

OCD-Artesia

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

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- 8 7716 |
| 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 TES |
| 2. Name of Operator LIME ROCK RESOURCES II-A, L.P. | | 7. If Unit or CA Agreement, Name and No. 10/22/2012 |
| 3a. Address 1111 BAGBY ST., STE 4600 HOUSTON, TX 77002 | | 8. Lease Name and Well No. VANDAGRIFF "8" FEDERAL #4 <39517> |
| 3b. Phone No. (include area code) 713-292-9526 | | 9. API Well No. 30-015-40805 |
| 4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface 330' FNL & 990' FWL At proposed prod. zone SAME | | 10. Field and Pool, or Exploratory RED LAKE; GLORIETA-YESO <51120> |
| 14. Distance in miles and direction from nearest town or post office* 8 MILES SOUTHEAST OF ARTESIA, NM | | 11. Sec., T. R. M. or Blk. and Survey or Area UNIT D - SEC. 8 - T18S - R27E |
| 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330' | 16. No. of acres in lease 120 | 12. County or Parish EDDY |
| 18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1040' 475' | 19. Proposed Depth 5000' | 13. State NM |
| 21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3418' GL | 22. Approximate date work will start* 07/01/2012 | 17. Spacing Unit dedicated to this well 40 |
| 20. BLM/BIA Bond No. on file NMB-000716 | | |
| 23. Estimated duration 2-3 WEEKS | | |

24. Attachments

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

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

| | | |
|---|--|------------------|
| 25. Signature | Name (Printed/Typed) LISA BARFIELD dba PETRO ENERGY GROUP | Date 7/5/2012 |
| Title POA AGENT FOR LIME ROCK RESOURCES II-A, L.P. | | |

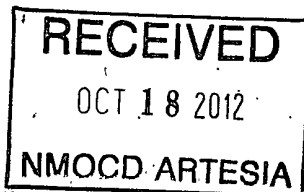
| | | |
|---|--|---------------------|
| Approved by (Signature) /s/ James A. Arnos | Name (Printed/Typed) /s/ James A. Arnos | Date OCT 16 2012 |
| Title for FIELD MANAGER | | |
| Office CARLSBAD FIELD OFFICE | | |

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.

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

(Continued on page 2)

*(Instructions on page 2)



ROS WELL CONTROLLED WATER BASIN

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED

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

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

| | | | | | | |
|--------------------------------------|--|--|--|---|------------------------------|--|
| 1 API Number 30-015-40805 | | 2 Pool Code 51120 | | 3 Pool Name RED LAKE; GLORISTA-4250 | | |
| 4 Property 39517 | | 5 Property Name VANDAGRIFF "8" D FEDERAL | | | 6 Well Number 4 | |
| 7 OGRID No. 277-255333-558 | | 8 Operator Name LIME ROCK RESOURCES A.L.P. | | | 9 Elevation 3418.1 | |

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 |
|---------------|----------|-------------|-------------|---------|---------------|------------------|---------------|----------------|-------------|
| D | 8 | 18 S | 27 E | | 330 | NORTH | 990 | WEST | 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 |
|---------------|----------|-------------|-------------|---------|---------------|------------------|---------------|----------------|-------------|
| D | 8 | 18 S | 27 E | | 330 | NORTH | 990 | WEST | EDDY |

| | | | |
|---------------------------------|--------------------|-----------------------|--------------|
| 12 Dedicated Acres 40 | 13 Joint or Infill | 14 Consolidation Code | 15 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.

| | | | | | | | |
|---|--|--|--|--|--|--|--|
| SURFACE LOCATION 990' 330' VANDAGRIFF "8" D FEDERAL #4 ELEV. = 3418.1' LAT. = 32.7685387°N; (NAD27) LONG. = 104.3052900°W | | | | 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. Signature: <i>[Signature]</i> Date: 7/5/2012 Printed Name: RICHARD LOGAN BOUGHAN | | | |
| W Q CORNER SEC. 8 LAT. = 32.7621989°N LONG. = 104.3085214°W | | | | E Q CORNER SEC. 8 LAT. = 32.7622147°N LONG. = 104.2913929°W | | | |
| SW CORNER SEC. 8 LAT. = 32.7549446°N LONG. = 104.3085334°W | | | | SE CORNER SEC. 8 LAT. = 32.7549995°N LONG. = 104.2914412°W | | | |
| NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1927 (NAD27), AND ARE IN DECIMAL DEGREE FORMAT. | | | | 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. OCTOBER 14, 2011 Date of Survey Signature and Seal of Professional Surveyor: <i>[Signature]</i> Certificate Number: FILIMON F JARAMILLO, PLS 12797 SURVEY NO. 622 | | | |

CERTIFICATION:

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

Executed this April 25, 2012

Lisa Barfield
POA Agent for Lime Rock Resources II-A, L.P.
12777 Jones Rd., Ste 385
Houston, TX 77070
281-890-1818 (office)

POWER OF ATTORNEY

DESIGNATION OF AGENT

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

Name of Agent: Lisa Barfield dba Petro Energy Group

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

Agent's Telephone Number: 281-890-1818

GRANT OF SPECIAL AUTHORITY

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

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

EFFECTIVE DATE

This power of attorney is effective immediately.

RELIANCE ON THIS POWER OF ATTORNEY

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

SIGNATURE AND ACKNOWLEDGEMENT

Lime Rock Resources II-A, L.P.

By: 

Name: Charles Adcock


Title: Co-Chief Executive Officer

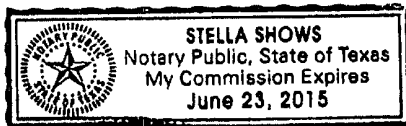
Date: 4/13/2012

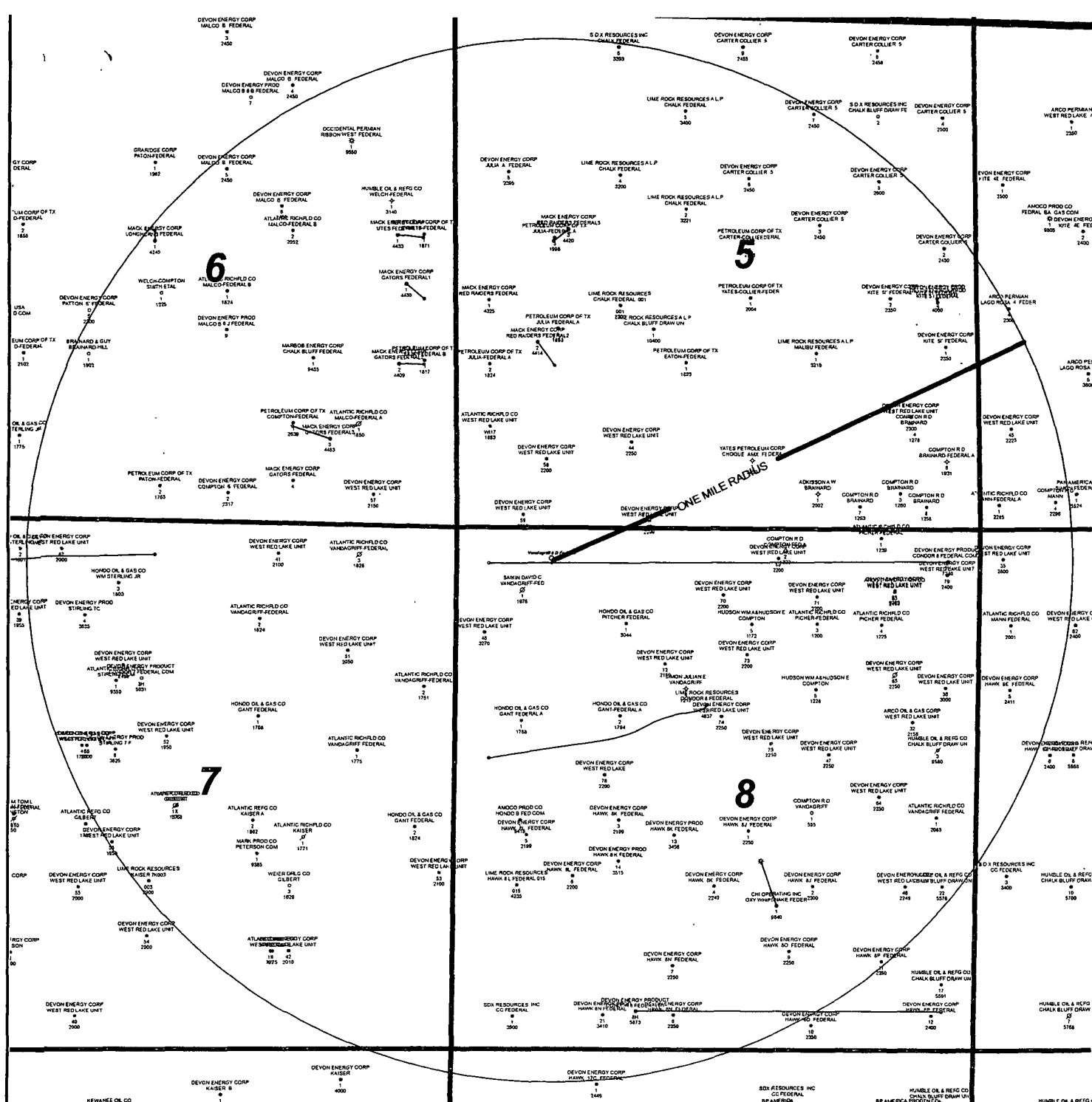
Address: 1111 Bagby Street, Suite 4600, Houston, TX 77002

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

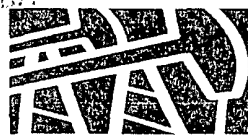
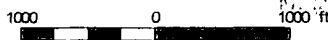
Signature of notarial officer: 
My commission expires: June 23, 2015





(D) S8-T18S-R27E

1 inch = 1400 feet



**LIME ROCK
RESOURCES**

LIME ROCK RESOURCES II-A, L.P.
ONE MILE RADIUS AROUND
VANDAGRIFF 8 D FEDERAL #4

Date:
6 June, 2012

**APPLICATION FOR PERMIT TO DRILL
LIME ROCK RESOURCES II-A, L.P
VANDAGRIFF "8" D FEDERAL #4
330' FNL & 990' FWL, Unit D-Sec. 8-T18S-R27E
Eddy County, NM
Lease Number: NM-7716**

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: (Note – no water wells within 16,400')

| <u>FORMATION</u> | <u>DEPTH</u> | <u>FORMATION FLUID CONTENT</u> |
|-----------------------|--------------|--------------------------------|
| Quaternary – Alluvium | Surface | NA |
| Triassic (down to) | 300' | Water |
| 7 Rivers Sand | Not Present | NA |
| Queen | 486' | Oil and Gas |
| Grayburg | 897' | Oil and Gas |
| Premier | 1120' | Oil and Gas |
| San Andres | 1172' | Oil and Gas |
| Glorieta | 2506' | Oil and Gas |
| Yeso | 2665' | Oil and Gas |
| Tubb | 4163' | Oil and Gas |
| Total Depth | 5000' | Total Depth |

3. The elevation of the unprepared ground is 3418.1' feet above sea level.

4. and 5. A rotary rig will be utilized to drill the well to a total depth of 5200' and run casing. This equipment will be rigged down and the well will be completed with a workover rig.

6. And 7. 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 | 60' | NA | NA | NA | Ready mix | NA | Surface |
| Surface | 12 25" | 8 675" | 24 | J-55 | ST&C | New API | 425' | 280 | 14.8 | 1.35 | Cl C Cmt +0.25 lbs/sk Cello Flake +2% CaCl ₂ | ~200% | Surface |
| Production | 7 875" | 5.5" | 17 | J-55 | LT&C | New API | 5000' | 325 | 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 | 100% | Surface |
| | | | | | | | | 630 | 14.8 | 1.33 | Class C w/ 0.6% R-3 and 1/4 pps cello flake | 50% | |

Note: Production String volumes will be adjusted based on borehole caliper log volumes and actual depth drilled using 35% excess above borehole caliper volume, unless wash out beyond caliper arm reach, then will use original excess cement percentages.

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

8. Proposed Mud Program is as follows

| Depth | 0-425' | 425-4900' | 4900-5000' |
|------------|-------------|---|--|
| Mud Type | Fresh Water | Brine | Brine w/ Gel & Starch |
| Properties | | | |
| MW | 8.5-9.2 | 9.9-10.2 | 9.9-10.2 |
| pH | 10 | 10-11.5 | 10-11.5 |
| WL | NC | NC | 15-20 |
| Vis | 28-34 | 30-32 | 32-35 |
| MC | NC | NC | 1 |
| Solids | NC | <2% | <3% |
| Pump Rate | 300-350gpm | 350-400gpm | 400-450gpm |
| Special | 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 |

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

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

Testing Program: None

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

Coring Program: None

11. Potential Hazards:

No abnormal temperatures or pressures are expected. There is no expected H₂S from this well. An H₂S 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 2200 psi based on 0.44 x TD. The estimated BHT is 135° F.

12. Duration of Operations:

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

Pressure Control Equipment

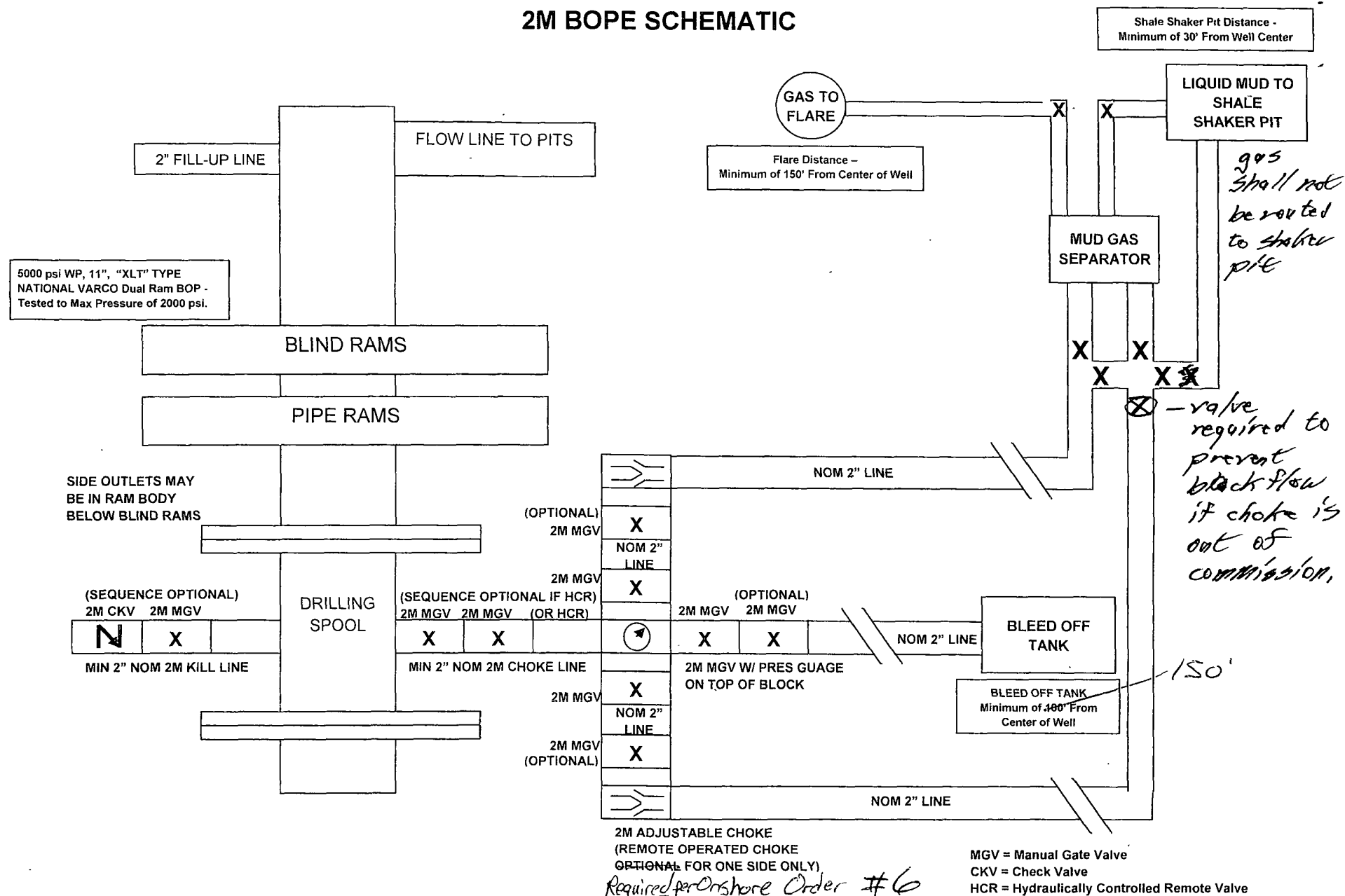
The blowout preventer equipment (BOP) will consist of a 5000 psi rated, 11", "XLT" type, National VARCO double ram preventer that will be tested to a maximum pressure of 2000 psi. The unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and drill pipe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

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

The BOP equipment will consist of the following:

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

2M BOPE SCHEMATIC



LIME ROCK RESOURCES II-A, L.P
VANDAGRIFF "8" D FEDERAL #4
UNIT D, S8-T18S-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

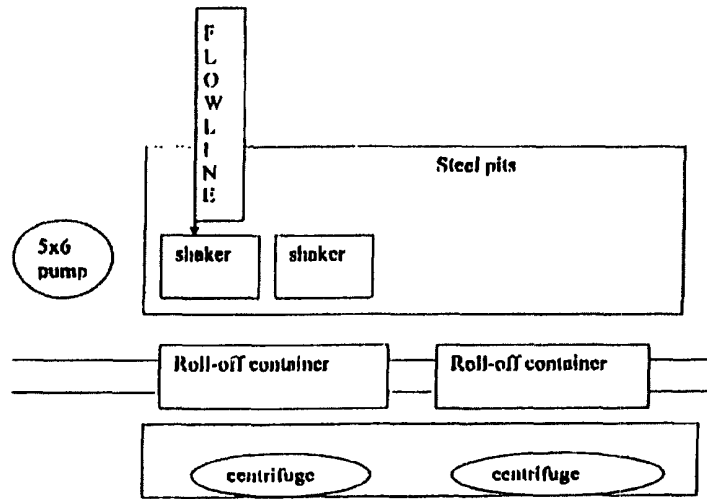
2-500 bbl frac tanks for brine water

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

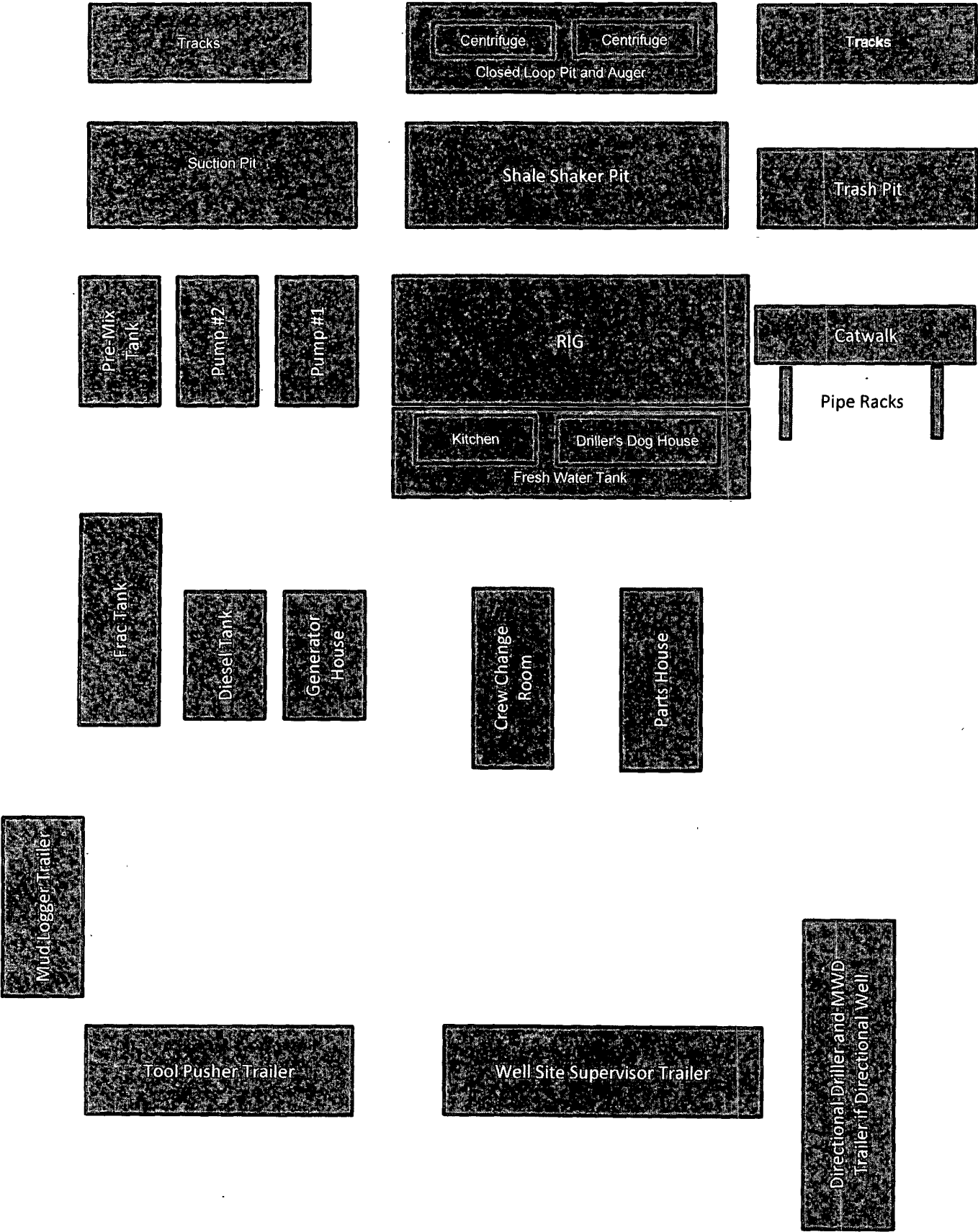


**CLOSED LOOP
SPECIALTY**

Office: 575.746.1689

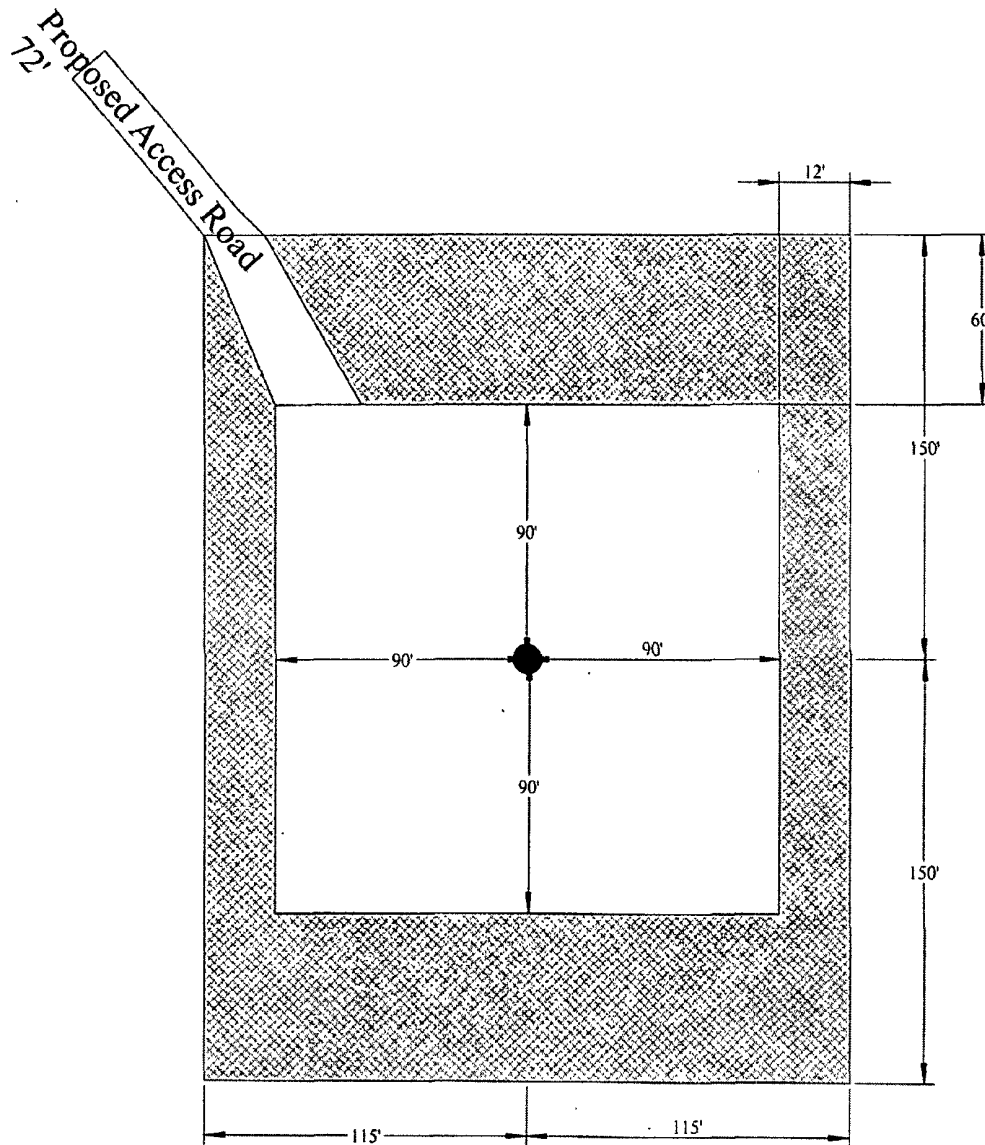
Cell: 575.748.6167

Lime Rock Resources II-A, L.P.
UDI Rig 22 Location Layout



Rig Layout

Interim Reclamation & Production Facilities



LIME ROCK RESOURCES II-A, L.P.
VANDAGRIFF 8 D FEDERAL #4

Well Bore

Production Facilities

North



Interim Reclamation



Flowline

LIME ROCK RESOURCES II-A, L.P

VANDAGRIFF "8" D FEDERAL #4 Well HYDROGEN SULFIDE (H₂S) CONTINGENCY DRILLING PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

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

SUMMARY PLAN

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

H2S CONTINGENCY DRILLING PLAN

B. Auxiliary Rescue Equipment will be available in the designated safety equipment storage area and will include:

- i. Stretcher,
- ii. Two OSHA approved full body harnesses,
- iii. 100 feet of 5/8 inch OSHA approved rope,
- iv. 2-20# Class ABC fire extinguishers.

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

H2S CONTINGENCY DRILLING PLAN

EMERGENCY PROCEDURES

Escape

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

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

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

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

Ignition of Gas Source

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

Characteristics of H₂S and SO₂

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

Contacting Authorities

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

H₂S OPERATIONS

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

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

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

H2S CONTINGENCY DRILLING PLAN EMERGENCY CONTACTS

Company Offices -

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

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

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

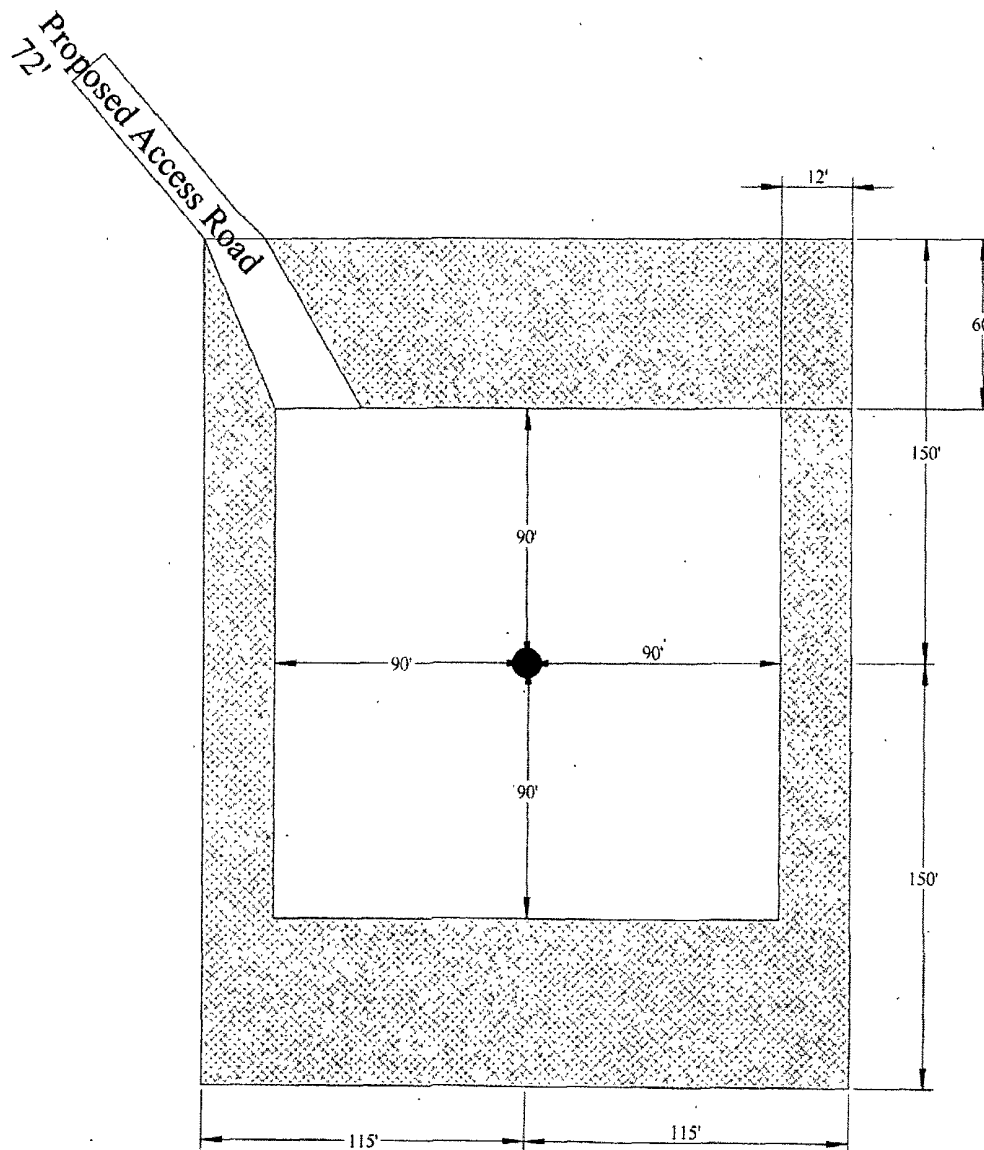
| Agency Call List | | |
|------------------|---|------------------|
| City | Agency or Office | Telephone Number |
| Artesia | Ambulance | 911 |
| Artesia | State Police | 575-746-2703 |
| Artesia | Sheriff's Office | 575-746-9888 |
| Artesia | City Police | 575-746-2703 |
| Artesia | Fire Department | 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.
VANDAGRIFF 8 D FEDERAL #4

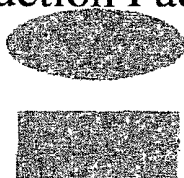
Well Bore

Production Facilities

North



Interim Reclamation



Flowline

PECOS DISTRICT CONDITIONS OF APPROVAL

| | |
|-----------------------|-------------------------------------|
| OPERATOR'S NAME: | LIME ROCK RESOURCES II-A, LP |
| LEASE NO.: | NM7716 |
| WELL NAME & NO.: | 4-VANDAGRIFF 8 D FEDERAL |
| SURFACE HOLE FOOTAGE: | 0330'/N. & 0990'/W. |
| BOTTOM HOLE FOOTAGE | |
| LOCATION: | Section 8, T. 18 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

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

- ☐ **Interim Reclamation**

- ☐ **Final Abandonment & Reclamation**