



November 12, 2018

Olivia Yu and Christina Hernandez
NMOCD District 1
1625 N. French Drive
Hobbs, New Mexico 88240

Re: Closure Report
Transfer line from Terrapin Frac Pond to Arabian 30-19 Fed Com 1H
NMOCD Reference #: 1RP-4871 & 1RP-5854

Ms. Olivia Yu and Ms. Christina Hernandez:

RXSoil, Inc. is pleased to submit the closure report summarizing the on-site remediation of treated produced water impacted soil for the above release, associated with the Arabian 30-19 Fed Com 1H site located in Lea County, New Mexico.

Sincerely,

Jace Caraway
Chief Operating Officer
RXSoil, Inc.
(940) 210-2051

Zach Robbins
Technical and Engineering Analyst
RXSoil, Inc.
(210) 400-7645

RXSoil, Inc.
201 Main St. Ste. 1360, Fort Worth, TX 76102

Appendices

1.	Final C-141.	5
2.	Overview Map	7
3.	Water Column/Average Depth to Groundwater.....	8
4.	Excavation Map	10
5.	Sidewall Testing Summary Table	11
6.	Project Pictures	13
7.	Agricultural Analysis Summary Table.....	15
8.	Lab Data Reports	17

RXSoil, Inc.

201 Main St. Ste. 1360, Fort Worth, TX 76102

I. Background

On behalf of Devon Energy Production Co LP and Swiftwater Energy Services ("Swiftwater"), RXSoil, Inc. ("RXSoil") has prepared this work plan that describes the assessment and corrective action plan for remediation of the release of 1RP-4871 associated with the Arabian 30-19 Fed Com 1H site with API #30-025-43176. The closure C-141 can be found as *Appendix 1*.

II. Regulatory Guidelines

Appendix 2 includes a 1,000-foot radius from the site showing no surface water within 1,000 feet of the release on the NM OCD Oil and Gas Map with Hydrology Layer. New Mexico Office of the State Engineer lists the nearest well approximately 1.45 miles west of the release location and lists a groundwater depth of 390' (see *Appendix 3*).

The closure criteria for soils impacted by a release with groundwater greater than 100 feet are **10** parts per million (ppm) benzene, **50** ppm combined benzene, toluene, ethyl benzene, and total xylenes (BTEX), **1,000** ppm GRO+DRO, **5,000** ppm total petroleum hydrocarbons (TPH) and **20,000** ppm chlorides. The reclamation must also include a minimum of four feet of soil with chloride concentrations less than **600** ppm.

III. Remediation Activities

The remediation of this release is being combined with the remediation of 1RP-4854. Impacted material from 1RP-4871 was excavated to a depth of 4' and replaced with clean material from an area adjacent to the affected area of 1RP-4854.

RXSoil's core process of on-site remediation is being used to address the contamination. This will be summarized in the Closure Report for 1RP-4854.

The spill area was excavated to a depth of 4'. Sidewall samples were collected every 50' and tested for chlorides to verify all contaminated material was removed. Two sidewall samples ("EX2" and EX10") tested above threshold. RXSoil could not continue excavation in those areas because of 811 instructions. At guidance of the BLM, material was scraped off the surface to alleviate growth. A sample map can be seen in *Appendix 4* with those results in a table in *Appendix 5*. All contaminated material was transported into treatment cells contained by 30-mil poly liner at the site of 1RP-4854.

A 20-mil poly liner was installed on the subsurface and walls of the area that was excavated. A drone image of this can be seen in *Appendix 6*.

Sidewall and bottom samples were taken for the contaminated area using a stainless-steel hand shovel. All tools were decontaminated before each sample, as specified in *Field Equipment Cleaning and Decontamination* (EPA, 2015). This includes wiping the equipment clean, water-rinsing the equipment, washing the equipment in detergent and water, and rinsing the equipment in water. Samples were temporarily transferred to a new plastic bag in the field. Once in a location safer for handling glass, the samples were transferred to glass jars, supplied by an approved laboratory. The threads on all jars were wiped clean to allow an air-tight seal. Samples were stored in a refrigerator before being placed on ice and transferred to a Cardinal Laboratory within an appropriate time period.

RXSoil, Inc.

201 Main St. Ste. 1360, Fort Worth, TX 76102

A composite sample was taken of the backfilled material and tested for agricultural analysis (CEC, SAR, ESP, anions and cations). These results can be found in *Appendix 7*. RXSoil will drill in the appropriate BLM seed mix in the spring. All third-party lab data can be found in *Appendix 8*.

RXSoil, on behalf of Devon Energy Production Co LP and Swiftwater Energy Services, is requesting no further action for release 1RP-4871.

RXSoil, Inc.

201 Main St. Ste. 1360, Fort Worth, TX 76102

APPENDIX 1

C-141, RELEASE NOTIFICATION AND CORRECTIVE ACTION DOCUMENT

RXSoil, Inc.

201 Main St. Ste. 1360, Fort Worth, TX 76102

Placeholder for C-141

RXSoil, Inc.

201 Main St. Ste. 1360, Fort Worth, TX 76102

APPENDIX 2 - OVERVIEW MAP



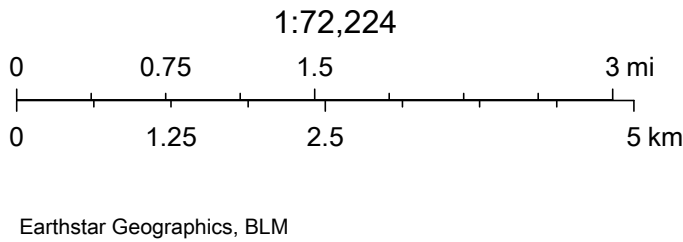
11/9/2018, 3:27:18 PM

Points

- Arabian 30-19 Fed Com 1H
- 1RP-4871
- 1RP-4854
- Nearest Well

- PLSS Townships
- PLSS Second Division

- OSE Water-bodies
- PLJV Probable Playas
- OSE Streams



APPENDIX 3

WATER COLUMN/AVERAGE DEPTH TO WATER

RXSoil, Inc.

201 Main St. Ste. 1360, Fort Worth, TX 76102



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the
POD suffix indicates the
POD has been replaced
& no longer serves a
water right file.)

(R=POD has
been replaced,
O=orphaned,
C=the file is
closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec 21	Tws 25S	Rng 31E	X 614912	Y 3553620*	Distance	Depth Well	Depth Water	Water Column
C_02250		CUB	ED	3	1	4	21	25S	31E	614912	3553620*	2313	400	390	10

Average Depth to Water: 390 feet

Minimum Depth: 390 feet

Maximum Depth: 390 feet

Record Count: 1

UTMNAD83 Radius Search (in meters):

Easting (X): 617222.69

Northing (Y): 3553727.86

Radius: 2500

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

7/2/18 11:20 AM

WATER COLUMN/ AVERAGE DEPTH TO
WATER

Appendix 4 - Excavation Map

1RP-4871

Legend

- Excavation Area
- Sidewall Sample



APPENDIX 5

SIDEWALL TESTING SUMMARY TABLE

RXSoil, Inc.

201 Main St. Ste. 1360, Fort Worth, TX 76102

Sample Name	Sample Type	Sample Date	Analyzed	Lab ID Sample	Chloride	
					Field	M4500
EX-1	Sidewall	9/17/2018	9/20/2018	H802633-01	144	48.0
EX-2	Sidewall	9/17/2018	9/20/2018	H802633-02	836	768
EX-3	Sidewall	9/17/2018	9/20/2018	H802633-03	224	208
EX-4	Sidewall	9/17/2018	9/20/2018	H802633-04	608	560
EX-5	Sidewall	9/17/2018	9/20/2018	H802633-05	292	272
EX-6	Sidewall	9/17/2018	9/20/2018	H802633-06	ND	32.0
EX-7	Sidewall	9/17/2018	9/20/2018	H802633-07	144	48.0
EX-8	Sidewall	9/17/2018	9/20/2018	H802633-08	144	336
EX-9	Sidewall	9/17/2018	9/20/2018	H802633-09	144	176
EX-10	Sidewall	9/17/2018	9/20/2018	H802633-10	556	1580
EX-11	Sidewall	9/17/2018	9/20/2018	H802633-11	556	432
EX-12	Sidewall	9/17/2018	9/20/2018	H802633-12	ND	96.0
EX-13	Sidewall	9/17/2018	9/20/2018	H802633-13	ND	48.0
EX-14	Sidewall	9/17/2018	9/20/2018	H802633-14	ND	32.0
EX-15	Sidewall	9/17/2018	9/20/2018	H802633-15	ND	32.0
BS-01	Bottom	9/17/2018	9/20/2018	H802633-16	1360	1840
BS-02	Bottom	9/17/2018	9/20/2018	H802633-17	1552	1820
NMOCD Thresholds					600	

BOLD results indicate results above thresholds

- indicates tests were not ran

"ND" indicates a non-detectable result, below testing limits

Green indicates special notes in **Section III** of the body

APPENDIX 6

PROJECT PICTURES

RXSoil, Inc.

201 Main St. Ste. 1360, Fort Worth, TX 76102



Figure 1: The liner was installed on the bottom and sides of the excavated area (photo taken from SE of spill).



Figure 2: The liner was installed on the bottom and sides of the excavated area (photo taken from E of spill).

RXSoil, Inc.
201 Main St. Ste. 1360, Fort Worth, TX 76102

APPENDIX 7

AGRICULTURAL ANALYSIS

Agricultural Analysis		
	Units	Backfill Composite
Inorganic Compounds		
Alkalinity, Bicarbonate	mg/kg	976
Alkalinity, Carbonate	mg/kg	<4.00
Chloride	mg/kg	<16.0
Conductivity	mg/kg	184
pH	pH Units	8.26
Sulfate	mg/kg	297
Alkalinity, Total	mg/kg	800
Saturated Paste Extraction		
Calcium	mg/L	128
Magnesium	mg/L	12.5
SAR	No Unit	0.34
Sodium	mg/L	15.2
Total Metals by ICP		
Calcium	mg/kg dry	21300
Magnesium	mg/kg dry	859
Potassium	mg/kg dry	872
Sodium	mg/kg dry	11.4
Sodium Saturation		
Cation Exchange Capacity	meq/100 g	7.33
Exchangable Metals by ICP		
Exchangable Sodium Percentage	%	<1.00
Sodium	mg/kg dry	5.00

APPENDIX 8

LAB DATA REPORTS

1. Excavation Samples 18

2. Agricultural Analysis 27

APPENDIX 8.1

LAB DATA REPORTS

EXCAVATION SAMPLES

RXSoil, Inc.

201 Main St. Ste. 1360, Fort Worth, TX 76102



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

September 24, 2018

MATTHEW LONGCRIER

RX-SOIL INC.

201 MAIN STREET, SUITE 1360

FORT WORTH, TX 76102

RE: SWIFTWATER

Enclosed are the results of analyses for samples received by the laboratory on 09/19/18 9:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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".

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

RX-SOIL INC.
 MATTHEW LONGCRIER
 201 MAIN STREET, SUITE 1360
 FORT WORTH TX, 76102
 Fax To: NA

Received:	09/19/2018	Sampling Date:	09/17/2018
Reported:	09/24/2018	Sampling Type:	Soil
Project Name:	SWIFTWATER	Sampling Condition:	** (See Notes)
Project Number:	SWIFTWATER 3	Sample Received By:	Tamara Oldaker
Project Location:	BAKER RANCH		

Sample ID: EX - 1 (H802633-01)

Chloride, SM4500CI-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	09/20/2018	ND	432	108	400	0.00	

Sample ID: EX - 2 (H802633-02)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	768	16.0	09/20/2018	ND	432	108	400	0.00	

Sample ID: EX - 3 (H802633-03)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	09/20/2018	ND	432	108	400	0.00	

Sample ID: EX - 4 (H802633-04)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	560	16.0	09/20/2018	ND	432	108	400	0.00	

Cardinal Laboratories

*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

RX-SOIL INC.
 MATTHEW LONGCRIER
 201 MAIN STREET, SUITE 1360
 FORT WORTH TX, 76102
 Fax To: NA

Received: 09/19/2018
 Reported: 09/24/2018
 Project Name: SWIFTWATER
 Project Number: SWIFTWATER 3
 Project Location: BAKER RANCH

Sampling Date: 09/17/2018
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: EX -5 (H802633-05)

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	09/20/2018	ND	432	108	400	0.00		

Sample ID: EX - 6 (H802633-06)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	09/20/2018	ND	432	108	400	0.00		

Sample ID: EX - 7 (H802633-07)

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	09/20/2018	ND	432	108	400	0.00	

Sample ID: EX - 8 (H802633-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	336	16.0	09/20/2018	ND	432	108	400	0.00		

Sample ID: EX - 9 (H802633-09)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	09/20/2018	ND	432	108	400	0.00	

Cardinal Laboratories

*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

RX-SOIL INC.
MATTHEW LONGCRIER
201 MAIN STREET, SUITE 1360
FORT WORTH TX, 76102
Fax To: NA

Received: 09/19/2018
Reported: 09/24/2018
Project Name: SWIFTWATER
Project Number: SWIFTWATER 3
Project Location: BAKER RANCH

Sampling Date: 09/17/2018
Sampling Type: Soil
Sampling Condition: ** (See Notes)
Sample Received By: Tamara Oldaker

Sample ID: EX - 10 (H802633-10)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1580	16.0	09/20/2018	ND	432	108	400	0.00		

Sample ID: EX - 11 (H802633-11)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	432	16.0	09/20/2018	ND	432	108	400	0.00		

Sample ID: EX - 12 (H802633-12)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	09/20/2018	ND	432	108	400	0.00	

Sample ID: EX - 13 (H802633-13)

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	09/20/2018	ND	432	108	400	0.00	

Sample ID: EX - 14 (H802633-14)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	09/20/2018	ND	432	108	400	0.00	

Cardinal Laboratories

*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

RX-SOIL INC.
 MATTHEW LONGCRIER
 201 MAIN STREET, SUITE 1360
 FORT WORTH TX, 76102
 Fax To: NA

Received: 09/19/2018
 Reported: 09/24/2018
 Project Name: SWIFTWATER
 Project Number: SWIFTWATER 3
 Project Location: BAKER RANCH

Sampling Date: 09/17/2018
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: EX - 15 (H802633-15)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	09/20/2018	ND	448	112	400	3.64		

Sample ID: BS - 1 (H802633-16)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1840	16.0	09/20/2018	ND	448	112	400	3.64	

Sample ID: BS - 2 (H802633-17)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1820	16.0	09/20/2018	ND	448	112	400	3.64		

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



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

Notes and Definitions

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

Cardinal Laboratories

*=Accredited Analyte

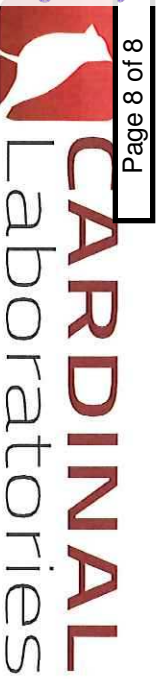
PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived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

A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager

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

Released to Imaging: 1/12/2022 2:55:40 PM



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: <u>RX Soil</u>		BILL TO		ANALYSIS REQUEST																							
Project Manager: <u>Matthew Longvick</u>		P.O. #:																									
Address:		Company:																									
City:		Attn:																									
State:		Address:																									
Zip:		City:																									
Phone #:		State:																									
Fax #:		Zip:																									
Project #: <u>Swiftwater</u>		Phone #:																									
Project Name: <u>Swiftwater</u>		Fax #:																									
Project Location: <u>Swiftwater 3</u>																											
Sampler Name: <u>Matthew Longvick</u>																											
FOR LAB USE ONLY																											
Lab I.D. <u>H802633</u>	Sample I.D. <u>11</u> <u>12</u> <u>13</u> <u>14</u> <u>15</u> <u>16</u> <u>17</u>	EX-11 EX-12 EX-13 EX-14 EX-15 BS-1 BS-2	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV.		SAMPLING		DATE	TIME	Chlorides											
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :														

PLEASE NOTE: Liability and Damages, Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: Matthew Longvick Date: 9/1/19 Received By: Samara Webb Date: 9/1/19

Relinquished By: Matthew Longvick Date: 9/1/19 Received By: Samara Webb Date: 9/1/19

Delivered By: (Circle One) 10.2c Sample Condition: ☒ Cool ☐ Intact ☐ Yes ☐ No ☐ Yes ☐ No

Sampler - UPS - Bus - Other: 10.2c CHECKED BY: TO. #97

REMARKS: Chlorides

APPENDIX 8.2

LAB DATA REPORTS

AGRICULTURAL ANALYSIS

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

October 22, 2018

MATTHEW LONGCRIER

RX-SOIL INC.

201 MAIN STREET, SUITE 1360

FORT WORTH, TX 76102

RE: SWIFTWATER

Enclosed are the results of analyses for samples received by the laboratory on 10/09/18 9:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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/ga/lab_accred_certif.html.

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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



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

Analytical Results For:

RX-SOIL INC.
201 MAIN STREET, SUITE 1360
FORT WORTH TX, 76102

Project: SWIFTWATER
Project Number: SWIFTWATER 3
Project Manager: MATTHEW LONGCRIER
Fax To: NA

Reported:
22-Oct-18 16:41

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SW3 COMPOSITE BACKFILL	H802867-01	Soil	03-Oct-18 00:00	09-Oct-18 09:30

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 or 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 damage 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.

A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

RX-SOIL INC.
201 MAIN STREET, SUITE 1360
FORT WORTH TX, 76102

Project: SWIFTWATER
Project Number: SWIFTWATER 3
Project Manager: MATTHEW LONGCRIER
Fax To: NA

Reported:
22-Oct-18 16:41

SW3 COMPOSITE BACKFILL
H802867-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

Cardinal Laboratories**Inorganic Compounds**

Alkalinity, Bicarbonate	976		20.0	mg/kg	1	8092513	AC	15-Oct-18	310.1M	
Alkalinity, Carbonate	<4.00		4.00	mg/kg	1	8092513	AC	15-Oct-18	310.1M	
Chloride	<16.0		16.0	mg/kg	4	8100913	AC	11-Oct-18	4500-Cl-B	
Conductivity	184		1.00	uS/cm	1	8101119	AC	12-Oct-18	120.1	
pH*	8.26		0.100	pH Units	1	8100914	AC	09-Oct-18	9045	
Sulfate	297		25.0	mg/kg	2.5	8101501	AC	15-Oct-18	375.4	QM-07
Alkalinity, Total	800		4.00	mg/kg	1	8092513	AC	15-Oct-18	310.1M	

Green Analytical Laboratories**Saturated Paste Extraction**

Calcium	128		0.100	mg/L	1	B810109	AES	12-Oct-18	EPA200.7	
Magnesium	12.5		0.100	mg/L	1	B810109	AES	12-Oct-18	EPA200.7	
SAR	0.34			No Unit	1	B810109	AES	12-Oct-18	Calculation	
Sodium	15.2		1.00	mg/L	1	B810109	AES	12-Oct-18	EPA200.7	

Total Metals by ICP

Calcium	21300		100	mg/kg dry	100	B810125	AES	15-Oct-18	6010B	
Magnesium	859		100	mg/kg dry	100	B810125	AES	15-Oct-18	6010B	
Potassium	872		200	mg/kg dry	100	B810125	AES	15-Oct-18	6010B	
Sodium	11.4	10.3	200	mg/kg dry	100	B810125	AES	15-Oct-18	6010B	J

Sodium Saturation

Cation Exchange Capacity	7.33		0.04	meq/100 g	1	B810110	AES	16-Oct-18	USDA-60 19	
--------------------------	------	--	------	-----------	---	---------	-----	-----------	------------	--

Exchangable Metals by ICP (Ammonium Acetate Extractable - Soluble)

Exchangable Sodium Percentage	<1.00		1.00	%	1	B810110	AES	16-Oct-18	USDA-60	
Sodium	5.00		1.00	mg/kg dry	1	B810110	AES	16-Oct-18	EPA200.7	

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 or 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 damage 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



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

Analytical Results For:

RX-SOIL INC.
201 MAIN STREET, SUITE 1360
FORT WORTH TX, 76102

Project: SWIFTWATER
Project Number: SWIFTWATER 3
Project Manager: MATTHEW LONGCRIER
Fax To: NA

Reported:
22-Oct-18 16:41

SW3 COMPOSITE BACKFILL**H802867-01 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	--------------------	-------	----------	-------	---------	----------	--------	-------

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 or 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 damage 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



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

Analytical Results For:

RX-SOIL INC.
201 MAIN STREET, SUITE 1360
FORT WORTH TX, 76102

Project: SWIFTWATER
Project Number: SWIFTWATER 3
Project Manager: MATTHEW LONGCRIER
Fax To: NA

Reported:
22-Oct-18 16:41

Inorganic Compounds - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	----------------	-----	--------------	-------

Batch 8092513 - 1:1 DI**Blank (8092513-BLK1)**

Prepared: 25-Sep-18 Analyzed: 01-Oct-18

Alkalinity, Carbonate	ND	1.00	mg/kg						
Alkalinity, Bicarbonate	5.00	5.00	mg/kg						
Alkalinity, Total	4.00	1.00	mg/kg						

LCS (8092513-BS1)

Prepared: 25-Sep-18 Analyzed: 01-Oct-18

Alkalinity, Carbonate	ND	1.00	mg/kg			80-120			
Alkalinity, Bicarbonate	122	5.00	mg/kg			80-120			
Alkalinity, Total	100	1.00	mg/kg	100		80-120	100		

LCS Dup (8092513-BSD1)

Prepared: 25-Sep-18 Analyzed: 01-Oct-18

Alkalinity, Carbonate	ND	1.00	mg/kg			80-120		20	
Alkalinity, Bicarbonate	127	5.00	mg/kg			80-120	4.02	20	
Alkalinity, Total	104	1.00	mg/kg	100		80-120	3.92	20	

Batch 8100913 - General Prep - Wet Chem**Blank (8100913-BLK1)**

Prepared & Analyzed: 09-Oct-18

Chloride	ND	16.0	mg/kg						
----------	----	------	-------	--	--	--	--	--	--

LCS (8100913-BS1)

Prepared & Analyzed: 09-Oct-18

Chloride	448	16.0	mg/kg	400		112	80-120		
----------	-----	------	-------	-----	--	-----	--------	--	--

LCS Dup (8100913-BSD1)

Prepared & Analyzed: 09-Oct-18

Chloride	448	16.0	mg/kg	400		112	80-120	0.00	20
----------	-----	------	-------	-----	--	-----	--------	------	----

Batch 8100914 - General Prep - Wet Chem**LCS (8100914-BS1)**

Prepared & Analyzed: 09-Oct-18

pH	7.05		pH Units	7.00		101	90-110		
----	------	--	----------	------	--	-----	--------	--	--

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 or 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 damage 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



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

Analytical Results For:

RX-SOIL INC.
201 MAIN STREET, SUITE 1360
FORT WORTH TX, 76102

Project: SWIFTWATER
Project Number: SWIFTWATER 3
Project Manager: MATTHEW LONGCRIER
Fax To: NA

Reported:
22-Oct-18 16:41

Inorganic Compounds - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch 8100914 - General Prep - Wet Chem

Duplicate (8100914-DUP1)	Source: H802867-01		Prepared & Analyzed: 09-Oct-18							
pH	8.28	0.100	pH Units		8.26			0.242	20	

Batch 8101119 - General Prep - Wet Chem

LCS (8101119-BS1)	Prepared & Analyzed: 12-Oct-18									
Conductivity	514		uS/cm	500		103	80-120			

Duplicate (8101119-DUP1)	Source: H802867-01		Prepared & Analyzed: 12-Oct-18							
Conductivity	184	1.00	uS/cm		184			0.0544	20	

Batch 8101501 - General Prep - Wet Chem

Blank (8101501-BLK1)	Prepared & Analyzed: 15-Oct-18									
Sulfate	ND	10.0	mg/kg							

LCS (8101501-BS1)	Prepared & Analyzed: 15-Oct-18									
Sulfate	20.4	10.0	mg/kg	20.0		102	80-120			

LCS Dup (8101501-BSD1)	Prepared & Analyzed: 15-Oct-18									
Sulfate	19.9	10.0	mg/kg	20.0		99.4	80-120	2.29	20	

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 or 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 damage 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



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

Analytical Results For:

RX-SOIL INC.
201 MAIN STREET, SUITE 1360
FORT WORTH TX, 76102

Project: SWIFTWATER
Project Number: SWIFTWATER 3
Project Manager: MATTHEW LONGCRIER
Fax To: NA

Reported:
22-Oct-18 16:41

Saturated Paste Extraction - Quality Control**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch B810109 - Paste Extract**Blank (B810109-BLK1)**

Prepared & Analyzed: 12-Oct-18

Calcium	ND	0.100	mg/L							
Sodium	ND	1.00	mg/L							
SAR	0.00		No Unit							
Magnesium	ND	0.100	mg/L							

Duplicate (B810109-DUP1)

Source: H802867-01

Prepared & Analyzed: 12-Oct-18

Calcium	99.1	0.100	mg/L		128			25.1	20	R1
Magnesium	9.79	0.100	mg/L		12.5			24.0	20	R1
SAR	0.34		No Unit		0.34			0.00	20	
Sodium	13.4	1.00	mg/L		15.2			12.6	20	

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 or 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 damage 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



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

Analytical Results For:

RX-SOIL INC.
201 MAIN STREET, SUITE 1360
FORT WORTH TX, 76102

Project: SWIFTWATER
Project Number: SWIFTWATER 3
Project Manager: MATTHEW LONGCRIER
Fax To: NA

Reported:
22-Oct-18 16:41

Total Metals by ICP - Quality Control**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch B810125 - EPA 3050**Blank (B810125-BLK1)**

Prepared: 12-Oct-18 Analyzed: 15-Oct-18

Calcium	ND	100	mg/kg dry							
Sodium	ND	200	mg/kg dry							
Potassium	ND	200	mg/kg dry							
Magnesium	ND	100	mg/kg dry							

LCS (B810125-BS1)

Prepared: 12-Oct-18 Analyzed: 15-Oct-18

Sodium	316	200	mg/kg dry	324		97.5	80-120			
Potassium	812	200	mg/kg dry	800		102	80-120			
Magnesium	1960	100	mg/kg dry	2000		98.2	80-120			
Calcium	422	100	mg/kg dry	400		105	80-120			

LCS Dup (B810125-BSD1)

Prepared: 12-Oct-18 Analyzed: 15-Oct-18

Calcium	416	100	mg/kg dry	400		104	80-120	1.27	20	
Potassium	804	200	mg/kg dry	800		100	80-120	1.03	20	
Sodium	313	200	mg/kg dry	324		96.5	80-120	1.01	20	
Magnesium	1950	100	mg/kg dry	2000		97.7	80-120	0.464	20	

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 or 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 damage 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



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

Analytical Results For:

RX-SOIL INC.
201 MAIN STREET, SUITE 1360
FORT WORTH TX, 76102

Project: SWIFTWATER
Project Number: SWIFTWATER 3
Project Manager: MATTHEW LONGCRIER
Fax To: NA

Reported:
22-Oct-18 16:41

Sodium Saturation - Quality Control**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch B810110 - Paste Extract**Blank (B810110-BLK1)**

Prepared: 12-Oct-18 Analyzed: 16-Oct-18

Cation Exchange Capacity	ND	0.04	meq/100 g							
--------------------------	----	------	-----------	--	--	--	--	--	--	--

Duplicate (B810110-DUP1)**Source: H802867-01**

Prepared: 12-Oct-18 Analyzed: 16-Oct-18

Cation Exchange Capacity	8.83	0.04	meq/100 g		7.33			18.6	200	
--------------------------	------	------	-----------	--	------	--	--	------	-----	--

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 or 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 damage 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



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

Analytical Results For:

RX-SOIL INC.
201 MAIN STREET, SUITE 1360
FORT WORTH TX, 76102

Project: SWIFTWATER
Project Number: SWIFTWATER 3
Project Manager: MATTHEW LONGCRIER
Fax To: NA

Reported:
22-Oct-18 16:41

Exchangable Metals by ICP (Ammonium Acetate Extractable - Soluble) - Quality Control**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	----------------	-----	--------------	-------

Batch B810110 - Paste Extract**Blank (B810110-BLK1)**

Prepared: 12-Oct-18 Analyzed: 16-Oct-18

Sodium	ND	1.00	mg/kg dry
Exchangable Sodium Percentage	ND	1.00	%

Duplicate (B810110-DUP1)

Source: H802867-01

Prepared: 12-Oct-18 Analyzed: 16-Oct-18

Sodium	6.00	1.00	mg/kg dry	5.00	18.2	20
Exchangable Sodium Percentage	0.29	1.00	%	0.31	6.67	20

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 or 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 damage 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

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

Notes and Definitions

R1	Duplicate sample RPD exceeded laboratory acceptance criteria. Sample(s) may be difficult to homogenize.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
J	Estimated concentration. Analyte concentration between MDL and RL.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or 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 damage 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.

A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



Company Name: Rx Soil

ANALYSIS REQUEST

ality

cations

PLEASE NOTE: Liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable analyses. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Phone Result:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Add'l Phone #:
Fax Result:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Add'l Fax #:
REMARKS:			

Released to Imaging: 1/12/2022 2:55:40 PM

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

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☒ Final Report

Name of Company	Devon Energy Production Co LP	Contact	Stephen Richards, Devon Completions Foreman
Address	PO BOX 250, Artesia, NM 88211	Telephone No.	(575) 252-3717
Facility Name: Transfer line from Terrapin Frac Pond to Arabian 30-19 Fed Com 2H	Facility Type Oil well		

Surface Owner: State / Federal	Mineral Owner: State / Federal	API No. 30-025-43773
--------------------------------	--------------------------------	----------------------

LOCATION OF RELEASE

Unit Letter M	Section 2	Township 26S	Range 31E	Feet from the 407	North/South Line NORTH	Feet from the 46	East/West Line WEST	County LEA
------------------	--------------	-----------------	--------------	----------------------	---------------------------	---------------------	------------------------	---------------

Latitude 32.067261 N Longitude -103.757277 W NAD83

NATURE OF RELEASE

Type of Release: Treated Produced Water	Volume of Release: 281 bbls	Volume Recovered: 145 bbls
Source of Release: Lay Flat Transfer Line	Date and Hour of Occurrence: 10/10/2017, 9:45 AM	Date and Hour of Discovery 10/10/2017, 9:45 AM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? OCD: Olivia Yu, Dist. 1 BLM: Shelly Tucker	
By Whom? Mike Shoemaker, EHS Professional	Date and Hour: OCD: 10/11/17, 9:15 AM BLM: 10/11/17, 9:45 AM	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. NA	
If a Watercourse was Impacted, Describe Fully.* NA		

RECEIVED

By Olivia Yu at 3:45 pm, Oct 27, 2017


Describe Cause of Problem and Remedial Action Taken.*

While transferring treated produced water from the Terrapin Frac Pond to the Arabian 30-19 Fed Com #2H, the booster pump over pressured and the lay flat hose ruptured, releasing produced water on the ground. The pump was shut down and the hose was repaired.

Describe Area Affected and Cleanup Action Taken.*

The spill affected approximately 10,244 square feet (1711 cubic feet) running south then east of the rupture point located approximately at 32.067261 N, -103.757277 W and is approximately 3.3 miles southwest from the Arabian 30-19 Fed Com 2H well pad. An estimated 281 barrels of treated produced water was spilled and 145 barrels were recovered. A remediation contractor will be contacted to assist with the delineation and remediation efforts.

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>Denise Menoud</i>		OIL CONSERVATION DIVISION	
Printed Name: Denise Menoud		Approved by Environmental Specialist: 	
Title: Admin Field Support	Approval Date: 10/27/2017	Expiration Date:	
E-mail Address: denise.menoud@dvn.com	Conditions of Approval: see attached directive	Attached <input checked="" type="checkbox"/>	
Date: 10/13/2017	Phone: (575)746-5544		

* Attach Additional Sheets If Necessary

Operator/Responsible Party,

The OCD has received the form C-141 you provided on _10/24/2017_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number _1RP-4854_ 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 _1_ office in __Hobbs__ on or before _11/27/2017_. 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



Swiftwater Spill 10/10/17



This map is for illustrative purposes only and is neither a legally recorded map nor survey and is not intended to be used as one. Devon makes no warranty, representation, or guarantee of any kind regarding this map.

WGS_1984_Web_Mercator_Auxiliary_Sphere
Prepared by: Menoud
Map is current as of: 13-Oct-2017



Miles

0 0.02 0.04 0.07 1:3,557

Central Valley Electric
Xcel Electric

District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 4898

CONDITIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 4898
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jnobui	Even if water is from recycled pond, contaminated area should be sampled for petroleum hydrocarbons. In future, variance for liners are required. Need to request for deferral if leaving >600 mg/kg chloride in place in top 4 ft. All sample locations should be geo-located on map.	1/12/2022