

2RP-4660
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Soil Assessment, Remediation, and Closure Report

West Red Lake Unit #51
API# 30-015-28459 * 2RP-4660
Talon Project # 701307.106.01

Prepared For:

Lime Rock Resources
1111 Bagby Street Suite 4600
Houston, TX 77002

Prepared By:

TALON/LPE
408 W. Texas Avenue
Artesia, New Mexico 88210

July 17, 2018

Mr. Mike Bratcher
NMOCD District 2
811 S. 1st Street
Artesia, NM 88210

Subject: **Soil Assessment and Remediation Work Plan**
West Red Lake Unit #51
API# 30-015-28459 * 2RP-4660

Dear Mr. Bratcher,

Lime Rock Resources (Lime Rock) has contracted Talon/LPE (Talon) to perform soil assessment and remediation services at the above referenced location. The results of our soil assessment and completed remediation activities and closure request are contained herein.

Site Information

The West Red Lake Unit #51 is located approximately twelve (12) miles southeast of Artesia, New Mexico. The legal location for this release is Unit Letter H, Section 8, Township 18 South and Range 27 East in Eddy County, New Mexico. More specifically the latitude and longitude for the release are 32.7655716 North and -104.3119125 West. A site plan is presented in [Appendix I](#).

According to the soil survey provided by the United States Department of Agriculture Natural Resources Conservation Service, the soil in this area is made up of Gypsum land. Per the New Mexico Bureau of Geology and Mineral Resources, the local surface and shallow geology is Holocene to upper Pleistocene in age and is comprised of alluvial deposits.

Ground Water and Site Ranking

The New Mexico State Engineer web site indicates that the nearest ground water is 8' below ground surface (BGS). See [Appendix II](#) for the referenced groundwater data.

Therefore the ranking for this site is a **20** based on the following:

Depth to ground water	<50'
Wellhead Protection Area	>1000'
Distance to surface water body	>1000'

Based upon the site ranking of **20**, NMOCD Recommended Remedial Action Levels (RRAL) are 50 mg/kg for BTEX, 10 mg/kg for Benzene and 100 mg/kg for TPH. The recommended guidelines for chlorides is 600 mg/kg.

Incident Description

On February 27, 2018, a flow line ruptured causing the release of 185 barrels of produced water to be released and flow down the draw. The line was isolated, shut in and repaired. A vacuum truck was immediately called and recovered 148 barrels of fluid from the pooling area at the sump and culvert at the bottom of the draw. A site plan is presented in [Appendix I](#) which illustrates the impacted area. This flow path is the same as several previous releases.

On February 28, 2018, Talon mobilized personnel to begin the site assessment and soil sampling activities for the construction of a work plan. Grab soil samples were collected from around the impacted area utilizing a hand auger. The results of our initial assessment are presented in the following data table.

Laboratory Data

See [Appendix III](#) for complete report of laboratory results.

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO	TPH (mg/kg) EXT	Total TPH
S-1	0	0.549	336	<10.0	<10.0	<10.0	<10.0
	1	-	1170	-	-	-	
	2	-	1330	-	-	-	-
	3	-	1090	-	-	-	-
	4	-	624	-	-	-	-
S-2	0	4.23	26400	94.3	1080	113	1225.3
Refusal	1	<0.300	20800	<10.0	<10.0	<10.0	<10.0
S-3	0	0.811	28000	<10.0	640	77.8	717.8
	1	0.427	7360	<10.0	<10.0	<10.0	<10.0
Refusal	2	<0.300	1070	<10.0	<10.0	<10.0	<10.0
S-4	0	252	26400	1750	5610	611	7971
	1	0.692	20000	<10.0	<10.0	<10.0	<10.0
Refusal	1.5	<0.300	14600	<10.0	<10.0	<10.0	<10.0
S-5	0	4.44	41200	14.9	33.5	<10.0	48.4
	1	4.29	24400	<10.0	<10.0	<10.0	<10.0
	2	1.52	29600	<10.0	<10.0	<10.0	<10.0
Refusal	2.5	0.849	23200	<10.0	<10.0	<10.0	<10.0
S-6	0	<0.300	32400	<10.0	<10.0	<10.0	<10.0
Refusal	1	<0.300	15600	<10.0	<10.0	<10.0	<10.0

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO	TPH (mg/kg) EXT	Total TPH
S-7	0	<0.300	32400	<10.0	<10.0	<10.0	<10.0
	1	<0.300	2440	<10.0	<10.0	<10.0	<10.0
Refusal	2	<0.300	1390	<10.0	<10.0	<10.0	<10.0

--Analyte Not Tested

On March 13, 2018, Talon mobilized personnel to the location a second time to perform additional vertical delineation at sample locations throughout the draw and also to collect perimeter samples along the flow path.

See [Appendix III](#) for complete report of laboratory results.

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO	TPH (mg/kg) EXT	Total TPH
S-2	2	-	8080	-	-	-	-
	3	-	2200	-	-	-	-
	4	-	592	-	-	-	-
	5	-	488	-	-	-	-
	6	-	496	-	-	-	-
	7	-	272	-	-	-	-
S-3	3	-	7360	-	-	-	-
	4	-	1360	-	-	-	-
	6	-	128	-	-	-	-
	7	-	704	-	-	-	-
	8	-	32.0	-	-	-	-
S-5	4	-	17800	-	-	-	-
	5	-	8660	-	-	-	-
	6	-	12600	-	-	-	-
	7	-	5600	-	-	-	-
	8	-	1420	-	-	-	-
S-6	3	-	240	-	-	-	-
	4	-	496	-	-	-	-
	5	-	8930	-	-	-	-
	6	-	9460	-	-	-	-
	7	-	6000	-	-	-	-
	9	-	1490	-	-	-	-
S-8	0	-	16	-	-	-	-
	0.5	-	32	-	-	-	-

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO	TPH (mg/kg) EXT	Total TPH
S-9	0	-	16	-	-	-	-
	0.5	-	32	-	-	-	-
S-10	0	-	<16.0	-	-	-	-
	0.5	-	16.0	-	-	-	-
S-11	0	-	192	-	-	-	-
	0.5	-	16	-	-	-	-
S-12	0	-	16.0	-	-	-	-
	0.5	-	32.0	-	-	-	-
S-13	0	-	16.0	-	-	-	-
	0.5	-	32.0	-	-	-	-
S-14	0	-	16.0	-	-	-	-
	0.5	-	16.0	-	-	-	-
S-15	0	-	96.0	-	-	-	-
	0.5	-	16.0	-	-	-	-
S-16	0	-	16.0	-	-	-	-
	0.5	-	48.0	-	-	-	-
S-17	0	-	16.0	-	-	-	-
	0.5	-	16.0	-	-	-	-
S-18	0	-	9200	-	-	-	-
	0.5	-	6130	-	-	-	-
S-19	0	-	80.0	-	-	-	-
	0.5	-	96.0	-	-	-	-

Remedial Actions Performed:

- The flow path between sample locations S-2 through S-4, including S-7 (end of flow path) was excavated to a depth of 2-feet deep.
- The flow path between sample locations just south of S-4 through S-6 was excavated to a depth of 4-feet deep.
- It is noted that the analytical results from sample location S-1, up gradient from the release, indicate that background readings in this draw exceed NMOCD RRAL's (1330 mg/kg at 2-feet below ground surface).

Closure

Therefore on behalf of Lime Rock Resources, we respectfully request that no further action be required and that closure of this incident be granted.

Should you have any questions or if further information is required, please do not hesitate to contact our office at (575)-746-8768

Respectfully submitted,

TALON/LPE

Jacob Laird
Environmental Scientist

David J Adkins
District Manager

Attachments:

Appendix I Site Plan
Appendix II Groundwater Data
Appendix III Final C-141
Appendix IV Laboratory Data

APPENDIX I

SITE PLAN

West Red Lake 51

Lime Rock Energy, Eddy County, NM

Legend

-  Flow Path
-  Release Point
-  Sample Locations



Google Earth
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APPENDIX II

GROUNDWATER DATA



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	Sub-basin	County	Q	Q	Q	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
RA 03714			CH	4	4	2	08	18S	27E	566212	3625253*	1782	381		
RA 05989			ED	3	2	4	01	18S	26E	562774	3626466*	1928	72	8	64
Average Depth to Water:															8 feet
Minimum Depth:															8 feet
Maximum Depth:															8 feet

Record Count:2

UTM NAD83 Radius Search (in meters):

Easting (X): 564447.96

Northing (Y): 3625509.42

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.

5/2/18 2:13 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

APPENDIX III

FINAL C-141

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: Lime Rock Resources II-A, L.P.	Contact: Mike Barrett
Address: 1111 Bagby Street Suite 4600, Houston, TX, 77002	Telephone No. 575-365-9724
Facility Name: West Red Lake 51	Facility Type: Injection Well
Surface Owner: BLM	Mineral Owner: Federal
API No. 30-015-28459	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	8	18S	27E	1450'	North	890'	East	Eddy

Latitude 32.7655716 Longitude -104.3119125 NAD83

NATURE OF RELEASE


Type of Release: Produced Water	Volume of Release: 185 bbls	Volume Recovered: 148 bbls
Source of Release: Flow Line	Date and Hour of Occurrence 2/27/2018	Date and Hour of Discovery 2/27/2018 @ 10:00 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- NMOCD Shelly Tucker- BLM	
By Whom? Kimberly Wilson- Talon LPE	Date and Hour: 2/27/2018 @ 4:12 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.* A flow line ruptured causing the release of 185 barrels of produced water to be released to flow down the draw. The line was isolated, shut in and repaired. A vac truck was immediately called and recovered 148 barrels of fluid from the sump previously constructed at the bottom of the draw. Talon mobilized personnel to the location for the initial site assessment and soil sampling activities.

Describe Area Affected and Cleanup Action Taken.* The area measures approximately 1,200 feet down the draw and varying in width from 2- feet to 4- feet wide. The impacted soil was excavated from 2-feet deep to 4-feet deep throughout the draw. All contaminated soil was transported to Lea Land LLC for disposal.

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.

OIL CONSERVATION DIVISION

Signature: 	Approved by Environmental Specialist:	
Printed Name: Mike Barrett		
Title: Production Superintendent	Approval Date:	Expiration Date:
E-mail Address: mbarrett@limerockresources.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 7/17/18	Phone: 575-365-9724	

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
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Address: 1111 Bagby Street Suite 4600, Houston, TX, 77002	Telephone No. 575-365-9724
Facility Name: West Red Lake Unit #51	Facility Type: Injection Well

Surface Owner: BLM	Mineral Owner: Federal	API No. 30-015-28459
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LOCATION OF RELEASE

Unit Letter H	Section 8	Township 18S	Range 27E	Feet from the 1450'	North/South Line North	Feet from the 890'	East/West Line East	County Eddy
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Latitude 32.7655716 Longitude -104.3119125 NAD83

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By Whom? Kimberly M. Wilson -Talon/LPE	Date and Hour: February 27, 2018 4:12 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.* A flow line ruptured causing a release of 185 barrels of produced water to be released to flow down the draw. The line was isolated, shut in and repaired. A vac truck was immediately called and recovered 148 barrels of fluid from the sump previously constructed at the bottom of draw. Talon mobilized personnel to the location for initial site assessment and soil sampling activities.		
Describe Area Affected and Cleanup Action Taken.* The area measures approximately 1,200 feet down the draw and varying in width from 2-feet to 4-feet. The wet impacted soil was excavated to prevent further migration.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		

Signature: 	<u>OIL CONSERVATION DIVISION</u>	
Printed Name: Mike Barrett	Approved by Environmental Specialist:	
Title: Production Superintendent	Approval Date:	Expiration Date:
E-mail Address: mbarrett@limerockresources.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 3/13/18	Phone: 575-365-9724	

* Attach Additional Sheets If Necessary