

# **Remediation and Closure Report:**

West Red Lake #41 2 RP-4345 API # 30-015-28443 Talon Project No. 701307.101.01

# **Prepared For:**

Lime Rock Resources II-A, L.P. 1111 Bagby Street Suite 4600 Houston, TX 77002

# **Prepared By:**

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

# January 3, 2018

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Mr. Mike Bratcher **NMOCD District 2** 811 S. 1<sup>st</sup> Street Artesia, NM 88210

Subject: Remediation and Closure Report West Red Lake #41 API # 30-015-28443

Dear Mr. Bratcher,

Lime Rock Resources II-A, L.P. had contracted Talon/LPE (Talon) to perform soil assessment and remediation services at the above referenced location. The incident description, soil sampling results, remediation activities and closure request are submitted herein.

## **Site Information**

The Lime Rock West Red Lake Unit 41 is located approximately eleven (11) miles southeast of Artesia, New Mexico. The legal location for this release is Unit Letter B, Section 7, Township 18 South and Range 27 East in Eddy County, New Mexico. More specifically the latitude and longitude for the release are 32.769298 North and -104.313950 West. A site map is presented in Appendix I.

According to the soil survey provided by the United States Department of Agriculture National Resources Conservation Services, the soil in this area is made up of weathered Gypsum. The local surface and shallow geology, Paleozoic Age sedimentary deposits, is comprised of the Guadeloupian Artesia Group, Tansil and Yates formations which include silty soils under lain by gypsum and hard caliches. Drainage courses in this area are normally dry.

## Ground Water and Site Ranking

The New Mexico State Engineer web site indicates that the nearest ground water is 8' below ground surface. 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 clean-up guideline for total chlorides is 600 mg/kg.

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## **Incident Description**

On August 5, 2017, a flow line ruptured resulting in the loss of approximately 323 barrels of produced water. The fluid from the release flowed into a ravine leading to the Pecos River. No fluid entered the river. A vac truck was called to the location and recovered 40 barrels of produced water. A site map is presented in Appendix I which illustrates the impacted area.

## **Remedial Actions Taken**

- 8/5/17-Talon LPE constructed earthen berms to minimize impacts and prevent fluids from reaching the river. A hydroexcavator was used to excavate wet areas.
- 8/6/17-Talon constructed lined sumps in the upper and lower flow paths. The upper flow path of the draw was flushed with 520 barrels of fresh water. 218 barrels were recovered from the upper sump.
- 8/7/17- The lower flow path of the draw was flushed with 520 barrels of fresh water. 310 barrels of water was collected from the lower sump.
- 8/23/17- The upper flow path of the draw was flushed again with 1300 barrels of fresh water. 800 barrels were recovered from the upper sump.
- 8/24/17- The lower flow path of the draw was flushed with 1040 barrels of fresh water. 650 barrels of water was recovered from the lower sump.
- 11/28/17- Talon returned to the location with a backhoe and roustabout crew. Soil samples were collected and field titrated for total chlorides to guide the excavation process. The upper portion of the impacted area within the numerous flow lines present was excavated by hand to avoid damage to the lines. The remaining impacted areas and flow path leading to the draw were excavated with a backhoe to a depth of 1.5-feet below surface.
- The impacted areas within the draw were hand-excavated by roustabout crews.
- Confirmation samples were collected from locations within the draw and from the flow path between the release point and the draw. Sample locations are illustrated on the attached site plans (Appendix I) and the resulting data is summarized in the following table. The complete lab report is attached in Appendix III.
- All contaminated soil was transported to Lea Land, LLC an approved NMOC disposal facility. The excavated area was backfilled with clean caliche obtained from Lea Land LLC, and machine compacted to match the surrounding location.

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## Laboratory Results

Sample ID	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO	TPH (mg/kg) EXT DRO
S-1	< 0.300	128	<10	<10	<10
S-2	< 0.300	144	<10	<10	<10
S-3	< 0.300	16	<10	<10	<10
S-4	< 0.300	112	<10	<10	<10
S-5	< 0.300	496	<10	10.8	<10
S-6	< 0.300	80	<10	<10	<10
S-7	< 0.300	144	<10	11.8	<10
S-8	< 0.300	272	<10	12.1	<10
S-9	< 0.300	80	<10	<10	<10
S-10	< 0.300	576	<10	10.7	<10
S-11	< 0.300	352	<10	<10	<10

See Appendix III for complete report of laboratory results.

## Closure

Based upon the remedial actions described herein and the resulting analytical data from the confirmation samples, on behalf of Lime Rock Resources we respectfully request that no further action be required and that closure in respect to this incident be granted. A Final C-141 is attached in Appendix IV.

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

Attachments:

Appendix ISite MapAppendix IIGroundwater DataAppendix IIILaboratory ResultsAppendix IVFinal C-141

berly M. Wilson

Kimberly M. Wilson Project Manager

# APPENDIX I

# SITE MAP

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# **APPENDIX II**

# GROUNDWATER DATA

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer	(R=POE been re O=orpha	placed,													
serves a water right ile.)	C=the fil closed)			(	qua				IW 2=N allest to		4=SE) AD83 UTM in n	neters)	(In f	eet)	
POD Number	Code	POD Sub- basin	County		Q 16		lec	Tws	Rng	х	Y	DistanceDer	othWellDept		/ater
RA 05989			ED	3	2	4 (	01	18S	26E	562774	3626466* 🍋	1524	72	8	64
RA 03714			CH	4	4	2	08	18S	27E	566212	3625253* 🌍	2128	381		
RA 03661			ED	3	2	3 3	32	17S	27E	565186	3628038* 🥘	2410	330	140	19
RA 03664			CH	3	2	3 3	32	17S	27E	565186	3628038* 🍋	2410	400	100	30
RA 02432			ED	2	3	1	12	18S	26E	561764	3625443* 🕘	2440	100		
											Avera	age Depth to W	ater:	82 fee	t
												Minimum De	pth:	8 fee	t
												Maximum De	pth:	140 fee	t
Record Count:5															
UTMNAD83 Radiu	s Search	(in mete	ers):												
Easting (X): 564	169.94		North	ing	(Y)	: 3	625	852.5	3		Radius: 2500				

WATER COLUMN/ AVERAGE DEPTH WATER Received by OCD: 5/14/2020 4:41:50 PM

# **APPENDIX III**

# LABORATORY RESULTS



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

December 09, 2017

DAVID ADKINS TALON LPE 408 W. TEXAS AVE. ARTESIA, NM 88210

RE: WEST RED LAKE #41

Enclosed are the results of analyses for samples received by the laboratory on 12/04/17 16:17.

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 <a href="https://www.tceq.texas.gov/field/qa/lab\_accred\_certif.html">www.tceq.texas.gov/field/qa/lab\_accred\_certif.html</a>.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keine

Celey D. Keene Lab Director/Quality Manager

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TALON LPE DAVID ADKINS 408 W. TEXAS AVE. ARTESIA NM, 88210 Fax To: (575) 745-8905

Received:	12/04/2017	Sampling Date:	12/01/2017
Reported:	12/09/2017	Sampling Type:	Soil
Project Name:	WEST RED LAKE #41	Sampling Condition:	Cool & Intact
Project Number:	701307.101.01	Sample Received By:	Jodi Henson
Project Location:	LIMEROCK - EDDY CO NM		

### Sample ID: S- 1 (H703332-01)

**BTEX 8021B** Analyzed By: MS mg/kg Analyte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD Qualifier Benzene\* < 0.050 0,050 12/06/2017 ND 1.78 88.8 2.00 2.14 Toluene\* < 0.050 0.050 12/06/2017 88.5 ND 1.77 2.00 1.12 Ethylbenzene\* < 0.050 0.050 12/06/2017 ND 1.70 85.1 2.00 0.625 Total Xylenes\* < 0.150 0.150 12/06/2017 ND 5.34 89.0 6.00 0.698 Total BTEX < 0.300 0.300 12/06/2017 ND Surrogate: 4-Bromofluorobenzene (PIL 96.0 % 72-148 Chloride, SM4500CI-B Analyzed By: AC mg/kg Analyte Result Reporting Limit Method Blank True Value QC Analyzed BS % Recovery RPD Qualifier Chloride 128 16.0 12/06/2017 ND 432 108 400 3.64 **TPH 8015M** mg/kg Analyzed By: MS Analyte Reporting Limit Result Analyzed Method Blank BS % Recovery True Value QC RPD Qualifier GRO C6-C10 <10.0 10.0 12/06/2017 ND 240 200 120 1.28 DRO >C10-C28 <10.0 10.0 12/06/2017 ND 231 116 200 1.04 EXT DRO >C28-C36 <10.0 10.0 12/06/2017 ND Surrogate: 1-Chlorooctane 72.9% 28.3-164 Surrogate: 1-Chlorooctadecane 71.0% 34.7-157

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Received:	12/04/2017	Sampling Date:	12/01/2017
Reported:	12/09/2017	Sampling Type:	Soil
Project Name:	WEST RED LAKE #41	Sampling Condition:	Cool & Intact
Project Number:	701307.101.01	Sample Received By:	Jodi Henson
Project Location:	LIMEROCK - EDDY CO NM		

## Sample ID: S- 2 (H703332-02)

BTEX 8021B	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/06/2017	ND	1.78	88.8	2.00	2.14	
Toluene*	<0.050	0.050	12/06/2017	ND	1.77	88.5	2.00	1.12	
Ethylbenzene*	<0.050	0.050	12/06/2017	ND	1.70	85,1	2.00	0.625	
Total Xylenes*	<0.150	0.150	12/06/2017	ND	5.34	89.0	6.00	0.698	
Total BTEX	<0.300	0.300	12/06/2017	ND					
Surrogate: 4-Bromofluorobenzene (PIE	95.8	% 72-148							
Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	12/06/2017	ND	432	108	400	3.64	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/06/2017	ND	240	120	200	1.28	
DRO >C10-C28	<10.0	10.0	12/06/2017	ND	231	116	200	1.04	
EXT DRO >C28-C36	<10.0	10.0	12/06/2017	ND					
Surrogate: 1-Chlorooctane	82.4	% 28.3-164	1						
Surrogate: 1-Chlorooctadecane	79.6	% 34.7-157	,						

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#### \*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Received:	12/04/2017	Sampling Date:	12/01/2017
Reported:	12/09/2017	Sampling Type:	Soil
Project Name:	WEST RED LAKE #41	Sampling Condition:	Cool & Intact
Project Number:	701307.101.01	Sample Received By:	Jodi Henson
Project Location:	LIMEROCK - EDDY CO NM		

## Sample ID: S- 3 (H703332-03)

BTEX 8021B	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/06/2017	ND	1.78	88.8	2.00	2.14	
Toluene*	<0.050	0.050	12/06/2017	ND	1.77	88.5	2.00	1.12	
Ethylbenzene*	<0.050	0.050	12/06/2017	ND	1.70	85,1	2,00	0.625	
Total Xylenes*	<0.150	0.150	12/06/2017	ND	5.34	89,0	6.00	0.698	
Total BTEX	<0.300	0.300	12/06/2017	ND					
Surrogate: 4-Bromofluorobenzene (PIE	97.5	% 72-148							
Chloride, SM4500CI-B	mg/	lkg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	12/06/2017	ND	432	108	400	3.64	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/06/2017	ND	240	120	200	1.28	
DRO >C10-C28	<10.0	10.0	12/06/2017	ND	231	116	200	1.04	
EXT DRO >C28-C36	<10.0	10.0	12/06/2017	ND					
Surrogate: 1-Chlorooctane	76.0	% 28.3-164	1						
Surrogate: 1-Chlorooctadecane	76.0	% 34.7-157	7						

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Celey D. Keene, Lab Director/Quality Manager



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Received:	12/04/2017	Sampling Date:	12/01/2017
Reported:	12/09/2017	Sampling Type:	Soil
Project Name:	WEST RED LAKE #41	Sampling Condition:	Cool & Intact
Project Number:	701307.101.01	Sample Received By:	Jodi Henson
Project Location:	LIMEROCK - EDDY CO NM		

#### Sample ID: S- 4 (H703332-04)

BTEX 8021B	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/06/2017	ND	1.78	88.8	2.00	2.14	
Toluene*	<0.050	0.050	12/06/2017	ND	1.77	88,5	2.00	1.12	
Ethylbenzene*	<0.050	0.050	12/06/2017	ND	1.70	85,1	2.00	0.625	
Total Xylenes*	<0,150	0.150	12/06/2017	ND	5.34	89.0	6.00	0.698	
Total BTEX	<0.300	0.300	12/06/2017	ND					
Surrogate: 4-Bromofluorobenzene (PIL	95.3	% 72-148							
Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	12/06/2017	ND	432	108	400	3.64	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/06/2017	ND	240	120	200	1.28	
DRO >C10-C28	<10.0	10.0	12/06/2017	ND	231	116	200	1.04	
EXT DRO >C28-C36	<10.0	10.0	12/06/2017	ND					
Surrogate: 1-Chlorooctane	65.2	% 28.3-16	1						
Surrogate: 1-Chlorooctadecane	63.4	% 34.7-15	7						

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Celey D. Keene, Lab Director/Quality Manager



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Received:	12/04/2017	Sampling Date:	12/01/2017
Reported:	12/09/2017	Sampling Type:	Soil
Project Name:	WEST RED LAKE #41	Sampling Condition:	Cool & Intact
Project Number:	701307.101.01	Sample Received By:	Jodi Henson
Project Location:	LIMEROCK - EDDY CO NM		

### Sample ID: S- 5 (H703332-05)

BTEX 8021B	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/06/2017	ND	1.78	88.8	2.00	2.14	
Toluene*	<0.050	0.050	12/06/2017	ND	1.77	88,5	2.00	1.12	
Ethylbenzene*	<0.050	0.050	12/06/2017	ND	1.70	85.1	2.00	0.625	
Total Xylenes*	<0.150	0.150	12/06/2017	ND	5.34	89,0	6.00	0,698	
Total BTEX	<0.300	0.300	12/06/2017	ND					
Surrogate: 4-Bromofluorobenzene (PIL	96.8	% 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	496	16.0	12/06/2017	ND	432	108	400	3.64	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/06/2017	ND	240	120	200	1.28	
DRO >C10-C28	10.8	10.0	12/06/2017	ND	231	116	200	1.04	
EXT DRO >C28-C36	<10.0	10.0	12/06/2017	ND					
Surrogate: 1-Chlorooctane	60.7	% 28.3-16	4						
Surrogate: 1-Chlorooctadecane	60.6	% 34.7-15	7						

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Celey D. Keene, Lab Director/Quality Manager

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Received:	12/04/2017	Sampling Date:	12/01/2017
Reported:	12/09/2017	Sampling Type:	Soil
Project Name:	WEST RED LAKE #41	Sampling Condition:	Cool & Intact
Project Number:	701307.101.01	Sample Received By:	Jodi Henson
Project Location:	LIMEROCK - EDDY CO NM		

## Sample ID: S- 6 (H703332-06)

BTEX 8021B	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/06/2017	ND	1.78	88.8	2.00	2,14	
Toluene*	<0.050	0.050	12/06/2017	ND	1,77	88.5	2.00	1.12	
Ethylbenzene*	<0.050	0.050	12/06/2017	ND	1.70	85.1	2.00	0.625	
Total Xylenes*	<0.150	0.150	12/06/2017	ND	5.34	89.0	6.00	0.698	
Total BTEX	<0.300	0.300	12/06/2017	ND					
Surrogate: 4-Bromofluorobenzene (PIL	97.0	% 72-148							
Chloride, SM4500Cl-B	mg,	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	12/06/2017	ND	432	108	400	3.64	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/06/2017	ND	240	120	200	1.28	
DRO >C10-C28	<10.0	10.0	12/06/2017	ND	231	116	200	1.04	
EXT DRO >C28-C36	<10.0	10.0	12/06/2017	ND					
Surrogate: 1-Chlorooctane	64.7	% 28.3-164	1						
Surrogate: 1-Chlorooctadecane	66.4	% 34.7-157	7						

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#### \*=Accredited Analyte

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Celeg D. Keine -

Celey D. Keene, Lab Director/Quality Manager



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Received:	12/04/2017	Sampling Date:	12/01/2017
Reported:	12/09/2017	Sampling Type:	Soil
Project Name:	WEST RED LAKE #41	Sampling Condition:	Cool & Intact
Project Number:	701307.101.01	Sample Received By:	Jodi Henson
Project Location:	LIMEROCK - EDDY CO NM		

## Sample ID: S- 7 (H703332-07)

BTEX 8021B	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/06/2017	ND	1.78	88.8	2.00	2.14	
Toluene*	<0.050	0.050	12/06/2017	ND	1.77	88.5	2.00	1.12	
Ethylbenzene*	<0.050	0.050	12/06/2017	ND	1.70	85.1	2,00	0.625	
Total Xylenes*	<0.150	0,150	12/06/2017	ND	5.34	89.0	6.00	0.698	
Total BTEX	<0.300	0.300	12/06/2017	ND					
Surrogate: 4-Bromofluorobenzene (PIL	97.1	% 72-148							
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	12/06/2017	ND	432	108	400	3.64	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/07/2017	ND	199	99.4	200	20.6	
DR0 >C10-C28	11.8	10.0	12/07/2017	ND	205	102	200	7.96	
EXT DRO >C28-C36	<10.0	10.0	12/07/2017	ND					
Surrogate: 1-Chlorooctane	101	% 28.3-16	4						
Surrogate: 1-Chlorooctadecane	99.0	% 34.7-15	7						

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\*=Accredited Analyte

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Celleg D. Keene

Celey D. Keene, Lab Director/Quality Manager



TALON LPE DAVID ADKINS 408 W. TEXAS AVE. ARTESIA NM, 88210 Fax To: (575) 745-8905

Received:	12/04/2017	Sampling Date:	12/01/2017
Reported:	12/09/2017	Sampling Type:	Soil
Project Name:	WEST RED LAKE #41	Sampling Condition:	Cool & Intact
Project Number:	701307.101.01	Sample Received By:	Jodi Henson
Project Location:	LIMEROCK - EDDY CO NM		

## Sample ID: S- 8 (H703332-08)

BTEX 8021B	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/07/2017	ND	1.77	88.5	2.00	1.18	
Toluene*	<0.050	0.050	12/07/2017	ND	1.75	87.5	2.00	0.0440	
Ethylbenzene*	<0.050	0.050	12/07/2017	ND	1.70	84.8	2.00	1.52	
Total Xylenes*	<0.150	0.150	12/07/2017	ND	5.27	87.8	6.00	1.86	
Total BTEX	<0.300	0.300	12/07/2017	ND					
Surrogate: 4-Bromofluorobenzene (PIL	95.0	% 72-148							
Chloride, SM4500CI-B	mg/	kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	12/06/2017	ND	432	108	400	3.64	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/07/2017	ND	199	99.4	200	20.6	
DRO >C10-C28	12,1	10.0	12/07/2017	ND	205	102	200	7.96	
EXT DRO >C28-C36	<10.0	10.0	12/07/2017	ND					
Surrogate: 1-Chlorooctane	100 9	% 28.3-164	0						
Surrogate: 1-Chlorooctadecane	93.1	% 34.7-157							

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Celey D. Keene, Lab Director/Quality Manager



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Received:	12/04/2017	Sampling Date:	12/01/2017
Reported:	12/09/2017	Sampling Type:	Soil
Project Name:	WEST RED LAKE #41	Sampling Condition:	Cool & Intact
Project Number:	701307.101.01	Sample Received By:	Jodi Henson
Project Location:	LIMEROCK - EDDY CO NM		

## Sample ID: S- 9 (H703332-09)

BTEX 8021B	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/07/2017	ND	1.77	88.5	2.00	1.18	
Toluene*	<0.050	0.050	12/07/2017	ND	1.75	87.5	2.00	0.0440	
Ethylbenzene*	<0.050	0.050	12/07/2017	ND	1.70	84.8	2.00	1.52	
Total Xylenes*	<0.150	0.150	12/07/2017	ND	5.27	87.8	6.00	1.86	
Total BTEX	<0.300	0.300	12/07/2017	ND					
Surrogate: 4-Bromofluorobenzene (PIE	96.7	% 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	80.0	16.0	12/06/2017	ND	432	108	400	3.64	
TPH 8015M	mg/	kg	Analyze	ed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/07/2017	ND	199	99.4	200	20.6	
DRO >C10-C28	<10.0	10.0	12/07/2017	ND	205	102	200	7.96	
EXT DRO >C28-C36	<10.0	10.0	12/07/2017	ND					
Surrogate: 1-Chlorooctane	1199	6 28.3-164							
Surrogate: 1-Chlorooctadecane	1169	6 34.7-157							

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Received:	12/04/2017	Sampling Date:	12/01/2017
Reported:	12/09/2017	Sampling Type:	Soil
Project Name:	WEST RED LAKE #41	Sampling Condition:	Cool & Intact
Project Number:	701307.101.01	Sample Received By:	Jodi Henson
Project Location:	LIMEROCK - EDDY CO NM		

## Sample ID: S- 10 (H703332-10)

**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 12/07/2017 ND 1,77 88.5 2.00 1.18 Toluene\* < 0.050 0,050 12/07/2017 87.5 2.00 ND 1.75 0.0440 Ethylbenzene\* <0.050 0.050 12/07/2017 ND 1.70 84.8 2.00 1.52 Total Xylenes\* <0,150 0.150 12/07/2017 ND 5.27 87.8 6.00 1.86 **Total BTEX** <0.300 0.300 12/07/2017 ND 72-148 Surrogate: 4-Bromofluorobenzene (PIL 95.3 % Chloride, SM4500CI-B Analyzed By: AC mg/kg Analyte Reporting Limit Method Blank BS True Value QC Result Analyzed % Recovery RPD Qualifier Chloride 576 16.0 12/06/2017 ND 432 108 400 3.64 TPH 8015M mg/kg Analyzed By: MS Analyte Reporting Limit Result Analyzed Method Blank BS % Recovery True Value QC RPD Qualifier GRO C6-C10 <10.0 10.0 12/07/2017 ND 199 99,4 200 20,6 DR0 >C10-C28 10.7 10.0 12/07/2017 ND 205 102 200 7.96 EXT DRO >C28-C36 <10.0 10.0 12/07/2017 ND Surrogate: 1-Chlorooctane 102 % 28.3-164 Surrogate: 1-Chlorooctadecane 92.4% 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



TALON LPE DAVID ADKINS 408 W. TEXAS AVE. ARTESIA NM, 88210 Fax To: (575) 745-8905

Received:	12/04/2017	Sampling Date:	12/01/2017
Reported:	12/09/2017	Sampling Type:	Soil
Project Name:	WEST RED LAKE #41	Sampling Condition:	Cool & Intact
Project Number:	701307.101.01	Sample Received By:	Jodi Henson
Project Location:	LIMEROCK - EDDY CO NM		

## Sample ID: S- 11 (H703332-11)

BTEX 8021B	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/07/2017	ND	1.77	88.5	2.00	1.18	
Toluene*	<0.050	0.050	12/07/2017	ND	1.75	87.5	2.00	0.0440	
Ethylbenzene*	<0.050	0.050	12/07/2017	ND	1.70	84.8	2.00	1,52	
Total Xylenes*	<0.150	0.150	12/07/2017	ND	5.27	87.8	6.00	1.86	
Total BTEX	<0.300	0.300	12/07/2017	ND					
Surrogate: 4-Bromofluorobenzene (PIL	96.0	% 72-148							
Chloride, SM4500CI-B	mg	'kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	352	16.0	12/06/2017	ND	432	108	400	3.64	
TPH 8015M	mg/	lkg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/07/2017	ND	199	99.4	200	20.6	
DRO >C10-C28	<10.0	10.0	12/07/2017	ND	205	102	200	7.96	
EXT DRO >C28-C36	<10.0	10.0	12/07/2017	ND					
Surrogate: 1-Chlorooctane	86.7	% 28.3-164	1						
Surrogate: 1-Chlorooctadecane	80.8	% 34.7-157	7						

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

## **Notes and Definitions**

QR-04	The RPD for the BS/BSD was outside of historical limits.
BS1	Blank spike recovery above laboratory acceptance criteria. Results for analyte potentially biased high.
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 SM4500CI-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

Page 13 of 15

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APPENDIX IV

# FINAL C-141

1625 N. FICHCH DF., HODDS, NM 88240	ate of Nev nerals and		ico I Resources				Form C-141 Revised April 3, 2017
District III   Oil O     1000 Rio Brazos Road, Aztec, NM 87410   1220     District IV   1220	Conservati South St. anta Fe, N	Franc	is Dr.	St	abmit 1 Copy ac	to appropr cordance w	iate District Office in ith 19.15.29 NMAC.
Release Notific	NAME OF A DESCRIPTION OF A	and the second second	Contract of the second second	ctio	n		
		PERAT			🗌 Initia	al Report	Final Report
Name of Company: Lime Rock Resources II-A, L.P. Address: 1111 Bagby Street Suite 4600, Houston, TX, 7700	A DESCRIPTION OF TAXABLE PARTY OF TAXABLE PARTY.		ke Barrett No. 575-365-97	24			
Facility Name: West Red Lake Unit #41	and the second se	lity Typ					
Surface Owner: BLM Mineral C	wner: Fede	eral			API No	. 30-015-2	8443
	TION O		and the second sec	L P	1337 . 7 *	0	
Unit LetterSectionTownshipRangeFeet from theB718S27E330	North/South North		Feet from the 1800	East	/West Line East	County Eddy	
Latitude <u>32.7687035</u>	Longit	ude	104.3148575		NAD83		
	URE OF						
Type of Release: Produced water Source of Release: Flowline			Release: 323 bb lour of Occurren			ecovered: 4 Hour of Dis	and the second se
Was Immediate Notice Given?			0 10:00 a.m. Whom?		8/5/2017	@ 11:00 a.r	n.
Yes 🗌 No 🗌 Not Re	equired Mi	ike Brate	her/Crystal Wea ker-BLM	ver-NN	AOCD		
By Whom? Sheldon Hitchcock-Talon/LPE	Da	te and H	water a weather when you is a spirit or the standard sector bury the tage sport over				
Was a Watercourse Reached?	If		lume Impacting	the Wa	tercourse.		
If a Watercourse was Impacted, Describe Fully.* The fluid from the release flowed into a drainage leading to the Pe the bottom of the flow path. Lined sumps were built in the upper a truck.							
Describe Cause of Problem and Remedial Action Taken.* A flowline failed resulting in the release of approximately 323 bbl produced water. The line was repaired and put back into service.	s of produced	d water.	A vacuum truck	was uti	lized to reco	ver approxi	mately 40 bbls of
Describe Area Affected and Cleanup Action Taken.* The fluid from the release entered an adjacent drainage which flow the flow path with earthen berms. Lined sumps were constructed in be captured. The upper and lower portions of the draw were flushe collected from the sumps utilizing a vacuum truck. The impacted a the draw and flow path. All contaminated soil was transported was backfilled with clean caliche obtained from Lea Land L I hereby certify that the information given above is true and compl regulations all operators are required to report and/or file certain re public health or the environment. The acceptance of a C-141 report should their operations have failed to adequately investigate and re or the environment. In addition, NMOCD acceptance of a C-141 r	n the upper and d with fresh y areas were execute to Lea Land LC, and man ete to the bese elease notifica rt by the NM emediate cont	nd lower water on cavated d, LLC achine c st of my ations an OCD ma taminatio	of the drainage two separate oc to a depth of 1.5 an approved N ompacted to m knowledge and u d perform correc arked as "Final R on that pose a thu	so that casions -feet. C MOC atch th inderst ctive ac ceport" reat to g	any fluid rur s. The water of Conformation disposal fac and surround and that purs ctions for rele does not reli ground water	ning down used to flust samples we cility. The ing locatio uant to NM asses which eve the oper , surface wa	the flow path would in the draw was ere collected from excavated area in. OCD rules and may endanger rator of liability iter, human health
federal, state, or local laws and/or regulations.			OIL CON	SER	VATION	DIVISIO	DN
Signature: Mull / S					-		
Printed Name: Mike Barrett	Appro	oved by I	Environmental S	peciali	st:	inifer	Nobui
Title: Production Superintendent	Appro	oval Date	e: 01/12/2	022	Expiration I	Date:	
E-mail Address: mbarrett@limerockresources.com	Condi	itions of	Approval:			Attenhed	
Date: 12/19/17 Phone: 575-365-9724						Attached	
* Attach Additional Sheets If Necessary NAB1722928	3340						

1625 N. French Dr., Hobbs, NM 88240 Energy Minera   District II Energy Minera   811 S. First St., Artesia, NM 88210 Oil Cons   1000 Rio Brazos Road, Aztec, NM 87410 0il Cons   District IV 1220 So	of New Mex ils and Natura servation Di- uth St. Franc Fe, NM 875	ll Resources vision vis Dr.	Submit 1 Copy ac	to appropr cordance w	Form C-141 Revised April 3, 2017 iate District Office in ith 19.15.29 NMAC.
Release Notificati	and the second se	A CONTRACTOR OF THE OWNER OF THE OWNER OF THE OWNER OF	ction		
Refease 1 (othicate	OPERA'			al Report	Final Report
Name of Company Lime Rock Resources II-A, L.P.	Contact Mil	ke Barrett			
Address 1111 Bagby St. Ste. 4600, Houston, TX 77002 Facility Name West Red Lake Unit #41	Telephone 1 Facility Typ	No. 575-365-972	24		
Surface Owner BLM Mineral Owner	1		APINO	. 30-015-2	28443
	ON OF RE	FASE	/ MITIN		
	rth/South Line North	Feet from the 1800	East/West Line East	County	Eddy
Latitude <u>32.7687035</u>	Longitude -	04.3148575	NAD83	I	
	E OF REL				
Type of Release Produced Water		Release 323bbls		Recovered 4	
Source of Release Flowline	Date and H 8/5/2017 (d	Hour of Occurrence		Hour of Dis @ 11:00 an	
Was Immediate Notice Given?	If YES, To	Whom?		(1) 11100 tu	
Yes 🗌 No 🗌 Not Requir	ed   Mike Brate   Shelly Tuc	cher/Crystal Weav ker-BLM	er-NMOCD		
By Whom? Sheldon Hitchcock	Date and H	Iour 8/5/2017 @	5:17pm		
Was a Watercourse Reached?	Approx. 25	blume Impacting t 50bbls	he Watercourse.		
If a Watercourse was Impacted, Describe Fully.*					
The fluid from the release flowed into a drainage leading to the Pecos I bottom of the flow path. Lined sumps were built in the upper and lowe truck.					
A flowline failed resulting in the release of approximately 323bbls of p produced water. The line was repaired and put back into service.	produced water.	A vacuum truck w	as utilized to reco	ver approxi	mately 40bbls of
Describe Area Affected and Cleanup Action Taken.* The fluid from the release entered an adjacent drainage which flows in the flow path with earthen berms. Lined sumps were constructed in the drainage will be captured. In an effort to mitigate impacts from the rele following the flush utilizing vacuum trucks. Soil samples were taken fr	upper and lowe ase the draw wa om the draw aft	r portions of the d s flushed with fre er the flush in ord	rainage so that any sh water. The wate er to determine the	r fluid runni r was recov extent of the	ing down the vered from the sumps the soil impacts.
I hereby certify that the information given above is true and complete t regulations all operators are required to report and/or file certain releas public health or the environment. The acceptance of a C-141 report by should their operations have failed to adequately investigate and remed or the environment. In addition, NMOCD acceptance of a C-141 report federal, state, or local laws and/or regulations.	e notifications at the NMOCD m iate contaminati	nd perform correc arked as "Final R on that pose a thre e the operator of p	tive actions for rel- eport" does not rel- eat to ground water responsibility for c	eases which ieve the ope , surface w ompliance	n may endanger erator of liability ater, human health with any other
Signature: MIL Jan		OIL CON	SERVATION	DIVISIO	<u>NC</u>
Printed Name: Mike Barrett	Approved by	Environmental S	pecialist:		
Title: Production Superintendent	Approval Dat	e:	Expiration	Date:	
E-mail Address: mbarrett@limerockresources.com	Conditions of	Approval:		Attached	1
Date:   8/10/2017   Phone:   575-365-9724     Attach Additional Sheets If Necessary					

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

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

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Action 8301

CONDITIONS

Operator:	OGRID:
LIME ROCK RESOURCES II-A, L.P.	277558
1111 Bagby Street	Action Number:
Houston, TX 77002	8301
	Action Type:
	[C-141] Release Corrective Action (C-141)

CONDITIONS

CONDING		
Created By	Condition	Condition Date
jnobui	In the future please collect sump water samples from flushing.	1/12/2022