

**RECEIVED**  
APR 02 2013  
OCD Artesia

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 033865** 705  
4/11/2013  
6. If Indian, Allottee or Tribe Name

1a. Type of work:  DRILL  REENTER

7. If Unit or CA Agreement, Name and No.

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

8. Lease Name and Well No. **EAGLE 33 J FEDERAL #25 <39800>**

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

9. API Well No. **30-015-41264**

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

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

10. Field and Pool, or Exploratory  
**RED LAKE; GLORIETA-YESO NE <511207>**

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

At surface **1650' FSL & 2310' FEL**

At proposed prod. zone **SAME**

11. Sec., T. R. M. or Blk. and Survey or Area  
**UNIT J-SEC.33-T17S-R27E**

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

12. County or Parish  
**EDDY**

13. State  
**NM**

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

16. No. of acres in lease  
**80**

17. Spacing Unit dedicated to this well  
**40**

18. Distance from proposed location\* **0'- location is an**  
to nearest well, drilling, completed, **expired APD**  
applied for, on this lease, ft.

19. Proposed Depth  
**4800'**

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

21. Elevations (Show whether DF, KDB, RT, GL, etc.)  
**3548' GL**

22. Approximate date work will start\*  
**7/3/2013**

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:

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>1. Well plat certified by a registered surveyor.</li> <li>2. A Drilling Plan.</li> <li>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).</li> </ul> | <ul style="list-style-type: none"> <li>4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).</li> <li>5. Operator certification</li> <li>6. Such other site specific information and/or plans as may be required by the BLM.</li> </ul> |
|---|---|

|               |   |                          |
|---------------|---|--------------------------|
| 25. Signature | Name (Printed/Typed)<br><b>LISA BARFIELD dba PETRO ENERGY GROUP</b> | Date<br><b>2/18/2013</b> |
|---------------|---|--------------------------|

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

|                                   |  |      |
|-----------------------------------|--|------|
| Approved by (Signature)<br>       | Name (Printed/Typed)<br><b>1/5/ DON PETERSON</b> | Date |
| Title<br><b>FOR FIELD MANAGER</b> | Office<br><b>CARLSBAD FIELD OFFICE</b>           |      |

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)

Roswell Controlled Water Basin

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

Approval Subject to General Requirements  
& Special Stipulations Attached

**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 10/4/12

Lisa Barfield

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: 

Name: Charles Adcock

Title: Co-Chief Executive Officer

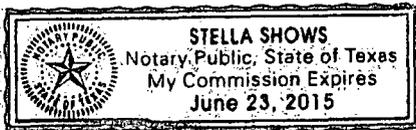
Date: 4/13/2012

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:   
My commission expires: June 23, 2015



**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<br><b>30-015-41264</b> |  | Pool Code<br><b>26836</b> | Pool Name<br><b>RED LAKE; GLORIETA-YESO NE</b> |
| Property Code<br><b>39800</b>     | Property Name<br><b>EAGLE "33" J FEDERAL</b>           |                           | Well Number<br><b>25</b>                       |
| OCRID No.<br><b>6137</b>          | Operator Name<br><b>LIME ROCK RESOURCES A II, L.P.</b> |                           | Elevation<br><b>3512.7</b>                     |

**Surface Location**

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| J             | 33      | 17 S     | 27 E  |         | 1650          | SOUTH            | 2310          | EAST           | 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 |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
|               |         |          |       |         |               |                  |               |                |        |

|                              |                 |                    |           |
|------------------------------|-----------------|--------------------|-----------|
| Dedicated Acres<br><b>40</b> | Joint or Infill | Consolidation Code | Order No. |
|------------------------------|-----------------|--------------------|-----------|

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.

N89°55'21"W 2534.81 FT      N89°55'02"W 2534.04 FT

|   |  |   |
|---|--|---|
| NW CORNER SEC. 33<br>LAT. = 32.7978582°N<br>LONG. = 104.2910028°W | N/4 CORNER SEC. 33<br>LAT. = 32.7978456°N<br>LONG. = 104.2827558°W | NE CORNER SEC. 33<br>LAT. = 32.7978319°N<br>LONG. = 104.2745114°W |
|---|--|---|

NOTE:  
LATITUDE AND LONGITUDE  
COORDINATES ARE SHOWN  
USING THE NORTH  
AMERICAN DATUM OF 1927  
(NAD27), AND ARE IN  
DECIMAL DEGREE FORMAT.

W/4 CORNER SEC. 33  
LAT. = 32.7907068°N  
LONG. = 104.2913234°W

E/4 CORNER SEC. 33  
LAT. = 32.7905471°N  
LONG. = 104.2745156°W

**EAGLE "33" J FEDERAL #25**  
ELEV. = 3512.7'  
LAT. = 32.7978425°N (NAD27)  
LONG. = 104.2820308°W

SW CORNER SEC. 33  
LAT. = 32.7835552°N  
LONG. = 104.2916482°W

S/4 CORNER SEC. 33  
LAT. = 32.7833126°N  
LONG. = 104.2829016°W

SE CORNER SEC. 33  
LAT. = 32.7832671°N  
LONG. = 104.2745170°W

S88°08'40"E 2690.27 FT      S89°39'43"E 2577.59 FT

**17 OPERATOR CERTIFICATION**

*I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.*

*RLP/l*      10/4/12  
Signature      Date

Printed Name  
**RICHARD LOGAN BOUGHAN**

**18 SURVEYOR CERTIFICATION**

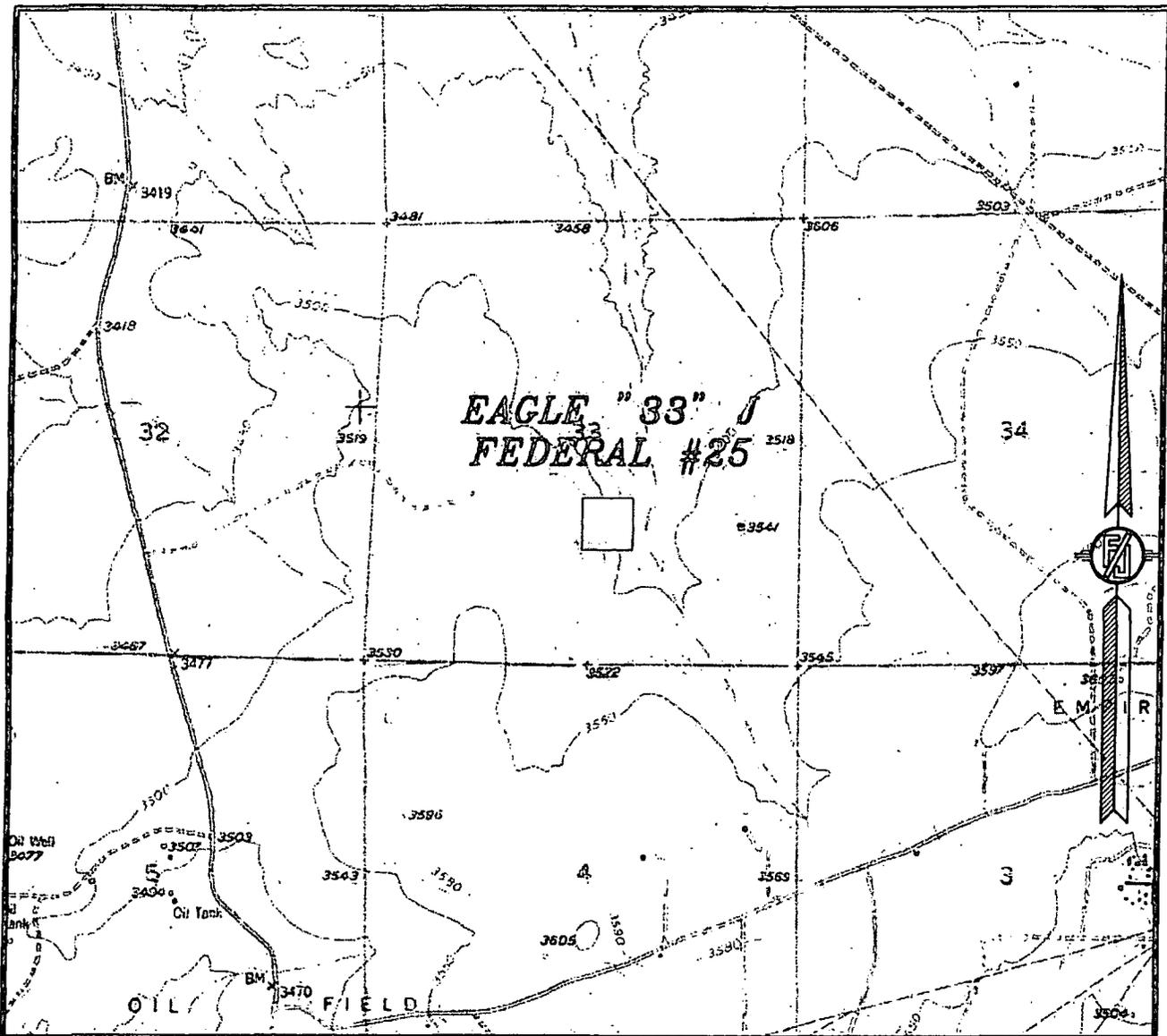
*I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.*

MAY 9 2012  
Date of Survey

*Filmon F. Jaramello*  
Signature and Seal of Professional Surveyor

Certificate Number: **FILMON F. JARAMELLO, PLS 12797**  
SURVEY NO 832

SECTION 33, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO  
LOCATION VERIFICATION MAP



USGS QUAD MAP:  
SPRING LAKE

NOT TO SCALE

LIME ROCK RESOURCES II-A, L.P.  
EAGLE "33" J FEDERAL #25  
LOCATED 1650 FT. FROM THE SOUTH LINE  
AND 2310 FT. FROM THE EAST LINE OF  
SECTION 33, TOWNSHIP 17 SOUTH,  
RANGE 27 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO

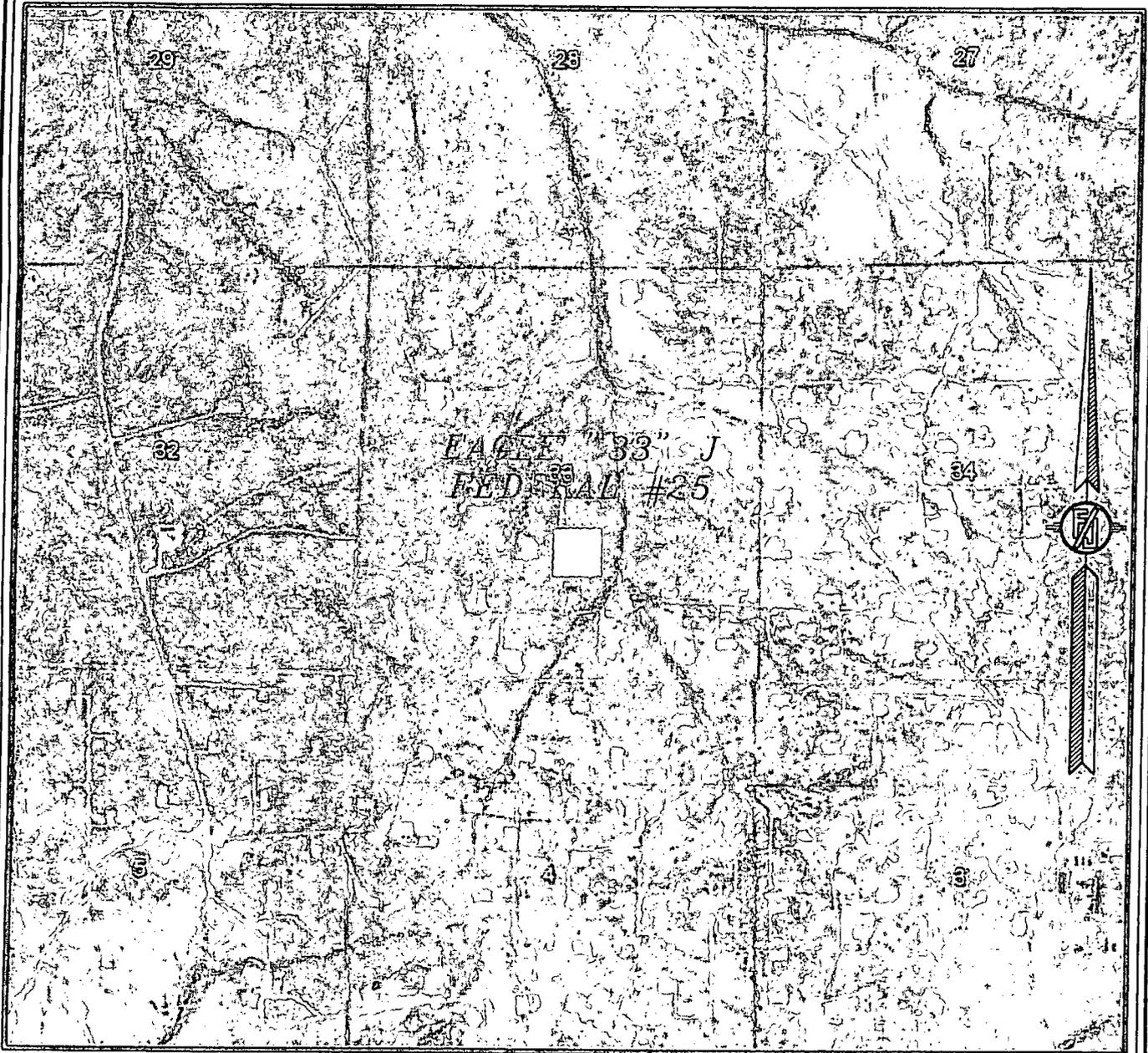
MAY 9, 2012

SURVEY NO. 832

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO  
(575) 234-3341



SECTION 33, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO  
AERIAL PHOTO



NOT TO SCALE  
AERIAL PHOTO:  
GOOGLE EARTH  
JUNE 2011

LIME ROCK RESOURCES II-A, L.P.  
EAGLE "33" J FEDERAL #25  
LOCATED 1650 FT. FROM THE SOUTH LINE  
AND 2310 FT. FROM THE EAST LINE OF  
SECTION 33, TOWNSHIP 17 SOUTH,  
RANGE 27 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO

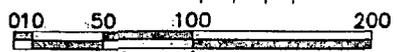
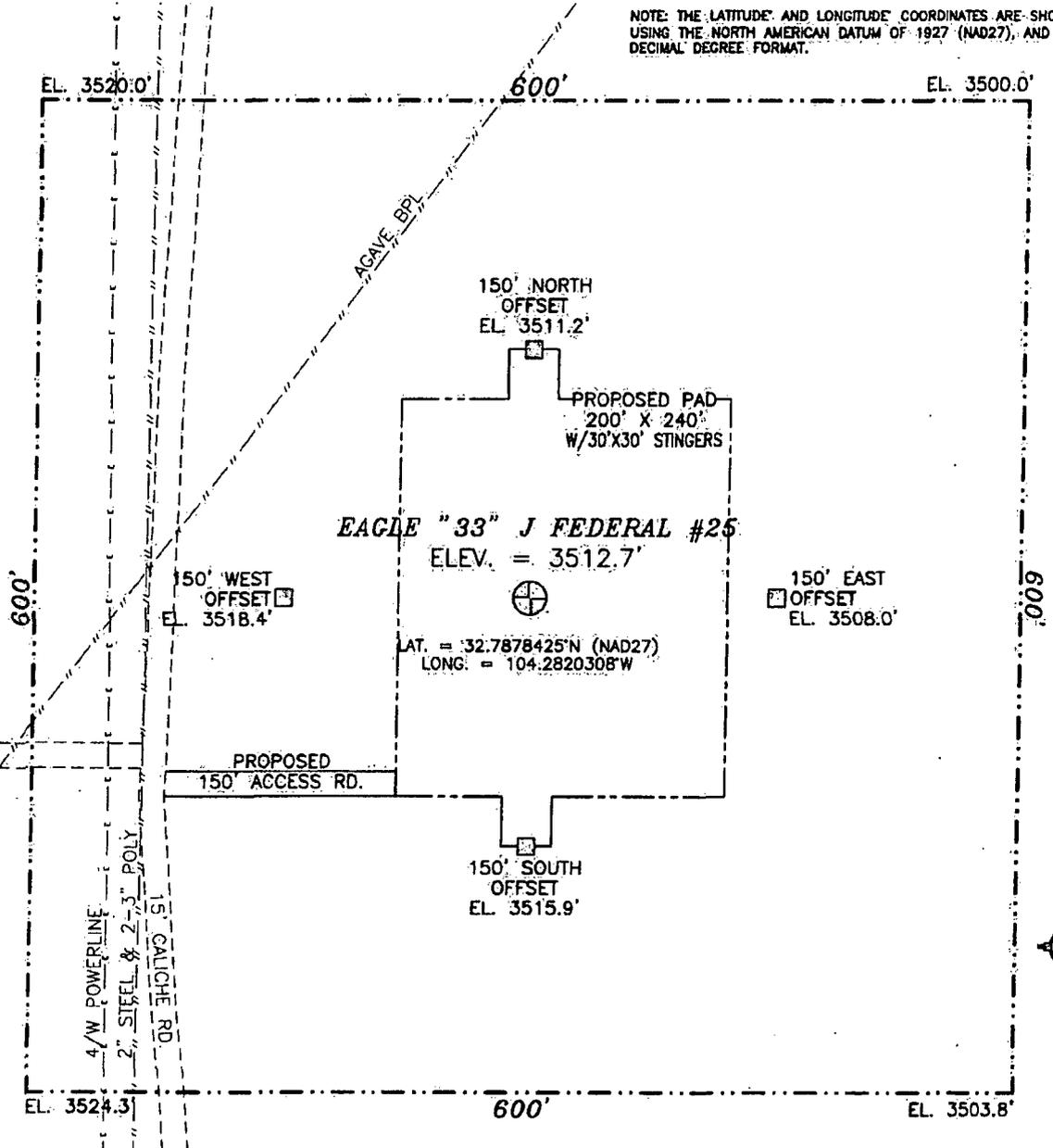
MAY 9, 2012

SURVEY NO. 832

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO  
(575) 234-3341

**SECTION 33, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO**

NOTE: THE LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1927 (NAD27), AND ARE IN DECIMAL DEGREE FORMAT.

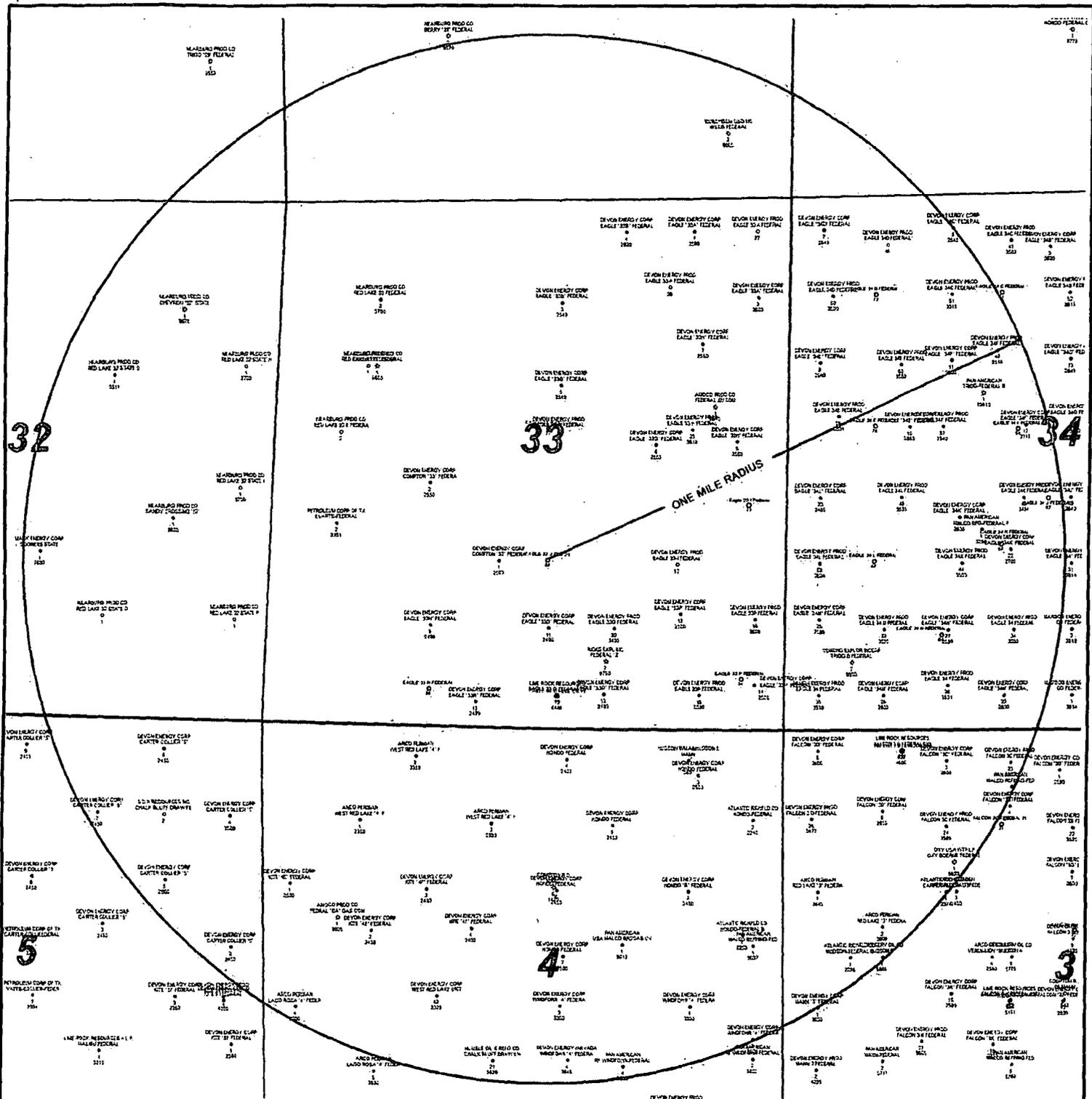


SCALE 1" = 100'  
**DIRECTIONS TO LOCATION**  
 FROM PAVED CR. 225 (EMPIRE) AND PAVED CR. 227 (LITTLE DIAMOND) GO WEST-SOUTHWEST ON CR. 227 0.5 MILES, TURN RIGHT ON CALICHE ROAD AND GO NORTHWEST 0.5 MILES, TURN LEFT AND GO WEST 0.9 MILES, TURN RIGHT AND GO NORTH 700' TO A PROPOSED ROAD SURVEY AND FOLLOW FLAGS EAST 150' TO THE SW. COR. OF PROPOSED PAD FOR THIS LOCATION.

**LIME ROCK RESOURCES II-A, L.P.  
 EAGLE "33" J FEDERAL #25  
 LOCATED 1650 FT. FROM THE SOUTH LINE  
 AND 2310 FT. FROM THE EAST LINE OF  
 SECTION 33, TOWNSHIP 17 SOUTH,  
 RANGE 27 EAST, N.M.P.M.  
 EDDY COUNTY, STATE OF NEW MEXICO**

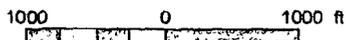
MAY 9, 2012

**SURVEY NO. 832  
 MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO  
 (575) 234-3341**



(J) S33-T17S-R27E

1 inch = 1400 feet

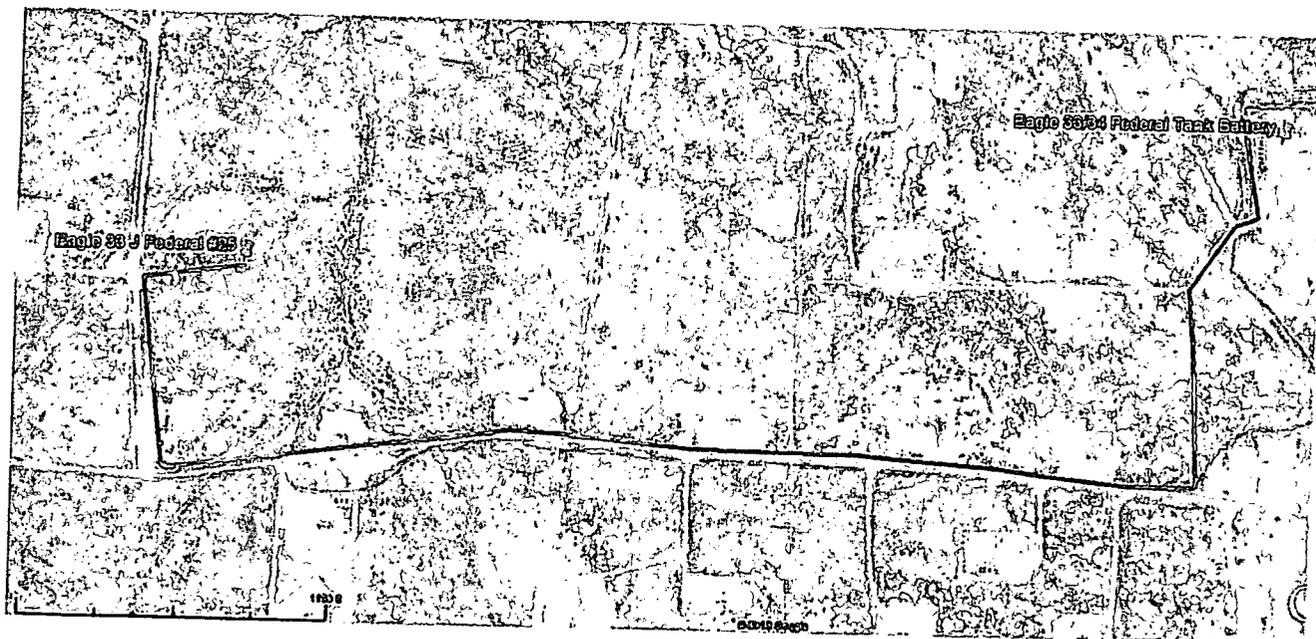


**LIME ROCK  
RESOURCES**

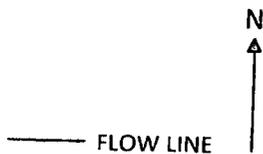
**LIME ROCK RESOURCES II-A, L.P.  
ONE MILE RADIUS AROUND  
EAGLE 33J FEDERAL 25**

|                     |                        |
|---------------------|------------------------|
| Author:<br>< name > | Date:<br>12 July, 2012 |
| Scale:<br>< scale > |                        |

MAP DETAILING FLOWLINE  
From Eagle 33 J Federal #25  
to Eagle 33/34 Federal Tank Battery



LIME ROCK RESOURCES II-A, L.P.  
**Eagle 33 J Federal #25**  
LOCATED 1650' FROM THE SOUTH LINE  
AND 2310' FROM THE WEST LINE OF  
SECTION 33, TOWNSHIP 17 SOUTH,  
RANGE 27 EAST, N.M.P.M.,  
EDDY COUNTY, NM



# LIME ROCK RESOURCES II- A, L.P APD DRILLING PLAN

**OPERATOR:** LIME ROCK RESOURCES II- A, L.P

**WELL:** Eagle 33 J Federal #25

**LOCATION:** 1650' FSL & 2310' FEL

Unit J-Sec. 33-T17S-R27E

Eddy County, NM

**LEASE NUMBER:** NM 033865

In attachment and accordance to BLM Form 3160-3, we respectfully submit the following information to drill the subject well vertically with rotary tools to a depth of 4800', set production casing, and then move the rig off to use a work over rig to complete the well:

## 1. & 2. ESTIMATED TOPS OF GEOLOGIC FORMATIONS AND MARKERS:

| Formation             | Depth   | Formation Content |
|-----------------------|---------|-------------------|
| Quaternary – Alluvium | Surface |                   |
| 7 Rivers              | 285'    |                   |
| Queen                 | 798'    | Oil/Gas           |
| Grayburg              | 1188'   | Oil/Gas           |
| San Andres            | 1455'   | Oil/Gas           |
| Glorieta              | 2820'   | Oil/Gas           |
| Yeso                  | 2893'   | Oil/Gas           |
| Tubb                  | 4302'   | Oil/Gas           |
| TD                    | 4800'   | Oil/Gas           |

The surface formation Geologic name is recent Permian with Quaternary Alluvium, which includes other surficial deposits. The elevation of the unprepared ground is 3512.7' Above Sea Level. The distance to the nearest Fresh Water Well is 1.27 miles, with usable water depth recorded to 140'. Usable water will be protected from salts, anhydrites along with oil and gas contamination with a surface casing string cemented to surface at 400'.

## 3. PRESSURE CONTROL:

### (2000 psi BOPE SYSTEM WITH SCHEMATIC ATTACHED)

The blowout preventer equipment (BOP) will consist of a 2000 psi rated, "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 for 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 inch 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.
- Fill-up line above the uppermost preventer.

**4. PROPOSED CASING (“CSG”)**

| CASING TYPE | CASING DEPTH, FT | HOLE SIZE, IN. | CASING SIZE, IN. | CASING WEIGHT, LBS/FT | CASING GRADE | CASING THREAD | API, (Y) OR (N) | NEW (N) OR USED (U) |
|-------------|------------------|----------------|------------------|-----------------------|--------------|---------------|-----------------|---------------------|
| CONDUCTOR   | 80               | 26.000         | 20.000           | 91.5                  | B            | WELDED        | N               | N                   |
| SURFACE     | 400              | 12.250         | 8.625            | 24.0                  | J-55         | ST&C          | Y               | N                   |
| PRODUCTION  | 4800             | 7.875          | 5.500            | 17.0                  | J-55         | LT&C          | Y               | N                   |

All casing designed to a minimum of:

BURST SAFETY FACTOR

1.18

COLLAPSE SAFETY FACTOR  
SAFETY FACTOR

1.2  
2.0

TENSION

**5. PROPOSED CEMENT (“CMT”) PROGRAM**

| CASING TYPE | CASING DEPTH, FT | # SACKS CMT ** | CMT TOP | CMT DENSIT Y, ppg | CMT YIELD, CU. FT. PER SACK | CMT EXCES S % | CMT BLEN D * |
|-------------|------------------|----------------|---------|-------------------|-----------------------------|---------------|--------------|
| CONDUCTOR   | 80               | NA             | SURF    | READY MIX         |                             |               |              |
| SURFACE     | 400              | 280            | SURF    | 14.8              | 1.34                        | 200           | 1            |
| PRODUCTION  | 4800             | 300            | SURF    | 12.8              | 1.903                       | 80            | 2            |
|             |                  | 575            | 1636    | 14.8              | 1.328                       | 50            | 3            |

**\* CMT BLENDS:**

- (1) CI C Cmt +0.25 lbs/sk Cello Flake +2% CaCl<sub>2</sub>
- (2) Production casing lead slurry: (35:65)Poz/CI C Cmt + 5% NaCl +.0125lb/sk Cello Flake+ 5lbs/sk LCM-1+ 0.2% R-3 +6% Gel
- (3) Production casing tail slurry: Class C w/ 0.6% R-3 and 1/4 pps cello flake

\*\* Cement volumes will be adjusted based on caliper log volumes and depths of casing; and adjusted proportionately for depth changes of the multi stage tool if applicable.

A 13 3/8", 48#, H-40, ST&C, New, API contingency string will be set at 375' in a reamed 17 1/2" hole if circulation is lost in cave or karst (cave & karst potential to 350') and not regained. Contingency string will be cemented to the surface with 400 sacks (536 cubic feet) Class C + 1/4 pound per sack cello flake +2% CaCl<sub>2</sub> mixed to yield 1.34 cubic feet per sack and 14.8 pounds per gallon. Excess >100%

Upon the setting of a 13 3/8" contingency casing string, a 13 5/8" x 13 3/8" weld on wellhead will be installed. A 13 3/8" to 11" adapter flange will be installed and the 11" XLT 2000 psi NOV double ram BOP/BOPE (Schematic attached) will be installed. The BOP will be tested against the casing to 70% of the internal yield pressure of the 13 3/8", 48#, H-40, ST&C (1211 psi) casing and held for 30 min before drilling out the 13 3/8" casing shoe.

**6. TYPE(S) AND CHARACTERISTIC(S) OF MUD SYSTEM:**

| Expected Drilling and Mud Properties |             |  |  |
|--------------------------------------|-------------|--|--|
| <b>Depth</b>                         | 0-400       | 400-4650   | 4650-4800  |
| <b>Mud Type</b>                      | Fresh Water | Saltwater w/ Gel   | Saltwater w/ Gel & Starch  |
| Properties                           |             |  |  |
| <b>MW</b>                            | 8.5-9.2     | 9.9-10.2   | 9.9-10.2   |
| <b>pH</b>                            | 10          | 10-11.5  | 10-11.5  |
| <b>WL</b>                            | NC          | NC   | 15-20  |
| <b>Vis</b>                           | 28-34       | 30-32  | 32-35  |
| <b>MC</b>                            | NC          | NC   | 1  |
| <b>Solids</b>                        | NC          | <1%  | <1%  |
| <b>Pump Rate</b>                     | 300-350gpm  | 350-400gpm   | 400-450gpm   |
| <b>Special</b>                       | LCM as Req  | Salt Gel, Acid & MF as req'd.<br>Pmp Hi Vis sweeps to control Solids | Salt Gel, Acid & MF as req'd.<br>Pmp Hi Vis sweeps to control Solids |

**7. TESTING, CORING, and LOGGING PROCEDURES:**

**Testing Program:** None

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

**Coring Program:** None

**8. EXPECTED BOTTOM HOLE PRESSURE and TEMPERATURE:**

**Expected BHP:** BHP 2112 psi based on 0.44 x TD (4800')

**Expected BHT:** 135°F.

**9. ABNORMAL CONDITIONS:**

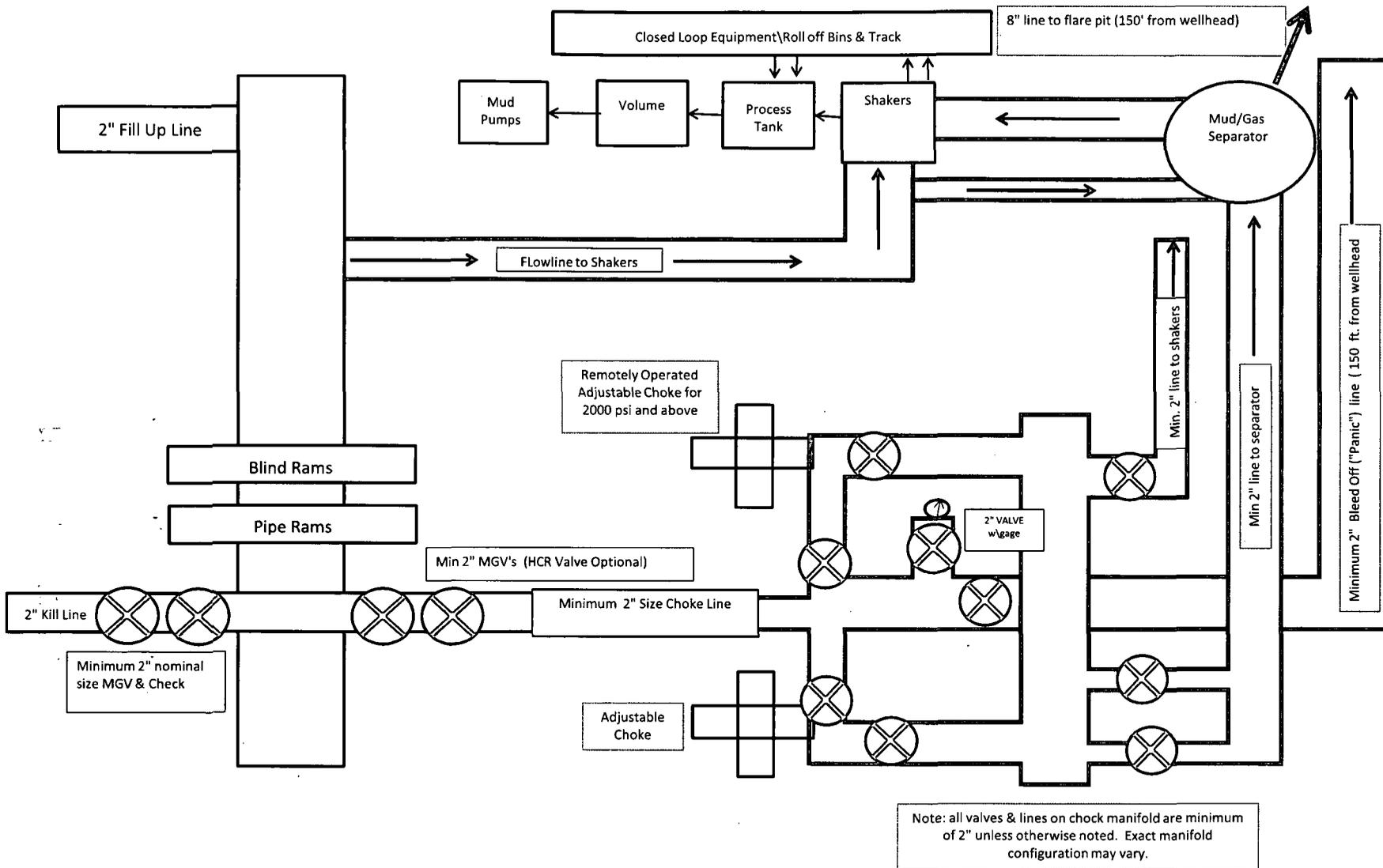
**Lost Circulation-** Well to be drilled in a cave/karsts area, thus loss of circulation down to 350' is possible during the drilling phase. See contingency casing string in item 4.

**No Abnormal Temperature or Pressure Expected** during the drilling or completion stage.

**H<sub>2</sub>S is present in producing wells in the area.** H<sub>2</sub>S is not expected in the wellbore during the drilling of this well, but a H<sub>2</sub>S drilling plan will be in place and a summary of the plan is attached, and will be followed according to Onshore Oil and Gas Order No. 6. All personnel will be familiar with all aspects of the safe operation of equipment being used to drill this well.

**Spud Date and Duration of Operations:**

Anticipated spud date is July 3, 2013. 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.



**11" Minimum 2000 psi BOP and  
Minimum 2000 psi BOPE System Schematic  
W/ Closed Loop System Equipment**

**LIME ROCK RESOURCES II- A, L.P**  
**Eagle 33 J Federal #25**  
**UNIT J, S33-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.

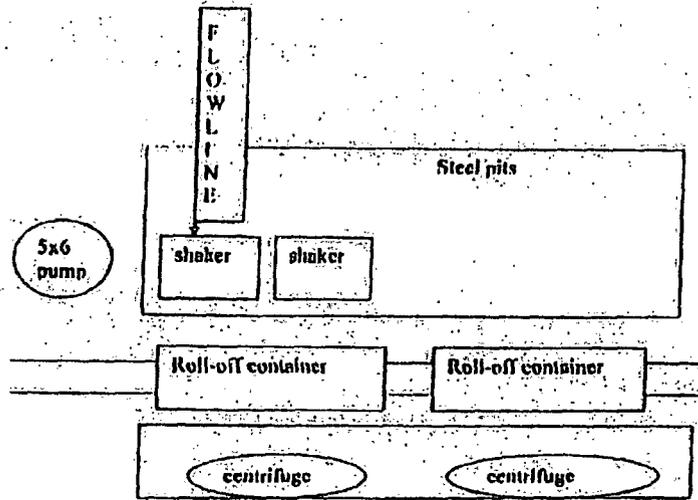
2- (250 bbl) tanks to hold fluid  
2-CRI bins with track system  
2-500 bbl frac tanks with fresh water  
2-500 bbl frac tanks for brine water

**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.



This will be maintained by 24 hour solids control personnel that stay on location.

TOMMY WILSON



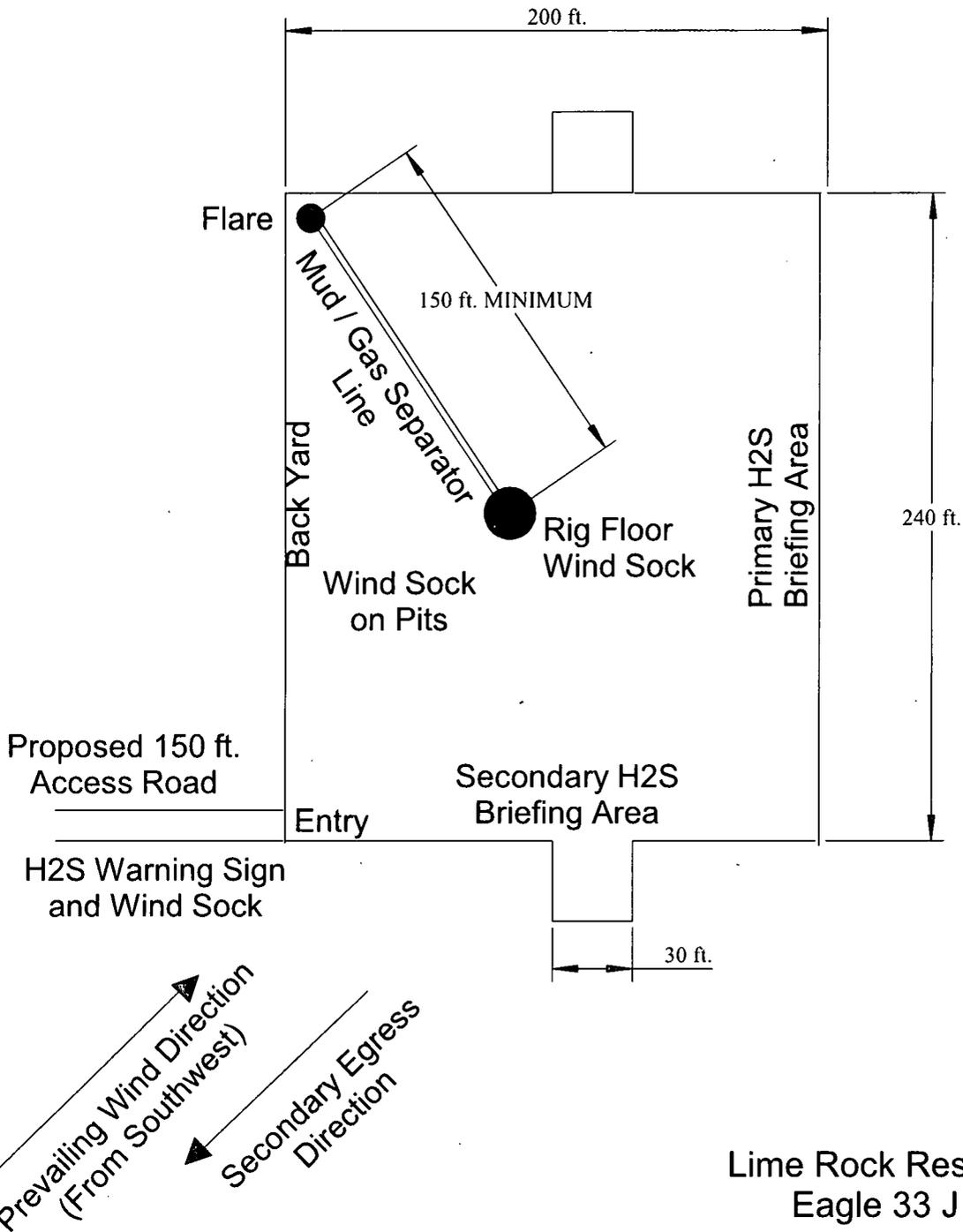
CLOSED LOOP  
SPECIALTY

Office: 575.748.1689

Cell: 575.748.6347

# Lime Rock Resources II-A, L.P. Rig Plat Layout V-Door North

(Not to Scale)



Lime Rock Resources II-A, L.P.  
Eagle 33 J Federal #25

### LEGEND

Well Bore



Bleed Off Line



Flare



Flare Line

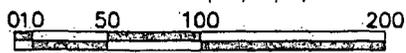
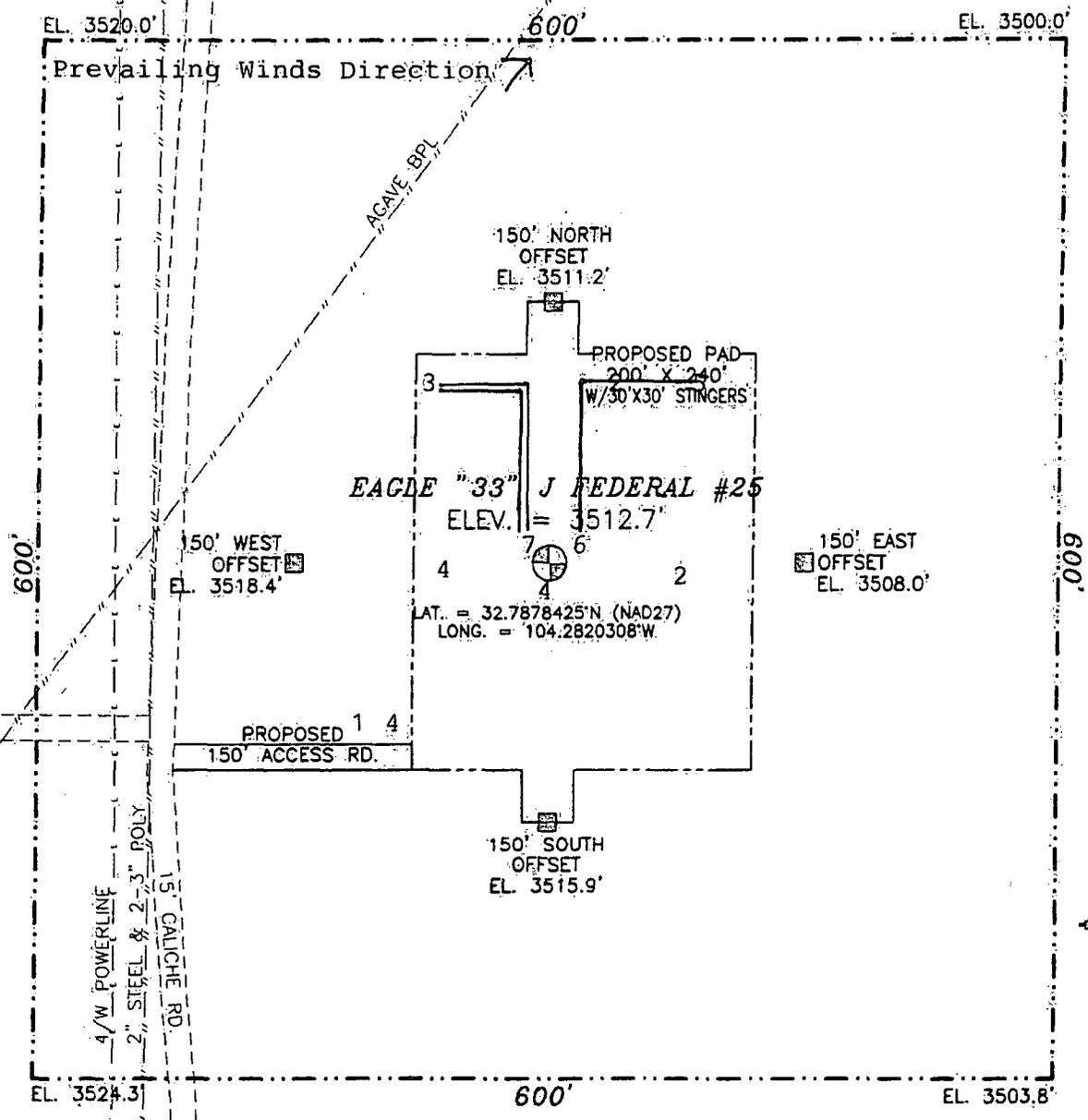


## UDI RIG #22 LAYOUT KEY

1. H<sub>2</sub>S Warning Sign
  2. Breifing Area
  3. Flare –at least 150' from the center of the wellbore
  4. Wind Sock – at entrance, on rig floor, and at pits
  5. Frac Tank – from Bleed off Line
  6. Choke Manifold
  7. Mud/Gas Separator
- Bleed off Line
- == Flare Line

SECTION 33, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M.  
 EDDY COUNTY, STATE OF NEW MEXICO

NOTE: THE LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1927 (NAD27), AND ARE IN DECIMAL DEGREE FORMAT.



SCALE 1" = 100'  
 DIRECTIONS TO LOCATION  
 FROM PAVED CR. 225 (EMPIRE) AND PAVED CR. 227 (LITTLE DIAMOND) GO WEST-SOUTHWEST ON CR. 227 0.5 MILES, TURN RIGHT ON CALICHE ROAD AND GO NORTHWEST 0.5 MILES, TURN LEFT AND GO WEST 0.9 MILES, TURN RIGHT AND GO NORTH 700' TO A PROPOSED ROAD SURVEY AND FOLLOW FLAGS EAST 150' TO THE SW. COR. OF PROPOSED PAD FOR THIS LOCATION.

LIME ROCK RESOURCES II-A, L.P.  
**EAGLE "33" J FEDERAL #25**  
 LOCATED 1650 FT. FROM THE SOUTH LINE  
 AND 2310 FT. FROM THE EAST LINE OF  
 SECTION 33, TOWNSHIP 17 SOUTH,  
 RANGE 27 EAST, N.M.P.M.  
 EDDY COUNTY, STATE OF NEW MEXICO

MAY 9, 2012

**LIME ROCK RESOURCES II, A, L.P**  
**Eagle 33 J Federal #25 Well**  
**Hydrogen Sulfide Drilling Plan Summary**  
**For Drilling Workover Facility**

- A. All personnel shall receive proper H<sub>2</sub>S training in accordance with Onshore Order 6 III.C.3.a.
- B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.
- C. Required Emergency Equipment:

- ☐ Well control equipment

- a. Flare line 150' from wellhead to be ignited by flare gun.
- b. Choke manifold with a remotely operated choke.
- c. Mud/gas separator

- ☐ Protective equipment for essential personnel.

- Breathing apparatus:

- a. Rescue Packs (SCBA) — 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
  - b. Work/Escape packs — 4 packs shall be stored on the rig floor the sufficient air hose not to restrict work activity.
  - c. Emergency Escape Packs — 4 packs shall be stored in the doghouse for emergency evacuation.

- Auxiliary Rescue Equipment:

- a. Stretcher
  - b. Two OSHA full body harness
  - c. 100 ft 5/8 inch OSHA approved rope
  - d. 1-20# class ABC fire extinguisher

- ☐ H<sub>2</sub>S detection and monitoring equipment:

- The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: Rig floor / Bell nipple / End of flow line or where well bore fluid is being discharged.  
(Gas sample tubes will be stored in the safety trailer)

- ☐ Visual warning systems.

- a. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
  - b. A colored condition flag will be on display, reflecting the current condition at the site at the time.
  - c. Two wind socks will be placed in strategic locations, visible from all angles.

- ☐ Mud program:

- The mud program has been designed to minimize the volume of H<sub>2</sub>S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H<sub>2</sub>S bearing zones.

■ Metallurgy:

- a. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H<sub>2</sub>S service.
- b. All elastomers used for packing and seals shall be H<sub>2</sub>S trim.

■ Communication:

Communication will be via two way radio in emergency and company vehicles. Cell phones and land lines where available.

## H2S CONTINGENCY DRILLING PLAN EMERGENCY CONTACTS

|                         |                                 |              |
|-------------------------|---------------------------------|--------------|
| <u>Company Offices-</u> | Lime Rock Houston Office        | 713-292-9510 |
|                         | Answering Service (After Hours) | 713-292-9555 |
|                         | Artesia, NM Office              | 575-748-9724 |
|                         | Roswell, NM                     | 575-623-8424 |

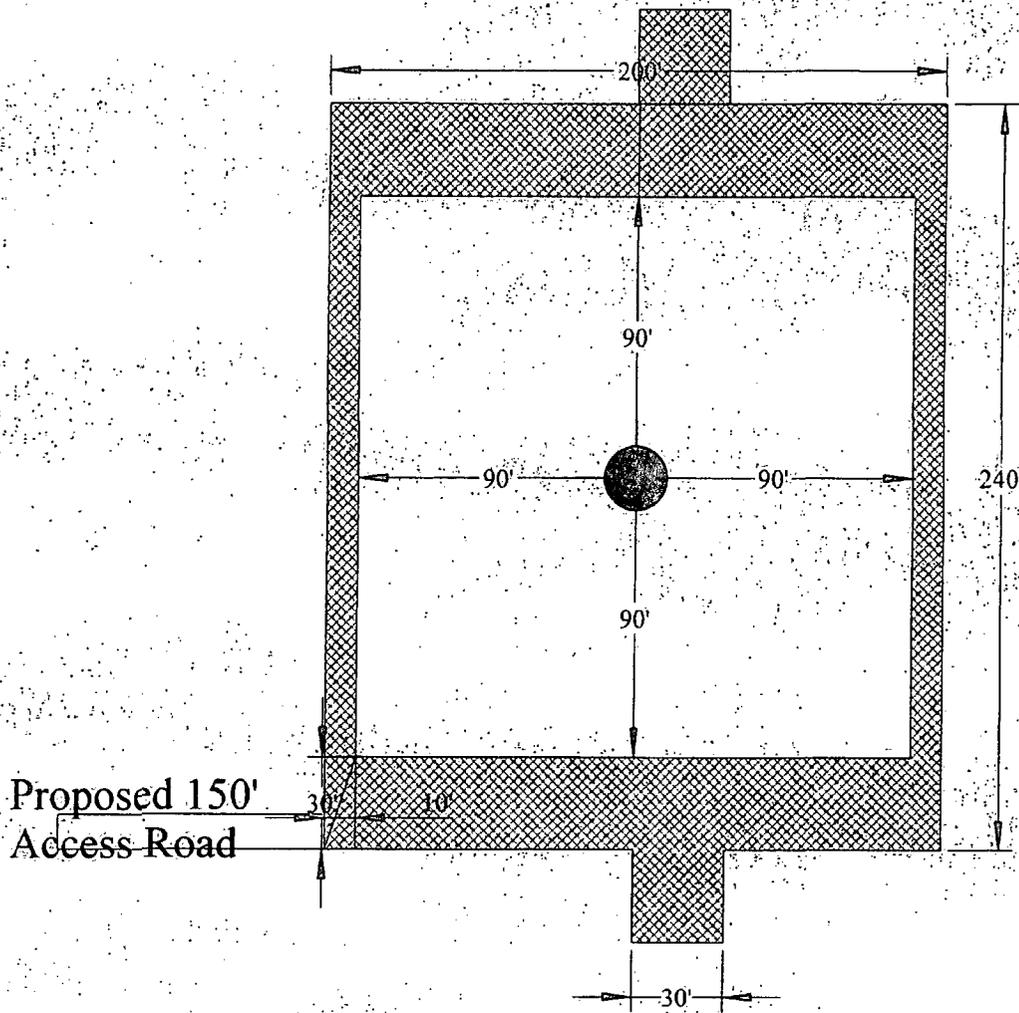
| KEY PERSONNEL   |                                 |                 |              |              |              |
|-----------------|---------------------------------|-----------------|--------------|--------------|--------------|
| Name            | Title                           | Location        | 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 MCCCELLAND | 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 |

# Interim Reclamation & Production Facilities



LIME ROCK RESOURCES II-A, L.P.  
EAGLE 33 J FEDERAL #25

- Well Bore 
- Interim Reclamation 
- Flowline 

## LEGEND

- Production Facilities  

North



## MULTI POINT SURFACE USE AND OPERATIONS PLAN

### LIME ROCK RESOURCES II- A, L.P

Eagle 33 J Federal #25  
1650'FSL & 2310'FEL, Unit J - Sec. 33-T17S-R27E  
Eddy County, NM  
Lease No. NM 033865

This plan is submitted with the Application for Permit to Drill the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan to be followed in rehabilitating the surface and environmental effects associated with the operations.

#### 1. EXISTING ROADS:

- a. Exhibit "A" is a portion of a BLM topo map showing the location of the proposed well as staked. The well site location is approximately 12.3 road miles east of Artesia, NM. Traveling east of Artesia on U.S. Hwy 82 there will be approximately 9.2 miles of existing highway .7 mile of County Rd. 204 and 225.
- b. Directions: From paved Cr. 225 (empire) and paved Cr. 227 (Little Diamond) Go west-southwest on Cr. 227 0.5 miles, turn left and go west 0.9 miles, turn right and go north 700' to a proposed road survey and follow flags east 150' to the sw. corner of proposed pad for this location.

#### 2. PLANNED ACCESS ROAD:

- a. Length and Width: The proposed access road will be 150 feet. The existing roads are color coded on Exhibit "A"
- b. Construction: The existing access road will be upgraded, as needed, by grading, and topping with compacted caliche. The surface will be properly drained.
- c. Turnout: None will be required.
- d. Culverts: None.
- e. Cuts and Fills: None required
- f. Gates, Cattle guards: None will be required.
- g. Off Lease right of way: None required.

#### 3. LOCATION OF EXISITING WELLS

- a. Locations of existing wells are shown on Exhibit "C".

#### 4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

- a. Lime Rock Resources II-A, L.P. has production facilities on the lease at this time

- b. If the well proves to be commercial, the necessary production facilities will be run parallel to the road and other flow lines to the Eagle 33/34 Federal Tank Battery in the same quarter.

**5. LOCATION AND TYPE OF WATER SUPPLY:**

- a. It is planned to drill the proposed well with fresh water that will be obtained from private or commercial sources and will be transported over the existing and proposed access roads.

**6. SOURCE OF CONSTRUCTION MATERIALS:**

- a. Caliche for surfacing the proposed access road and well site pad will be obtained from the approved COG private pit in the SW4/SW4 Sec. 32-T17S-R28E or a closer pit if available. No surface materials will be disturbed except those necessary to for grading and leveling the pad area and access road.

**7. METHODS OF HANDLING WASTE DISPOSAL**

- a. Drill cuttings and liquids will be stored in steel tanks of the closed loop mud system during the drilling operating and delivered to CRI, Permit No. R-9166, as needed, and at closure.
- b. There will be no mud pits to be fenced.
- c. Water produced during operations will be collected in tanks until hauled to an approved disposal system, or a separate disposal application will be submitted to the BLM for approval.
- d. Oil produced during operations will be stored in tanks until sold.
- e. Current laws and regulations pertaining to the disposal of human waste will be complied with.
- f. Trash, waste paper, garbage, and junk will be contained in trash bins to prevent scattering by the wind and will be removed for deposit in an approved sanitary landfill within 30 days after finishing drilling and/or completion operations.

**8. ANCILLARY FACILITIES:**

- a. None required.

**9. WELL SITE LAYOUT:**

- a. Exhibit "D" shows the relative location and dimension of the well pad, closed loop system, and major rig components. The pad and pit area has been staked and flagged, 600'x 600'.
- b. Mat size: 200'x240', plus 2 30'x30'stingers on the north and south to service the closed loop mud system.
- c. Cut & Fill: The location will require approximately a 2' cut on the north with fill to the south.

- d. The surface will be topped with compacted caliche.

#### 10. PLANS FOR RESTORATION OF THE SURFACE:

- a. After completion of drilling and/or completion operations, all equipment and other material not required for operations will be removed. The location will be cleaned of all trash and junk to leave the well site in an aesthetically pleasing a condition as possible.
- b. There will be no unguarded pits containing fluids.
- c. If the proposed well is found commercially viable, the location will be reduced to a square 180' by 180', centered at the well, allowing for environmental reclamation.
- d. If the proposed well is non-productive, all rehabilitation and/or vegetation requirements of the Bureau of Land Management will be complied with and will be accomplished as expeditiously as possible. Mud from the closed system will be disposed of as required.

#### 11. OTHER INFORMATION:

- a. Topography: The proposed well site and access roads are located on an overall 2.0% slope to the south. The location has an elevation of 3512.7' GL.
- b. Soil: The topsoil at the well site is a tan loamy soil. The soil is part of the Reeves-Gypsum land complex.
- c. Flora and Fauna: The location has a fair grass cover of grama, three-awn fluff grass alkali sacaton along with plant of mesquite, yucca, broomweed, cacti, and miscellaneous weeds and wildflowers. The wildlife consists of rabbits, coyotes, antelopes, deer, rattlesnakes, lizards, dove, quail, and other wildlife typical of the semi-arid desert land.
- d. Ponds and Streams: None.
- e. Residences and Other Structures: None in the immediate vicinity, except producing oil wells surrounding the location of the Eagle 33 J Federal, Well No #25.
- f. Land Use: Mostly oil production and possible cattle grazing.
- g. Surface Ownership: The proposed well site and access road is on Federal surface and minerals.
- h. There is no immediate evidence of an archaeological site on the location of the staked area. An archaeological survey is being conducted and has or will be submitted to the appropriate government agencies.

## 12. OPERATOR'S REPRESENTATIVE

- a. The field representative for assuring compliance with the approved use and operations plan is as follows:

Sid Ashworth  
LIME ROCK RESOURCES II- A, L.P.  
Heritage Plaza  
1111 Bagby Street, Suite 4600  
Houston, TX 77002  
Office Phone: 713-292-9526  
Cell Phone: 713-906-7750

# PECOS DISTRICT CONDITIONS OF APPROVAL

|                              |  |
|------------------------------|--|
| <b>OPERATOR'S NAME:</b>      | <b>Lime Rock Resources II-A, L.P.</b>      |
| <b>LEASE NO.:</b>            | <b>NMNM-033865</b>                         |
| <b>WELL NAME &amp; NO.:</b>  | <b>Eagle 33 J Federal 25</b>               |
| <b>SURFACE HOLE FOOTAGE:</b> | <b>1650' FSL &amp; 2310' FEL</b>           |
| <b>LOCATION:</b>             | <b>Section 33, T. 17 S., R 27 E., NMPM</b> |
| <b>COUNTY:</b>               | <b>Eddy County, New Mexico</b>             |

## 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**
  - Cave/Karst
- Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- Road Section Diagram**
- Drilling**
  - H2S requirements
  - High Cave Karst
  - Logging Requirements
  - Waste Material and Fluids
- Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
  - Electric Lines
- Interim Reclamation**
- Final Abandonment & Reclamation**

## **I. GENERAL PROVISIONS**

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## **II. PERMIT EXPIRATION**

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

## **III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES**

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

## **IV. NOXIOUS WEEDS**

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

## V. SPECIAL REQUIREMENT(S)

### Cave and Karst

\*\* Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

#### Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

##### **Construction:**

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

##### **No Blasting:**

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

##### **Pad Berming:**

The pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the pad. All sides will be bermed.

##### **Tank Battery Liners and Berms:**

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

##### **Leak Detection System:**

A method of detecting leaks is required. The method could incorporate gauges to measure loss, siting valves and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

##### **Automatic Shut-off Systems:**

Automatic shut off, check valves, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

#### Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

##### **Rotary Drilling with Fresh Water:**

Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

**Directional Drilling:**

Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

**Lost Circulation:**

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

**Abandonment Cementing:**

Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

**Pressure Testing:**

Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

## **VI. CONSTRUCTION**

### **A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

### **B. TOPSOIL**

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 3 inches in depth. The topsoil will be used for interim and final reclamation.

### **C. CLOSED LOOP SYSTEM**

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

### **D. FEDERAL MINERAL MATERIALS PIT**

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

### **E. WELL PAD SURFACING**

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

### **F. ON LEASE ACCESS ROADS**

#### **Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty (20) feet.

### Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

### Crowning

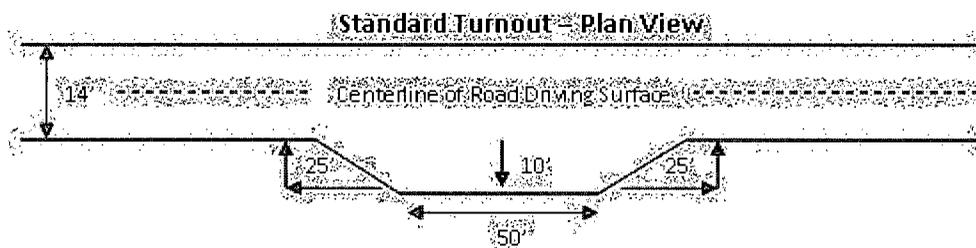
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

### Ditching

Ditching shall be required on both sides of the road.

### Turnouts

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:

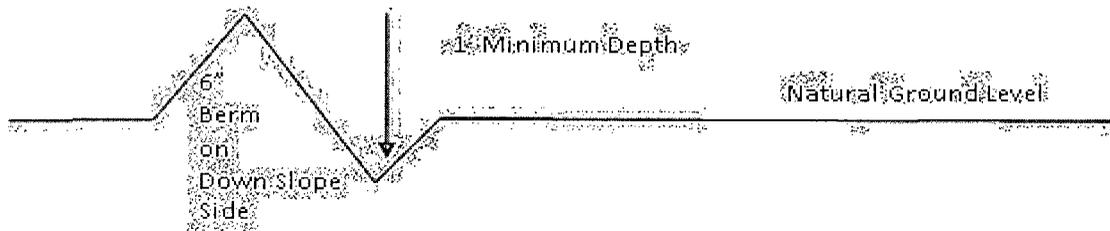


### Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

### Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

#### Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

#### Culvert Installations

Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

#### Cattleguards

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

#### Fence Requirement

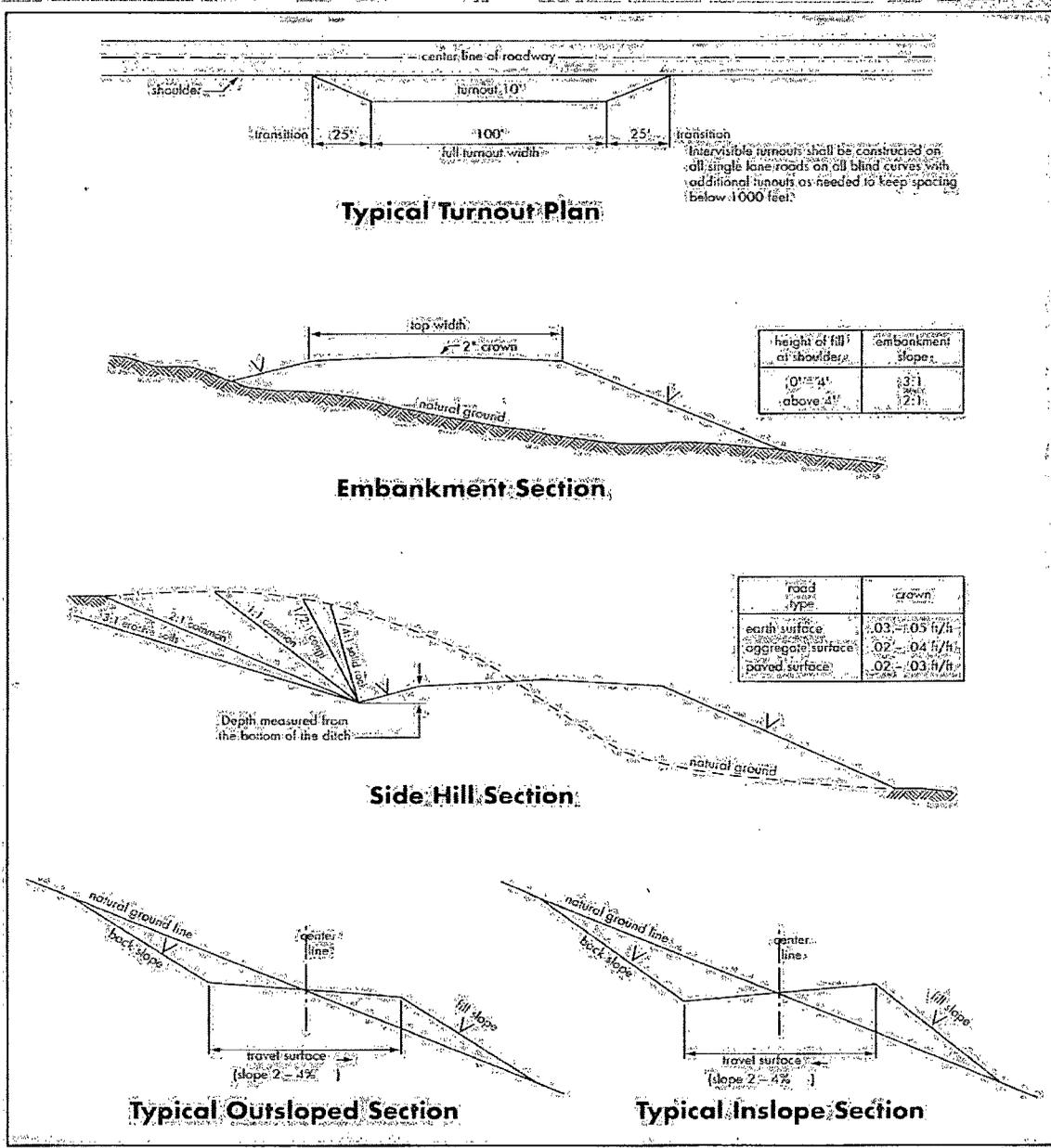
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

**Public Access**

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

**Figure 1 - Cross Sections and Plans For Typical Road Sections**



## VII. DRILLING

### A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

- a. Spudding well
- b. Setting and/or Cementing of all casing strings
- c. BOPE tests

**Eddy County**

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822

1. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan shall be activated 500 feet prior to drilling into the **Queen** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. **The record of the drilling rate along with the GR/N well log run from TD to surface shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

### B. CASING

**Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).**

**Centralizers required on surface casing per Onshore Order 2.III.B.1.f.**

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

**HIGH CAVE/KARST – OPERATOR HAS PROPOSED A CONTINGENCY CASING IF LOST CIRCULATION OCCURS WHILE DRILLING THE SURFACE HOLE. IF LOST CIRCULATION OCCURS WHILE DRILLING THE 7-7/8” HOLE, THE CEMENT PROGRAM FOR THE 5-1/2” CASING WILL NEED TO BE MODIFIED AND THE BLM IS TO BE CONTACTED PRIOR TO RUNNING THE CASING. A MINIMUM OF TWO CASING STRINGS CEMENTED TO SURFACE IS REQUIRED IN HIGH CAVE/KARST AREAS. THE CEMENT MUST BE IN A SOLID SHEATH THEREFORE, ONE INCH OPERATIONS WILL NOT BE PERMITTED. A DV TOOL WILL BE REQUIRED**

**There is a potential for shallow oil production within the Yates and Seven Rivers Formations.  
Possibility for water and brine flows in the Salado and Artesia Groups.  
Possible lost circulation in the Grayburg and San Andres formations.**

**Contingency Surface Casing Plan:**

1. The 13-3/8 inch contingency surface casing shall be set at approximately 375 feet and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

- d. If cement falls back, remedial cementing will be done prior to drilling out that string.

### **Casing Plan without Contingency:**

2. The **8-5/8** inch surface casing shall be set at approximately **400** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
  - Cement to surface. If cement does not circulate, contact the appropriate BLM office.
4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

### **C. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. **Contingency** - Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **13-3/8 inch** surface casing shoe shall be **2000 (2M)** psi. Operator is approved to test against the casing for the contingency plan.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **8-5/8 inch** surface casing shoe shall be **2000 (2M)** psi.
4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
  - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.
  - c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock.
  - d. The results of the test shall be reported to the appropriate BLM office.
  - e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
  - f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure

#### **D. DRILL STEM TEST**

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

**E. WASTE MATERIAL AND FLUIDS**

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

**JAM 032213**

## VIII. PRODUCTION (POST DRILLING)

### A. WELL STRUCTURES & FACILITIES

#### **Placement of Production Facilities**

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

#### **Containment Structures**

The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

#### **Painting Requirement**

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color Shale Green, Munsell Soil Color Chart # 5Y 4/2

### B. PIPELINES

#### STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

**A copy of the APD and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.**

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 *et seq.* (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the

release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

- a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
- b. Activities of other parties including, but not limited to:
  - (1) Land clearing.
  - (2) Earth-disturbing and earth-moving work.
  - (3) Blasting.
  - (4) Vandalism and sabotage.
- c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of 20 feet.
7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.
8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky or dune areas, the pipeline will be "snaked" around hummocks and dunes rather than suspended across these features.
9. The pipeline shall be buried with a minimum of 24 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.
10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.
11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.
12. Excluding the pipe, all above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.
13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.
14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

**C. ELECTRIC LINES (not applied for in APD)**

**IX. INTERIM RECLAMATION**

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

**X. FINAL ABANDONMENT & RECLAMATION**

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory

revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

#### Seed Mixture 4, for Gypsum Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

| <u>Species</u>                                       | <u>lb/acre</u> |
|--|----------------|
| Alkali Sacaton ( <i>Sporobolus airoides</i> )        | 1.0            |
| DWS Four-wing saltbush ( <i>Atriplex canescens</i> ) | 5.0            |

DWS: DeWinged Seed

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed