

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NM-117807	
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name TOS 10/24/2012	
2. Name of Operator LIME ROCK RESOURCES II-A, L.P.		7. If Unit or CA Agreement, Name and No.	
3a. Address 1111 BAGBY ST., STE. 4600 HOUSTON, TX 77002		8. Lease Name and Well No. EAGLE 35 A FEDERAL #21 <308961>	
3b. Phone No. (include area code) 713-292-9526		9. API Well No. 30-015-40810	
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface 455' FNL & 990' FEL At proposed prod. zone SAME		10. Field and Pool, or Exploratory RED LAKE; GLORIETA-YESO <96836>	
14. Distance in miles and direction from nearest town or post office* 10 MILES SOUTHEAST OF ARTESIA, NM		11 Sec., T. R. M. or Blk. and Survey or Area UNIT A - SEC. 35 - T17S - R27E	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 400'		12. County or Parish EDDY	
16. No. of acres in lease 120		13. State NM	
17. Spacing Unit dedicated to this well 40			
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 150'		20. BLM/BIA Bond No. on file NMB-000716	
19. Proposed Depth 5150'			
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3560.1' 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.             |

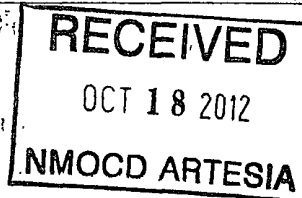
25. Signature <i>Lisa Barfield</i>	Name (Printed/Typed) LISA BARFIELD dba PETRO ENERGY GROUP	Date 7/5/12
Title POA AGENT FOR LIME ROCK RESOURCES II-A, L.P.		
Approved by (Signature) <i>/s/ James A. Amos</i>	Name (Printed/Typed) <i>/s/ James A. Amos</i>	Date OCT 16 2012
Title FIELD MANAGER		Office CARLSBAD 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)



ROSWELL CONTROLLED WATER BASIN

(Instructions on page 2)

SEE ATTACHED FOR  
CONDITIONS OF APPROVALAPPROVAL 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

1 API Number <b>30-015-40810</b>		2 Pool Code <b>96836</b>		3 Pool Name <b>RED LAKE; GLORIETA-YESU NE</b>	
4 Property Code <b>308961</b>		5 Property Name <b>EAGLE "35" A FEDERAL</b>			6 Well Number <b>21</b>
7 OGRID No. <b>277558</b>		8 Operator Name <b>LIME ROCK RESOURCES II A, LP</b>			9 Elevation <b>3560.1</b>

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	35	17 S	27 E		455	NORTH	990	EAST	EDDY

11 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

12 Dedicated Acres <b>40</b>	13 Joint or Infill	14 Consolidation Code	15 Order No.
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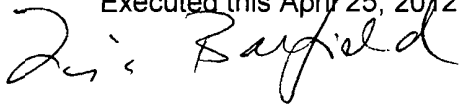
No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

<p>N89°00'58"W 2662.25 FT</p> <p>NW CORNER SEC. 35 LAT. = 32.7980625°N LONG. = 104.2575237°W</p> <p>N/4 CORNER SEC. 35 LAT. = 32.7979313°N LONG. = 104.2488634°W</p> <p>W/4 CORNER SEC. 35 LAT. = 32.7906862°N LONG. = 104.2574077°W</p> <p>SW CORNER SEC. 35 LAT. = 32.7833025°N LONG. = 104.2572947°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>S/4 CORNER SEC. 35 LAT. = 32.7833129°N LONG. = 104.2487387°W</p> <p>SE CORNER SEC. 35 LAT. = 32.7833252°N LONG. = 104.2401842°W</p> <p>N89°52'25"E 2630.21 FT</p> <p>N89°51'15"E 2629.71 FT</p>		<p>N89°02'08"W 2661.90 FT</p> <p>SURFACE LOCATION</p> <p>NE CORNER SEC. 35 LAT. = 32.7978019°N LONG. = 104.2402042°W</p> <p>EAGLE "35" A FEDERAL #21 ELEV. = 3560.1' LAT. = 32.7965994°N (NAD27) LONG. = 104.2434236°W</p> <p>E/4 CORNER SEC. 35 LAT. = 32.7905650°N LONG. = 104.2401940°W</p> <p>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</p> <p>Signature: <i>Lisa Barfield</i> Date: <i>7/5/12</i></p> <p>Printed Name: <b>LISA BARFIELD</b></p> <p>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.</p> <p>MARCH 24, 2012</p> <p>Date of Survey: <i>March 24, 2012</i></p> <p>Signature and Seal of Professional Surveyor: <i>[Signature]</i></p> <p>Certificate Number: <b>ELIMON E. JARAMILLO PLS 12797</b></p> <p><b>NEW MEXICO</b> <b>REGISTERED LAND SURVEYOR</b> <b>SURVEY NO 820</b></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

A handwritten signature in black ink, appearing to read "Lisa Barfield", written over the printed name.

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

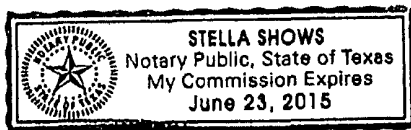
Date: 4/13/2012

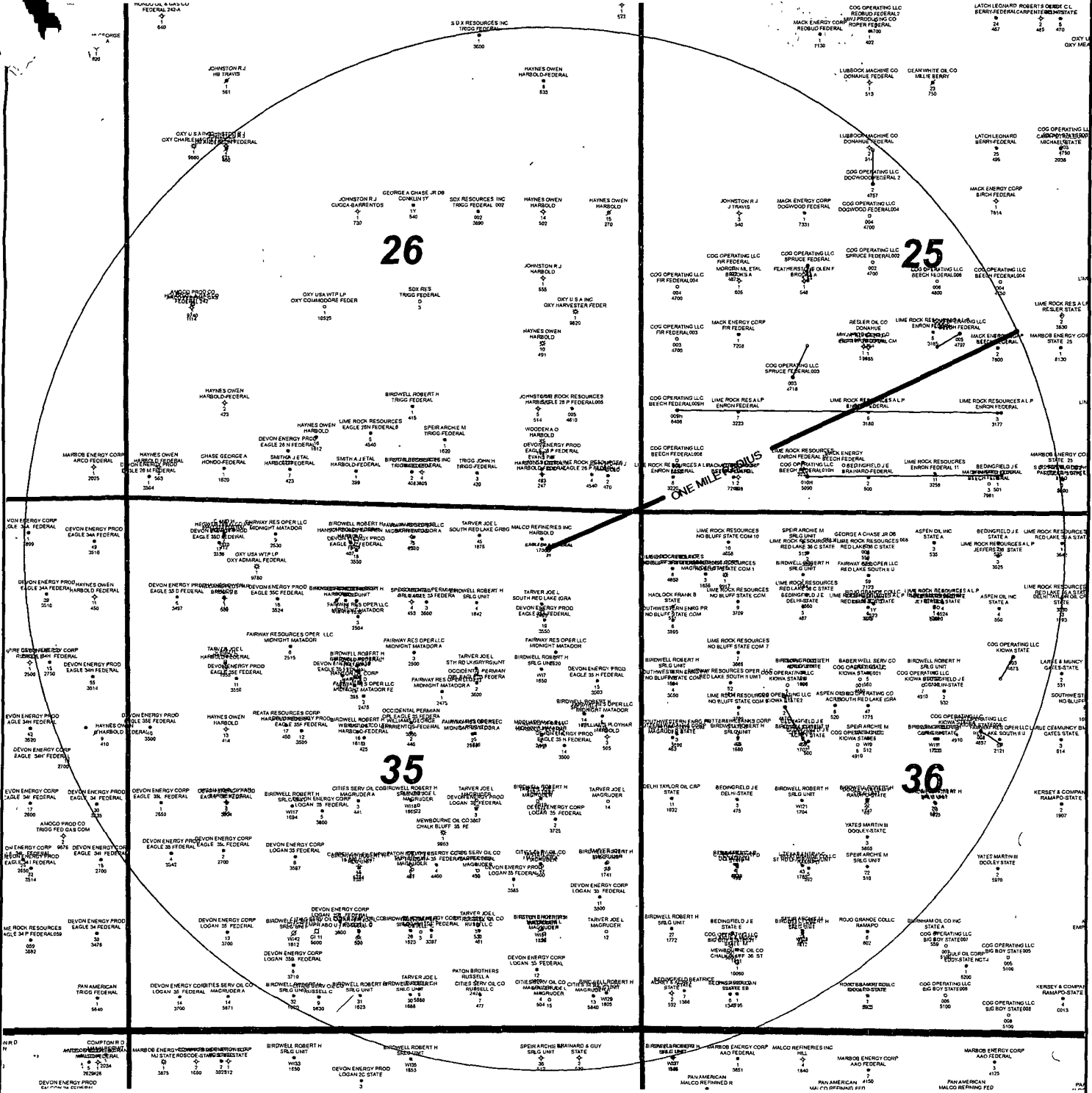
Address: 1111 Bagby Street, Suite 4600, Houston, TX 77002

State of TEXAS  
County of HARRIS

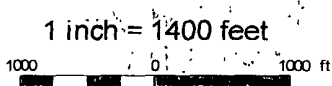
This instrument was acknowledged before me on April 13, 2012 by Stella Shows,  
Charles Adcock of Lime Rock Resources II-A, L.P. acting on behalf of said limited partnership.


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





(A) S35-T17S-R27E





# LIME ROCK RESOURCES

LIME ROCK RESOURCES II-A, L.P.  
ONE MILE RADIUS AROUND  
EAGLE 35A FEDERAL #21

Date: 4 June, 2012	

# LIME ROCK RESOURCES II- A, L.P

## Drilling Plan

Eagle 35 A Federal #21

455' FNL & 990' FEL

Unit A - Sec. 35 - T17S - R27E

Eddy County, NM

Lease Number: NM-117807

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. and 2. The geologic name of the surface formation is recent Permian with Quaternary alluvium and other surficial deposits..

Estimated tops of geologic markers:

<u>FORMATIONS</u>	<u>DEPTH</u>	<u>FORMATION FLUID CONTENT</u>
Quaternary – Alluvium	Surface	NA
Triassic (down to)	300'	Water
7 Rivers	375'	Water
Queen	888'	Oil and Gas
Grayburg	1296'	Oil and Gas
San Andres	1654'	Oil and Gas
Glorieta	3016'	Oil and Gas
Yeso	3106'	Oil and Gas
Total Depth	5150'	Total Depth

3. The elevation of the unprepared ground is 3560.1' feet above sea level.

4. and 5. A rotary rig will be utilized to drill the well to drill the well to a proposed total depth of 5150' and run casing. This equipment will be rigged down and the well will be completed with a workover rig.

7. and 8. 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	450' 350'	335	14.8	1.35	Cl C Cmt +0.25 lbs/sk Cello Flake +2% CaCl2	200%	Surface
Production	7.875"	5.5"	17	J-55	LT&C	New API	5150'	280	12.8	1.903	(35-65)Poz/Cl C Cmt + 5% NaCl +.0125lb/sk Cello Flake+ 5lbs/sk LCM-1+ 0.2% R-3 +6% Gel	80%	Surface
								640	14.8	1.33	Class C w/ 0.6% R-3 and 1/4 pps cello flake	50%	

## **Pressure Control Equipment**

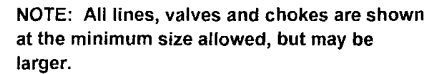
The blowout preventer equipment (BOP) will consist of a 5000 psi rated, 11", "XLT" type, National VARCO double ram preventer that will be tested to a maximum pressure of 2000 psi. The unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and drill pipe 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.

**Shale Shaker Pit Distance -  
Minimum of 30' From Well Center**



**LIME ROCK RESOURCES II- A, L.P**  
**Eagle 35A Federal #21**  
**UNIT A, S35-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.

Note: Cement volumes will be adjusted based on the actual depth drilled and the borehole caliper log volume with 35% over the caliper log volume on the production casing, unless at any point the caliper indicates washout larger than hole volume, then the original excess cement percentages will be used over caliper borehole volume.

Note: Surface and production casing were designed to exceed the following safety or design factors:  
Collapse – 1.2, Burst – 1.18 and tension 2.0

**9. Proposed Mud Program is as follows**

<b>Depth</b>	0-450 <del>3250</del> 450-4850	4850-5150	
<b>Mud Type</b>	Fresh Water	Brine	Brine w/ Gel & Starch
<b>Properties</b>			
<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 Gell & MF as Req'd pmp Hi Vis sweeps to control solids	Salt gel, Acid & MF as req. Pmp Hi Vis sweeps to control Solids

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

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

Testing Program:

None

Electric Logging Program:

Gamma Ray – Dual Laterlog – Compensated

Neutron/Density Log from total depth to surface casing, with

Gamma Ray - Neutron log to surface

Coring Program:

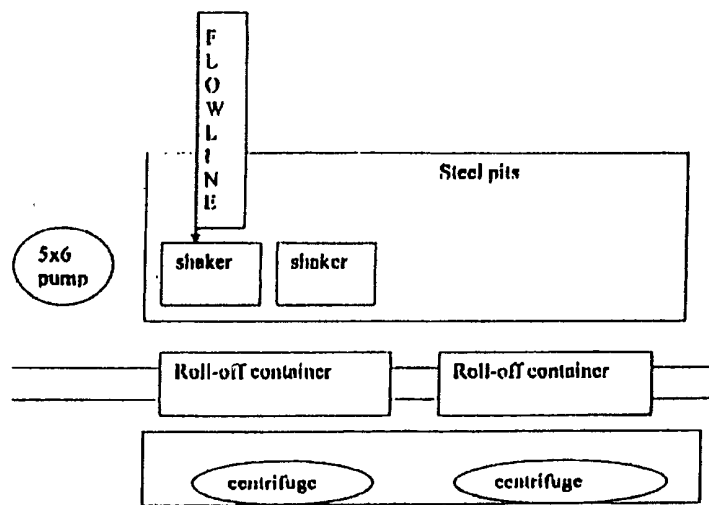
None

**12. Potential Hazards:**

No abnormal temperatures or pressures are expected. There is no expected H<sub>2</sub>S from this well. An H<sub>2</sub>S drilling plan is included and will be followed according to the provisions of Onshore Oil and Gas Order No. 6. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 2266 psi based on 0.44 x TD. The estimated BHT is 135° F. The pressure gradient is justified by bottom hole pressure tests conducted on the Eagle 26 N Federal #6, Sterling 6 M #2, and Hawk 8 L Federal #15 wells.

**13. 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.



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

*TOMMY WILSON*

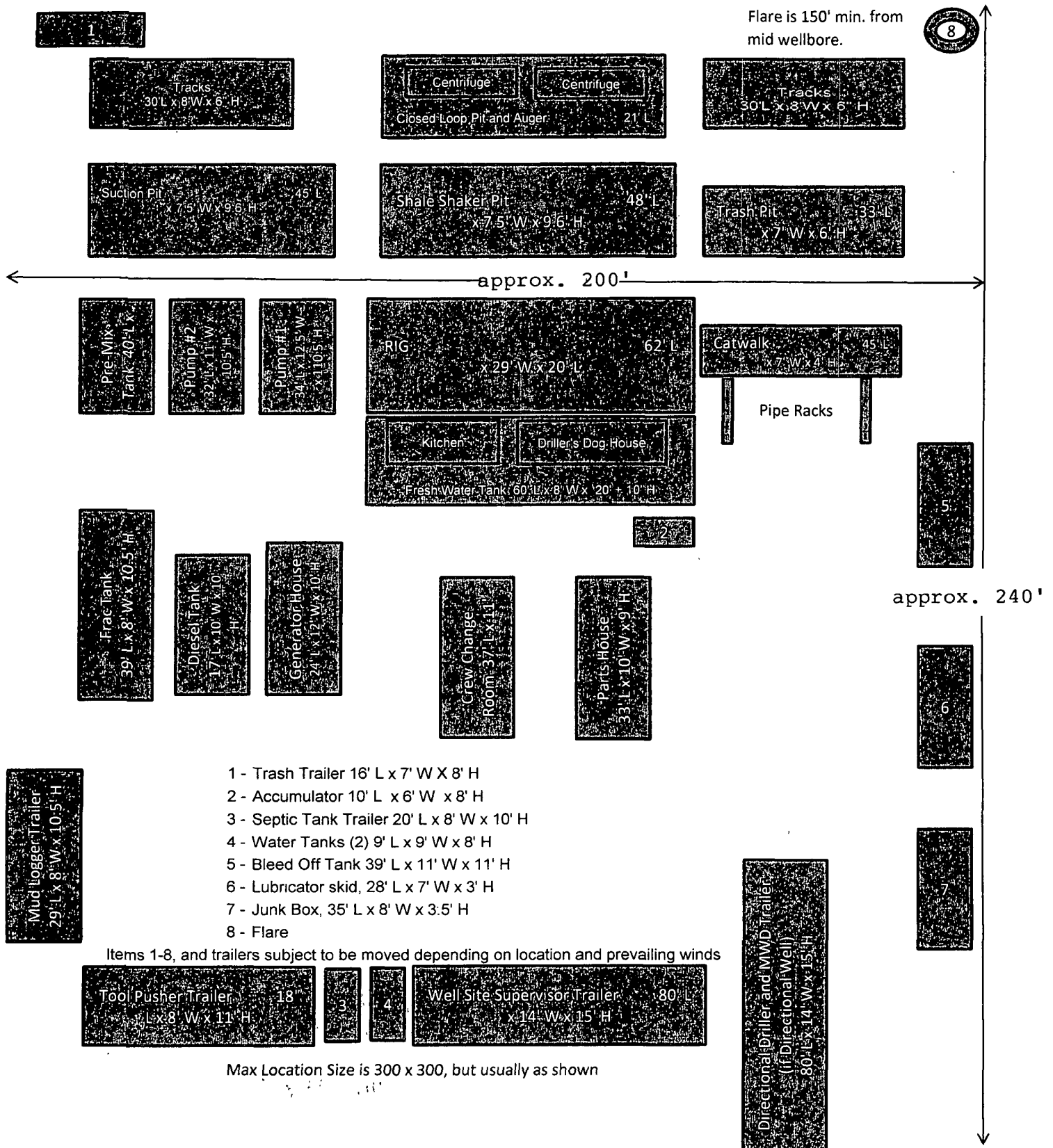


**CLOSED LOOP  
SPECIALTY**

Office: 575.746.1689

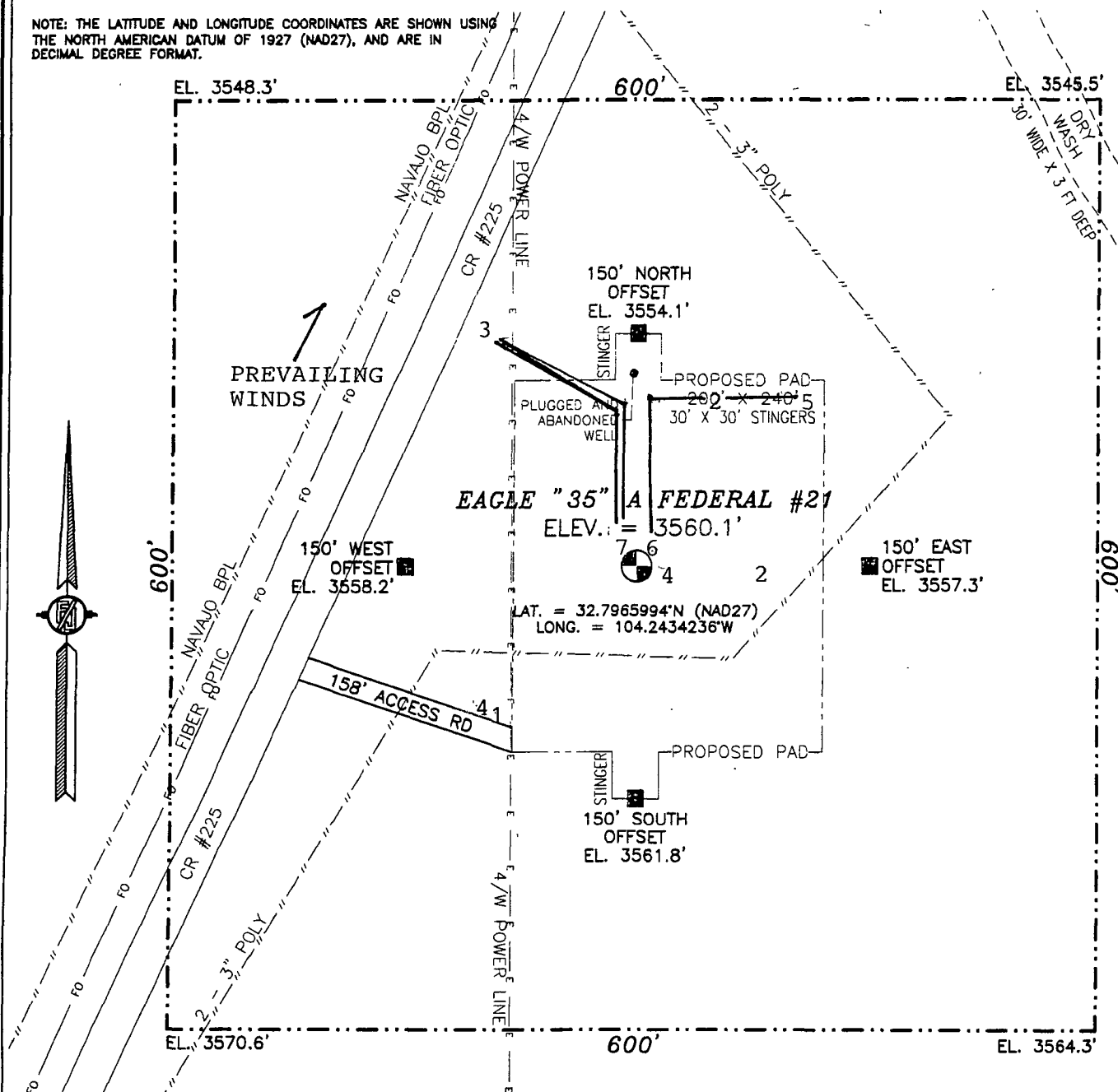
Cell: 575.748.6147

EAGLE 35 A FEDERAL #21



**SECTION 35, 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.



**LIME ROCK RESOURCES II A, LP  
EAGLE "35" A FEDERAL #21  
LOCATED 455 FT. FROM THE NORTH LINE  
AND 990 FT. FROM THE EAST LINE OF  
SECTION 35, TOWNSHIP 17 SOUTH,  
RANGE 27 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO**

MARCH 24, 2012

**SURVEY NO. 820**

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

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

### LEGEND FOR RIG LAYOUT PLAT

1 H<sub>2</sub>S Warning Signs

2 Briefing Area

3 Flare

4 Wind Sock- at Entrance, on Rig Floor and at Pits

5 Frac Tank from Panic Line

6 Choke Manifold

7 Mud / Gas Separator

————— Bleed Off Line

===== Flare Line

Flare is 150' from Center of Well Bore.

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

**Eagle 35A Federal #21 Well**

### **HYDROGEN SULFIDE (H<sub>2</sub>S) CONTINGENCY DRILLING PLAN**

**Assumed 100 ppm ROE = 3000'**

**100 ppm H<sub>2</sub>S concentration shall trigger activation of this plan.**

**This is an open drilling site. H<sub>2</sub>S 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. H<sub>2</sub>S monitors, warning signs, wind indicators and flags will be in use.**

#### **SUMMARY PLAN**

1. All personnel shall receive proper H<sub>2</sub>S training in accordance with Onshore Oil and Gas Order No. 6.III.C.3.a. A minimum of an initial training session and weekly H<sub>2</sub>S 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. H<sub>2</sub>S 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 H<sub>2</sub>S 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 H<sub>2</sub>S is possible, and furthermore, the color will be changed should the site condition dictate. If H<sub>2</sub>S 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 H<sub>2</sub>S 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 H<sub>2</sub>S 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 H<sub>2</sub>S conditions. Drill collars and other bottom hole assembly components are to be inspected after each well, and in the event H<sub>2</sub>S 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 H<sub>2</sub>S 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 H<sub>2</sub>S 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 H<sub>2</sub>S, 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 H<sub>2</sub>S 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 H<sub>2</sub>S, 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 (SO<sub>2</sub>). 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 H<sub>2</sub>S and SO<sub>2</sub>

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H <sub>2</sub> S	1.189 Air= 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO <sub>2</sub>	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.

## **H<sub>2</sub>S OPERATIONS**

Though no H<sub>2</sub>S 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 H<sub>2</sub>S 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 H<sub>2</sub>S 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

<u><b>Company Offices -</b></u>	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
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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

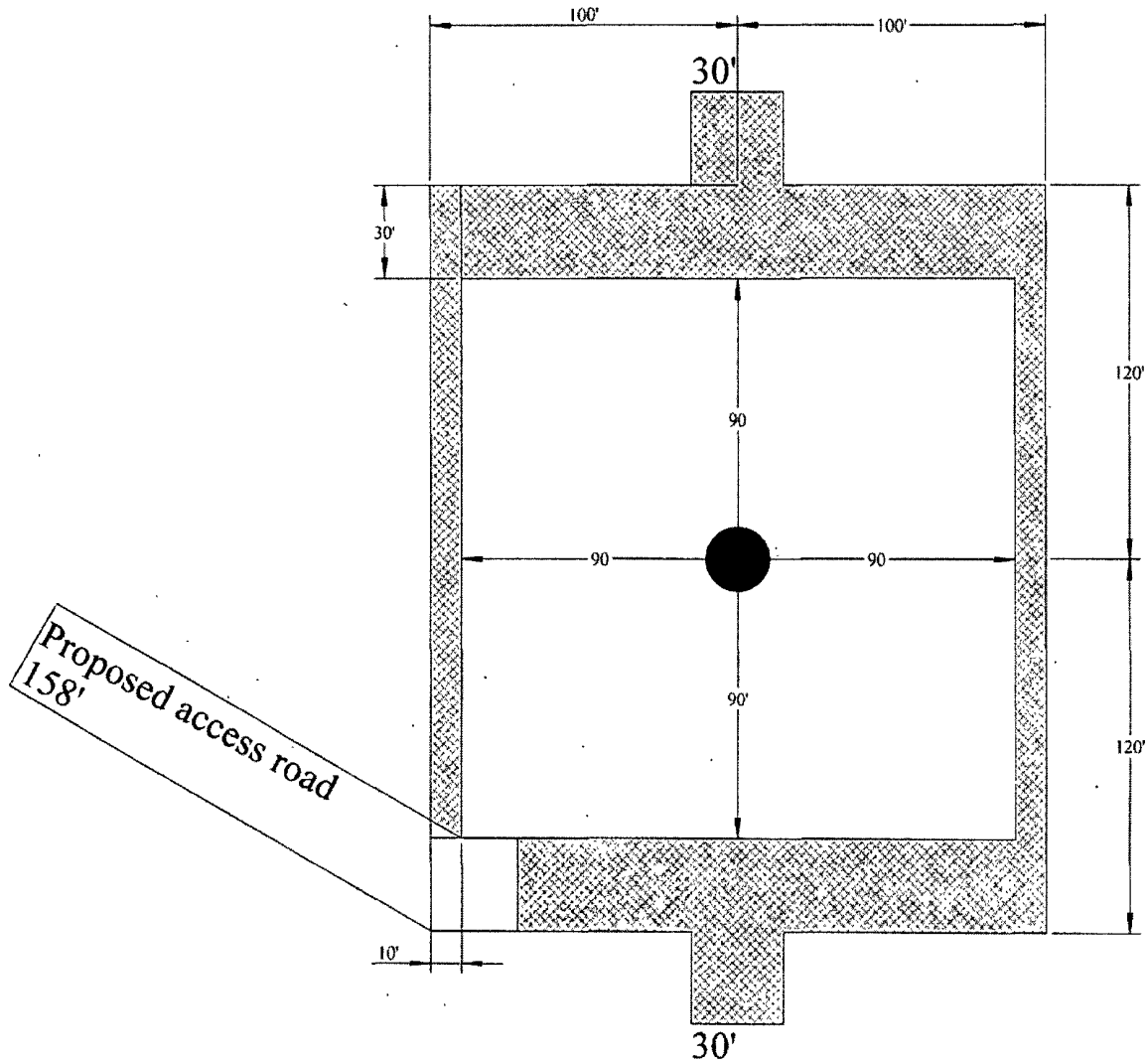
Agency Call List		
City	Agency or Office	Telephone Number
Artesia	Ambulance	911
Artesia	State Police	575-746-2703
Artesia	Sheriff's Office	575-746-9888
Artesia	City Police	575-746-2703
Artesia	Fire Department	575-746-2701
Artesia	Local Emergency Planning Committee	575-746-2122
Artesia	New Mexico OCD 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

# Rig Layout

## Interim Reclamation & Production Facilities



LIME ROCK RESOURCES II-A, L.P.  
EAGLE 35 A FEDERAL #21

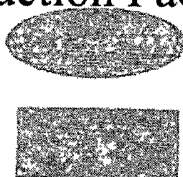
Well Bore

Production Facilities

North



Interim Reclamation



Flowline



## PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Lime Rock Resources II A LP
LEASE NO.:	NM117807
WELL NAME & NO.:	21 Eagle 35 A Federal
SURFACE HOLE FOOTAGE:	455' FNL & 990' FEL
BOTTOM HOLE FOOTAGE	
LOCATION:	Section 35, 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 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
  - 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)**

### **Surface flowline application**

**Surface flowline shall be applied for by sundry notice**

### **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, situating 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) 234-6235 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

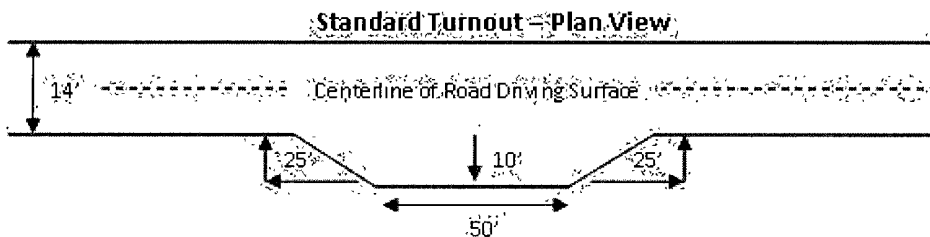
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

### 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:

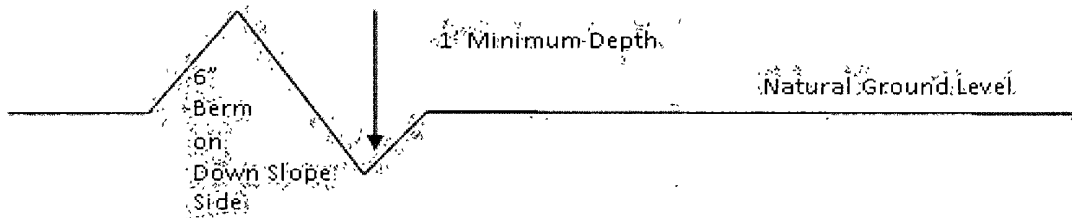


### Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing 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**

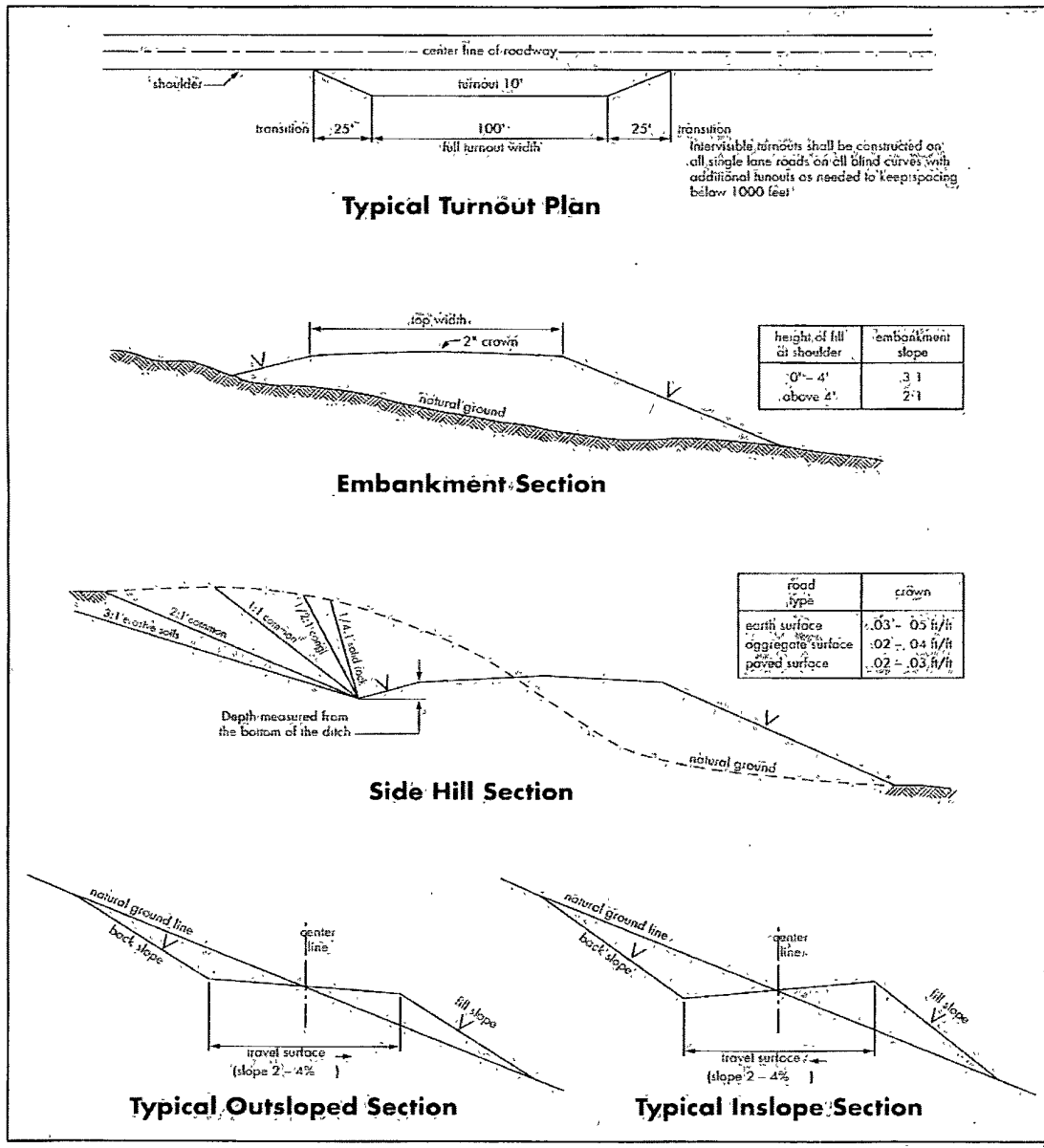
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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 should be activated prior to drilling out the surface casing shoe. **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 (horizontal well – vertical portion of hole) 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 – CONTINGENCY CASING WILL BE REQUIRED IF LOST CIRCULATION OCCURS WHILE DRILLING THE SURFACE HOLE. THE SURFACE HOLE WILL HAVE TO BE REAMED AND A LARGER CASING INSTALLED. 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.**

**Possible lost circulation in the Grayburg and San Andres formations.**

1. The **8-5/8** inch surface casing shall be set at approximately **350** feet and cemented to the surface. **Additional cement may be required – excess calculates to 19%.**
  - 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.

2. 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.

3. 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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 2000 (2M) psi.
3. 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**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
  - c. The results of the test shall be reported to the appropriate BLM office.

- d. 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.**
- e. 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:

#### **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.

**CRW 091012**

## **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 (not applied for in APD)**

### **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