

ATS-12-932

Form 3160-3  
(April 2004)

OCD Artesia

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

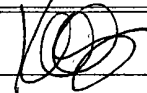
FORM APPROVED  
OMB No 1004-0137  
Expires March 31, 2007

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No <b>NMLC-028731B</b>
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name N/A
2. Name of Operator <b>COG Operating LLC</b>		7. If Unit or CA Agreement, Name and No. <b>NMNM-111789X; Dodd Federal Unit</b>
3a. Address <b>550 W. Texas Ave., Suite 100 Midland, TX 79701</b>		8. Lease Name and Well No. <b>DODD FEDERAL UNIT #564</b>
3b. Phone No. (include area code) <b>432-685-4384</b>		9. API Well No. <b>30-015- 40603</b>
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface <b>2310' FSL &amp; 1700' FWL, Unit K</b> At proposed prod zone		10. Field and Pool, or Exploratory <b>Dodd; Gloriaeta-Upper Yeso</b>
14. Distance in miles and direction from nearest town or post office* <b>2 miles from Loco Hills, NM</b>		11. Sec., T. R. M. or Blk. and Survey or Area <b>Sec 11 T17S R29E</b>
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any) <b>1700'</b>	16. No. of acres in lease <b>1480</b>	17. Spacing Unit dedicated to this well <b>40</b>
18. Distance from proposed location* to nearest well, drilling completed, applied for, on this lease, ft. <b>428'</b>	19. Proposed Depth <b>4550'</b>	20. BLM/BIA Bond No. on file <b>NMB000740; NMB000215</b>
21. Elevations (Show whether DF, KDB, RT, GL, etc.) <b>3632' GL</b>	22. Approximate date work will start* <b>07/30/2012</b>	23. Estimated duration <b>15 days</b>

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 	Name (Printed/Typed) <b>Kelly Holly</b>	Date <b>05/29/2012</b>
Title <b>Permitting Tech</b>		
Approved by (Signature) <b>/s/ Don Peterson</b>	Name (Printed/Typed) <b>/s/ Don Peterson</b>	Date <b>AUG - 8 2012</b>
Title <b>FIELD MANAGER</b>		
Office <b>CARLSBAD FIELD OFFICE</b>		

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

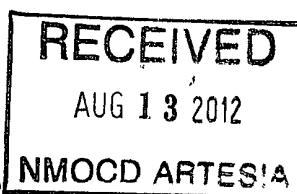
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

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

\*(Instructions on page 2)

Roswell Controlled Water Basin



Approval Subject to General Requirements  
& Special Stipulations Attached

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

I hereby certify that I, or persons under my direct supervision, have inspected the drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or COG Operating, LLC, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed this 21st day of May, 2012.

Signed: Carl Bird

Printed Name: Carl Bird

Position: Drilling Engineer

Address: 550 W. Texas, Suite 1300, Midland, Texas 79701

Telephone: (432) 683-7443

Field Representative (if not above signatory): Same

E-mail: cbird@concho.com

DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 353-6161 Fax: (575) 393-0720

DISTRICT II  
811 S. First St., Artesia, NM 88210  
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

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

Form C-102  
Revised August 1, 2011  
Submit one copy to appropriate  
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015- <b>40603</b>	Pool Code 97917	Pool Name Dodd; Glorieta-Upper Yeso
Property Code 308195	Property Name DODD FEDERAL UNIT	Well Number 564
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 3632'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	11	17-S	29-E		2310	SOUTH	1700	WEST	EDDY

Bottom Hole Location If Different From Surface

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

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			4550 8/8

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>SURFACE LOCATION Y=672353.6 N X=587621.2 E LAT.=32.848060° N LONG.=103.048023° W</p> <p>SEE DETAIL</p> <p>1700'</p> <p>2310'</p> <p>DETAIL</p> <p>3631.1' 3630.0' 3627.2' 3630.1'</p>	<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p> 5-25-12 Signature Date</p> <p>Kelly J. Holly Printed Name</p> <p>kholly@concho.com E-mail Address</p> <p><b>SURVEYOR CERTIFICATION</b></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>MAY 2, 2012 Date of Survey</p> <p>Signature of Professional Surveyor: </p> <p>Certificate Number: 3239 Ronald J. Eidson 12641 Professional Surveyor 3239</p> <p>AF JWSC W.O. 12.11.0386</p>
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#### 4. Casing Program

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	Jt.	brst/clps/ten
17 1/2"	0-300' 26"	13 3/8"	48#	H-40/J-55 hybrid	ST&C/New	ST&C	9.22/3.943/15.8
11"	0-850' 41"	8 5/8"	24or32#	J-55	ST&C/New	ST&C	3.03/2.029/7.82
7 7/8"	0-TD	5 1/2"	15.5or17#	J-55orL-80	LT&C/New	LT&C	1.88/1.731/2.42

#### 5. Cement Program

13 3/8" Surface Casing:

Class C w/ 2% CaCl<sub>2</sub> + 0.25 pps CF, 400 sx, yield 1.32 cuft/sk, 14.8 ppg, back to surface. 154% excess

8 5/8" Intermediate Casing:

##### 11" Hole:

**Single Stage:** 50:50:10 C:Poz:Gel w/ 5% Salt +0.25% CF, 300 sx lead, yield-2.45 cuft/sk, 11.8 ppg + Class C w/2% CaCl<sub>2</sub>, 200 sx tail, yield-1.32 cuft/sk, 14.8 ppg, back to surface. 363% excess

**Multi-Stage:** Stage 1: Class C w/2% CaCl<sub>2</sub>, 200 sx, yield - 1.32 cuft/sk, 14.8 ppg; 108% excess Stage 2: 50:50:10 C:Poz:Gel w/ 5% Salt +0.25% CF, 300 sx, yield - 2.45 cuft/sk, 11.8 ppg, back to surface, 726% excess; assumption for tool is lost circulation. Multi stage tool to be set at approximately, depending on hole conditions, 350' (50' below the surface casing). Cement volumes will be adjusted proportionately for depth changes of multi stage tool.

5 1/2" Production Casing:

**Single Stage:** LEAD 500 sx 35:65:6 C:Poz:Gel w/ 5% Salt + 5 pps LCM + 0.2% SMS + 0.3% FL-52A + 0.125 pps CF, yield-2.05 cuft/sk, 12.5 ppg; + TAIL 400 sx 50:50:2 C:Poz:Gel w/ 5% Salt + 3 pps LCM + 0.6% SMS + 1% FL-25 + 1% BA-58 + 0.3% FL-52A + 0.125 pps CF, yield-1.37 cuft/sk, 14.0 ppg, to 200' minimum tie back to intermediate casing. 76.8% open hole excess, cement calculated back to surface.

**Multi-Stage:** Stage 1: (Assumed TD of 4550') 500 sx 50:50:2 C:Poz:Gel w/ 5% Salt + 3 pps LCM + 0.6% SMS + 1% FL-25 + 1% BA-58 + 0.3% FL-52A + 0.125 pps CF, yield - 1.37 cuft/sk, 14.0 ppg, 34% excess; Stage 2: LEAD 450 sx 50:50:2 C:Poz:Gel w/ 5% Salt + 3 pps LCM + 0.6% SMS + 1% FL-25 + 1% BA-58 + 0.3% FL-52A + 0.125 pps CF, yield - 1.37 cuft/sk, 14.0 ppg, + TAIL 250 sx Class C w/ 0.3% R-3 + 1.5% CD-32, yield - 1.02 cuft/sk, 16.8 ppg, 148% open hole excess, cement calculated back to surface. Multi stage tool to be set at approximately, depending on hole conditions, 2500'. Cement volumes will be adjusted proportionately for depth changes of multi stage tool, assumption for tool is water flow.

## 6. Minimum Specifications for Pressure Control

The blowout preventer equipment (BOP) shown in Exhibit #9 will consist of a double ram-type (2000 psi WP) preventer, and in some cases possibly a 2000 psi Hydril type annular preventer as provided for in Onshore Order #2. This unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top of 4 1/2" drill pipe rams on the bottom. A 13-5/8" or 11" BOP will be used, depending on the rig selected, during the drilling of the well. The BOP will be nipped up on the 13 3/8" surface casing with BOP equipment and tested to 2000 psi. When 11" BOP is used the special drilling flange will be utilized on the 13-3/8" head to allow testing the BOP with a retrievable test plug. After setting 8-5/8" the BOP will then be nipped up on the 8 5/8" intermediate casing and tested by a third party to 2000 psi and used continuously until total depth is reached. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve, choke lines and a choke manifold (Exhibit #9) with a 2000 psi WP rating. This equipment will also be tested to rated working pressure by an independent tester.

The majority of the rigs currently in use have a 13-5/8" BOP, so no special provision is needed for most wells in the area for conventionally testing the BOP with a test plug. However, due to the vagaries of rig scheduling, it might be that one of the few rigs with 11" BOP's might be called upon to drill any specific well in the area. Note that intermediate hole size is always 11". Therefore, COG

Operating LLC respectfully requests a variance to the requirement of 13-5/8" BOP on 13-3/8" casing. When that circumstance is encountered the special flange will be utilized to allow testing the entire BOP with a test plug, without subjecting the casing to test pressure. The special flange also allows the return to full-open capability if desired.

See  
COA

## 7. Types and Characteristics of the Proposed Mud System

The well will be drilled to TD with a combination of brine, cut brine and polymer mud system. The applicable depths and properties of this system are as follows:

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-300' 265	Fresh Water	8.5	28	N.C.
300-850' 995	Brine	10	30	N.C.
850'-TD'	Cut Brine	8.7-9.2	30	N.C.

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

## 8. 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.

## 9. Logging, Testing and Coring Program

See COA

- A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log and will be run from TD to Surface.
- B. Drill Stem test is not anticipated.
- C. No conventional coring is anticipated.
- D. 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.

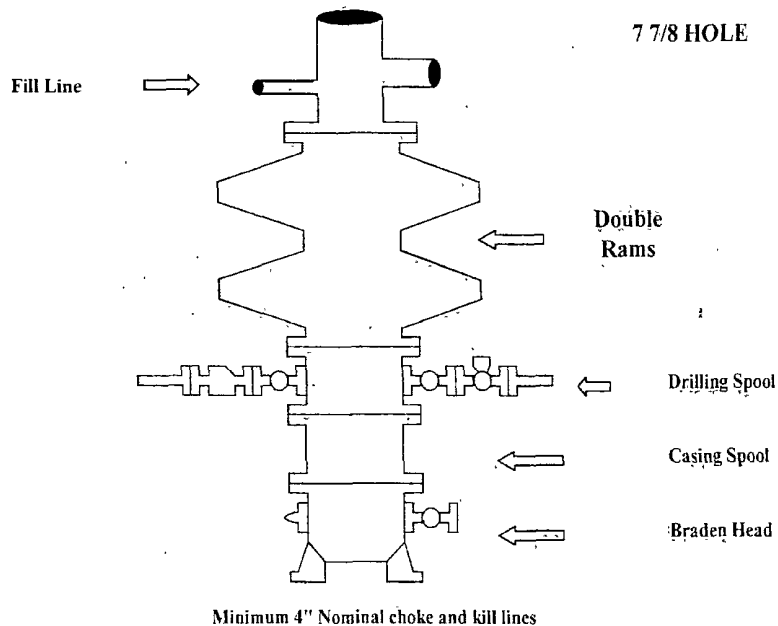
## 10. Abnormal Conditions, Pressure, Temperatures and Potential Hazards

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 110 degrees and the estimated maximum bottom hole pressure is 2300 psig. Measurable gas volumes or Hydrogen Sulfide levels have not been

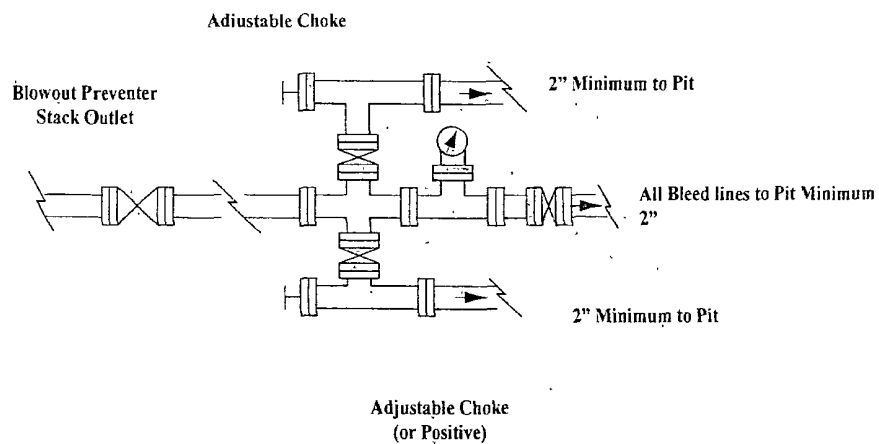
# COG Operating LLC

## Exhibit #9

### BOPE and Choke Schematic



Choke Manifold Requirement (2000 psi WP)  
No Annular Required



**NOTES REGARDING THE BLOWOUT PREVENTERS**

**Master Drilling Plan  
Eddy County, New Mexico**

1. Drilling nipple to be so constructed that it can be removed without use of a welder through rotary table opening, with minimum I.D. equal to preventer bore.
2. Wear ring to be properly installed in head.
3. Blow out preventer and all fittings must be in good condition, 2000 psi WP minimum.
4. All fittings to be flanged
5. Safety valve must be available on rig floor at all times with proper connections, valve to be full 2000 psi WP minimum.
6. All choke and fill lines to be securely anchored especially ends of choke lines
7. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.
8. Kelly cock on Kelly.
9. Extension wrenches and hands wheels to be properly installed.
10. Blow out preventer control to be located as close to driller's position as feasible.
11. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation all API specifications.



## Closed Loop Operation & Maintenance Procedure

All drilling fluid circulated over shaker(s) with cuttings discharged into roll off container.

Fluid and fines below shaker(s) are circulated with transfer pump through centrifuge(s) or solids separator with cuttings and fines discharged into roll off container.

Fluid is continuously re-circulated through equipment with polymer added to aid separation of cutting fines.

Roll off containers are lined and de-watered with fluids re-circulated into system.

Additional tank is used to capture unused drilling fluid or cement returns from casing jobs.

This equipment will be maintained 24 hrs./day by solids control personnel and or rig crews that stay on location.

Cuttings will be hauled to either:

CRI (permit number R9166)

or

GMI (permit number 711-019-001)

dependent upon which rig is available to drill this well.

## COG Operating LLC

### Hydrogen Sulfide Drilling Operation Plan

#### I. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H<sub>2</sub>S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H<sub>2</sub>S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H<sub>2</sub>S on metal components. If high tensile tubular are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H<sub>2</sub>S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H<sub>2</sub>S zone (within 3 days or 500 feet) and weekly H<sub>2</sub>S and well control drills for all personnel in each crew. The initial training session shall include a review of the site-specific H<sub>2</sub>S Drilling Operations Plan and the Public Protection Plan. **The concentrations of H<sub>2</sub>S of wells in this area from surface to TD are low enough that a contingency plan is not required.**

**6. Metallurgy:**

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

**7. Communication:**

- A. Radio communications in company vehicles including cellular telephone and 2-way radio.
- B. Land line (telephone) communication at Office.

**8. Well testing:**

- A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safely and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H<sub>2</sub>S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

**EXHIBIT #7**

**WARNING**  
**YOU ARE ENTERING AN H<sub>2</sub>S**  
**AUTHORIZED PERSONNEL ONLY**

- 1. BEARDS OR CONTACT LENSES NOT ALLOWED
- 2. HARD HATS REQUIRED
- 3. SMOKING IN DESIGNATED AREAS ONLY
- 4. BE WIND CONSCIOUS AT ALL TIMES
- 5. CHECK WITH COG OPERATING FOREMAN AT

**COG OPERATING LLC**  
**1-432-683-7443**  
**1-575-746-2010**

**EDDY COUNTY EMERGENCY NUMBERS**

ARTESIA FIRE DEPT. 575-746-5050  
ARTESIA POLICE DEPT. 575-746-5000  
EDDY CO. SHERIFF DEPT. 575-746-9888

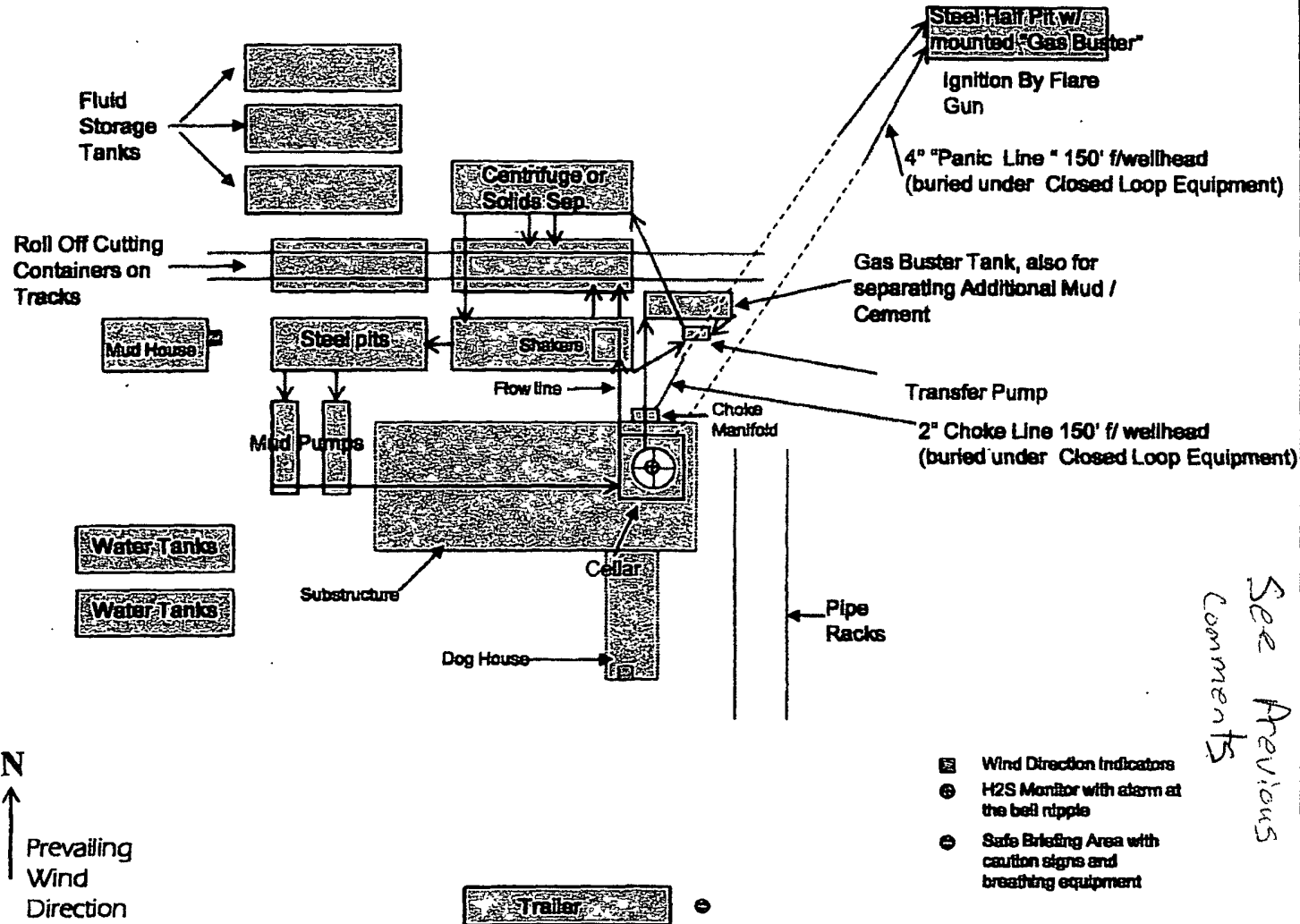
**LEA COUNTY EMERGENCY NUMBERS**

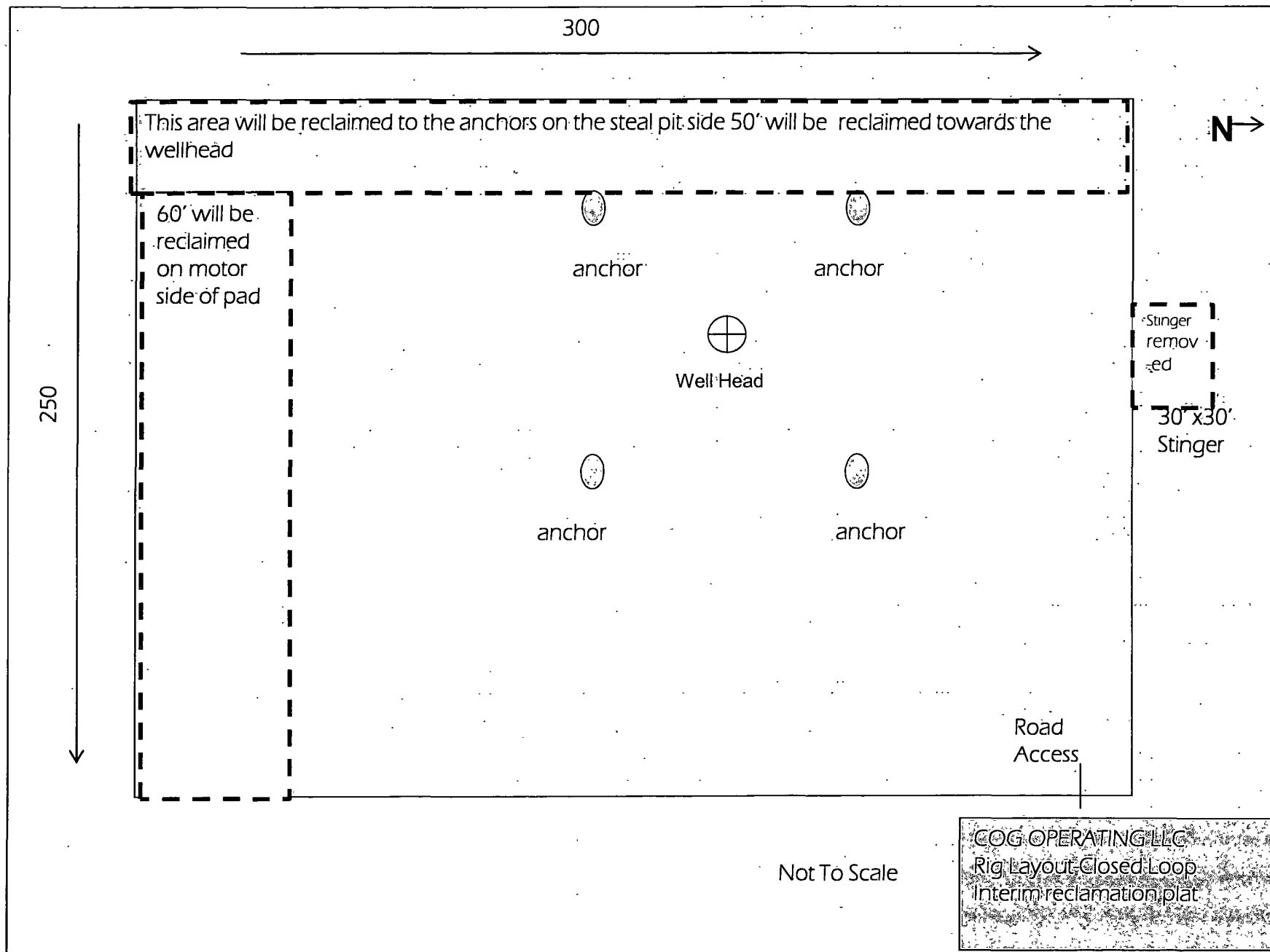
HOBBS FIRE DEPT. 575-397-9308  
HOBBS POLICE DEPT. 575-397-9285  
LEA CO. SHERIFF DEPT. 575-396-1196

COG Operating LLC

# EXHIBIT 8

Drilling Location - H2S Safety Equipment Diagram





# PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG Operating LLC
LEASE NO.:	LC-028731B
WELL NAME & NO.:	Dodd Federal Unit #564
SURFACE HOLE FOOTAGE:	2310' FSL & 1700' FWL
BOTTOM HOLE FOOTAGE:	SAME
LOCATION:	Section 11, T. 17 S., R 29 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**
  - Lesser Prairie-Chicken Timing Stipulations
  - Ground-level Abandoned Well Marker
- ☐ **Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
  - H2S requirement
  - Logging requirement
  - Waste Material and Fluids
- ☐ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
  - Electric Lines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**