

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

S OCD-ARTESIA

FORM APPROVED
OMB 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 ☐ Other

2. Name of Operator
COG Operating LLC

3a. Address
550 W. Texas Ave., Suite 1300 Midland, TX 79701

3b. Phone No. (include area code)
432-685-4340

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

SURFACE: 330' FNL & 330' FEL
Section 21, T16S, R28E, UL A

BHL: 330' FNL & 330' FWL
Section 21, T16S, R28E, UL D

5. Lease Serial No

NMN-100844

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No

Reindeer 21 Federal #2

9. API Well No.

30-015-35897

10. Field and Pool, or Exploratory Area

Crow Flats, Abo

11. County or Parish, State

Eddy County, NM

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 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 checked="" type="checkbox"/> Other Change pool & submit revised drilling plan
	<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 recompleat 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 recompleat 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.)

COG Operating LLC respectfully requests permission to change the pool from Wolfcamp to Abo.
Attached is a revised drilling plan to reflect changes.

**SUBJECT TO LIKE
APPROVAL BY STATE**

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

14. I hereby certify that the foregoing is true and correct
Name (Printed/Typed)

Phyllis A. Edwards

Title Regulatory Analyst

Signature

Phyllis A. Edwards

Date

04/21/2008

APPROVED

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

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

Title

Office

Date

APR 23 2008

Wesley W. Ingram
WESLEY W. INGRAM

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)

**Accepted for record
NMOCD**

**ATTACHMENT TO FORM 3160-3
COG Operating LLC
Reindeer "21" Federal # 2
SL: 330' FNL & 330' FEL, Unit A
BHL: 330' FNL & 330' FWL, Unit D
Sec 21, T16S, R28E
Eddy County, NM
Revised 4/21/08**

1. Proration Unit Spacing: 160 Acres
2. Ground Elevation: 3599'
3. Proposed Depths: Pilot hole TD = 6700', Horizontal TVD = 6555', Horizontal MD = 11500'
4. Estimated tops of geological markers:

Quaternary	Surface
Yates/Seven Rivers	600'
Queens	1120'
San Andres	1940'
Glorietta	3350'
Abo	5375'
Top Basal Abo	6520'

5. Possible mineral bearing formations:

Water Sand	Fresh Water	150'
San Andres	Oil / Gas	1940'
Glorietta	Oil / Gas	3350'
Abo	Oil / Gas	5375'
Top Basal Abo	Oil / Gas	6520'

- ## 6. Casing Program

<u>Hole size</u>	<u>Interval</u>	<u>OD of Casing</u>	<u>Weight</u>	<u>Cond.</u>	<u>Collar</u>	<u>Grade</u>
17-1/2"	0' - +/-500'	13-3/8"	48#	New	STC	H40
Collapse sf - 2.98, Burst sf – 2.33, Tension sf – 13.42						
12 1/4"	0' - 1800'	9-5/8"	40#	New	STC	J-55
Collapse sf - 2. 86, Burst sf – 1.42, Tension sf – 7.22						
8-3/4"	0' – 6100'MD	7"	26#	New	LTC	P-110
Collapse sf - 2. 18, Burst sf – 1.53, Tension sf – 4.37						
6-1/8"	5950' – 11150'MD	4-1/2"	11.6#	New	BTC	P-110
Collapse sf – 2.47, Burst sf – 1.64, Tension sf – 4.48						

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7. Cement Program

13 3/8" Surface Casing set at +/- 500', Circ to Surf with +/- 500 sx Class "C" w/ 2% CaCl₂, 1.35 yd.

9 5/8" Intermediate Casing set at +/- 1800', Circ. to Surf with +/- 600 sx 35/65 Poz "C", 2.05 yd. & 200 sx Class "C" w/ 2% CaCl₂, 1.35 yd.

7" Production Casing set at +/- 6100' MD, Cement with +/- 500 sx. 50/50/10 "C", 2.45 yd & +/- 200 sx Class "H", 1.18 yd., Est. TOC @ 200' minimum tie back into intermediate casing.

4 1/2" Production Liner set from +/- 5950' to +/-11150' MD, 6555' TVD, Liner run with +/- 5 isolation Packers and Sliding sleeves in un-cemented Lateral.

8. Pressure Control Equipment:

After setting 13 3/8" casing and installing 3000 psi casing head, NU 13 5/8" 3000 psi annular BOP. Test annular BOP, casing and manifold with clear fluid to 1000 psi w/ rig pump.

After setting 9 5/8" casing and installing 3000 psi casing spool, NU 3000 psi double ram BOP and 3000 psi annular BOP. Test double ram BOP and manifold to 3000# with clear fluid and annular to 1500 psi using an independent tester, this equipment will be used continuously until TD is reached. Blind rams will be operationally checked on each trip out of hole. Pipe rams will be operationally checked each 24 hour period. These checks will be noted on daily tour sheets. Other accessories to the BOP equipment include a Kelly cock and floor safety valves, choke lines and choke manifold with 3000 psi WP rating.

9. Proposed Mud Circulating System

<u>Interval</u>	<u>Mud Wt.</u>	<u>Visc.</u>	<u>FL</u>	<u>Type Mud System</u>
0' - 500'	8.5	28	NC	Fresh water native mud w/ paper for seepage and sweeps. Lime for PH.
500' - 1800'	9.1	30	NC	Brine mud, lime for PH and paper for seepage and sweeps.
1800' - 5300'	9.1	29	NC	Drill section with fresh water/cut brine circulating the reserve utilizing periodic sweeps of paper as needed for seepage control and solids removal.
5300' - 11150'	9.5	36	10	Drill horizontal section with XCD polymer / cut brine / starch.

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times.

10. Production Hole Drilling Summary:

Drill 8-3/4" pilot hole thru Top Basal Abo to +/- 6700', run open hole logs. Spot 350 sx. "H" Kick off plug from +/- 6700' to +/-6000'. Dress off to 6100' and set 7" production casing. Drill 6-1/8" hole and kick off at +/- 6200', building curve over +/- 350' to horizontal at 6555' TVD. Drill horizontal section in an westerly direction for +/-4500' lateral to TD at +/-11150' MD. Run 4-1/2" production liner in Open hole lateral and set isolation packers.

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COG Operating LLC
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11. Auxiliary Well Control and Monitoring Equipment

- A. Kelly cock will be kept in the drill string at all times.
- B. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

12. Logging, Testing and Coring Program:

- A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log and will be ran from T.D. in Pilot hole to 9 5/8" casing shoe.
- B. The mud logging program will consist of lagged 10' samples from intermediate casing point to T.D. in vertical pilot hole and from Kick off point to TD in Horizontal hole.
- C. Drill Stem test is not anticipated.
- D. No conventional coring is anticipated.
- E. Further testing procedures will be determined after the 5 1/2" production casing has been cemented at TD based on drill shows and log evaluation.

13. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 110 degrees and estimated maximum bottom hole pressure is 2838 psig. Low levels of Hydrogen sulfide have been monitored in producing wells in the area, so H₂S may be present while drilling of the well. An H₂S plan is attached to the Drilling Program. No major loss of circulation zones has been reported in offsetting wells.

14. Anticipated Starting Date

Drilling operations will commence approximately on October 15 2007 with drilling and completion operations lasting approximately 45 days.

**Reindeer 21 Federal 2
COG Operating LLC
April 23, 2008
Conditions of Approval**

- 1. Pool changes have to be approved by NMOCD. Copy of Approval must be in BLM CFO prior to drilling second intermediate.**
- 2. Well bore for 9-5/8" casing to be drilled with fresh water.**
- 3. Operator shall provide method of verification that TOC on 7" is a minimum of 200' inside 9-5/8" casing.**
- 4. Production liner packer assembly to be a minimum of 200' inside 7" casing.**
- 5. Packer on production liner is to be tested per Onshore Oil and Gas Order 2.III.B.1.b. Please call BLM for witness of seal test.**

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