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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 Repc

NM OIL CONSERVATION
ARTESIA DISTRICT

FEB 22 2017

RECEIVED

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

Operator Name and Address Lime Rock Resources II-A, L.P. 1111 Bagby Street, Suite 4600 Houston, Texas 77002		OGRID Number 277558
Property Code 314837		API Number 30-015-43116
Property Name Higgins Cahoon 12D		Well No. #3

7 Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
D	12	18S	26E		990	N	990	W	Eddy

8 Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
D	12	18S	26E		990	N	990	W	Eddy

9 Pool Information

Atoka, Glorieta-Yeso	3250
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Additional Well Information

Work Type N	Well Type O	Cable/ Rotary R	License Type P	Ground Level Elevation 3288
Multiole N	Proposed Depth 4600' MD / 4600' TVD	Formation Yeso	Contractor United Drilling, Inc	Soud Date After 3/1/2017
Depth to Ground Water: 8 Ft		Distance from nearest fresh water well 0.25 Miles		Distance from nearest surface water: 0.37 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/lb	Setting Depth	Sacks of Cement	Estimated TOC
Conductor	26"	20"	91.5	80	80	Surface
Surface	11"	8-5/8"	24	710	350	Surface
Production	7-7/8"	5-1/2"	17	4600	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 McClusky*

Printed Name: Eric McClusky

Title: Operations Engineer

E-mail Address: emcclusky@limerockresources.com

Date: 2/17/2017

Phone: 713-360-5714

OIL CONSERVATION DIVISION

Approved By:

Raymond Dr. Padany

Title:

Geologist

Approved Date:

3-17-2017

Expiration Date:

3-17-2019

Conditions of Approval Attached

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

**Higgins Cahoon 12D #3
990' FNL 990' FWL
(D) 12-18S-26E
Eddy County, NM**

1. The elevation of the unprepared ground is 3288 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 4600' 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 4600' MD.
5. Estimated tops of geologic markers:
6. Estimated depths at which anticipated oil, gas, or other mineral bearing formations are expected to be encountered:

	MD	TVD
Quaternary – Alluvium	Surface	Surface
Yates	NA	NA
7 Rivers	NA	NA
Queen	349	349
Grayburg	763	763
Premier	969	969
San Andres	1053	1053
Glorieta	2322	2322
Yeso	2442	2442
Tubb	3903	3903
TD	4600	4600

	MD	TVD
Yates	NA	NA
7 Rivers	NA	NA
Queen	349	349
Grayburg	763	763
Premier	969	969
San Andres	1053	1053
Glorieta	2322	2322
Yeso	2442	2442
Tubb	3903	3903
TD	4600	4600

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	710	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	4600	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	0-710	710-4450	4450-4600
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 4600 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 2024 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 it complet well and to construct surface facilities.