



PO Box 301 | Lovington , NM 88260 | Phone 575.396.2378

December 15, 2017

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

RE: Corrective Action Plan
XTO Energy
JRU 29 SWD
UL/K SEC. 36 T22S R30E
32.346432, -103.835934
2RP-2726; 2RP-3082; 2RP-3302; 2RP-3726 and 2RP-4040

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 JRU 29 SWD site is located approximately 1980 feet from the North/South Line South and 2310 feet from the East/West Line West 2310 at Unit Letter K of Section 36, Township 22 South, Range 30 East in Eddy County, New Mexico. This site is located in an area where groundwater is anticipated to be greater than 200 +/- feet below ground surface (bgs) as determined by consulting a Regional Groundwater Trend map. A liner from a previous remediation effort is buried beneath a portion of the currently impacted soil. The community of Loving, New Mexico is approximately 13 miles west-southwest of the site.

Five leak events have occurred at the JRU 29 SWD and are summarized below.

The initial spill occurred on December 25, 2014. XTO discovered a release of approximately ninety-seven (97) barrels (bbls) of produced water. It is suspected that an unknown truck dumped the fluid or left the "truck load valve" open, causing the spill. Time of the release is unknown. The spill was discovered on December 25, 2014 at 5:30 AM. An estimated three (3) bbls of fluids were recovered. Approximately fourteen thousand five hundred (14,500) square feet (ft²) of tank battery/well pad were impacted. New Mexico Oil Conservation Division (NMOCD) was notified of the release on December 25, 2014, and an initial C-141 was submitted to NMOCD on January 6, 2015 for approval. The NMOCD granted approval of the C-141 on January 12, 2015. Tracking number 2RP 2726 was assigned to the spill.

A second spill event occurred on June 22, 2015. XTO discovered a release of approximately one-hundred ten (110) bbls of produced water when a pipe fitting on the 4 inch saltwater disposal (SWD) discharge line failed. Time of the release is unknown. The spill was discovered on June 22, 2015 at 6:36 PM. An estimated forty (40) bbls of fluids were recovered [twenty (20) bbl from the zero permeability containment and twenty (20) bbl from the ground]. The spill impacted approximately five thousand (5,000) ft² of pasture area. NMOCD was notified on June 26, 2015. The NMOCD granted approval of the C-141 on June 30, 2015. Tracking number 2RP 3082 was assigned to the spill.

The third spill event occurred September 18, 2015. XTO discovered a release of approximately two-hundred ninety (290) bbls of produced water when flange bolts on the south water transfer pump failed. The spill was discovered September 18, 2015 at approximately 7:00 PM. Most of the fluids were released to the zero permeability containment. Approximately two-hundred forty bbls of fluids were recovered. Produced water released to the ground impacted approximately four thousand two-hundred thirty five (4235) ft² of pasture area. NMOCD was notified September 24, 2015. NMOCD granted approval of the C-141 report on September 24, 2015. Tracking number RP-3302 was assigned to the spill.

The fourth spill event occurred in May of 2016. XTO discovered a release of approximately seven hundred seventy five (775) bbls of produced water when a VSAT (satellite) antenna was damaged and caused the SCADA communication device to fail. This failure triggered an alarm that was not properly responded to. The produced water tanks overflowed into the zero permeability containment. The containment filled and overflowed onto the well pad. The date and time of the spill is unknown. The spill was discovered approximately 10:00 AM on May 27, 2016. About seven-hundred sixty (760) bbls of fluids were recovered. The spill affected two thousand two-hundred twelve (2212) ft² of well pad and six-hundred eighty eight (688) ft² of pasture. NMOCD was notified June 7, 2016. NMOCD granted approval of the C-141 report on June 8, 2016. Tracking number 2RP-3726 was assigned to the spill.

The fifth spill event occurred in December of 2016. XTO discovered a release of approximately three thousand three-hundred thirty two (3324) bbls of produced water due to a transfer pump failure. The pump failure caused damage to a fiberglass line. Fluids overflowed the containment. The date and time of the spill is unknown. The spill was discovered approximately 9:00 AM on December 1, 2016. Approximately two thousand nine-hundred ninety (2,990) bbls of fluids were recovered. The spill affected about twenty two thousand one-hundred five (22,105) ft² of well pad and thirty three thousand nine-hundred thirty eight (33,938) ft² of pasture for a total of 56,043 ft² impacted. NMOCD was notified December 1, 2016 at 4:52 PM. NMOCD granted approval of the C-141 report on December 16, 2016. Tracking number 2RP 4040 was assigned to the spill.

On September 11, 2017, Basin Environmental personnel arrived on the JRU 29 SWD site to perform initial test trench (tt or tts) sampling for delineation of the subject spills. A back hoe was utilized to excavate seven tts within the release area for collection of delineation samples. The tts were labeled SP-1, SP-2, SP-3, SP-4, SP-5, SP-6, and SP-7. Each sample was field tested for chlorides using HACH Chloride test strips. Confirmatory samples were submitted to a

NMOCD approved and certified laboratory. Results of field and laboratory testing are provided in Table 1. Select laboratory data is provided on the sample points location map (Figure 2).

To summarize lab results for trench SP-1, the laboratory test for chlorides yielded 272 mg/kg at 4 feet below ground surface (bgs). Benzene, toluene, ethyl benzene and xylene (BTEX) concentrations are below the method detection limit for the laboratory. Gas range organics (GRO), diesel range organics (DRO), and extended diesel range organics (EXT DRO) are well below the Recommended Remediation Action Level (RRAL) guideline of 100 mg/kg.

For trench SP-2, the laboratory test for chlorides yielded 64 mg/kg at 5 feet bgs. BTEX showed concentrations are below the method detection limit for the laboratory. GRO, DRO, and EXT DRO are well below the RRAL guideline of 100 mg/kg.

For trench SP-3, the laboratory test for chlorides yielded 432 mg/kg at 6 feet below ground surface. Laboratory tests for BTEX showed concentrations are below the method detection limit for the laboratory. GRO, DRO, and EXT DRO are well below the RRAL guideline of 100 mg/kg.

For trench SP-4, the laboratory test for chlorides yielded 2720 mg/kg at 3 feet bgs. Preservation of a previously installed liner prevented attempts to sample deeper at this location. This liner will be removed as part of the CAP and confirmation sampling will be performed to delineate the extent of chlorides beneath the liner using remediation excavation equipment. If the depth to cleanup of chlorides cannot be reached using the remediation equipment, a PVC conduit pipe will be set through the liner and an environmental test drill will be brought to the site to complete the delineation for chlorides. Laboratory tests for BTEX showed concentrations are below the method detection limit for the laboratory. GRO is well below the RRAL guideline of 100 mg/kg. DRO and EXT DRO are 2130 mg/kg and 489 mg/kg respectively and are above the RRAL guideline of 100 mg/kg.

For trench SP-5, the laboratory test for chlorides yielded 240 mg/kg at 14 feet bgs. BTEX showed concentrations are below the method detection limit for the laboratory. GRO, DRO, and EXT DRO are well below the RRAL guideline of 100 mg/kg.

At trench SP-6, the laboratory test for chlorides yielded 64 mg/kg at 14 feet bgs. BTEX showed concentrations are below the method detection limit for the laboratory. GRO, DRO, and EXT DRO were well below the RRAL guideline of 100 mg/kg.

For trench SP-7, the laboratory test for chlorides yielded 1760 mg/kg at 14 feet. Further delineation for chlorides at this site will be performed during execution of the CAP using excavation equipment. If the depth to cleanup of chlorides cannot be reached using the remediation excavation equipment, a PVC conduit pipe will be set through the liner and an environmental test drill will be brought to the site to complete the delineation for chlorides. However, laboratory tests for BTEX showed concentrations are below the method detection limit for the laboratory. GRO, DRO, and EXT DRO are well below the RRAL guideline of 100 mg/kg.

Corrective Action Plan (CAP)

Approximately 72,870 ft² of caliche pad and pasture are impacted at the JRU 29 SWD site. Of that total, approximately 32,300 ft² is caliche pad and approximately 40,570 is pasture land. Remediation of the impacted pasture soils and pad materials will be accomplished per the methods described below. A New Mexico State Land Office permit will be necessary to access the site.

A liner from a prior remediation effort will be removed. Location of the previously existing liner is shown in Figure 2. At sample locations SP-4 and SP-7 (reference Figure 2) excavation equipment will be utilized to collect deeper delineation samples for testing with field methods. Excavation and sampling will continue until results of field testing show chlorides are at or below the NMOCD target of 600 mg/kg. If a satisfactory delineation at or below the NMOCD target is obtained, the sample trenches will be backfilled and the soil material will be compacted.

The impacted pasture soils will then be excavated to a depth of four feet bgs. This excavated soil will be transported to Lea Land (NMOCD Permit # WM01) for disposal. If required, a six-inch cushion layer of sand may be installed over the entire excavation site. A 20 mil impermeable liner will then be installed over in-situ soil (or a backfill of 6 to 12-inch layer of cushioning sand, if required) to the limits of the excavation. A 6 to 12-inch sand layer will be placed on top of the liner over the entire excavation in order to protect the integrity of the liner during backfilling operations. Locally procured soil materials will be used to backfill the excavated area in one to two foot lifts. The lifts will be compacted with excavation equipment. The fill area will be graded to blend with the contours of the surrounding topography. At the completion of backfilling and at a time conducive for germination, Basin will loosen the surface of the backfilled soils with a disc, rake or harrow. Basin will then seed the extent of the remediated pasture area at JRU 29 SWD with a blend of native, non-noxious vegetation approved by the New Mexico State Land Office. The seed will be applied with either a drill or a broadcast method to ensure complete coverage of the affected area.

In the event that delineation of chlorides at locations SP-4 and SP-7 cannot be achieved to levels below the NMOCD target of 600 mg/kg when using remediation excavation equipment to facilitate sampling, PVC conduit (referenced above) will be set and sealed to the liner material prior to backfilling to grade. An environmental test drilling rig will be brought to the site and the strata at depth will be sampled until delineation at or below 600 mg/kg chlorides is achieved. The resultant soil boring will be backfilled with bentonite chips in lifts and hydrated per manufacturer's recommendations. Each borehole will be filled to the surface of the ground.

In addition to the pasture area, approximately 32,300 ft² of caliche pad at JRU 29 SWD is impacted. The impacted pad area will be excavated to an area approximately one foot in depth. This excavated caliche will be transported to Lea Land (NMOCD Permit # WM01) for disposal. The excavated area will then be backfilled with clean, non-impacted caliche. The clean caliche will be spread in thin layers (three to six-inches thick). Each layer will be watered and roll compacted to dryness and watered again. Another layer of caliche will be added on top of the previous layer until the fill area is brought up to grade.

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,

John P. Farrell P.G.
Project Manager
Basin Environmental Service Technologies
(575) 393-2378

Attachments:

Figure 1 – Site Location Map

Figure 2 – Sample Locations and Select Analytical Sampling Data

Table 1 – 2017 Sample Concentrations of BTEX, TPH and Chloride

Appendix A – Laboratory Analysis

Appendix B – C-141 Forms

ATTACHMENTS

TABLE

TABLE 1
2017 CONCENTRATIONS OF FIELD CHLORIDE
XTO
JRU 29 SWD
EDDY COUNTY, NEW MEXICO
NMOCD REFERENCE #S: 2RP-2726, 2RP-3082, 2RP-3302, 2RP-3726 and 2RP-4040

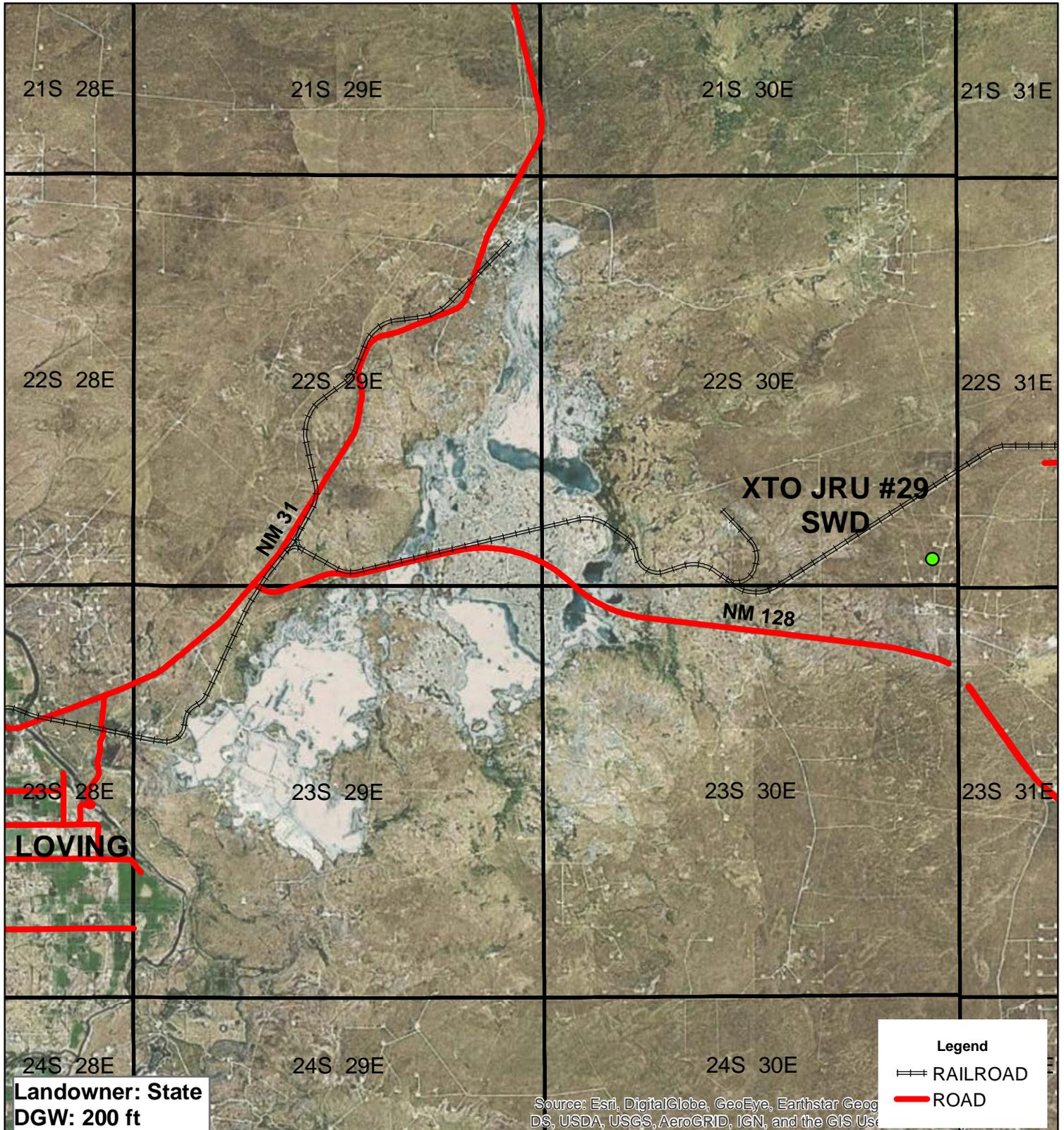
SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: 8015B			TPH C ₆ -C ₃₅ (mg/Kg)	FIELD	4500 CL-B
				GRO C ₆ -C ₁₂ (mg/Kg)	DRO C ₁₂ -C ₂₈ (mg/Kg)	EXT DRO C ₂₈ -C ₃₆ (mg/Kg)		CHLORIDE (mg/Kg)	CHLORIDE (mg/Kg)
TT-1	SUR	9/11/2017	In-Situ	NA	NA	NA	NA	>2456	NA
TT-1	1'	9/11/2017	In-Situ	NA	NA	NA	NA	560	NA
TT-1	2'	9/11/2017	In-Situ	NA	NA	NA	NA	344	NA
TT-1	3'	9/11/2017	In-Situ	NA	NA	NA	NA	272	NA
TT-1	4'	9/11/2017	In-Situ	<10.0	<10.0	<10.0	<30.0	180	272
TT-2	SUR	9/11/2017	In-Situ	NA	NA	NA	NA	> 2604	NA
TT-2	1'	9/11/2017	In-Situ	NA	NA	NA	NA	2060	NA
TT-2	2'	9/11/2017	In-Situ	NA	NA	NA	NA	1528	NA
TT-2	3'	9/11/2017	In-Situ	NA	NA	NA	NA	1136	NA
TT-2	4'	9/11/2017	In-Situ	NA	NA	NA	NA	264	NA
TT-2	5'	9/11/2017	In-Situ	<10.0	<10.0	<10.0	<30.0	< 112	64
TT-3	SUR	9/11/2017	In-Situ	NA	NA	NA	NA	> 2604	NA
TT-3	1'	9/11/2017	In-Situ	NA	NA	NA	NA	476	NA
TT-3	2'	9/11/2017	In-Situ	NA	NA	NA	NA	360	NA
TT-3	3'	9/11/2017	In-Situ	NA	NA	NA	NA	476	NA
TT-3	4'	9/11/2017	In-Situ	NA	NA	NA	NA	520	NA
TT-3	5'	9/11/2017	In-Situ	NA	NA	NA	NA	328	NA
TT-3	6'	9/11/2017	In-Situ	<10.0	<10.0	<10.0	<30.0	236	432
TT-4	SUR	9/11/2017	In-Situ	NA	NA	NA	NA	> 2604	NA
TT-4	1'	9/11/2017	In-Situ	NA	NA	NA	NA	> 2604	NA
TT-4	2'	9/11/2017	In-Situ	NA	NA	NA	NA	1,974	NA
TT-4	3'	9/11/2017	In-Situ	<10.0	2130	489	2619	1,224	2720

TABLE 1
2017 CONCENTRATIONS OF FIELD CHLORIDE
XTO
JRU 29 SWD
EDDY COUNTY, NEW MEXICO
NMOCD REFERENCE #'S: 2RP-2726, 2RP-3082, 2RP-3302, 2RP-3726 and 2RP-4040

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: 8015B			TPH C ₆ -C ₃₅ (mg/Kg)	FIELD	4500 CL-B
				GRO C ₆ -C ₁₂ (mg/Kg)	DRO C ₁₂ -C ₂₈ (mg/Kg)	EXT DRO C ₂₈ -C ₃₆ (mg/Kg)		CHLORIDE (mg/Kg)	CHLORIDE (mg/Kg)
TT-5	SUR	9/11/2017	In-Situ	NA	NA	NA	NA	> 2604	NA
TT-5	1'	9/11/2017	In-Situ	NA	NA	NA	NA	360	NA
TT-5	2'	9/11/2017	In-Situ	NA	NA	NA	NA	564	NA
TT-5	3'	9/11/2017	In-Situ	NA	NA	NA	NA	328	NA
TT-5	4'	9/11/2017	In-Situ	NA	NA	NA	NA	< 112	NA
TT-5	5'	9/11/2017	In-Situ	NA	NA	NA	NA	564	NA
TT-5	6'	9/11/2017	In-Situ	NA	NA	NA	NA	564	NA
TT-5	7'	9/11/2017	In-Situ	NA	NA	NA	NA	476	NA
TT-5	8'	9/11/2017	In-Situ	NA	NA	NA	NA	564	NA
TT-5	9'	9/11/2017	In-Situ	NA	NA	NA	NA	440	NA
TT-5	14'	9/11/2017	In-Situ	<10.0	<10.0	<10.0	<30.0	160	240
TT-6	SUR	9/11/2017	In-Situ	NA	NA	NA	NA	< 112	NA
TT-6	1'	9/11/2017	In-Situ	NA	NA	NA	NA	< 112	NA
TT-6	2'	9/11/2017	In-Situ	NA	NA	NA	NA	328	NA
TT-6	3'	9/11/2017	In-Situ	NA	NA	NA	NA	> 2604	NA
TT-6	4'	9/11/2017	In-Situ	NA	NA	NA	NA	2,408	NA
TT-6	6'	9/11/2017	In-Situ	NA	NA	NA	NA	296	NA
TT-6	8'	9/11/2017	In-Situ	NA	NA	NA	NA	< 112	NA
TT-6	14'	9/11/2017	In-Situ	<10.0	<10.0	<10.0	<30.0	< 112	64
TT-7	SUR	9/11/2017	In-Situ	NA	NA	NA	NA	< 112	NA
TT-7	1'	9/11/2017	In-Situ	NA	NA	NA	NA	328	NA
TT-7	2'	9/11/2017	In-Situ	NA	NA	NA	NA	> 2604	NA
TT-7	3'	9/11/2017	In-Situ	NA	NA	NA	NA	1644	NA
TT-7	4'	9/11/2017	In-Situ	NA	NA	NA	NA	1644	NA
TT-7	6'	9/11/2017	In-Situ	NA	NA	NA	NA	908	NA
TT-7	8'	9/11/2017	In-Situ	NA	NA	NA	NA	664	NA
TT-7	14'	9/11/2017	In-Situ	<10.0	<10.0	<10.0	<30.0	976	1760
NMOCD Regulatory Standard				10			5000	600	600

FIGURES

Geographic Location



Landowner: State
DGW: 200 ft



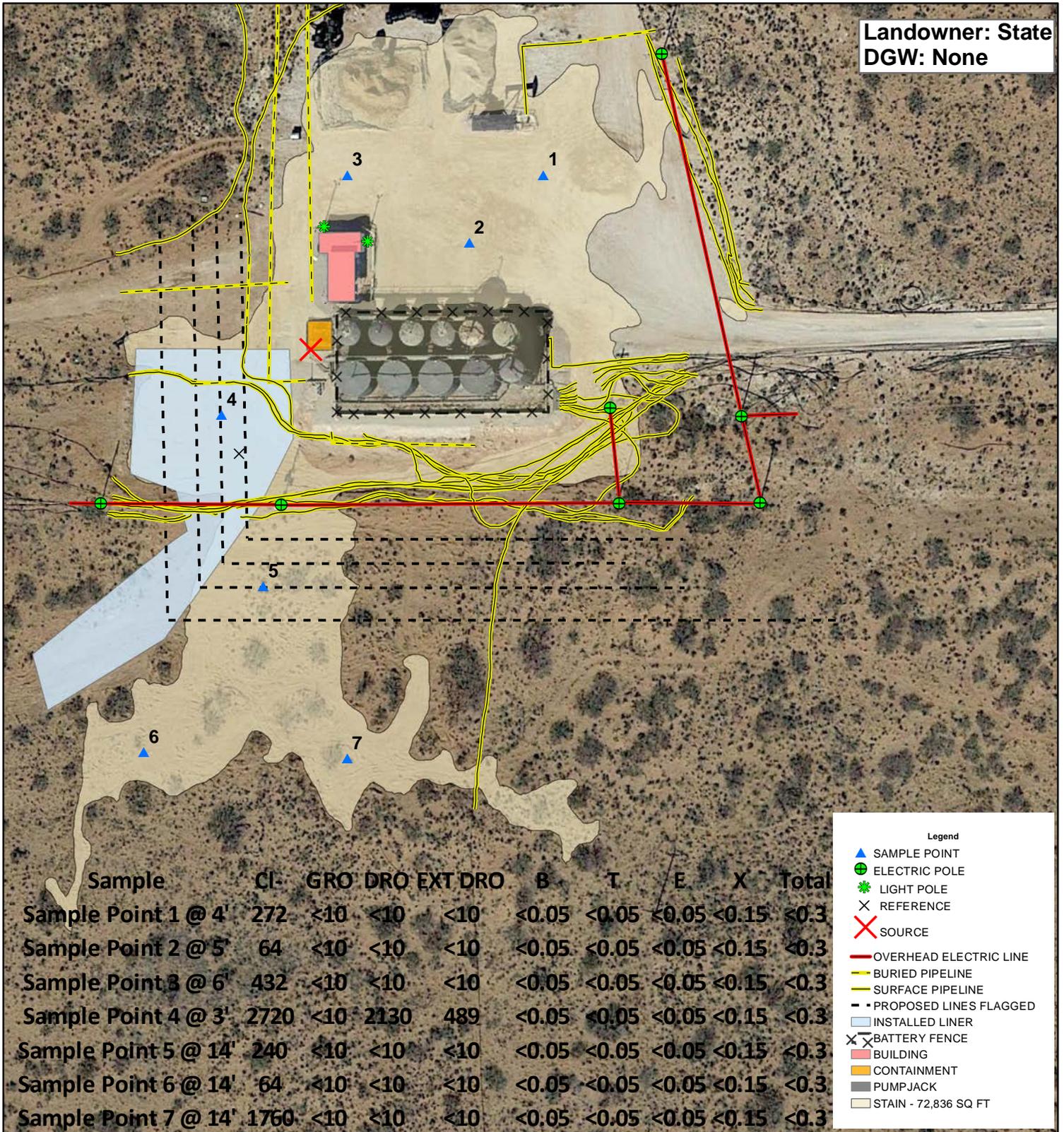
XTO
JRU 29 SWD
2RP-2766, 2RP-3082, 2RP-3302,
2RP-3726 & 2RP-4040

UL K SECTION 36
T-22-S R-30-E
EDDY COUNTY, NM

GPS: 32.319360 -103.931548
Figure 1
0 1 2
Miles
Drawing date: 10/10/17
Drafted by: T. Grieco

Initial Sampling

Landowner: State
DGW: None

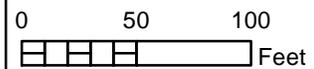


**XTO
JRU 29**

UL K SECTION 36
T-22-S R-30-E
EDDY COUNTY, NM

**Underground facilities are
spatially projected
and need to be field verified.**

GPS: 32.346386 -103.835900



GPS date: 9/5/17, 10/2/17 TG
Drawing date: 10/2/17
Drafted by: T. Grieco



APPENDIX A



September 25, 2017

ROBBIE RUNNELS

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: JRU 29 SWD

Enclosed are the results of analyses for samples received by the laboratory on 09/18/17 15:26.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

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: 09/18/2017
 Reported: 09/25/2017
 Project Name: JRU 29 SWD
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 09/11/2017
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP1 @ 4' (H702515-01)

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	09/22/2017	ND	1.90	95.2	2.00	0.810	
Toluene*	<0.050	0.050	09/22/2017	ND	1.77	88.6	2.00	1.97	
Ethylbenzene*	<0.050	0.050	09/22/2017	ND	1.85	92.4	2.00	1.18	
Total Xylenes*	<0.150	0.150	09/22/2017	ND	5.59	93.2	6.00	1.42	
Total BTEX	<0.300	0.300	09/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 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	272	16.0	09/20/2017	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	09/20/2017	ND	183	91.7	200	0.349	
DRO >C10-C28	<10.0	10.0	09/20/2017	ND	196	98.0	200	0.105	
EXT DRO >C28-C36	<10.0	10.0	09/20/2017	ND					

Surrogate: 1-Chlorooctane 82.3 % 28.3-164

Surrogate: 1-Chlorooctadecane 85.0 % 34.7-157

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: 09/18/2017
 Reported: 09/25/2017
 Project Name: JRU 29 SWD
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 09/11/2017
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 5' (H702515-02)

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	09/22/2017	ND	1.90	95.2	2.00	0.810	
Toluene*	<0.050	0.050	09/22/2017	ND	1.77	88.6	2.00	1.97	
Ethylbenzene*	<0.050	0.050	09/22/2017	ND	1.85	92.4	2.00	1.18	
Total Xylenes*	<0.150	0.150	09/22/2017	ND	5.59	93.2	6.00	1.42	
Total BTEX	<0.300	0.300	09/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	09/20/2017	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	09/21/2017	ND	183	91.7	200	0.349	
DRO >C10-C28	<10.0	10.0	09/21/2017	ND	196	98.0	200	0.105	
EXT DRO >C28-C36	<10.0	10.0	09/21/2017	ND					

Surrogate: 1-Chlorooctane 84.4 % 28.3-164

Surrogate: 1-Chlorooctadecane 86.3 % 34.7-157

Cardinal Laboratories

*=Accredited Analyte

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



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 09/18/2017
 Reported: 09/25/2017
 Project Name: JRU 29 SWD
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 09/11/2017
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ 6' (H702515-03)

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	09/22/2017	ND	1.90	95.2	2.00	0.810	
Toluene*	<0.050	0.050	09/22/2017	ND	1.77	88.6	2.00	1.97	
Ethylbenzene*	<0.050	0.050	09/22/2017	ND	1.85	92.4	2.00	1.18	
Total Xylenes*	<0.150	0.150	09/22/2017	ND	5.59	93.2	6.00	1.42	
Total BTEX	<0.300	0.300	09/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 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	09/20/2017	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	09/21/2017	ND	183	91.7	200	0.349	
DRO >C10-C28	<10.0	10.0	09/21/2017	ND	196	98.0	200	0.105	
EXT DRO >C28-C36	<10.0	10.0	09/21/2017	ND					

Surrogate: 1-Chlorooctane 82.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 89.7 % 34.7-157

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*=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: 09/18/2017
 Reported: 09/25/2017
 Project Name: JRU 29 SWD
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 09/11/2017
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP 4 @ 3' (H702515-04)

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	09/22/2017	ND	1.90	95.2	2.00	0.810	
Toluene*	<0.050	0.050	09/22/2017	ND	1.77	88.6	2.00	1.97	
Ethylbenzene*	<0.050	0.050	09/22/2017	ND	1.85	92.4	2.00	1.18	
Total Xylenes*	<0.150	0.150	09/22/2017	ND	5.59	93.2	6.00	1.42	
Total BTEX	<0.300	0.300	09/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 116 % 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	2720	16.0	09/20/2017	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	09/21/2017	ND	183	91.7	200	0.349	
DRO >C10-C28	2130	10.0	09/21/2017	ND	196	98.0	200	0.105	
EXT DRO >C28-C36	489	10.0	09/21/2017	ND					

Surrogate: 1-Chlorooctane 80.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 123 % 34.7-157

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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: 09/18/2017
 Reported: 09/25/2017
 Project Name: JRU 29 SWD
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 09/11/2017
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP 5 @ 14' (H702515-05)

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	09/22/2017	ND	1.97	98.3	2.00	0.292	
Toluene*	<0.050	0.050	09/22/2017	ND	1.82	91.1	2.00	0.577	
Ethylbenzene*	<0.050	0.050	09/22/2017	ND	1.91	95.4	2.00	0.0216	
Total Xylenes*	<0.150	0.150	09/22/2017	ND	5.73	95.4	6.00	0.0613	
Total BTEX	<0.300	0.300	09/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 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	240	16.0	09/20/2017	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	09/25/2017	ND	183	91.7	200	0.349	
DRO >C10-C28	<10.0	10.0	09/25/2017	ND	196	98.0	200	0.105	
EXT DRO >C28-C36	<10.0	10.0	09/25/2017	ND					

Surrogate: 1-Chlorooctane 79.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 86.9 % 34.7-157

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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: 09/18/2017
 Reported: 09/25/2017
 Project Name: JRU 29 SWD
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 09/11/2017
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP 6 @ 14' (H702515-06)

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	09/22/2017	ND	1.97	98.3	2.00	0.292	
Toluene*	<0.050	0.050	09/22/2017	ND	1.82	91.1	2.00	0.577	
Ethylbenzene*	<0.050	0.050	09/22/2017	ND	1.91	95.4	2.00	0.0216	
Total Xylenes*	<0.150	0.150	09/22/2017	ND	5.73	95.4	6.00	0.0613	
Total BTEX	<0.300	0.300	09/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 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	09/20/2017	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	09/21/2017	ND	183	91.7	200	0.349	
DRO >C10-C28	<10.0	10.0	09/21/2017	ND	196	98.0	200	0.105	
EXT DRO >C28-C36	<10.0	10.0	09/21/2017	ND					

Surrogate: 1-Chlorooctane 99.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 105 % 34.7-157

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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: 09/18/2017
 Reported: 09/25/2017
 Project Name: JRU 29 SWD
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 09/12/2017
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP 7 @ 14' (H702515-07)

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	09/22/2017	ND	1.97	98.3	2.00	0.292	
Toluene*	<0.050	0.050	09/22/2017	ND	1.82	91.1	2.00	0.577	
Ethylbenzene*	<0.050	0.050	09/22/2017	ND	1.91	95.4	2.00	0.0216	
Total Xylenes*	<0.150	0.150	09/22/2017	ND	5.73	95.4	6.00	0.0613	
Total BTEX	<0.300	0.300	09/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 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	1760	16.0	09/20/2017	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	09/21/2017	ND	183	91.7	200	0.349	
DRO >C10-C28	<10.0	10.0	09/21/2017	ND	196	98.0	200	0.105	
EXT DRO >C28-C36	<10.0	10.0	09/21/2017	ND					

Surrogate: 1-Chlorooctane 96.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 104 % 34.7-157

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Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

BILL TO

ANALYSIS REQUEST

Company Name: Basin Environmental Service Technologies, LLC
 Project Manager: Robbie Runnels
 Address: P.O. Box 301
 City: Lovington State: NM Zip: 88260
 Phone #: (575)396-2378 Fax #: (575)396-1429
 Project #: Project Owner: XTO Energy
 Project Name: JRU 29 SWD
 Project Location: Eddy
 Sampler Name: Robbie Runnels

P.O. #: XTO Energy
 Company: XTO Energy
 Attn: Amy Ruth
 Address:
 City: State: NM Zip: 88260
 Phone #: Fax #:

FOR LAB USE ONLY	MATRIX	PRESERV	SAMPLING
	GROUNDWATER		
	WASTEWATER		
	SOIL		
	OIL		
	SLUDGE		
	OTHER :		
	ACID/BASE:		
	ICE / COOL		
	OTHER :		

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	DATE	TIME	Chloride	TPH (8015M)	BTEX (8021B)
H702515	1 SP 1 @ 4'	g	1	9/11/17	9:35	X	X	X
	2 SP 2 @ 5'	g	1	9/11/17	10:05	X	X	X
	3 SP 3 @ 6'	g	1	9/11/17	10:40	X	X	X
	4 SP 4 @ 3'	g	1	9/11/17	11:21	X	X	X
	5 SP 5 @ 14'	g	1	9/11/17	13:30	X	X	X
	6 SP 6 @ 14'	g	1	9/11/17	14:20	X	X	X
	7 SP 7 @ 14'	g	1	9/12/17	7:55	X	X	X

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Relinquished By: _____ Date: 9/11/17 Received By: Holly Curbers Date: 9/26/17
 Time: 3:26 PM
 Delivered By: (Circle One) 12.3°C / 12.55°C Sample Condition: Cool Intact Yes No
 Sampler - UPS - Bus - Other: HC CHECKED BY: HC
 REMARKS: Please email results to pm@basinenr.com, amy_ruth@xtoenergy.com

APPENDIX B

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
JAN 06 2015 Revised August 8, 2011

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

RECEIVED

Release Notification and Corrective Action

NAB 1501255875

OPERATOR Initial Report Final Report

Name of Company: BOPCO, L.P. *2160137* Contact: Tony Savoie
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220 Telephone No. 575-887-7329
Facility Name: JRU-29 SWD Tank Battery, on the Pad with the producing well. Facility Type: Exploration and Production

Surface Owner: State of N.M. Mineral Owner: State of N.M. API No. 30-015-27735

LOCATION OF RELEASE

Unit Letter K	Section 36	Township 22S	Range 30E	Feet from the 1980	North/South Line South	Feet from the 2310	East/West Line West	County: Eddy
------------------	---------------	-----------------	--------------	-----------------------	---------------------------	-----------------------	------------------------	-----------------

Latitude N 32.346493 Longitude W 103.835563

NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: 97 bbls.	Volume Recovered: 3 bbls.
Source of Release: Unknown truck dumped fluid or left the truck load line valve open.	Date and Hour of Occurrence: 12/25/14 Time unknown	Date and Hour of Discovery: 12/25/14 at about 5:30 a.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input 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 produced water was assumed to have come from BOPCO operations but has not been confirmed. The spill was a result of an unknown truck driver failed to control fluids while unloading or parked at the BOPCO SWD Tank Battery. An investigation is underway. Attached is a record of events and findings to-date.

Describe Area Affected and Cleanup Action Taken.*
The spill impacted approximately 14,500 sq.ft. of Tank Battery/well pad. A vacuum truck recovered approximately 3 bbls of fluid upon discovery. The pad area had a significant rain event after the release and prior to EH&S site review. The spill area will be cleaned up in accordance to the NMOCD 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: <i>Tony Savoie</i>	OIL CONSERVATION DIVISION	
Printed Name: Tony Savoie	Signed By <i>Mike Brannon</i> Approved by Environmental Specialist:	
Title: Waste Management and Remediation Specialist	Approval Date: <i>1/12/15</i>	Expiration Date: <i>N/A</i>
E-mail Address: <i>tasavoie@basspet.com</i>	Conditions of Approval: Remediation per O.C.D. Rules & Guidelines Attached <input type="checkbox"/>	
Date: <i>1/6/15</i> Phone: <i>432-556-8730</i>	SUBMIT REMEDIATION PROPOSAL NO LATER THAN: <i>2/12/15</i>	

* Attach Additional Sheets If Necessary

2RP-2726

NM OIL CONSERVATION

ARTESIA DISTRICT

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

JUN 26 2015

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

NAB1518142271 **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: JRU-29 SWD Tank Battery	Facility Type: SWD

Surface Owner: State of N.M.	Mineral Owner: State of N.M.	API No. 30-015-27735
------------------------------	------------------------------	----------------------

LOCATION OF RELEASE

Unit Letter K	Section 36	Township 22S	Range 30E	Feet from the 1980	North/South Line South	Feet from the 2310	East/West Line West	County: Eddy
------------------	---------------	-----------------	--------------	-----------------------	---------------------------	-----------------------	------------------------	-----------------

Latitude N 32.346432 Longitude W 103.835934

NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: 110 bbls.	Volume Recovered: 40 bbls.
Source of Release: 4" SWD pump discharge line	Date and Hour of Occurrence: 6/22/15 Time unknown	Date and Hour of Discovery: 6/22/15 at about 5:45 p.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? NMOCD emergency #104	
By Whom? Tony Savoie	Date and Hour: 6/22/15 at 6:36 p.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
A 4" pipe fitting failed on the discharge of the SWD transfer pump. The pump was shut down and the fitting was replaced.

Describe Area Affected and Cleanup Action Taken.*
The spill impacted approximately 5,000 sq.ft. of pasture area. All of the free standing fluid was recovered with a vacuum truck. Twenty bbls of PW was recovered from the 0 Perm containment and 20bbls off the ground. A portion of the impacted area has a liner installed at about 3 ft. in depth. This liner was installed during a previous closed remediation at the location.
The spill area will be cleaned up in accordance to the NMOCD 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: <i>Tony Savoie</i>	OIL CONSERVATION DIVISION	
Printed Name: Tony Savoie	Signed By: <i>[Signature]</i> Approved by Environmental Specialist:	
Title: Waste Management and Remediation Specialist	Approval Date: 6/30/15	Expiration Date: N/A
E-mail Address: tasavoie@basspet.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 6/26/15	Phone: 432-556-8730	Remediation per O.C.D. Rules & Guidelines

* Attach Additional Sheets If Necessary

**SUBMIT REMEDIATION PROPOSAL NO
LATER THAN: 8/1/15**

2RP-3082

NM OIL CONSERVATION

ARTESIA DISTRICT

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

SEP 24 2015

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

NAB1526753593

OPERATOR

Initial Report Final Report

Name of Company: BOPCO, L.P. <u>260737</u>	Contact: Amy Ruth
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: James Ranch Unit #29 SWD Tank Battery	Facility Type: SWD

Surface Owner: State of New Mexico	Mineral Owner: State of New Mexico	API No. 30-015-27735
------------------------------------	------------------------------------	----------------------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	36	22S	30E	1980	South	2310	West	Eddy

Latitude 32.346409° Longitude -103.835868°

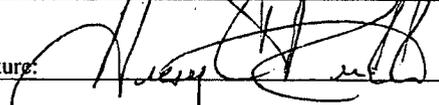
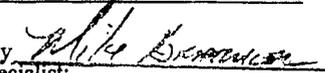
NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 290 bbls	Volume Recovered 240 bbls
Source of Release Water Transfer Pump	Date and Hour of Occurrence 9/18/2015 at 6:30 pm	Date and Hour of Discovery 9/18/2015 at 7 pm
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher and Heather Patterson	
By Whom? Tony Savoie	Date and Hour 9/19/2015 at 9:35 am	
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.*
Flange bolts on the south water transfer pump failed. Most of the fluids were released to zero perm containment. Pump was repaired.

Describe Area Affected and Cleanup Action Taken.*
A total of 4235 square feet of pasture west of the containment was affected. The leak occurred within a previously remediated area containing a 20 mil plastic liner approximately 3 feet below ground surface. 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	Signed By:  Approved by Environmental Specialist:	
Title: Assistant Remediation Foreman	Approval Date: 9/24/15	Expiration Date: N/A
E-mail Address: ACRuth@basspct.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 9-24-15 Phone: 432-661-0571	Remediation per O.C.D. Rules & Guidelines SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 10/25/15	

* Attach Additional Sheets If Necessary

2RP-3302

NM OIL CONSERVATION

ARTESIA DISTRICT

State of New Mexico
Energy Minerals and Natural Resources

JUN 07 2016

Form C-141
Revised August 8, 2011

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

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

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

RECEIVED

Release Notification and Corrective Action

NAB1616 127076

OPERATOR

Initial Report Final Report

Name of Company: BOPCO, L.P. <i>2100731</i>	Contact: Amy Ruth
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: James Ranch Unit 29 SWD	Facility Type: Exploration and Production
Surface Owner: State	Mineral Owner: State
API No. 30-015-27735	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	36	22S	30E	1840	South	2184	West	Eddy

Latitude 32.346457° Longitude -103.835847°

NATURE OF RELEASE

Type of Release	Produced Water	Volume of Release	775 bbls	Volume Recovered	760 bbls
Source of Release	Produced Water Tanks	Date and Hour of Occurrence	Unknown	Date and Hour of Discovery	5/27/2016 10 am
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Mike Bratcher/Heather Patterson (NMOCD)		
By Whom?	Amy Ruth	Date and Hour	5/27/2016 2:58 pm		
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.*

Location VSAT (satellite) was damaged and caused SCADA communication to fail. Failure triggered an alarm that was not responded to by the proper personnel. Produced water tanks overflowed into zero perm containment. After filling containment, fluids began overflowing onto location well pad. Satellite was repaired.

Describe Area Affected and Cleanup Action Taken.*

The leak affected 2,212 sq. ft. of location well pad and 688 sq. ft. of pasture west of the caliche pad. Standing fluids were recovered by vacuum trucks.

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

Signature: <i>Amy C. Ruth</i>	OIL CONSERVATION DIVISION	
Printed Name: Amy C. Ruth	Signed By <i>Mike Bratcher</i> Approved by Environmental Specialist:	
Title: EHS Remediation Specialist	Approval Date: <i>6/8/16</i>	Expiration Date: <i>NIA</i>
E-mail Address: ACRuth@basspet.com	Conditions of Approval: Attached <input type="checkbox"/>	
Date: 6/7/2016 Phone: 432-661-0571	Remediation per O.C.D. Rules & Guidelines	

SUBMIT REMEDIATION PROPOSAL NO
LATER THAN: *7/19/16*

ARP-3720

* Attach Additional Sheets If Necessary

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
Submit 7 Copy to appropriate District Office in accordance with 19.15.29 NMAC.
RECEIVED

Release Notification and Corrective Action

NAB 11635454725 OPERATOR Initial Report Final Report

Name of Company: BOPCO, L.P. <i>240737</i>	Contact: Amy Ruth
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: JRU 29 SWD Battery at JRU well #29	Facility Type: Exploration and Production
Surface Owner: State of New Mexico	Mineral Owner: State of New Mexico
API No. 30-015-27735	

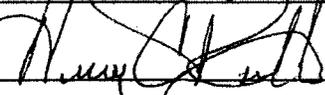
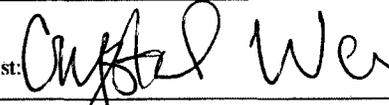
LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	36	22S	30E	1845	South	2160	West	Eddy

Latitude 32.346427° Longitude -103.835871°

NATURE OF RELEASE

Type of Release	Produced Water	Volume of Release	3324 bbls	Volume Recovered	2990 bbls
Source of Release	Water transfer pump	Date and Hour of Occurrence	Unknown	Date and Hour of Discovery	12/1/2016 approx. 9 am
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Mike Bratcher and Heather Patterson (NMOCD)		
By Whom?	Amy Ruth	Date and Hour	12/1/2016 4:52 pm		
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.* Release was due to a water transfer pump failure resulting in damage to pump fiberglass line. Fluids overflowed containment. Pump was isolated for repair.					
Describe Area Affected and Cleanup Action Taken.* The leak affected 56,043 square feet (33,938 square feet of this is in pasture). Standing fluids were recovered from the ground. Saturated surface soils were scraped and stockpiled on bermed plastic located on the caliche pad.					
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 C. Ruth	Approved by Environmental Specialist: 		
Title: EHS Environmental Supervisor	Approval Date:	Expiration Date:	
E-mail Address: ACRuth@basspet.com	Conditions of Approval: <i>see attached</i>		Attached <input checked="" type="checkbox"/>
Date: 12/16/2016	Phone: 432-661-0571		

* Attach Additional Sheets If Necessary

2RP-4040

Operator/Responsible Party,

The OCD has received the form C-141 you provided on **12/19/2016** regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4040 has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District II office in Artesia on or before 2/1/2017. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

- Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

- If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

- Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold

OCD Environmental Bureau Chief

1220 South St. Francis Drive

Santa Fe, New Mexico 87505

505-476-3465

jim.griswold@state.nm.us

Weaver, Crystal, EMNRD

From: Ruth, Amy C. <ACRuth@BassPet.Com>
Sent: Friday, December 16, 2016 6:07 PM
To: Bratcher, Mike, EMNRD; Patterson, Heather, EMNRD; Weaver, Crystal, EMNRD
Subject: RE: Release Notification - BOPCO, JRU 29 SWD Battery
Attachments: Initial C-141 JRU 29 SWD Battery 12-1-16.pdf

Categories: Printed

Please find attached the initial form C-141 for the reference spill in the notification below. Please call me with questions. Thank you and talk to you soon.

-Amy

-----Original Message-----

From: Ruth, Amy C.
Sent: Thursday, December 01, 2016 4:52 PM
To: Mike Bratcher; Heather.Patterson@state.nm.us
Subject: Release Notification - BOPCO, JRU 29 SWD Battery

This is a notification of a release of fluids greater than 25 bbls at the location noted below. An initial C-141 will be submitted with final volumes as soon as can be calculated. Please call me with questions. Thank you.

>

> Name: james ranch unit 029 swd battery bopco, l.p.

> Description: API: 3001527735

> Latitude: 32.346745

> Longitude: -103.835426

>

> Pipeline patrol sent photo of release. The release was due to water transfer pump failure. Free standing fluids are being recovered and saturated surface soils are being removed.