

OCD-HOBBS

Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

5. Lease Serial No.
NM 0450847

6. If Indian, Allottee or Tribe Name

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

8. Lease Name and Well No.
Bough Federal 13 (36308)

9. API Well No.
30-025-38276

10. Field and Pool, or Exploratory
Bough Abo / 97265

11. Sec., T. R. M. or Blk. and Survey or Area
Section 13, T-9-S, R-35-E

12. County or Parish
Lea

13. State
NM

1a. Type of work: ☒ DRILL ☐ REENTER 30-025-38276

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

2. Name of Operator
Rubicon Oil & Gas, LLC (194266)

3a. Address
508 W. Wall St, STE 500 Midland, TX 79701

3b. Phone No. (include area code)
(432) 687-5100

4. Location of Well (Report location clearly and in accordance with any State requirements.)
At surface 1650 FNL & 1980 FEL
At proposed prod. zone LEA COUNTY CONTROLLED WATER BASIN

14. Distance in miles and direction from nearest town or post office*
1.75 Miles NE of Crossroads, NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
1650 FNL & 1980 FEL

16. No. of acres in lease
160

17. Spacing Unit dedicated to this well
160

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

19. Proposed Depth
9600

20. BLM/BIA Bond No. on file
BLM # 2922 Statewide # B32644643

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
GL 4109'

22. Approximate date work will start*
01/01/2007

23. Estimated duration
14 days

24. Attachments

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

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

25. Signature *Kay Maddox*
Title
Regulatory Agent

Name (Printed/Typed)
Kay Maddox (432) 638-8475

Date
12/05/2006

Approved by (Signature) */s/ James Stovall*
Title
FIELD MANAGER

Name (Printed/Typed)
/s/ James Stovall
Office
CARLSBAD FIELD OFFICE

Date
JAN 23 2007

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 1 YEAR

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.

*(Instructions on page 2)

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

SUBJECT TO LIKE
APPROVAL BY STATE

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

Form 3160-5
(April 2004)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
DM B No. 1004-0137
Expires: March 31, 2007**SUNDRY NOTICES AND REPORTS ON WELLS***Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.***SUBMIT IN TRIPLICATE- Other instructions on reverse side.**1. Type of Well ☐ Oil Well ☒ Gas Well ☐ Other2. Name of Operator **Rabicon Oil & Gas, LLC**3a. Address
508 W. Wall Ste 500 Midland TX 797013b. Phone No. (Include area code)
432-687-5100

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

1650' FRI. & 1980' FEL, Section 13, T9S, R35E

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.

Bough Federal 13 No. 1

9. API Well No.

35-025-10. Field and Pool, or Exploratory Area
Bough Abo

11. County or Parish, State

Leon, New Mexico**12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION				
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off	
<input type="checkbox"/> Subsequent Report	<input checked="" type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity	
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other	
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon		
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal		

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Change to casing program as outlined on the Nine Point Drilling Plan:
Intermediate casing shall consist of +/- 4100' 8-5/8" 32 ppf K55 LTC casing only

14. I hereby certify that the foregoing is true and correct
Name (Printed/Typed)**Hnl Lec**Title **Ops Mgr / Agent**

Signature

Date

12/28/2006**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by

/s/ James Stovall**ACTING FIELD MANAGER**Date **JAN 23 2007**

Conditions of approval, if any, are attached. Approval of this notice 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.

Office **CARLSBAD FIELD OFFICE**

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.

(Instructions on page 2)

DISTRICT I

1825 N. FRENCH DR., HOBBS, NM 58240

DISTRICT II

1301 W. GRAND AVENUE, ARTESIA, NM 58210

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 and Natural Resources Department

OIL CONSERVATION DIVISION

1220 SOUTH ST. FRANCIS DR.

Santa Fe, New Mexico 87505

Form C-102

Revised JUNE 10, 2003

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-38276	Pool Code 77265 (22265)	Pool Name BOUGH ABO Bough; ABO
Property Code 36308	Property Name BOUGH FEDERAL 13	Well Number 1
GRID No. 194266	Operator Name RUBICON OIL AND GAS, LLC	Elevation 4109'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	13	9-S	35-E		1650	NORTH	1980	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres 160	Joint or Infill Replacement well	Consolidation Code	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>GEODETIC COORDINATES NAD 27 NME</p> <p>Y=924376.5 N X=811535.1 E</p> <p>LAT.=33.536865° N LONG.=103.310967° W</p>	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>Kay Maddox</i> Signature</p> <p>KAY MADDOX Printed Name</p> <p>Regulatory Agent Title</p> <p>December 1, 2006 Date</p>
	<p>SURVEYOR CERTIFICATION</p> <p>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>AUGUST 8, 2006</p> <p>Date Surveyed</p> <p><i>Ronald J. Edson</i> Signature</p> <p>RONALD J. EDSON Professional Surveyor</p> <p>NEW MEXICO Professional Surveyor</p> <p>3114/06 Date</p> <p>06 11 1304 Date</p> <p>Certificate No. GARY EDSON 12841 RONALD J. EDSON 3239</p>

Nine Point Drilling Plan
(Supplement to BLM 3160-3)

Rubicon Oil & Gas, LLC

Bough Federal 13 No. 1

Section 13, T-09-S, R-35-E 1650' FNL & 1980' FEL

Field: Bough Abo

Lea Co., NM

1. Name and estimated tops of geologic horizons:

Surface formation is the Quarternary Alluvium.

Yates ~2750, San Andres ~4005, Glorieta. ~5449, Tubb ~6850, Abo ~7648, PermoPenn ~8874, Bough ~9545

2. Protection of possible useable water will be achieved by setting 13-3/8" surface casing @ 400' +/- and cementing it to surface. Isolation of any evaporate/ anahydrite section will be achieved by setting 8-5/8" casing @ 4100' +/- into the San Andres, and cementing back to surface.
3. The well control equipment to be employed during the drilling of this well is illustrated on attached EXHIBIT A. This equipment includes a 13-5/8"- 2 ram BOP, annular BOP and choke manifold of comparable pressure rating. Equipment will be rated for 3000 PSI and will be tested to 5000 psi (except Annular which will be tested to 70% of rated working pressure - 2100 psi) prior to drilling out of the 8-5/8" intermediate casing. Prior to drilling out of the 13-3/8" surface casing the same equipment and casing shall be tested to 1211 PSI or 70% of the burst rating of the casing utilizing the rig pumps. A hydraulic closing unit will be a part of this equipment and will be function tested daily.
4. The casing strings will consist of the following:
Conductor 20" set @ 40'
Surface 13-3/8" OD, 48 #/ft, H40, STC, new pipe @ 400' +/- in 17-1/2" hole.
Intermediate: 8-5/8" OD, 28/32 #/ft, K55, L/STC, new pipe @ 4100' +/- in 12-1/4" hole.
Production: 5-1/2" OD, 17.0 #/ft, L-80, LTC, new pipe @ 9,600' +/- in 7-7/8" hole
5. Cementing programs for the above casing strings are:

Conductor @ 40' cemented to surface utilizing redi-mix cement

Surface @ 400': **Lead Slurry:** 175 sks Class C Lite w/ .25 pps Flocele, 5 pps Gilsonite, yld ~ 1.85 cu ft/ sk, mixed @ 12.7 ppg

Tail Slurry: 200 sks Class C w/ 2% CaCl₂, yld 1.34 cuft/sk, mixed @ 14.8 ppg.

The above volume represents 100% excess over calculated hole volume, and will be adjusted to actual setting depth of casing. The slurries will be preceded by a fresh water spacer, and displaced with fresh water.

Intermediate 1 @ 4100':

Lead Slurry: 1100 sks Class C Interfill w/ additives, yld ~ 1.59 cu ft/sk

Tail Slurry: 200 sks Class C w/ 2% CaCl₂, yld ~ 1.34 cu ft/sk

The above volume represents 15% excess over calculated hole volume - actual volumes will be adjusted to a fluid caliper run at TD of this hole section with 20% excess added. The cement slurries will be preceded by 20 bbls cement wash for mud removal and displaced with fresh water.

Production 1: 9600 to ~6000'

Lead Slurry: 200 sks Class H Lite with vendor recommended additives

Tail Slurry: 250 sks Class H with vendor recommended additives.

Actual cement type and additives will be determined from hole conditions encountered and prospective zones determined from e-logs. Actual volumes pumped will be determined from an open hole caliper recorded over this interval.

6. It is anticipated that this well will be drilled to TD utilizing the fluids shown below:

- 0-400':** Gel/Lime "spud mud" 8.6-9.0 PPG. Utilize native solids to maintain sufficient viscosity to clean hole. Mix paper as required to control seepage loss.
- 400-2200':** 8.4 – 8.6 PPG fresh water. Circulate thru reserve pit for gravitational solids removal. Add paper as required to control seepage loss while maintaining pH at 10.0 – 10.5 using Lime.
- 2200-4100':** Brine / Cut brine 9.2 – 10.0 Circulate thru reserve pit for gravitational solids removal utilizing sweeps for hole cleaning and LCM as needed for seepage.
- 4100-9,600':** Cutbrine/Polymer 8.8-9.2 PPG Utilize polymers and starch to maintain fluid loss 15 to 8 cc range and sufficient mud weights to stabilize shales and minimize any hydrocarbon influx. Utilize sweeps for hole cleaning and LCM as needed for seepage.

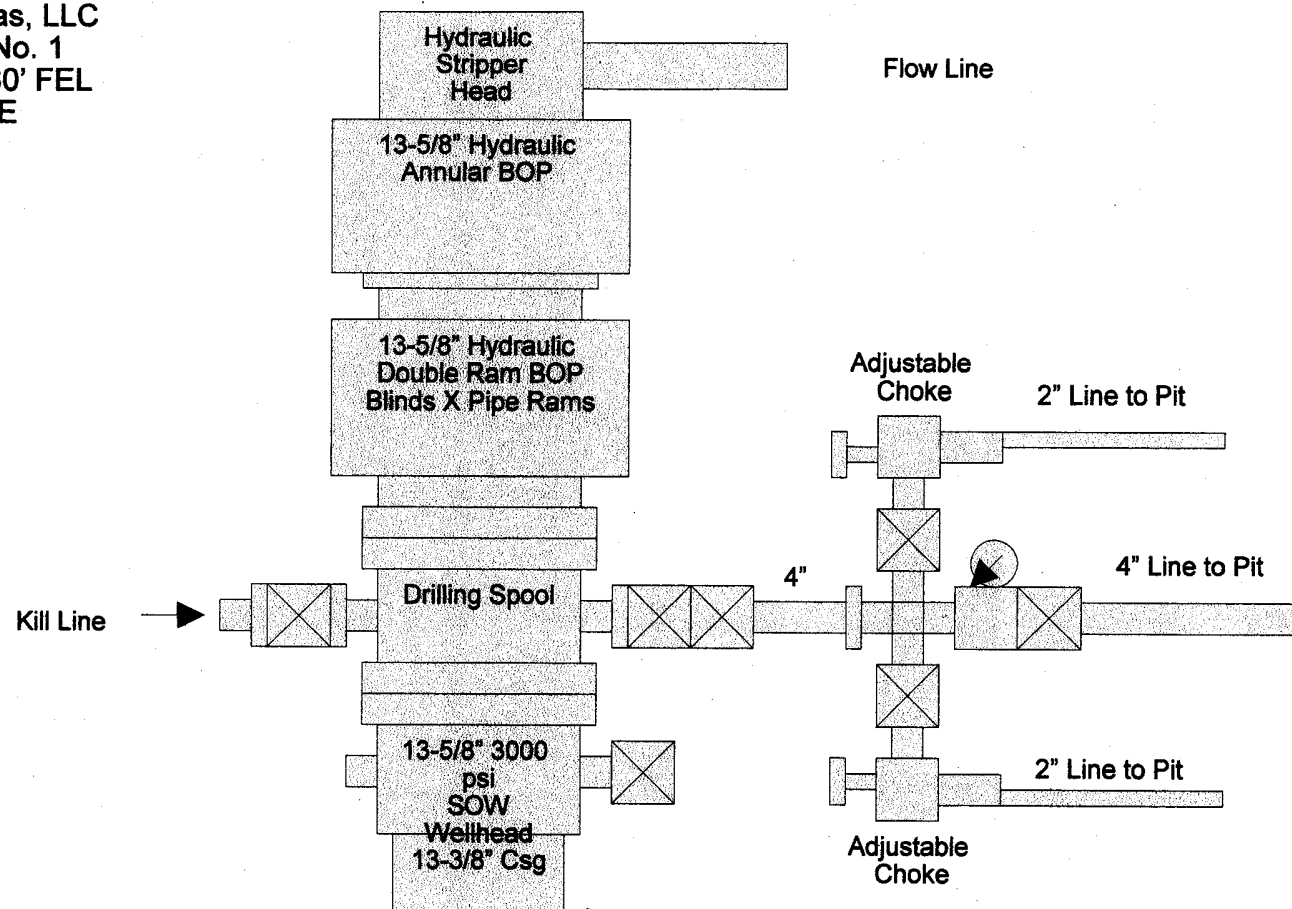
7. Auxiliary equipment will include an upper kelly cock valve, safety valve to fit drill pipe and pressure gauges.

8. No drill stem testing or coring is planned for this wellbore. No Mudlogging will be utilized under the current plan. A Schlumberger Platform Express Triple Combo electric log suite or equivalent will be run at TD.

9. The estimated BHP at TD is not expected to exceed 3500 psi, and a BHT of 145 F is anticipated. There is no H₂S present in the hydrocarbons being produced in this area. Should such unexpected circumstances be encountered the operator and drilling contractor are prepared to take necessary steps to ensure safety of all personnel, and environment. Lost circulation could occur but is not expected to be a serious problem in this area, and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid.

10. It is estimated that this well will be drilled and cased in 22 days. Drilling will commence as soon approval is received and services can be contracted.

Rubicon Oil & Gas, LLC
Bough Federal No. 1
1650' FNL & 1980' FEL
Sec 10T9S, R35E
Lea County, NM



3000 psi Working Pressure
BOPE Configuration
And Choke Manifold

Exhibit "___"

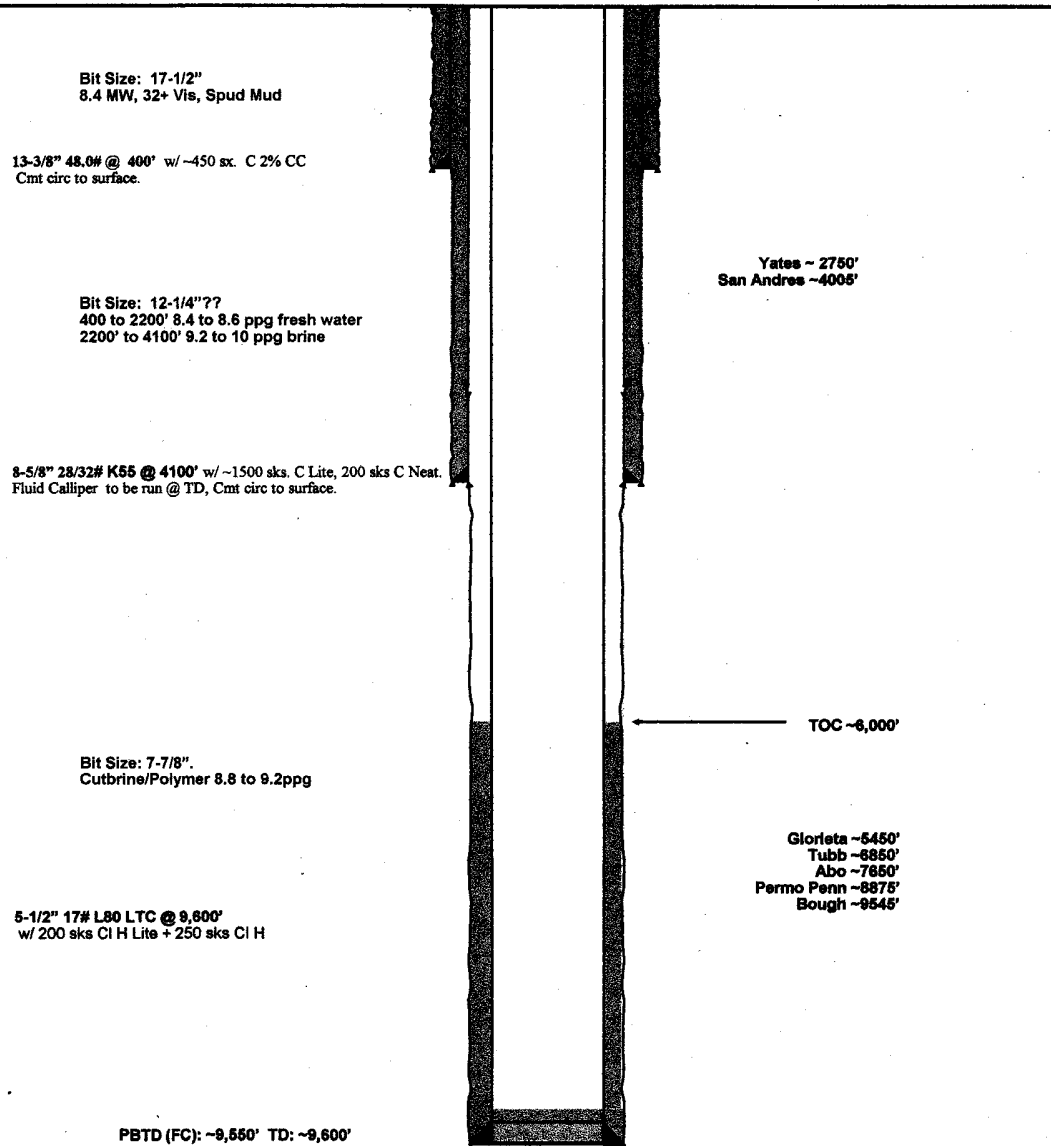
Rubicon Oil & Gas, LLC
Bough 13 Fed No. 1
Bough Prospect
Lea County, New Mexico

KB: NA'
GL: 4109'

TD'd: NA
Spud: 12/2006

1650' FNL
1980' FEL
Section 13
Township 09S
Range 35E

Proposed Wellbore



CONDITIONS OF APPROVAL - DRILLING

Well Name & No. 13-Bough Federal
Operator's Name: Rubicon Oil & Gas, LLC
Location: 1650FNL, 1980FEL, Section 13, T-9-S, R-35-E
Lease: NM 0450847

I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 - for wells in Eddy County; and the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (505) 393-3612 for wells in Lea County, in sufficient time for a representative to witness:

A. Spudding

B. Cementing casing: 13-3/8 inch 8-5/8 inch 5-1/2 inch

C. BOP tests

2. **Although no Hydrogen Sulfide has been reported in this section, it is always a possible hazard.**

3 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.

4. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing (size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15 day time frame.

5. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.

6. A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales.

7. Gamma-Ray/Neutron logs shall be run from the base of the Salado Formation to the surface; cable speed not to exceed 30 feet per minute.

II. CASING:

1. The 13-3/8 inch surface casing shall be set **a minimum of 25 feet into the Rustler Anhydrite approximately 400 feet**, below usable water and cement circulated to the surface. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

Possible lost circulation in the Red Beds. Possible karst type structures.

2. The minimum required fill of cement behind the 8-5/8 inch intermediate casing is **circulate cement to the surface.**

3. The minimum required fill of cement behind the 5-1/2 inch production casing is **cement shall extend upward a minimum of 200 feet into the intermediate casing.**

III. PRESSURE CONTROL:

1. All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling below the 13-5/8 inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced. **BOP description in APD states that a 3M system will be used, but tested to 5000 psi. Test should be to 3000 psi.**

2. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling the surface and intermediate casing shall be 3Mpsi. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling below the 8-5/8 inch casing shall be 3Mpsi.

3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.

- A variance to test the **BOP system and surface casing (13-3/8")** to the reduced pressure of 1000 psi or **70% of the burst rating of the casing** with the rig pumps is approved.
- The tests shall be done by an independent service company.
- The results of the test shall be reported to the appropriate BLM office.
- Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures. Use of drilling mud for testing is not permitted since it can mask small leaks.
- Testing must be done in a safe workman-like manner. Hard line connections shall be required.
- BOPE must be tested prior to drilling into the **Wolfcamp** Formation by an independent service company.

IV. DRILLING MUD:

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** Formation, and shall be used until production casing is run and cemented. Monitoring equipment shall consist of the following:

1. Recording pit level indicator to indicate volume gains and losses.
2. Mud measuring device for accurately determining the mud volumes necessary to fill the hole during trips.
3. Flow-sensor on the flow line to warn of abnormal mud returns from the well.

Engineer on call phone: 505-706-2779

WWI 122206

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

State of New Mexico
Energy Minerals and Natural Resources

Form C-144
June 1, 2004

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☒

Type of action: Registration of a pit or below-grade tank ☒ Closure of a pit or below-grade tank ☐

Operator: **Rubicon Oil and Gas LLC** Telephone: **432-687-5100** e-mail address: **hlee@adventureexpl.com**
Address: **508 West Wall, Suite 500, Midland, Texas 79701**
Facility or well name: **Bough Federal 13-1** API #: **30-02538276** U/L or Qtr/Qtr Unit **G** Sec **13** T **9** S **R** **35** E
County: **Eddy LEA** Latitude **32° 32' 12.71" N** Longitude **103° 18' 39.48" W** NAD: 1927 X 1983 ☐
Surface Owner: Federal ☒ State ☐ Private ☐ Indian ☐

Pit Type: Drilling <input checked="" type="checkbox"/> Production <input type="checkbox"/> Disposal <input type="checkbox"/> Workover <input type="checkbox"/> Emergency <input type="checkbox"/> Lined <input checked="" type="checkbox"/> Unlined <input type="checkbox"/> Liner type: Synthetic <input checked="" type="checkbox"/> Thickness 12 mil Clay <input type="checkbox"/> Pit Volume 25,000 bbl	Below-grade tank Volume: _____ bbl Type of fluid: _____ Construction material: _____ Double-walled, with leak detection? Yes <input type="checkbox"/> If not, explain why not. _____
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.) 110'	Less than 50 feet (20 points) 50 feet or more, but less than 100 feet (10 points) 0 100 feet or more (0 points)
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes (20 points) 0 No (0 points)
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet (20 points) 200 feet or more, but less than 1000 feet (10 points) 0 1000 feet or more (0 points)
Ranking Score (Total Points) 0	

If this is a pit closure: (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if you are burying in place) onsite ☒ offsite ☐ If offsite, name of facility _____. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☐ Yes ☐ If yes, show depth below ground surface _____ ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments:

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines X, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Date: **JAN 24, 2006**

Printed Name/Title **HAL LEE Agent/Operator** Signature **Hal Lee**

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:

Printed Name/Title **CHRIS WILLIAMS (DIST. SUPV)**

Signature **Chris Williams**

Date: **2/9/07**