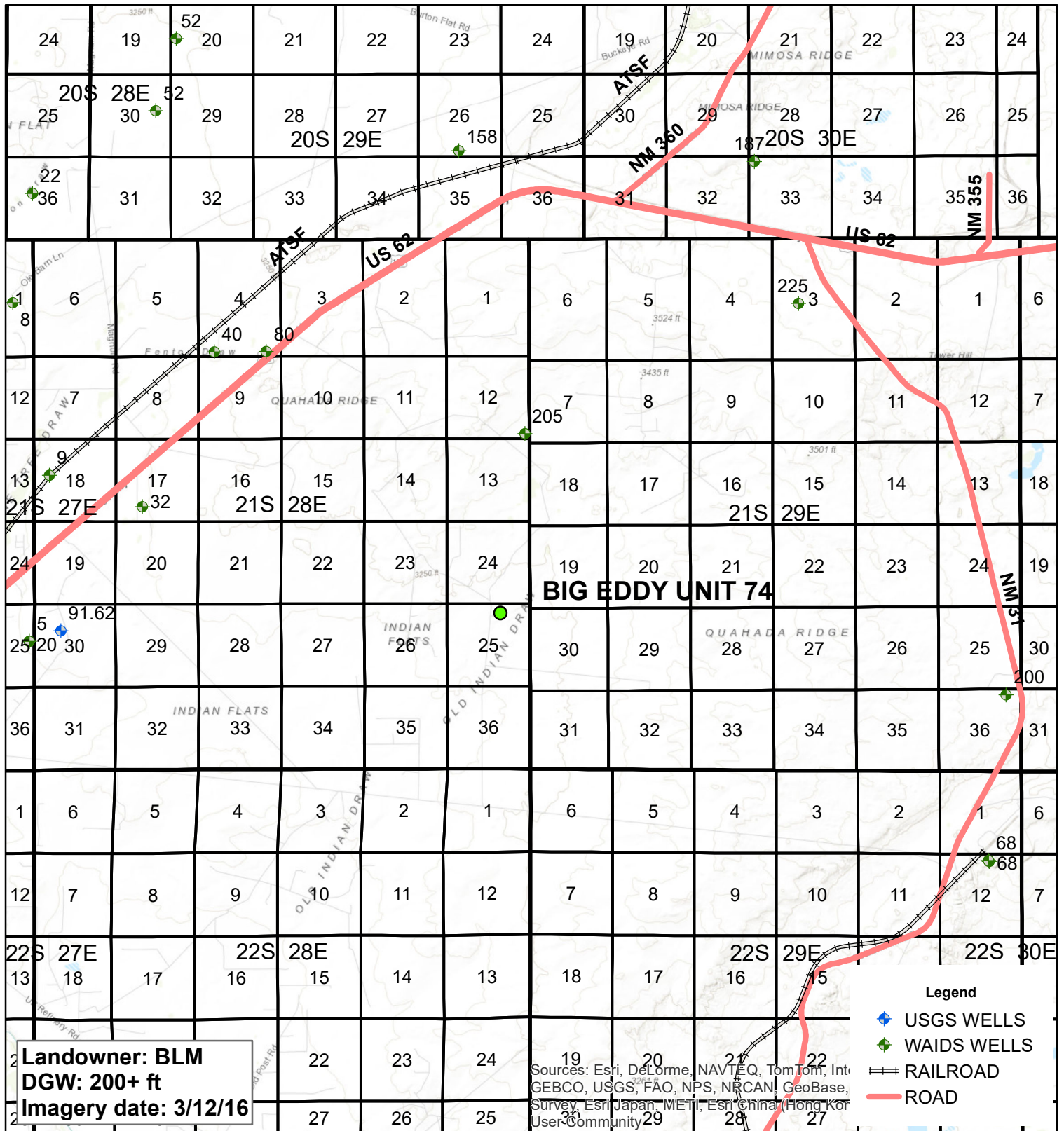
Figure 1

0 1 2
 Miles

Drawing date: 1/31/18
 Drafted by: T. Grieco



Depth to Groundwater



XTO BIG EDDY UNIT 74

UL B SECTION 25
T-21-S R-28-E
EDDY COUNTY, NM

GPS: 32.456770 -104.037534

Figure 2

0 1 2
Miles

Drawing date: 1/31/18
Drafted by: T. Grieco



Initial Sampling



XTO BIG EDDY UNIT 74

**UL B SECTION 25
T-21-S R-28-E
EDDY COUNTY, NM**

GPS: 32.456770 -104.037534

Figure 3

0 10 20
HHH Feet

Drawing date: 1/31/18
Drafted by: T. Grieco



FIGURE 4
CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL
SOIL CHEMISTRY TABLE
XTO Energy
BIG EDDY UNIT #74
EDDY COUNTY, NEW MEXICO
Unit Letter B, Section 25, Township 21 South, Range 28 East
NMOCD # - 2RP - 2664

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030					METHOD: 8015M			TPH C ₆ -C ₃₅ (mg/Kg)	4500 Cl-B CHLORIDE (mg/Kg)
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL- BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C ₆ -C ₁₀ (mg/Kg)	DRO C ₁₀ -C ₂₈ (mg/Kg)	ORO C ₂₈ -C ₃₅ (mg/Kg)		
SP 1 @ Surface	0'	1/4/2018	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	532.0	378.0	910.0	144
SP 1 @ 1'	1'	1/4/2018	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	66.8	49.8	116.6	64.0
SP 2 @ Surface	0'	1/4/2018	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<16.0
SP 2 @ 1'	1'	1/4/2018	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<16.0
NMOCD # 2RP- 3213													
SP 1 @ Surface	0'	1/4/2018	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	34.2	10.3	44.5	432
SP 1 @ 2'	2'	1/4/2018	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	231.0	92.9	323.9	128
SP 2 @ Surface	0'	1/4/2018	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	5470.0	1160.0	6630.0	48.0
SP 2 @ 2'	2'	1/4/2018	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	13.1	10.7	23.8	<16.0
NMOCD Recommended Remediation Action Level				10				50				5000	600

NA = Not analyzed.

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

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

NM OIL CONSERVATION

ARTESIA DISTRICT

Form C-141

Revised August 8, 2011

DEC 15 2014

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

RECEIVED

Release Notification and Corrective Action

NAB1435042878

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P.

2100737

Contact: Tony Savoie

Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220

Telephone No. 575-887-7329

Facility Name: Big Eddy Unit #74 Tank Battery

Facility Type: Exploration and Production

Surface Owner: Federal

Mineral Owner: Federal

API No. 30-015-22839

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	25	21S	28E					Eddy

Latitude N 32.456855 Longitude W 103.037608

NATURE OF RELEASE

Type of Release: Crude Oil and produced water	Volume of Release: 1 Bbl crude oil and 4 bbls produced water	Volume Recovered: 1 bbl total fluid
Source of Release: Facility flare stack	Date and Hour of Occurrence: 12/4/14 time unknown	Date and Hour of Discovery: 12/4/14 at approximately 1:00 p.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 valve was found closed on the production tank coming from the water dump line, the float valve failed on the scrubber causing fluid to escape from the flare stack. The closed valve was opened and the float valve was repaired.

Describe Area Affected and Cleanup Action Taken.*

The spill misted approximately 500 sq. ft. of pasture area and puddled up in an area of approximately 648 sq. ft. of earthen containment around the flare stack. The pasture area was washed down with micro-blaze. All of the free standing fluid was recovered with a vacuum truck. The spill area will be cleaned up in accordance to the NMOCD and BLM remediation guidelines.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Tony Savoie		OIL CONSERVATION DIVISION	
Printed Name: Tony Savoie		Approved by Environmental Specialist: [Signature]	
Title: Waste Management and Remediation Specialist		Approval Date: 12/16/14	Expiration Date: N/A
E-mail Address: tasavoie@basspet.com		Conditions of Approval:	
Date: 12/15/14		Remediation per O.C.D. Rules & Guidelines	
Phone: 432-556-8730		SUBMIT REMEDIATION PROPOSAL NO	
		LATER THAN: 1/16/15	

* Attach Additional Sheets If Necessary

2RP-2664

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

NAB1523231042		OPERATOR	<input checked="" type="checkbox"/> Initial Report	<input type="checkbox"/> Final Report
Name of Company: BOPCO, L.P.		Contact: Amy Ruth		
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220		Telephone No. 575-887-7329		
Facility Name: Big Eddy Unit #74 Tank Battery		Facility Type: Exploration and Production		
Surface Owner: Federal		Mineral Owner: Federal		API No. 30-015-22839

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	25	21S	28E	660	North	1980	East	Eddy

Latitude 32.456689° Longitude -104.037531°

NATURE OF RELEASE

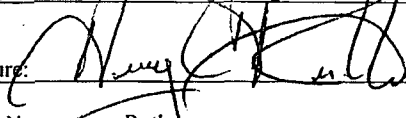

Type of Release	Crude Oil	Volume of Release	12 bbls	Volume Recovered	10 bbls
Source of Release	Heater	Date and Hour of Occurrence	8/13/2015 time unknown	Date and Hour of Discovery	8/13/2015 11 am
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	N/A		
By Whom?	N/A	Date and Hour	N/A		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	N/A		

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*
Heater began leaking from corroded bottom. The heater was drained, cleaned, and LOTO – will not be in use until it is removed from location

Describe Area Affected and Cleanup Action Taken.*
The leak affected approximately 545 square feet of caliche pad. A vacuum truck recovered standing fluids.

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: 		OIL CONSERVATION DIVISION	
Printed Name: Amy Ruth		Approved by Environmental Specialist: 	
Title: Assistant Remediation Foreman		Approval Date: 8/20/15	Expiration Date: N/A
E-mail Address: ACRuth@basspet.com		Conditions of Approval: Remediation per O.C.D. Rules & Guidelines Attached <input type="checkbox"/>	
Date: 8/17/2015 Phone: 432-661-0571		SUBMIT REMEDIATION PROPOSAL NO	

* Attach Additional Sheets If Necessary

LATER THAN: 9/21/15

2RP-3213

XTO Energy – Big Eddy Unit #74

Unit Letter B of Section 25, T21S, R28E



Flare release area, facing east



Flare release area, facing east



Release area, facing northeast



Release area, facing southeast



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

January 11, 2018

ROBBIE RUNNELS

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: BIG EDDY

Enclosed are the results of analyses for samples received by the laboratory on 01/05/18 14:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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.

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
ROBBIE RUNNELS
P.O. Box 301
Lovington NM, 88260
Fax To: (575) 396-1429

Received:	01/05/2018	Sampling Date:	01/04/2018
Reported:	01/11/2018	Sampling Type:	Soil
Project Name:	BIG EDDY	Sampling Condition:	Cool & Intact
Project Number:	UNIT #74 FLARE	Sample Received By:	Tamara Oldaker
Project Location:	XTO ENERGY - EDDY CO NM		

Sample ID: SP 1 @ SURFACE (H800043-01)

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	01/09/2018	ND	1.98	99.2	2.00	3.50	
Toluene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.24	
Ethylbenzene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.48	
Total Xylenes*	<0.150	0.150	01/09/2018	ND	6.08	101	6.00	4.44	
Total BTX	<0.300	0.300	01/09/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	01/10/2018	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	01/10/2018	ND	200	99.8	200	8.76	
DRO >C10-C28*	532	10.0	01/10/2018	ND	197	98.6	200	5.21	
EXT DRO >C28-C36	378	10.0	01/10/2018	ND					

Surrogate: 1-Chlorooctane 87.4 % 41-142

Surrogate: 1-Chlorooctadecane 108 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 01/05/2018
Reported: 01/11/2018
Project Name: BIG EDDY
Project Number: UNIT #74 FLARE
Project Location: XTO ENERGY - EDDY CO NM

Sampling Date: 01/04/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 1' (H800043-02)

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	01/09/2018	ND	1.98	99.2	2.00	3.50	
Toluene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.24	
Ethylbenzene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.48	
Total Xylenes*	<0.150	0.150	01/09/2018	ND	6.08	101	6.00	4.44	
Total BTX	<0.300	0.300	01/09/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	01/10/2018	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	01/10/2018	ND	200	99.8	200	8.76	
DRO >C10-C28*	66.8	10.0	01/10/2018	ND	197	98.6	200	5.21	
EXT DRO >C28-C36	49.8	10.0	01/10/2018	ND					

Surrogate: 1-Chlorooctane 97.3 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 01/05/2018
Reported: 01/11/2018
Project Name: BIG EDDY
Project Number: UNIT #74 FLARE
Project Location: XTO ENERGY - EDDY CO NM

Sampling Date: 01/04/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ SURFACE (H800043-03)

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	01/09/2018	ND	1.98	99.2	2.00	3.50		
Toluene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.24		
Ethylbenzene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.48		
Total Xylenes*	<0.150	0.150	01/09/2018	ND	6.08	101	6.00	4.44		
Total BTX	<0.300	0.300	01/09/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/10/2018	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	01/10/2018	ND	200	99.8	200	8.76	
DRO >C10-C28*	<10.0	10.0	01/10/2018	ND	197	98.6	200	5.21	
EXT DRO >C28-C36	<10.0	10.0	01/10/2018	ND					

Surrogate: 1-Chlorooctane 96.9 % 41-142

Surrogate: 1-Chlorooctadecane 98.6 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 01/05/2018
Reported: 01/11/2018
Project Name: BIG EDDY
Project Number: UNIT #74 FLARE
Project Location: XTO ENERGY - EDDY CO NM

Sampling Date: 01/04/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 1' (H800043-04)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/09/2018	ND	1.98	99.2	2.00	3.50		
Toluene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.24		
Ethylbenzene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.48		
Total Xylenes*	<0.150	0.150	01/09/2018	ND	6.08	101	6.00	4.44		
Total BTEx	<0.300	0.300	01/09/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/10/2018	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	01/10/2018	ND	200	99.8	200	8.76	
DRO >C10-C28*	<10.0	10.0	01/10/2018	ND	197	98.6	200	5.21	
EXT DRO >C28-C36	<10.0	10.0	01/10/2018	ND					

Surrogate: 1-Chlorooctane 90.8 % 41-142

Surrogate: 1-Chlorooctadecane 90.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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

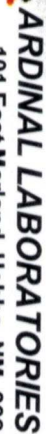
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Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 7 of 7

January 11, 2018

ROBBIE RUNNELS

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: BIG EDDY

Enclosed are the results of analyses for samples received by the laboratory on 01/05/18 14:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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.

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
 ROBBIE RUNNELS
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	01/05/2018	Sampling Date:	01/04/2018
Reported:	01/11/2018	Sampling Type:	Soil
Project Name:	BIG EDDY	Sampling Condition:	Cool & Intact
Project Number:	UNIT #74 BATTERY	Sample Received By:	Tamara Oldaker
Project Location:	XTO ENERGY - EDDY CO NM		

Sample ID: SP 1 @ SURFACE (H800044-01)

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	01/09/2018	ND	1.98	99.2	2.00	3.50	
Toluene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.24	
Ethylbenzene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.48	
Total Xylenes*	<0.150	0.150	01/09/2018	ND	6.08	101	6.00	4.44	
Total BTX	<0.300	0.300	01/09/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	432	16.0	01/10/2018	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	01/10/2018	ND	200	99.8	200	8.76	
DRO >C10-C28*	34.2	10.0	01/10/2018	ND	197	98.6	200	5.21	
EXT DRO >C28-C36	10.3	10.0	01/10/2018	ND					

Surrogate: 1-Chlorooctane 103 % 41-142

Surrogate: 1-Chlorooctadecane 104 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 01/05/2018
Reported: 01/11/2018
Project Name: BIG EDDY
Project Number: UNIT #74 BATTERY
Project Location: XTO ENERGY - EDDY CO NM

Sampling Date: 01/04/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 2' (H800044-02)

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	01/09/2018	ND	1.98	99.2	2.00	3.50	
Toluene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.24	
Ethylbenzene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.48	
Total Xylenes*	<0.150	0.150	01/09/2018	ND	6.08	101	6.00	4.44	
Total BTX	<0.300	0.300	01/09/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	01/10/2018	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	01/10/2018	ND	200	99.8	200	8.76	
DRO >C10-C28*	231	10.0	01/10/2018	ND	197	98.6	200	5.21	
EXT DRO >C28-C36	92.9	10.0	01/10/2018	ND					

Surrogate: 1-Chlorooctane 80.2 % 41-142

Surrogate: 1-Chlorooctadecane 89.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 01/05/2018
Reported: 01/11/2018
Project Name: BIG EDDY
Project Number: UNIT #74 BATTERY
Project Location: XTO ENERGY - EDDY CO NM

Sampling Date: 01/04/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ SURFACE (H800044-03)

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	01/09/2018	ND	1.98	99.2	2.00	3.50		
Toluene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.24		
Ethylbenzene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.48		
Total Xylenes*	<0.150	0.150	01/09/2018	ND	6.08	101	6.00	4.44		
Total BTX	<0.300	0.300	01/09/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	01/10/2018	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*	<50.0	50.0	01/10/2018	ND	200	99.8	200	8.76		
DRO >C10-C28*	5470	50.0	01/10/2018	ND	197	98.6	200	5.21		
EXT DRO >C28-C36	1160	50.0	01/10/2018	ND						

Surrogate: 1-Chlorooctane 78.6 % 41-142

Surrogate: 1-Chlorooctadecane 182 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 01/05/2018
Reported: 01/11/2018
Project Name: BIG EDDY
Project Number: UNIT #74 BATTERY
Project Location: XTO ENERGY - EDDY CO NM

Sampling Date: 01/04/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 2' (H800044-04)

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	01/09/2018	ND	1.98	99.2	2.00	3.50		
Toluene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.24		
Ethylbenzene*	<0.050	0.050	01/09/2018	ND	1.97	98.5	2.00	4.48		
Total Xylenes*	<0.150	0.150	01/09/2018	ND	6.08	101	6.00	4.44		
Total BTX	<0.300	0.300	01/09/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	01/10/2018	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	01/10/2018	ND	200	99.8	200	8.76	
DRO >C10-C28*	13.1	10.0	01/10/2018	ND	197	98.6	200	5.21	
EXT DRO >C28-C36	10.7	10.0	01/10/2018	ND					

Surrogate: 1-Chlorooctane 105 % 41-142

Surrogate: 1-Chlorooctadecane 106 % 37.6-147

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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.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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