

12-683

OCD Artesia

Form 3160-3
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

5 Lease Serial No.
NM-117807

6. If Indian, Allottee or Tribe Name

TPS
10/22/2012

7 If Unit or CA Agreement, Name and No

8. Lease Name and Well No.

MATTHEWS 25 FEDERAL #1 <39572>

9. API Well No.

30-015-40804

10. Field and Pool, or Exploratory

RED LAKE; GLORIETA-YESO NE <96826>

11 Sec., T. R. M. or Blk. and Survey or Area
UNIT E - SEC. 25 - T17S - R27E

12. County or Parish
EDDY

13. State
NM

1a. Type of work: ☒ DRILL ☐ REENTER

1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

2. Name of Operator LIME ROCK RESOURCES II-A, L.P.

<272558>

3a Address 1111 BAGBY ST., STE. 4600
HOUSTON, TX 77002

3b. Phone No. (include area code)
713-292-9526

4. Location of Well (Report location clearly and in accordance with any State requirements.)

At surface 2130' FNL & 330' FWL

At proposed prod zone 2310' FNL & 330' FWL

14. Distance in miles and direction from nearest town or post office*
10 MILES SOUTHEAST OF ARTESIA, NM

15. Distance from proposed* location to nearest property or lease line, ft
(Also to nearest drig. unit line, if any)
330'

16. No. of acres in lease
160

17. Spacing Unit dedicated to this well
40

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
580'

19. Proposed Depth
5514' MD
5500' TVD

20. BLM/BIA Bond No. on file
NMB-000716

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3570.4' GL

22. Approximate date work will start*
07/01/2012

23. Estimated duration
2-3 WEEKS

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

- | | |
|---|---|
| 1. Well plat certified by a registered surveyor | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office) | 6. Such other site specific information and/or plans as may be required by the BLM |

25 Signature

Name (Printed/Typed)
LISA BARFIELD dba PETRO ENERGY GROUP

Date
7/5/12

Title
POA AGENT FOR LIME ROCK RESOURCES II-A, L.P.

Approved by (Signature)

Name (Printed/Typed)

Date
OCT 16 2012

Title
FIELD MANAGER

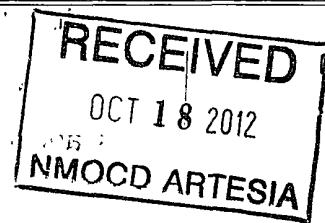
Office
CARLSBAD FIELD OFFICE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached:
APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction

(Continued on page 2)

*(Instructions on page 2)



ROSWELL CONTROLLED WATER BASIN

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised October 15, 2009
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-40804	Pool Code 96836	Pool Name RED LAKE; GLORIETA-YESO NE
Property Code 39572	Property Name MATTHEWS "25" FEDERAL	Well Number 1
OCRID No. 277558	Operator Name LIME ROCK RESOURCES II-A, L. P.	Elevation 3570.4

" Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	25	17 S	27 E		2130	NORTH	330	WEST	EDDY

" Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	25	17 S	27 E		2310	NORTH	330	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

<p>NW CORNER SEC. 24 LAT = 32.8122317°N LONG = 104.2402531°W</p> <p>NE CORNER SEC. 24 LAT = 32.8121534°N LONG = 104.2230975°W</p> <p>MATTHEWS "25" FEDERAL #1 ELEV = 3570.4' LAT = 32.8063735°N (NAD27) LONG = 104.2391758°W</p> <p>SURFACE LOCATION 330'</p> <p>BOTTOM OF HOLE 330'</p> <p>BOTTOM OF HOLE LAT = 32.8058790°N LONG = 104.2391755°W</p> <p>NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1927 (NAD27), AND ARE IN DECIMAL DEGREE FORMAT.</p> <p>SW CORNER SEC. 24 LAT = 32.7977521°N LONG = 104.2402441°W</p> <p>SE CORNER SEC. 24 LAT = 32.7976322°N LONG = 104.2239126°W</p>	<p>" OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge, belief, and that the said information pertains to working, oil, test or other mineral interest in the land in, being the proposed bottom hole location, or has a right to drill this well in this location pursuant to an agreement with an owner of such mineral or working interest, or to a leasing pooling agreement or a community pooling unit, heretofore entered by the division.</p> <p><i>Lisa Barfield</i> 5/6/12 Signature Date Printed Name LISA BARFIELD</p> <p>"SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>OCTOBER 1, 2011 Date of Survey <i>Alfonso J. Ramirez</i> Signature and Seal of Professional Surveyor Certificate Number FILMONT JARAMILLO PLS 12707 SURVEY NO 610</p>
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CERTIFICATION:

I hereby certify that I have inspected the proposed drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have knowledge of state and Federal laws applicable to this operation; that the statements made in the APD package are, to the best of my knowledge true and correct; and that the work associated with the operation proposed herein will be performed in the conformity with this APD package and the terms and conditions which it is approved. I also certify that I, or the company I represent, am/is responsible for the operations conducted under this application. These statements are subject to the provisions of 18U.S.C. 1001 for the filing of a false statement.

Executed this April 25, 2012

Lisa Barfield

POA Agent for Lime Rock Resources II-A, L.P.

12777 Jones Rd., Ste 385

Houston, TX 77070

281-890-1818 (office)

POWER OF ATTORNEY

DESIGNATION OF AGENT

Lime Rock Resources II-A, L.P. hereby names the following person as its agent:

Name of Agent: Lisa Barfield dba Petro Energy Group

Agent's Address: 12777 Jones Road Suite 385 Houston, Texas 77070

Agent's Telephone Number: 281-890-1818

GRANT OF SPECIAL AUTHORITY

Lime Rock Resources II-A, L.P. grants its agent the authority to act for it with the respect to the following only:

1. Executing forms required to be filed with the Oil Conservation Division of the New Mexico Energy, Minerals, and Natural Resources Department.
2. Executing forms required to be filed with the Bureau of Land Management of the Department of Interior of the United States of America.

EFFECTIVE DATE

This power of attorney is effective immediately.

RELIANCE ON THIS POWER OF ATTORNEY

Any person, including the agent, may rely upon the validity of this power of attorney or a copy of it unless that person knows it has terminated or is invalid.

SIGNATURE AND ACKNOWLEDGEMENT

Lime Rock Resources II-A, L.P.

By: [Signature]

Name: Charles Adcock

Title: Co-Chief Executive Officer

Date: 4/13/2012

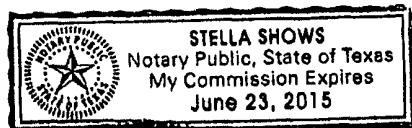
Address: 1111 Bagby Street, Suite 4600, Houston, TX 77002

State of TEXAS

County of HARRIS

This instrument was acknowledged before me on April 13, 2012 by Stella Shows,
Charles Adcock of Lime Rock Resources II-A, L.P. acting on behalf of said limited partnership.

Signature of notarial officer: [Signature]
My commission expires: June 23, 2015



**APPLICATION FOR PERMIT TO DRILL
LIME ROCK RESOURCES II- A, L.P
MATTHEWS "25" FEDERAL #1
2130' FNL & 330' FWL Surface Location
2310' FNL & 330' FWL Bottom Hole Location
Unit E – Sec. 25 - T17S - R27E
Eddy County, NM
Lease Number: NMLC 558679**

In conjunction with Form 3160-3, Application for Permit to Drill subject well, LIME ROCK RESOURCES II- A, L.P submits the following items of pertinent information in accordance with BLM requirements:

- 1. The geologic name of the surface formation is recent Permian with Quaternary alluvium and other surficial deposits.**

Estimated tops of geologic markers and Item 2 Providing Potential Fluid Content:

	MD	TVD	Potential Fluid
Quaternary – Alluvium	Surface	Surface	NA
Triassic (down to)	300'	300'	Water
7 Rivers	407'	407'	Oil & Gas
Queen	927'	923'	Oil & Gas
Grayburg	1368'	1355'	Oil & Gas
Premier	1664'	1650'	Oil & Gas
San Andres	1728'	1714'	Oil & Gas
Glorieta	3067'	3053'	Oil & Gas
Yeso	3171'	3157'	Oil & Gas
TD	5514'	5500'	

- 3. A rotary rig will be utilized to directional drill the well to 55140' and run casing. This equipment will be rigged down and the well will be completed with a workover rig.**
- 4. Directional drilling will kick off at 500' in the 174.77° azimuth direction with a build rate of 3°/100', then will end the build section at a depth of 908.3' MD (905.2' TVD) to a tangent section at 12.25° until a depth of 1238.3' MD (1227.7 TVD) at which the angle will be dropped at 2.5°/100' until the well is back to vertical at 1728.3' MD (1714' TVD). The 174.77° azimuth direction will be maintained to hit the target square, and then the well will be maintained as a straight hole to a proposed total depth of 5514.3' MD and 5500' TVD.**
- 5. Proposed total depth is 5514' (MD) and 5500' (TVD).**
- 6. The elevation of the unprepared ground is 3570.4' feet above sea level.**
- 7. The well will be drilled as a shallow "S" directional well to hit a square target bounded by regulatory setbacks on the west and south, and 30' north and 30' east of those setbacks.**

Once the well is drilled into the target, aiming at the center of the target, the well path will never cross the regulatory "hard line" boundaries. The location listed on the application for a permit to drill is the absolute furthest southwest that the well's vertical well path will penetrate within the square 30' x 30' target. (Please see directional plan attached.)

8. and 9. Proposed Casing and Cement program is as follows:

Casing Type	Hole Size	Casing Size	Casing Wt, PPF	Casing Grade	Thread	Casing Cond	Depth	SX CMT	Density, PPG	Yield, Cu ft/Sk	Cement Slurry	Excess Cement %	TOC
Conductor	26"	20"	91.5	B	Weld	New	80'	NA	NA	NA	Ready mix	NA	Surface
Surface	12.25"	8.675"	24	J-55	ST&C	New API	375'	300	14.8	1.35	CI C Cmt +0.25 lbs/sk Cello Flake +2% CaCl ₂	200%	Surface
Production	7.875"	5.5"	17	J-55	LT&C	New API	5500'	450	12.8	1.903	(35-65) Poz/CI C Cmt + 5% NaCl + 0.125 lb/sk Cello Flake + 5 lbs/sk LCM-1 + 0.2% R-3 + 6% Gel	80%	Surface
								700	14.8	1.33	Class C w/ 0.6% R-3 and 1/4 pps cello flake	50%	

Note: Production String volumes will be adjusted based on borehole caliper log volumes and actual depth drilled using 35% excess above borehole caliper volume.

Note: All casing designed with the following safety or design factors: Collapse = 1.2, Burst = 1.18 and tension = 2

10. Proposed Mud Program is as follows:

Depth	0-375	375-5200	5200-5500
Mud Type	Fresh Water	Brine	Brine w/ Gel & Starch
Properties			
MW	8.5-9.2	9.9-10.2	9.9-10.2
pH	10	10-11.5	10-11.5
WL	NC	NC	20-30
Vis	28-34	30-32	32-35
MC	NC	NC	1
Solids	NC	<1%	<1%
Pump Rate	300-350gpm	350-400gpm	400-450gpm
Special	LCM as Req	Salt Gel & MF as Req'd pmp Hi Vis sweeps to control solids	Salt gel, Acid & MF as req Pmp Hi Vis sweeps to control Solids

11. Pressure Control Equipment: See Attached Description and diagram of Pressure Control Equipment.

12. Testing, Logging and Coring Program *See COA*

Testing Program: None

Electric Logging Program: Gamma Ray – Dual Laterlog – Compensated
Neutron/Density Log from total depth to surface casing. Gamma Ray – Neutron log to surface.

Coring Program: None

13. Potential Hazards:

No abnormal temperatures or pressures are expected. There is no expected H₂S to enter this wellbore as mud weight should prevent fluid influx. An H₂S drilling plan is included and will be followed according to the provisions of Onshore Oil and Gas Order No. 6 for H₂S detection, and in the event of H₂S presence in the wellbore. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 2420 psi based on .44 x TVD. The estimated BHT is 135° F. The pressure gradient is justified by bottom hole pressure tests performed on the Eagle 26 N Federal #6, Stirling 6 M #2, and Hawk 8 L Federal #15 wells.

14. 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 the well and to construct surface facilities.

LIME ROCK RESOURCES

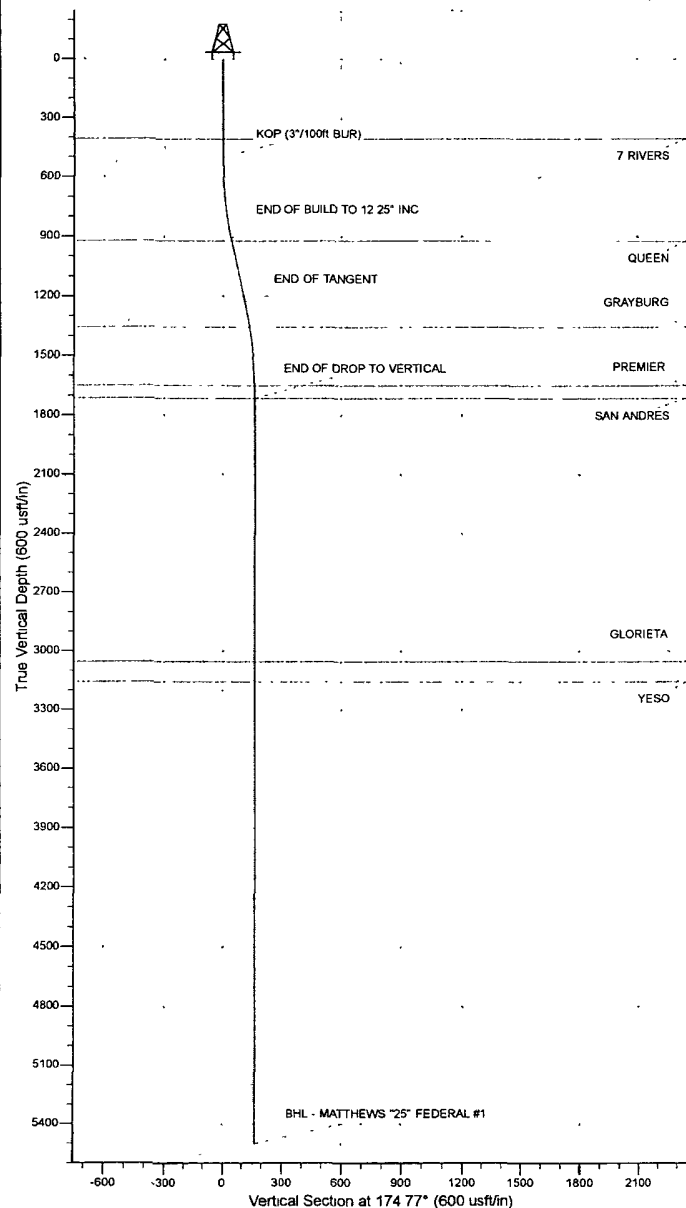
**EDDY COUNTY, NM (NAD 27)
SEC. 25 T17S RGE. 27E
MATTHEWS "25" FEDERAL #1**

ORIGINAL WELLBORE

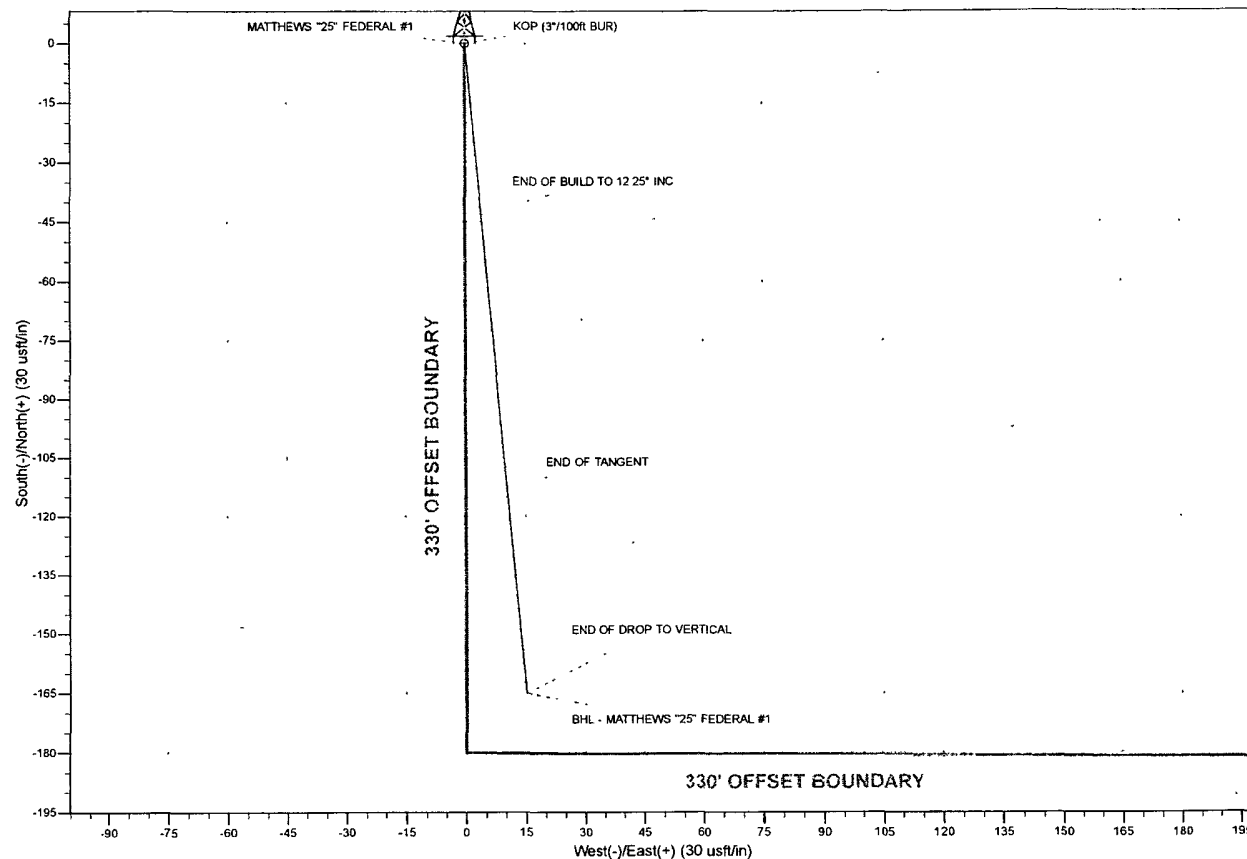
21 March, 2012

Plan: PROPOSAL #1





Project: EDDY COUNTY, NM (NAD 27)
 Site: SEC. 25 T17S RGE. 27E
 Well: MATTHEWS "25" FEDERAL #1
 Wellbore: ORIGINAL WELLBORE
 Design: PROPOSAL #1



Azimuths to True North
 Magnetic North 7.84°
 Magnetic Field
 Strength 48814.5 nT
 Dip Angle 60.59°
 Date 21/03/2012
 Model IGRF2010

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Annotation
500.0	500.0	0.00	0.00	0.0	0.0	0.0	KOP (3 1/2 inch BUR)
905.2	908.3	12.25	174.77	-43.3	4.0	43.5	END OF BUILD TO 12 25 inch INC
1227.7	1238.3	12.25	174.77	-113.0	10.3	113.5	END OF TANGENT
1714.0	1728.3	0.00	0.00	-165.0	15.1	165.7	END OF DROP TO VERTICAL
5500.0	5514.3	0.00	0.00	-165.0	15.1	165.7	BHL - MATTHEWS "25" FEDERAL #1

Planning Report



Database:	EDM_5000_1_7	Local Co-ordinate Reference:	Well MATTHEWS "25" FEDERAL #1
Company:	LIME ROCK RESOURCES	TVD Reference:	KB-EST @ 3579.5usft (Original Well Elev)
Project:	EDDY COUNTY, NM (NAD 27)	MD Reference:	KB-EST @ 3579.5usft (Original Well Elev)
Site:	SEC. 25 T17S RGE. 27E	North Reference:	True
Well:	MATTHEWS "25" FEDERAL #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Project	EDDY COUNTY, NM (NAD 27)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		Using geodetic scale factor

Site	SEC. 25 T17S RGE. 27E		
Site Position:		Northing:	654,439.64 usft
From:	Lat/Long	Easting:	533,551.69 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"
		Latitude:	32° 47' 56.747 N
		Longitude:	104° 13' 26.914 W
		Grid Convergence:	0.06 °

Well	MATTHEWS "25" FEDERAL #1		
Well Position	+N/-S	2,648.0 usft	Northing: 657,082.59 usft
	+E/-W	-4,619.4 usft	Easting: 528,930.01 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 48' 22.945 N
		Longitude:	104° 14' 21.033 W
		Ground Level:	3,568.0 usft

Wellbore	ORIGINAL WELLBORE		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	21/03/2012	7.84
			Dip Angle (°)
			60.59
			Field Strength (nT)
			48,815

Design	PROPOSAL #1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (°)
			174.77

Plan Sections											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	-3,579.5	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	-3,079.5	0.0	0.0	0.00	0.00	0.00	0.00	
908.3	12.25	174.77	905.2	-2,674.3	-43.3	4.0	3.00	3.00	0.00	174.77	
1,238.3	12.25	174.77	1,227.7	-2,351.8	-113.0	10.3	0.00	0.00	0.00	0.00	
1,728.3	0.00	0.00	1,714.0	-1,865.5	-165.0	15.1	2.50	-2.50	0.00	180.00	
5,514.3	0.00	0.00	5,500.0	1,920.5	-165.0	15.1	0.00	0.00	0.00	0.00	BHL - MATTHEWS

Database: EDM_5000_1_7
Company: LIME ROCK RESOURCES
Project: EDDY COUNTY, NM (NAD 27)
Site: SEC. 25 T17S RGE. 27E
Well: MATTHEWS "25" FEDERAL #1
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

Local Co-ordinate Reference: Well MATTHEWS "25" FEDERAL #1
TVD Reference: KB-EST @ 3579.5usft (Original Well Elev)
MD Reference: KB-EST @ 3579.5usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	3,579.50	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	3,479.50	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	3,379.50	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	3,279.50	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	3,179.50	0.0	0.0	0.0	0.00	0.00	0.00
7 RIVERS										
407.0	0.00	0.00	407.0	3,172.50	0.0	0.0	0.0	0.00	0.00	0.00
KOP (3°/100ft BUR)										
500.0	0.00	0.00	500.0	3,079.50	0.0	0.0	0.0	0.00	0.00	0.00
600.0	3.00	174.77	600.0	2,979.55	-2.6	0.2	2.6	3.00	3.00	0.00
700.0	6.00	174.77	699.6	2,879.87	-10.4	1.0	10.5	3.00	3.00	0.00
800.0	9.00	174.77	798.8	2,780.73	-23.4	2.1	23.5	3.00	3.00	0.00
900.0	12.00	174.77	897.1	2,682.42	-41.6	3.8	41.7	3.00	3.00	0.00
END OF BUILD TO 12.25° INC										
908.3	12.25	174.77	905.2	2,674.26	-43.3	4.0	43.5	3.00	3.00	0.00
QUEEN										
926.5	12.25	174.77	923.0	2,656.50	-47.1	4.3	47.3	0.00	0.00	0.00
1,000.0	12.25	174.77	994.8	2,584.69	-62.7	5.7	62.9	0.00	0.00	0.00
1,100.0	12.25	174.77	1,092.5	2,486.97	-83.8	7.7	84.2	0.00	0.00	0.00
1,200.0	12.25	174.77	1,190.3	2,389.24	-104.9	9.6	105.4	0.00	0.00	0.00
END OF TANGENT										
1,238.3	12.25	174.77	1,227.7	2,351.78	-113.0	10.3	113.5	0.00	0.00	0.00
1,300.0	10.71	174.77	1,288.1	2,291.35	-125.3	11.5	125.8	2.50	-2.50	0.00
GRAYBURG										
1,367.9	9.01	174.77	1,355.0	2,224.50	-136.8	12.5	137.4	2.50	-2.50	0.00
1,400.0	8.21	174.77	1,386.8	2,192.72	-141.6	13.0	142.2	2.50	-2.50	0.00
1,500.0	5.71	174.77	1,486.0	2,093.47	-153.7	14.1	154.3	2.50	-2.50	0.00
1,600.0	3.21	174.77	1,585.7	1,993.78	-161.4	14.8	162.1	2.50	-2.50	0.00
PREMIER										
1,664.3	1.60	174.77	1,650.0	1,929.50	-164.1	15.0	164.8	2.50	-2.50	0.00
1,700.0	0.71	174.77	1,685.7	1,893.84	-164.8	15.1	165.5	2.50	-2.50	0.00
END OF DROP TO VERTICAL - SAN ANDRES										
1,728.3	0.00	0.00	1,714.0	1,865.50	-165.0	15.1	165.7	2.50	-2.50	0.00
1,800.0	0.00	0.00	1,785.7	1,793.84	-165.0	15.1	165.7	0.00	0.00	0.00
1,900.0	0.00	0.00	1,885.7	1,693.84	-165.0	15.1	165.7	0.00	0.00	0.00
2,000.0	0.00	0.00	1,985.7	1,593.84	-165.0	15.1	165.7	0.00	0.00	0.00
2,100.0	0.00	0.00	2,085.7	1,493.84	-165.0	15.1	165.7	0.00	0.00	0.00
2,200.0	0.00	0.00	2,185.7	1,393.84	-165.0	15.1	165.7	0.00	0.00	0.00
2,300.0	0.00	0.00	2,285.7	1,293.84	-165.0	15.1	165.7	0.00	0.00	0.00
2,400.0	0.00	0.00	2,385.7	1,193.84	-165.0	15.1	165.7	0.00	0.00	0.00
2,500.0	0.00	0.00	2,485.7	1,093.84	-165.0	15.1	165.7	0.00	0.00	0.00
2,600.0	0.00	0.00	2,585.7	993.84	-165.0	15.1	165.7	0.00	0.00	0.00
2,700.0	0.00	0.00	2,685.7	893.84	-165.0	15.1	165.7	0.00	0.00	0.00
2,800.0	0.00	0.00	2,785.7	793.84	-165.0	15.1	165.7	0.00	0.00	0.00
2,900.0	0.00	0.00	2,885.7	693.84	-165.0	15.1	165.7	0.00	0.00	0.00
3,000.0	0.00	0.00	2,985.7	593.84	-165.0	15.1	165.7	0.00	0.00	0.00
GLORIETA										
3,067.3	0.00	0.00	3,053.0	526.50	-165.0	15.1	165.7	0.00	0.00	0.00
3,100.0	0.00	0.00	3,085.7	493.84	-165.0	15.1	165.7	0.00	0.00	0.00
YESO										
3,171.3	0.00	0.00	3,157.0	422.50	-165.0	15.1	165.7	0.00	0.00	0.00
3,200.0	0.00	0.00	3,185.7	393.84	-165.0	15.1	165.7	0.00	0.00	0.00
3,300.0	0.00	0.00	3,285.7	293.84	-165.0	15.1	165.7	0.00	0.00	0.00

Database:	EDM_5000_1_7	Local Co-ordinate Reference:	Well MATTHEWS "25" FEDERAL #1
Company:	LIME ROCK RESOURCES	TVD Reference:	KB-EST @ 3579.5usft (Original Well Elev)
Project:	EDDY COUNTY, NM (NAD 27)	MD Reference:	KB-EST @ 3579.5usft (Original Well Elev)
Site:	SEC. 25 T17S RGE. 27E	North Reference:	True
Well:	MATTHEWS "25" FEDERAL #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Buidl Rate (°/100usft)	Turn Rate (°/100usft)
3,400.0	0.00	0.00	3,385.7	193.84	-165.0	15.1	165.7	0.00	0.00	0.00
3,500.0	0.00	0.00	3,485.7	93.84	-165.0	15.1	165.7	0.00	0.00	0.00
3,600.0	0.00	0.00	3,585.7	-6.16	-165.0	15.1	165.7	0.00	0.00	0.00
3,700.0	0.00	0.00	3,685.7	-106.16	-165.0	15.1	165.7	0.00	0.00	0.00
3,800.0	0.00	0.00	3,785.7	-206.16	-165.0	15.1	165.7	0.00	0.00	0.00
3,900.0	0.00	0.00	3,885.7	-306.16	-165.0	15.1	165.7	0.00	0.00	0.00
4,000.0	0.00	0.00	3,985.7	-406.16	-165.0	15.1	165.7	0.00	0.00	0.00
4,100.0	0.00	0.00	4,085.7	-506.16	-165.0	15.1	165.7	0.00	0.00	0.00
4,200.0	0.00	0.00	4,185.7	-606.16	-165.0	15.1	165.7	0.00	0.00	0.00
4,300.0	0.00	0.00	4,285.7	-706.16	-165.0	15.1	165.7	0.00	0.00	0.00
4,400.0	0.00	0.00	4,385.7	-806.16	-165.0	15.1	165.7	0.00	0.00	0.00
4,500.0	0.00	0.00	4,485.7	-906.16	-165.0	15.1	165.7	0.00	0.00	0.00
4,600.0	0.00	0.00	4,585.7	-1,006.16	-165.0	15.1	165.7	0.00	0.00	0.00
4,700.0	0.00	0.00	4,685.7	-1,106.16	-165.0	15.1	165.7	0.00	0.00	0.00
4,800.0	0.00	0.00	4,785.7	-1,206.16	-165.0	15.1	165.7	0.00	0.00	0.00
4,900.0	0.00	0.00	4,885.7	-1,306.16	-165.0	15.1	165.7	0.00	0.00	0.00
5,000.0	0.00	0.00	4,985.7	-1,406.16	-165.0	15.1	165.7	0.00	0.00	0.00
5,100.0	0.00	0.00	5,085.7	-1,506.16	-165.0	15.1	165.7	0.00	0.00	0.00
5,200.0	0.00	0.00	5,185.7	-1,606.16	-165.0	15.1	165.7	0.00	0.00	0.00
5,300.0	0.00	0.00	5,285.7	-1,706.16	-165.0	15.1	165.7	0.00	0.00	0.00
5,400.0	0.00	0.00	5,385.7	-1,806.16	-165.0	15.1	165.7	0.00	0.00	0.00
5,500.0	0.00	0.00	5,485.7	-1,906.16	-165.0	15.1	165.7	0.00	0.00	0.00
BHL - MATTHEWS "25" FEDERAL #1										
5,514.3	0.00	0.00	5,500.0	-1,920.50	-165.0	15.1	165.7	0.00	0.00	0.00

Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
407.0	407.0	7 RIVERS		0.00	
926.5	923.0	QUEEN		0.00	
1,367.9	1,355.0	GRAYBURG		0.00	
1,664.3	1,650.0	PREMIER		0.00	
1,728.3	1,714.0	SAN ANDRES		0.00	
3,067.3	3,053.0	GLORIETA		0.00	
3,171.3	3,157.0	YESO		0.00	

Plan Annotations

MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
500.0	500.0	0.0	0.0	KOP (3°/100ft BUR)
908.3	905.2	-43.3	4.0	END OF BUILD TO 12.25° INC
1,238.3	1,227.7	-113.0	10.3	END OF TANGENT
1,728.3	1,714.0	-165.0	15.1	END OF DROP TO VERTICAL
5,514.3	5,500.0	-165.0	15.1	BHL - MATTHEWS "25" FEDERAL #1

Pressure Control Equipment

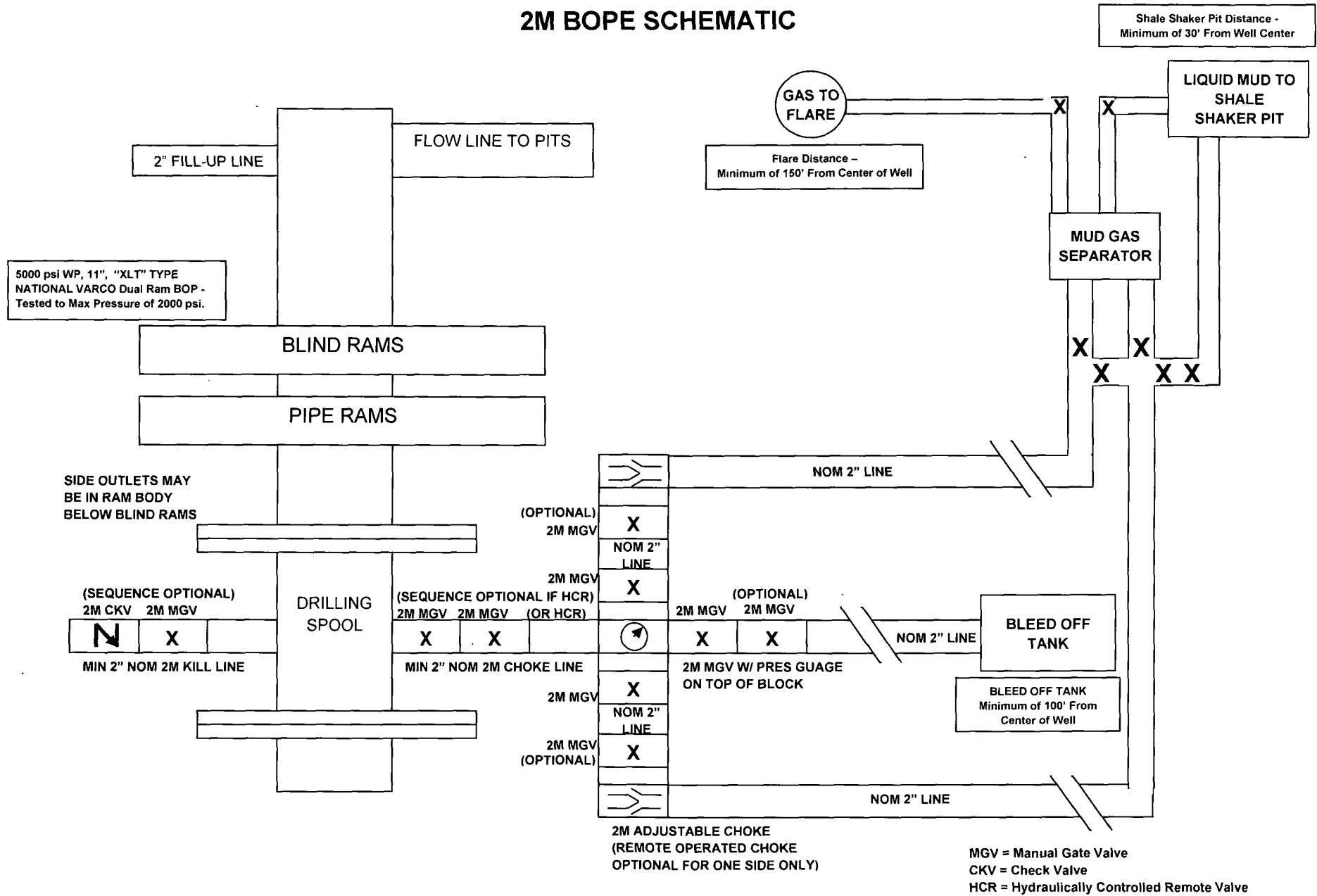
The blowout preventer equipment (BOP) will consist of a 5000 psi rated, 11", "XLT" type, National VARCO double ram preventer that will be tested to a maximum pressure of 2000 psi. The unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and drill pipe rams on bottom. The 2M BOP will be installed on the 8 5/8" surface casing and utilized continuously until total depth is reached. All casing strings will be tested as per Onshore Order #2. This also includes a thirty day (30) test, should the rig still be operating on the same well in thirty days.

Pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These functional tests will be documented on the daily drilling logs.

The BOP equipment will consist of the following:

- Double ram with blind rams (top) and pipe rams (bottom),
- Drilling spool, or blowout preventer with 2 side outlets (choke side shall be a 2" minimum diameter, kill side will be at least 2 inch diameter),
- Kill line (2 inch minimum),
- A minimum of 2 choke line valves (2 inch minimum),
- 2 inch diameter choke line,
- 2 kill valves, one of which will be a check valve (2 inch minimum),
- 2 chokes, one of which will be capable of remote operation,
- Pressure gauge on choke manifold,
- Upper Kelly cock valve with handle available,
- Safety valve and subs to fit all drill string connections in use,
- All BOPE connections subjected to well pressure will be flanged, welded, or clamped.
- A Fill-up line above the uppermost preventer.

2M BOPE SCHEMATIC



LIME ROCK RESOURCES II- A, L.P
MATTHEWS "25" FEDERAL #1
UNIT E, S25-T17S-R27E, EDDY COUNTY, NM

Design: Closed Loop System with roll-off steel bins (pits)

CRI/HOBBS will supply (2) bins (100 bbl) volume, rails and transportation relating to the Close Loop System. Specification of the Closed Loop System is attached.

Contacts: Gary Wallace (432) 638-4076 Cell (575) 393-1079 Office

Scomi Oil Tool: Supervisor – Armando Soto (432) 553-7979 Hobbs, NM

Monitoring 24 Hour service

Equipment: Centrifuges – Derrick Brand
Rig Shakers – Brandt Brand
D-watering Unit
Air pumps on location for immediate remediation process
Layout of Close Loop System with bins, centrifuges and shakers attached.

Cuttings and associated liquids will be hauled to a State regulated third party disposal site (CRI or Controlled Recovery, Inc.). The disposal site permit is DFP = #R9166.

2- (250 bbl) tanks to hold fluid
2-CRI bins with track system
2-500 bbl frac tanks with fresh water
2-500 bbl frac tanks for brine water

Operations:

Closed Loop System equipment will be inspected daily by each tour and any necessary maintenance performed. Any leak in system will be repaired and/or contained immediately. OCD will be notified within 48 hours of any spill. Remediation process will start immediately.

Closure:

During drilling operations all liquids, drilling fluids and cuttings will be hauled off via CRI equipment to DFP #R9166.

LIME ROCK RESOURCES II- A, L.P

MATTHEWS "25" FEDERAL #1 Well HYDROGEN SULFIDE (H₂S) CONTINGENCY DRILLING PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

This is an open drilling site. H₂S monitoring equipment, along with a choke manifold, mud/gas separator, and flare will be rigged up and in use when the company drills out from under surface casing. H₂S monitors, warning signs, wind indicators and flags will be in use.

SUMMARY PLAN

1. All personnel shall receive proper H₂S training in accordance with Onshore Oil and Gas Order No. 6.III.C.3.a. A minimum of an initial training session and weekly H₂S and well control drills for all personnel in each working crew shall be conducted. The initial training session for each well shall include a review of the this Drilling Operations Plan and site specific measures and areas set up when the rig is moved onto location.
2. The company has caused the drilling contractor and other vendors to install 2000 psi well control systems including:
 - A. A choke manifold with:
 - i. One remotely operated choke;
 - ii. A flare line and flare that is 150' from the wellhead to be ignited, in the event the plan is put into effect, with an electronic ignition system or a back up flare gun;
 - iii. A mud/gas separator downstream of the of the choke and upstream of the flare;
 - iv. All BOP equipment required for a 2000 psi well control system will be in place and tested by a third party to 250 psi low pressure and 2000 psi high pressure. This test will include testing all lines and equipment associated with the choke manifold and kill line. Weekly BOP function and control drills will be performed with all applicable crews and personnel on location.
3. At rig move in, two perpendicular briefing areas readily accessible will be designated and marked with signage. A clear foot path for escape will be designated and marked.
4. The following protective equipment for essential personnel will be located on location at rig move in:
 - A. Breathing apparatus:
 - i. Rescue Packs (1 at each briefing area and 2 stored in the designated safety equipment storage area), shall be on location,
 - ii. 4 work/escape packs shall be stored on the rig floor with sufficient hose to allow work activity,
 - iii. 4 Emergency escape packs shall be stored in the rig doghouse for emergency evacuation,

H2S CONTINGENCY DRILLING PLAN

- B. Auxiliary Rescue Equipment will be available in the designated safety equipment storage area and will include:
- i. Stretcher,
 - ii. Two OSHA approved full body harnesses,
 - iii. 100 feet of 5/8 inch OSHA approved rope,
 - iv. 2-20# Class ABC fire extinguishers.
5. H₂S detection and monitoring equipment shall be in place before drilling out surface casing. There will be a stationary detector in the rig dog house and another with the mud log equipment on the end of the flow line. Three sensors will be placed on the rig floor, the wellhead/cellar, and on the closed loop equipment. The detection level for H₂S will be set at 10 ppm and the alarm will sound if any level of the gas is detected over 10 ppm.
6. Visual warning systems will be in place at rig move in and before the surface casing is drilled out. Color coded signage will be placed at the entrance to location indicating H₂S is possible, and furthermore, the color will be changed should the site condition dictate. If H₂S is detected, then a color coded condition flag will be displayed to indicate levels of detection. Wind socks will be placed at the location entrance and one other fully visible site to allow personnel to determine wind direction and safe escape/briefing routes.
7. The mud program utilized on this well is intended to provide sufficient density to exclude H₂S from the wellbore. Furthermore, Loss Circulation Material will be added before any known loss circulation (low pressure) zones are encountered. Corrosion inhibitors are included in the mud system to prevent failures in the event H₂S does enter the wellbore, and seal rings are used to prevent the use of elastomers on the wellhead equipment. In the event a rotating head is necessary, elastomers will be designed to operate in H₂S conditions. Drill collars and other bottom hole assembly components are to be inspected after each well, and in the event H₂S is encountered in the wellbore, drill pipe shall be inspected as well.
8. The location shall be equipped with one cell telephone in the rig doghouse, one cell telephone with the well site supervisor, two way communication devices to communicate between mud system personnel, rig floor personnel, mud log personnel, and safety personnel on location. In the event H₂S is detected, a company vehicle with two way radios shall be moved into a safe briefing area and manned for communication with all vendors, company personnel or agency personnel as required.

H2S CONTINGENCY DRILLING PLAN

EMERGENCY PROCEDURES

Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas, or if monitors indicate H₂S is present. Escape will take place via the entry road away from the flare stack, or a foot path marked and designated before the well is spud by on site personnel. Once crews and other personnel are a safe distance, the crews will move to evacuate any persons in the Radius of Exposure, followed by blocking access to the Radius of Exposure.

There are no homes or buildings within the Radius of Exposure ("ROE"), so efforts will be concentrated on evacuating any third parties within the ROE. Immediate response will include evacuation of any persons potentially affected by toxic or flammable gasses. Once evacuation is under way, perimeter monitoring and control of access will be executed to ensure safe areas and stage areas.

In the event of a release of gas containing H₂S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H₂S monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
 - Detection of H₂S, and
 - Measures for protection against the gas,
 - Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the gas.

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air= 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air= 1	2ppm	N/A	1000 ppm

Contacting Authorities

Lime Rock Resources personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Lime Rock Resources response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER) and BLM Onshore Order #6.

H₂S OPERATIONS

Though no H₂S is anticipated during the drilling operation, this contingency plan will provide for methods to ensure the well is kept under control in the event an H₂S reading of 100 ppm or more are encountered.

Once personnel are safe and the proper protective gear is in place and on personnel, the operator and rig crew essential personnel will ensure the well is under control, suspend drilling operations and shut-in the well (unless pressure build up or other operational situations dictate suspending operations will prevent well control), increase the mud weight and circulate all gas from the hole utilizing the mud/gas separator downstream of the choke, the choke manifold and the emergency flare system located 150' from the well. Bring the mud system into compliance and the H₂S level below 10 ppm, and then notify all emergency officers that drilling ahead is practical and safe.

Proceed with drilling ahead only after all provisions of Onshore Order 6, Section III.C. have been satisfied.

H2S CONTINGENCY DRILLING PLAN EMERGENCY CONTACTS

Company Offices -

Lime Rock Houston Office
 Answering Service (After Hours)
 Artesia, NM Office
 Roswell, NM

713-292-9510
 713-292-9555
 575-748-9724
 575-623-8424

KEY PERSONNEL					
Name	Title	Location	Office #	Cell #	Home #
SID ASHWORTH	PRODUCTION ENGINEER	HOUSTON	713-292-9526	713-906-7750	713-783-1959
JERRY SMITH	ASSISTANT PRODUCTION SUPERVISOR	ARTESIA	575-748-9724	505-918-0556	575-746-2478
MICHAEL BARRETT	PRODUCTION SUPERVISOR	ROSWELL	575-623-8424	505-353-2644	575-623-4707
GARY FATHEREE	WELL SITE SUPERVISOR	ROTATES ON SITE	NA	940-389-6044	NA
GARY MCCELLAND	WELL SITE SUPERVISOR	ROTATES ON SITE	NA	903-503-8997	NA

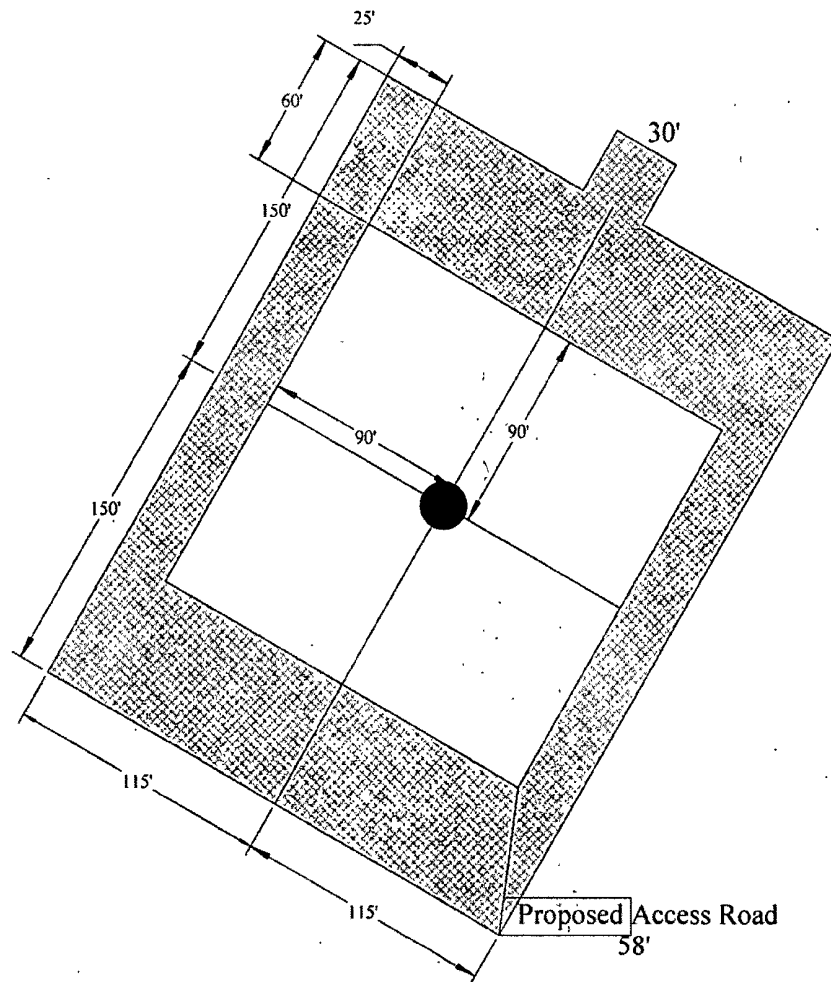
Agency Call List		
City	Agency or Office	Telephone Number
Artesia	Ambulance	911
Artesia	State Police	575-746-2703
Artesia	Sheriff's Office	575-746-9888
Artesia	City Police	575-746-2703
Artesia	Fire Department	575-746-2701
Artesia	Local Emergency Planning Committee	575-746-2122
Artesia	New Mexico OCD District II	575-748-1283
Carlsbad	Ambulance	911
Carlsbad	State Police	575-885-3137
Carlsbad	Sheriff's Office	575-887-7551
Carlsbad	City Police	575-885-2111
Carlsbad	Fire Department	575-885-2111
Carlsbad	Local Emergency Planning Committee	575-887-3798
Carlsbad	US DOI Bureau of Land Management	575-887-6544
State Wide	New Mexico Emergency Response Commission ("NMERC")	505-476-9600
State Wide	NMERC 24 hour Number	505-827-9126
State Wide	New Mexico State Emergency Operations Center	505-476-9635
National	National Emergency Response Center (Washington, D.C.)	800-424-8802

H2S CONTINGENCY DRILLING PLAN EMERGENCY CONTACTS

Emergency Services				
Name	Service	Location	Telephone Number	Alternate Number
Boots & Coots International Well Control	Well Control	Houston / Odessa	1-800-256-9688	281-931-8884
Cudd Pressure Control	Well Control & Pumping	Odessa	915-699-0139	915-563-3356
Baker Hughes Inc.	Pumping Service	Artesia, Hobbs and Odessa	575-746-2757	SAME
Total Safety	Safety Equipment and Personnel	Artesia	575-746-2847	SAME
Cutter Oilfield Services	Drilling Systems Equipment	Midland	432-488-6707	SAME
Assurance Fire & Safety	Safety Equipment and Personnel	Artesia	575-396-9702	575-441-2224
Flight for Life	Emergency Helicopter Evacuation	Lubbock	806-743-9911	SAME
Aerocare	Emergency Helicopter Evacuation	Lubbock	806-747-8923	SAME
Med Flight Air Ambulance	Emergency Helicopter Evacuation	Albuquerque	505-842-4433	SAME
Artesia General Hospital	Emergency Medical Care	Artesia	575-748-3333	702 North 13 Street

Rig Layout

Interim Reclamation & Production Facilities



LIME ROCK RESOURCES II-A, L.P.
MATTHEWS "25" FEDERAL #1

Well Bore

Production Facilities

North



Interim Reclamation



Flowline

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	LIME ROCK RESOURCES II-A, LP
LEASE NO.:	NM0558679
WELL NAME & NO.:	1-MATTHEWS 25 FEDERAL
SURFACE HOLE FOOTAGE:	2130'/N. & 0330'/W.
BOTTOM HOLE FOOTAGE:	2310'/N. & 0330'/W.
LOCATION:	Section 25, T. 17 S., R. 27 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☒ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**

Sundry application for surface flowline
Cave/Karst

- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads

- ☐ **Road Section Diagram**

- ☒ **Drilling**
 - High Cave/Karst
 - H2S requirement
 - Logging requirement
 - Waste Material and Fluids

- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines

- ☐ **Interim Reclamation**

- ☐ **Final Abandonment & Reclamation**