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District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Form C-101
Revised July 18, 2013

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

☒ AMENDED Report

after R-14164-D

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address Lime Rock Resources II-A, L P 1111 Bagby Street, Suite 4600 Houston, Texas 77002		² OGRID Number 277558
		³ API Number 30-015-40978
⁴ Property Code 39636	⁵ Property Name Brainard 11 P	⁶ Well No #4

⁷ Surface Location

UL Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
P	11	18S	26E		825	S	330	E	Eddy

⁸ Proposed Bottom Hole Location

UL Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
P	11	18S	26E		825	S	330	E	Eddy

⁹ Pool Information

Red Lake, Glorieta-Yeso NE	51120
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Additional Well Information

⁹ Work Type N	¹⁰ Well Type O	¹¹ Cable/Rotary R	¹² Lease Type P	¹³ Ground Level Elevation 3304.4
¹⁴ Multihole N	¹⁵ Proposed Depth 4500' MD / 4500' TVD	¹⁶ Formation Yeso	¹⁷ Contractor United Drilling, Inc.	¹⁸ Spud Date After 3/1/2017
Depth to Ground Water: 23 Ft		Distance from nearest fresh water well: 0.23 Miles		Distance from nearest surface water: 0.93 Miles

☒ We will be using a closed-loop system in lieu of lined

¹⁹ Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Conductor	26"	20"	91.5	80	80	Surface
Surface	11"	8-5/8"	24	675	350	Surface
Production	7-7/8"	5-1/2"	17	4500	900	Surface

Casing/Cement Program: Additional Comments

Surface Csg set 50' above first oil show. Cement will be circulated as required.

Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
XLT 11"	5000	2000	National Varco

I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

I further certify that I have complied with 19.15.14.9 (A) ☐ and/or 19.15.14.9 (B) NMAC 0, if ☒

Signature: *Eric I. McClusky*
Printed Name: Eric McClusky

Title: Operations Engineer

E-mail Address: emcclusky@limerockresources.com

Date: 2/13/2017

Phone: 713-360-5714

OIL CONSERVATION DIVISION

Approved By:

Title:

Approved Date:

Expiration Date:

Conditions of Approval Attached

Prior to Spud, Operator will review and adhere to NMOCD order R-14164 for current changes or any amendments which may pertain to the drilling and completion of this well.

**Lime Rock Resources II-A, L.P.
Drilling Plan**

**Brainard 11 P #4
825' FSL 330' FEL
(P) 11-18S-26E
Eddy County, NM**

1. The elevation of the unprepared ground is 3304.4 feet above sea level.
2. The geologic name of the surface formation is Quaternary – Alluvium.
3. A rotary rig will be utilized to drill the well to 4500' and run casing. This equipment will be rigged down and the well will be completed with a workover rig.
4. Well will be drilled to a total proposed depth of 4500' MD.

5. Estimated tops of geologic markers:

	MD	TVD
Quaternary – Alluvium	Surface	Surface
Yates	NA	NA
7 Rivers	NA	NA
Queen	338	338
Grayburg	724	724
Premier	NA	NA
San Andres	997	997
Glorieta	2366	2366
Yeso	2473	2473
Tubb	3950	3950
TD	4500	4500

6. Estimated depths at which anticipated oil, gas, or other mineral bearing formations are expected to be encountered:

	MD	TVD
Yates	NA	NA
7 Rivers	NA	NA
Queen	338	338
Grayburg	724	724
Premier	NA	NA
San Andres	997	997
Glorieta	2366	2366
Yeso	2473	2473
Tubb	3950	3950
TD	4500	4500

7. Proposed Casing and Cement program is as follows

Type	Hole	Casing	Wt	Grade	Thread	Depth	Sx	Density	Yield	Components
Conductor	26"	20"	91.5	B	Welded	80	80			Ready Mix
Surface	11"	8-5/8"	24	J-55	ST&C	675	350	14.8	1.35	Cl C Cmt + 0.25 lbs/sk Cello Flake + 2% CaCl ₂
Intermediate										
Production	7-7/8"	5-1/2"	17	J-55	LT&C	4500	300	12.8	1.903	(35:65) Poz/Cl C Cmt + 5% NaCl + 0.25 lbs/sk Cello Flake + 5 lbs/sk LCM-1 + 0.2% R-3 + 6% Gel
							600	14.8	1.33	Cl H w/ 0.6% R-3, 0.125% Cello Flake, 2% Gel

8. Proposed Mud Program is as follows

Depth	0-675	675-4350	4350-4500
Mud Type	Fresh Water Mud	Brine, Salt Gel, & Starch	Brine, Salt Gel, & Starch
Properties			
MW	8.4-9.2	9.8-10.1	9.9-10.1
pH	9.0-10.5	10.0-12.0	10.0-12.0
WL	NC	NC	20-30
Vis	28-34	28-29	32-34
MC	NC	NC	<2
Solids	NC	<2%	<3%
Pump Rate	300-500 gpm	375-425 gpm	400-425 gpm
Special		Use Poymers sticks and MF-55 Hi-Vis Sweeps as necessary	Hi Vis Sweeps, add acid and starch as req. Raise Vis to 35 for log.

9. **Pressure Control Equipment:** See Attached Description and diagram of Pressure Control Equipment.

10. **Testing, Logging and Coring Program**

Testing Program No drill stem tests are anticipated

Electric Logging Program SGR-DLL-CDL-CNL Quad Combo from 4500 to surf. Csg. SGR-CNL to Surf.

Coring Program: No full or sidewall cores are anticipated.

11. **Potential Hazards:**

No abnormal temperatures or pressures are expected. There is no known presence of H₂S in this H₂S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. personnel will be familiar with all aspects of safe operation of equipment being used to drill this well Estimated BHP 1980 psi based on 0.44 x TD. The estimated BHT is 125 degrees F.

12. **Duration of Operations:**

Anticipated spud date will be soon after approval and as soon as a rig will be available. Move in operations and drilling is expected to take 10 days. An additional 14 days will be needed to complete well and to construct surface facilities.

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION DIVISION

PERMIT CONDITIONS OF APPROVAL

Operator Name Lime Rock Resources
API Number 30-015-40978
Well Name and Number Brainard 11P #4

- ☐ Will require a Directional Survey and "As Drilled" C-102 with the C-104
- ☒ Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string.
- ☒ If cement does not circulate to surface, must run temperature survey or other log to determine top of cement.
- ☐ NSL approval required prior to sale of product
- ☐ NSP approval required for requested acreage dedication
- ☐ Initial injection cannot commence until all regulatory requirements have been met and drilling and completion data conforms to approved SWD order

Prior to Spud, Operator will review and adhere to NMOCD order R-14164 for current changes or any amendments which may pertain to the drilling and completion of this well.