## RECEIVED

Form 3160-3

Operator Copy

JAN 13 2010

NMOCD ARTESIA OVED (April 2004) OMB No 1004-0137 Expires March 31, 2007 UNITED STATES Lease Serial No. DEPARTMENT OF THE INTERIOR NMNM-0397623 BUREAU OF LAND MANAGEMENT If Indian, Allotee or Tribe Name APPLICATION FOR PERMIT TO DRILL OR REENTER 7 If Unit or CA Agreement, Name and No DRILL REENTER la. Type of work 8 Lease Name and Well No. lb. Type of Well ✓ Oil Well Gas Well Single Zone Multiple Zone Folk Federal #38 Name of Operator 9 API Well No. COG Operating LLC 30-015- 3 7516 3b. Phone No. (include area code) 3a Address 10 Field and Pool, or Exploratory 550 W. Texas, Suite 1300 Midland TX 79701 Empire; Yeso, East 96610 (432) 685-4385 Location of Well (Report location clearly and in accordance with any State requirements,\*) 11. Sec, T. R M or Blk, and Survey or Area 1500' FSL & 2310' FWL Unit K At surface Sec 17, T17S, R29E At proposed prod. zone 14 Distance in miles and direction from nearest town or post office\* 12. County or Parish 13. State 2.5 miles Northwest of Loco Hills, New Mexico Eddy NM Distance from proposed\* 17 Spacing Unit dedicated to this well 16 No of acres in lease location to neares property or lease line, ft (Also to nearest drig unit line, if any) 1500 400 18 Distance from proposed location\* to nearest well, drilling, completed, 20 BLM/BIA Bond No. on file 19 Proposed Depth 875' 5450' NMB000215 applied for, on this lease, ft 22. Approximate date work will start\* Elevations (Show whether DF, KDB, RT, GL, etc.) 23. Estimated duration 3619' GL 09/30/2009 10 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: 1. Well plat certified by a registered surveyor Bond to cover the operations unless covered by an existing bond on file (see Item 20 above) Operator certification 3 A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office) Such other site specific information and/or plans as may be required by the authorized officer Name (Printed/Typed) 25. Signature Robyn M. Odom 08/24/2009 Title Approved by (Signat Name (Printed/Typed) /s/ Don Peterson NOV 0 5 2009 Title Office CARLSBAD FIELD OFFICE FOR FIELD MANAGER

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.

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.

Conditions of approval, if any, are attached

APPROVAL FOR TWO YEARS

\*(Instructions on page 2)

**Roswell Controlled Water Basin** 

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

Form 3160-5 (April 2004)

3a Address

1. Type of Well ✓ Oil Well □ □

1500' FSL & 2310' FWL Sec.17, T17S, R29E, Unit K

TYPE OF SUBMISSION

Final Abandonment Notice

Notice of Intent

Subsequent Report

Name of Operator COG Operating LLC

550 W. Texas Ave., Suite 1300 Midland, TX 79701

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

#### **UNITED STATES** DEPARTMENT OF THE INTERIOR

## BUREAU OF LAND MANAGEMENT

SUNDRY	NOTICES	AND	REPORTS	ON	WELLS

Change Plans

Casing Repair

Convert to Injection

	UNITED STATES DEPARTMENT OF THE BUREAU OF LAND MAN	INTERIOR	Operator	Expires: March 31, 2007
	NOTICES AND REF	5. Lease Serial No NM-0397623		
	is form for proposals t ill. Use Form 3160-3 (/			6. If Indian, Allottee or Tribe Name
IBMIT IN TRI	<b>PLICATE</b> - Other instr	ructions on reverse :	side.	7. If Unit or CA/Agreement, Name and/or No.
II Oil Well□□□	Gas Well Other Other			8. Well Name and No. Folk Federal #38
rator COG Opera	ting LLC			9. API Well No.
		3b. Phone No. (include area	code)	30-015-
Ave., Suite 1300	Midland, TX 79701	432-685-4395		10. Field and Pool, or Exploratory Area
lell (Footage, Sec., T	T., R., M., or Survey Description)			Empire; Glorieta-Yeso, East 96610
2310' FWL				11. County or Parish, State
, R29E, Unit K				Eddy, NM
12. CHECK AF	PPROPRIATE BOX(ES) TO	INDICATE NATURE (	OF NOTICE, RI	EPORT, OR OTHER DATA
SUBMISSION		ТҮРЕ О	F ACTION	
Intent	Acidize Alter Casing	Deepen Fracture Treat	Production (Star Reclamation	rt/Resume) Water Shut-Off Well Integrity

Other Change V-door

Recomplete

Water Disposal

Temporarily Abandon

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.)

☑ Plug Back

Fracture Treat

New Construction

Plug and Abandon

COG Operating LLC respectfully requests permission to change the V-door to North East parallel with the pipeline.

This change is requested by the Bureau of Land Management.

14. Thereby certify that the foregoing is true and correct Name (Printed/Typed)			,				
Phyllis A. Edwards	Title Re	egulatory Analyst					
Signature Phyllis Q-Edwards	Date	09,	)/18/2009				
	THIS SPACE FOR FEDERAL OR STATE OFFICE USE						
Approved by	Ti	itle Afm	Date 11/5/09	,			
Conditions of approval, if any, are attached. Approval of this notice does not warran certify that the applicant holds legal or equitable title to those rights in the subject lear which would entitle the applicant to conduct operations thereon.		office CARLS	SBAD 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.

#### State of New Mexico

DISTRICT I 1625 N. FRENCH DR., HOBBS, NM 86240

Energy, Minerals and Natural Resources Department

DISTRICT II

1301 W. GRAND AVENUE, ARTESIA, NM 68210

DISTRICT III 1000 Rio Brazos Rd., Aztec, NM 87410

1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

OIL CONSERVATION DIVISION 1220 SOUTH ST. FRANCIS DR. Santa Fe, New Mexico 87505

Form C-102 Revised October 12, 2005 Submit to Appropriate District Office State Lease - 4 Copies Fee Lease - 3 Copies

DISTRICT IV

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name	
30-015-37516	96610	EMPIRE; GLORIETA-YE	SO, EAST
Property Code	Prope	Well Number	
302495	FOLK I	38	
OGRID No.	Opera	ator Name	Elevation
229137	COG OPEI	RATING, LLC	3619'

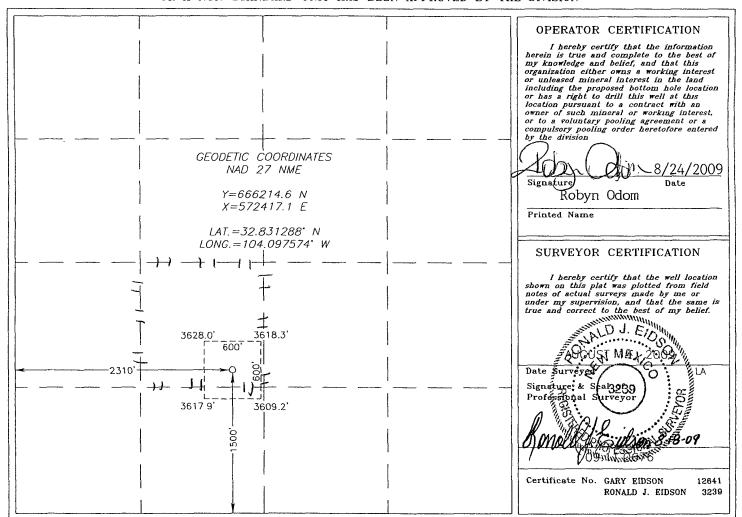
#### Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County	ĺ
K	17	17-S	29-E		1500	SOUTH	2310	WEST	EDDY	

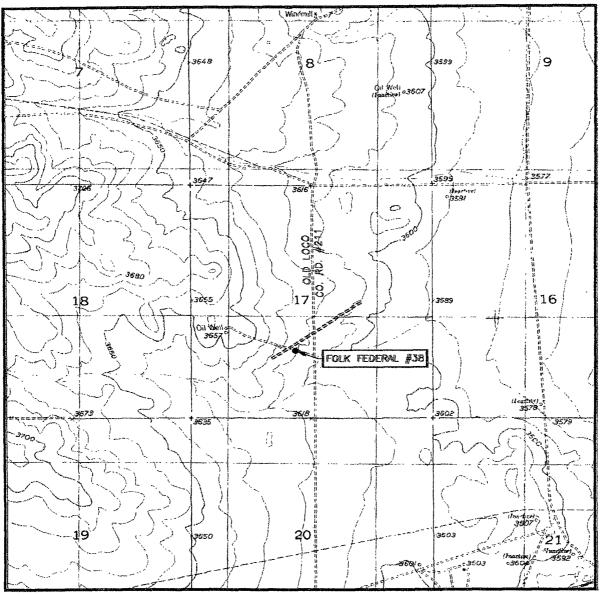
#### Bottom Hole Location If Different From Surface

UL or lot No. Sec	ction Township	Range Lot	Idn Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres	Joint or Infill Co	nsolidation Code	Order No.	1		I	
40							

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



## LOCATION VERIFICATION MAP



SCALE: 1" = 2000"

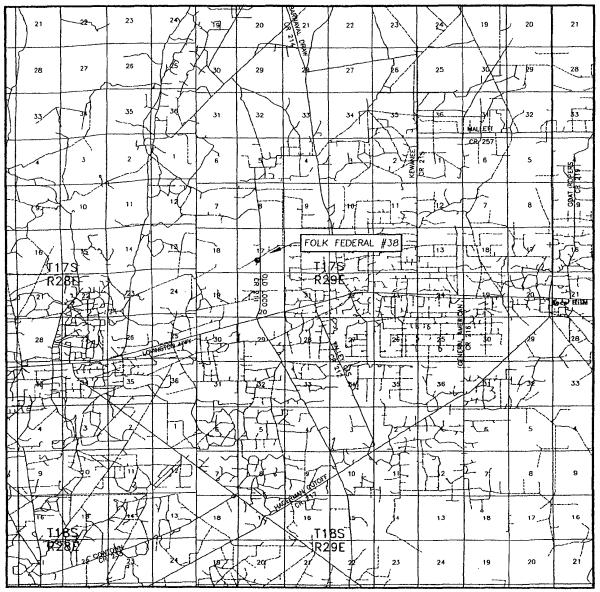
CONTOUR INTERVAL: RED LAKE SE, N.M. - 10"

SEC 1	<u>7 TWMP. 17—S RGE. 29—E</u>
SURVEY	N.M.P.M.
COUNT	Y EDDY STATE NEW MEXICO
DESCRI	PTION 1500" FSL & 2310" FWIL
ELEVATI	ON 3619"
OPERAT	TOR COG OPERATING, LLC
LEASE_	FOLK FEDERAL
	I. TOPOGRAPHIC MAP



IPROMDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
IHOBBS, N.M. 88240
((575) 393-3117

## VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 17 TV	WP. <u>17-S</u> RGE. <u>29-E</u>
SURVEY	N.M.P.M.
COUNTYED	DY STATE NEW MEXICO
DESCRIPTION	1500' FSL & 2310' FWL
ELEVATION	3619'
OPERATOR	COG OPERATING, LLC
LEASE	FOLK FEDERAL



PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117

### SECTION 17, TOWNSHIP 17 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO 3628.0 600' 3618.3 50' NORTH OFFSET 3618.31 00 FOLK FEDERAL #38 150' EAST OFFSET Ó 150' WEST 3615.0 ELEV. 3618.9' LAT.=32.831288 N LONG.=104.097574 W OFFSET 3525.1 150' SOUTH DEFSET 3617.3 3617.9 500° 3609.2' DIRECTIONS TO LOCATION FROM THE INTERSECTION OF U.S. HWY. #82 AND 100 200 Feet CO. RD. #211 (OLD LOCO RD.), GO NORTH ON CO. RD. #211 APPROX. 1.3 MILES. TURN LEFT AND GO WEST APPROX. 0.1 MILE. THIS LOCATION IS APRPOX. 175 FEET SOUTH OF LEASE ROAD. Scale: 1 = 100' OPERATING, COG FOLK FEDERAL #38 WELL LOCATED 1500 FEET FROM THE SOUTH LINE AND 2310 FEET FROM THE WEST LINE OF SECTION 17, TOWNSHIP 17 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO. PROVIDING SURVEYING SERVICES SINCE 1946 TOHN WEST SURVEYING COMPANY 412 N. DAL PASO HOBBS, N.M. 88240 (575) 393-3117 Survey Date: 8/14/09 Sheet Sheets W.O. Number: 09.11.0676 | Dr By; LA Rev 1:N/A Date: 8/18/09 09110676 Scale: 1 "= 100

#### MASTER DRILLING PROGRAM

#### 1. Geologic Name of Surface Formation

Quaternary

#### 2. Estimated Tops of Important Geologic Markers:

Quaternary	Surface
Top of Salt	400'
Base of Salt	800'
Yates	850'
Seven Rivers	1150'
Queen	1750'
Grayburg	2125'
San Andres	2400'
Glorietta	3850'
Yeso Group	3930'

#### 3. Estimated Depths of Anticipated Fresh Water, Oil and Gas

Water Sand	150'	Fresh Water
Grayburg	2125'	Oil/Gas
San Andres	2400'	Oil/Gas
Glorietta	3850'	Oil/Gas
Yeso Group	3930'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 300" and circulating cement back to the surface will protect the surface fresh water sand. The Salt Section will be protected by setting 8 5/8" casing to 850' and circulating cement, in-a-single-or multi-stage job-and/or-with-an-ECP, back to the surface. Any shallower zones above TD, which contain commercial quantities of oil and/or gas, will have cement circulated across them. This will be achieved by cementing, with a single or multi-stage job, the 5 1/2" production casing back 200' into the intermediate casing, to be run at TD. If wellbore conditions arise that require immediate action and/or a change to this program, COG Operating LLC personnel will always react to protect the wellbore and/or environment.

per for phil

Mandan Bushing Danasan Duming Dank Anna

COG Operating LLC Master Drilling Plan Revised 7-22-09 Empire East; Yeso Use for Sections 6-30, T17S, R29E Eddy County, NM

Casing Program 4.

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	Jt.	brst/clps/ten
17 1/2"	0-300' 33	13 3/8"	48#	H-40orJ-55	ST&C/New	ST&C	9.22/3.943/15.8
11"	0-850'	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, 400 sx, yield 1.32, back to surface

8 5/8" Intermediate Casing:

11" Hole:

Single Stage: 50:50:10, 200 sx lead, yield-2.45 + Class C, 200 sx tail, yield-1.32, back to surface.

Multi-Stage:-Stage 1: Class C, 500 sx, yield -\_1-32; Stage 2: Class C, 200 sx, yield - 1.32

5 1/2" Production Casing:

Single Stage: 35:65:6, 500 sx Lead, yield-2.05 + 50.50.2, 400 sx Tail, yield-1.37, to 200' minimum tie back to intermediate casing.

Multi-Stage: Stage 1: 50:50:2, 400 sx, yield - 1.37; Stage 2: 35:65:6, 500 sx, yield 2.05, to 200' minimum tie back to intermediate casing.

#### Minimum Specifications for Pressure Control See COA 6.

The blowout preventer equipment (BOP) shown in Exhibit #9 will consist of a double ram-type (2000 psi WP) preventer. 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. The BOP will be nippled up on the 13 3/8" surface casing with BOP equipment and tested together to 1000 psi-by-rig pump in-one test. The BOP will then be nippled 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 (Exhibit #10) will include a Kelly cock and floor safety valve, choke lines and a choke manifold (Exhibit #11) with a 2000 psi WP rating.

COG Operating LLC
Master Drilling Plan Revised 7-22-09
Empire East; Yeso
Use for Sections 6-30, T17S, R29E
Eddy County, NM

#### 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:



ä

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
, 0- <del>300'-</del> 230'	Fresh Water	8.5	28	N.C.
<del>300</del> -850'	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 ½" production casing has been cemented at TD, based on drill shows and log evaluation.

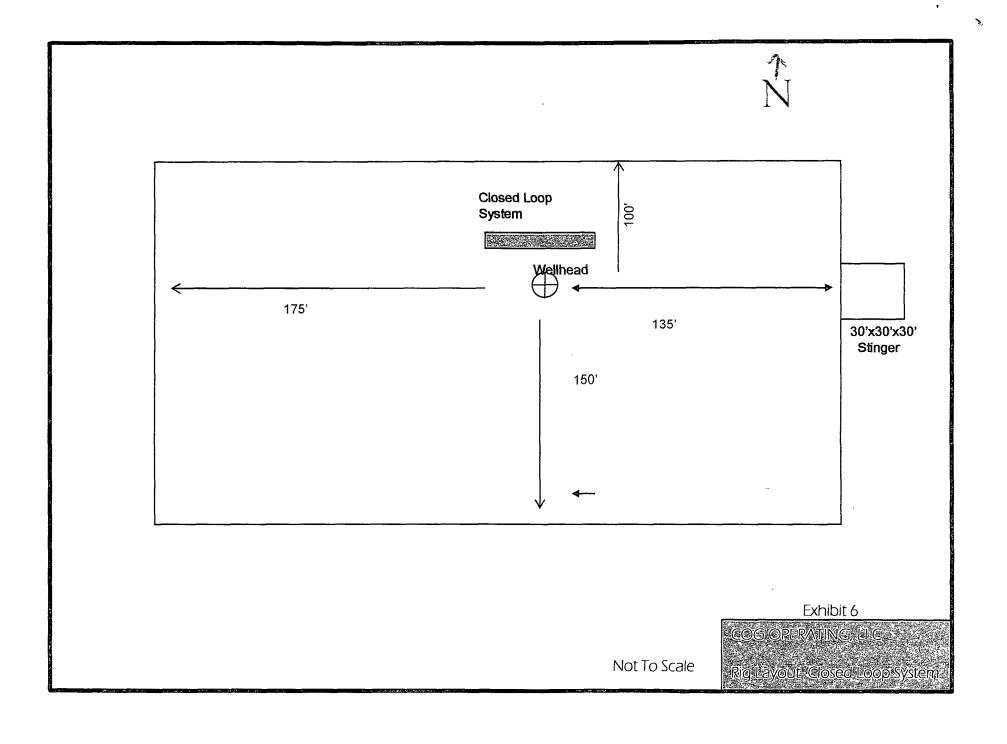
#### 10. Abnormal Conditions, Pressure, Temperatures and Potential Hazards

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 encountered during drilling operations in this area, although a Hydrogen Sulfide Drilling Operation Plan is attached to this program. No major loss of circulation zones has been reported in offsetting wells.

COG Operating LLC
Master Drilling Plan Revised 7-22-09
Empire East; Yeso
Use for Sections 6-30, T17S, R29E
Eddy County, NM

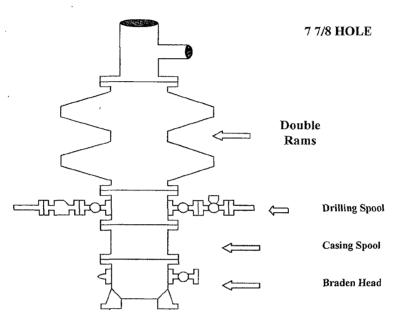
#### 11. Anticipated Starting Date and Duration of Operations

Road and location work will not begin until approval has been received from the BLM. As this is a Master Drilling plan, please refer to the Form 3160-3 for the anticipated start date. Once commenced, drilling operations should be finished in approximately 10 days. If the well is productive, an additional 30 days will be required for completion and testing before a decision is made to install permanent facilities.



## **COG Operating LLC**

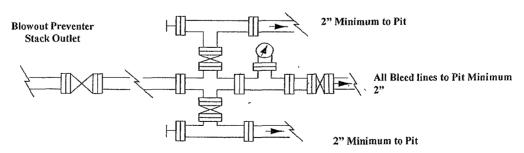
# **Exhibit #9 BOPE and Choke Schematic**



Minimum 4" Nominal choke and kill lines

## Choke Manifold Requirement (2000 psi WP) No Annular Required

#### Adjustable Choke



Adjustable Choke (or Positive)

# 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.

Blowout Preventers Page 2

### 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.

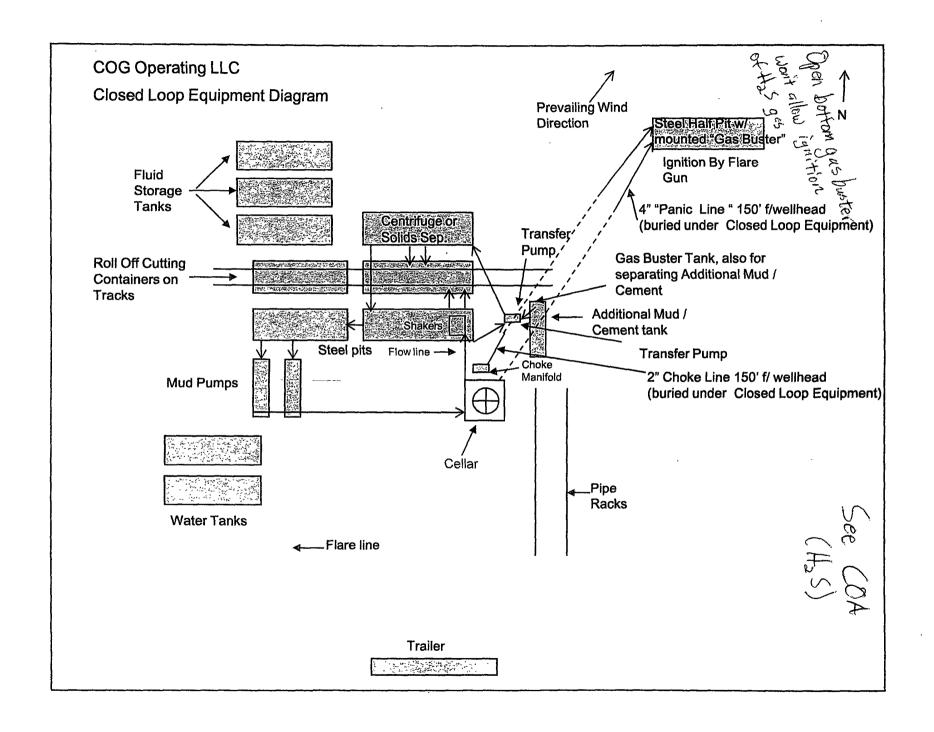
Additional tank is used to capture unused drilling fluid or cement returns from casing jobs.

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 an characteristics of hydrogen sulfide (H2S)
- 2. The proper use and maintenance of personal protective equipment and life support systems.
- 3. The proper use of H2S 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 H2S on metal components. If high tensile tubular are to be used, personnel well 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 H2S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H2S Drilling Operations Plan and the Public Protection Plan. The concentrations of H2S of wells in this area from surface to TD are low enough that a contingency plan is not required.

### II. H2S SAFETY EQUIPMENT AND SYSTEMS

Note: All H2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain H2S.

#### 1. Well Control Equipment:

- A. Flare line.
- B. Choke manifold.
- C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
- D. Auxiliary equipment may include if applicable: annular preventer & rotating head.

#### 2. Protective equipment for essential personnel:

A. Mark II Survive air 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.

#### 3. H2S detection and monitoring equipment:

A. 1 portable H2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 PPM are reached.

#### 4. Visual warning systems:

- A. Wind direction indicators as shown on well site diagram (Exhibit #8).
- B. Caution/Danger signs (Exhibit #7) shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

#### 5. Mud program:

A. The mud program has been designed to minimize the volume of H2S circulated to surface. Proper mud weight, safe drilling practices, and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones.

#### 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 H2S service.
- B. All elastomers used for packing and seals shall be H2S 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 H2S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

#### EXHIBIT #7

# WARNING YOU ARE ENTERING AN H2S

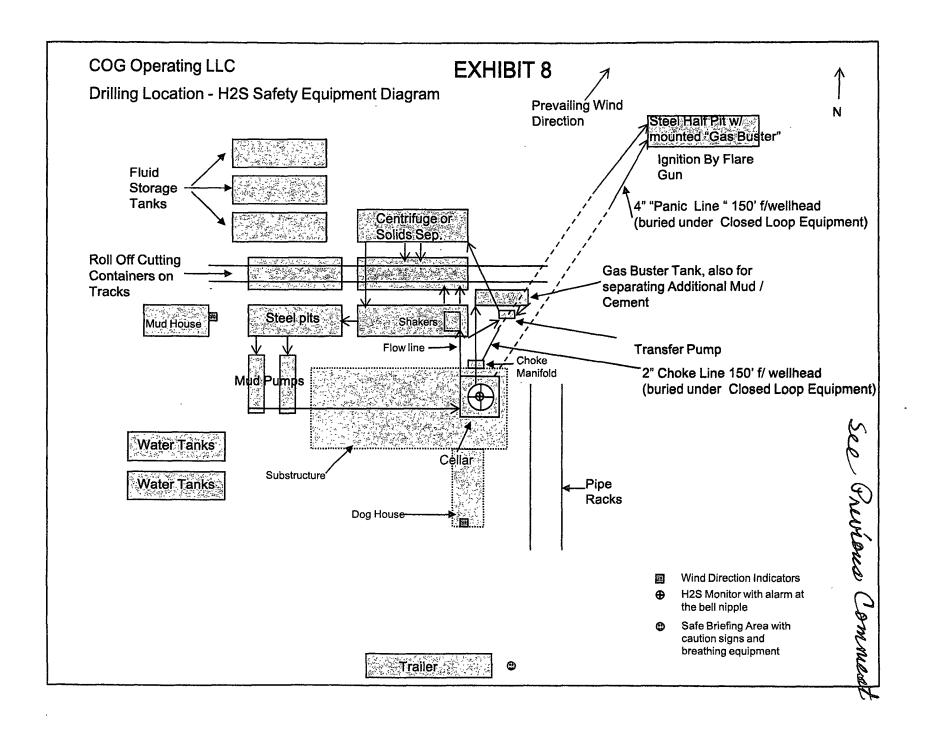
#### AUTHORIZED PERSONNEL ONLY

- 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



#### SURFACE USE AND OPERATING PLAN

#### 1. Existing & Proposed Access Roads

- A. The well site survey and elevation plat for the proposed well is shown in Exhibit #1. It was staked by John West Engineering, Hobbs, NM.
- B. All roads to the location are shown in the topographic map Exhibit #2. The existing lease roads are illustrated and are adequate for travel during drilling and production operations. Upgrading existing roads prior to drilling the well will be done where necessary.
- C. Directions to Location: From the intersection US Highway 82 and Co. Rd. 211 (Old Loco Road), Go North on County Road 211 apprx 1.3 miles. Turn Left and go West apprx 0.1 mile. This location is apprx 175 feet South of lease road. See Vicinity Map, Exhibit #3
- D. Routine grading and maintenance of existing roads will be conducted as necessary to maintain their condition as long as any operations continue on this lease.

#### 2. Proposed Access Road:

Exhibit #4 shows that 0' of new access road will be required for this location. If any road is required it will be constructed as follows:

- A. The maximum width of the running surface will be 14'. The road will be crowned, ditched and constructed of 6" rolled and compacted caliche. Ditches will be at 3:1 slope and 4 feet wide. Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns.
- B. The average grade will be less than 1%.
- C. No turnouts are planned.
- D. No culverts, cattleguard, gates, low water crossings or fence cuts are necessary.
- E. Surfacing material will consist of native caliche. Caliche will be obtained from the nearest BLM approved caliche pit or reserve pit area.

#### 3. Location of Existing Well:

Exhibit #5 shows all existing wells within a one-mile radius of this well.

As shown on this plat there are numerous wells producing from the San Andres and Yeso formations.

#### 4. Location of Existing and/or Proposed Facilities:

- A. COG Operating LLC does operate a production facility on this lease.
- B. If the well is productive, contemplated facilities will be as follows:
  - 1) Production will be sent to the Folk Federal tank battery located at the Folk Federal #2 well location. The facility location is shown in Exhibit #5.
  - 2) The tank battery and facilities including all flow lines and piping will be installed according to API specifications.
  - 3) Any additional caliche will be obtained from a BLM approved caliche pit. Any additional construction materials will be purchased from contractors.
  - 4) Proposed flow lines, will follow an archaeologically approved route to the Folk Federal tank battery located at the Folk Federal #2 well location. The flowline will be SDR 7 3" poly line laid on the surface and will be approximately 2800 in length.
  - 5) It will be necessary to run electric power if this well is productive. Power will be provided by CVE and they will submit a separate plan and ROW for service to the well location.
  - 6) If the well is productive, rehabilitation plans will include the following:
    - a) The original topsoil from the well site will be returned to the location, and the site will be re-contoured as close as possible to the original site.

#### 5. Location and Type of Water Supply:

The well will be drilled with combination brine and fresh water mud system as outlined in the drilling program. The water will be obtained from commercial water stations in the area and hauled to location by transport truck over the existing and proposed access roads shown in Exhibit #2. If a commercial fresh water source is nearby, fast line may be laid along existing road ROW's and fresh water pumped to the well. No water well will be drilled on the location.

#### 6. Source of Construction Materials:

All caliche required for construction of the drill pad and proposed new access road (approximately 2500 cubic yards) will be obtained from a BLM approved caliche pit or the reserve pit.

#### 7. Methods of Handling Water Disposal:

- A. The well will be drilled utilizing a closed loop mud system. Drill cuttings will be held in roll-off style mud boxes and taken to an NMOCD approved disposal site.
- B. Drilling fluids will be contained in steel mud pits.
- C. Water produced from the well during completion will be held temporarily in steel tanks and then taken to an NMOCD approved commercial disposal facility.
- D. Garbage and trash produced during drilling or completion operations will be collected in a trash bin and hauled to an approved landfill. No toxic waste or hazardous chemicals will be produced by this operation.
- E. After the rig is moved out and the well is either completed or abandoned, all waste materials will be cleaned up within 30 days. In the event of a dry hole only a dry hole marker will remain.

#### 8. Ancillary Facilities:

No airstrip, campsite or other facilities will be built as a result of the operation on this well.

#### 9. Well Site Layout:

- A. The drill pad layout, with elevations staked by John West Engineering, is shown in Exhibit #4. Dimensions of the pad and pits are shown on Exhibit #6. Topsoil, if available, will be stockpiled per BLM specifications. Because the pad is almost level no major cuts will be required.
- B. Exhibit #6 also shows the proposed orientation of closed loop system and access road. No permanent living facilities are planned, but a temporary foreman/toolpusher's trailer will be on location during the drilling operations.

#### 10. Plans for Restoration of the Surface:

- A. The location and road will be rehabilitated as recommended by the BLM.
- B. Upon completion of proposed operations, it the well is completed, the reserve pit area will be closed as outlined in Section 4.6 above within the same prescribed time. Any additional caliche required for facilities will be obtained from a BLM approved caliche pit. Topsoil removed from the drill site will be used to recontour the pit area to its original natural level and re-seeded as per BLM specifications.

#### 11. Surface Ownership:

- A. The surface is owned by the U.S. Government and is administered by the Bureau of Land Management. The surface is multiple uses with the primary uses of the region for grazing of livestock and the production of oil and gas.
- Β. The surface tenant for this site is Bogel Farms, Lewis Derrick, P O Box 441, Artesia, NM.
- C. The proposed road routes and surface location will be restored as directed by the BLM.

#### 12. Other Information:

- A. The area around the well site is grassland and the topsoil is sandy. The vegetation is moderately sparse with native prairie grasses, some mesquite and shinnery oak. No wildlife was observed but it is likely that mule deer, rabbits, coyotes and rodents traverse the area.
- B. There is no permanent or live water in the immediate area.
- C. There are no dwellings within 2 miles of this location.
- D. If needed, a Cultural Resources Examination is being prepared by Southern New Mexico Archaeological Services, Inc. P.O. Box 1, Bent New Mexico, 88314, phone # 505-671-4797 and the results will be forwarded to your office in the near future. Otherwise, COG will be participating in the Permian Basin MOA Program.

#### 13. Bond Coverage:

Bond Coverage is Nationwide Bond # 000215

#### 14. Lessee's and Operator's Representative:

The COG Operating LLC representative responsible for assuring compliance with the surface use plan is as follows:

John Coffman, **Drilling Superintendent** COG Operating LLC 550 W. Texas, Suite 1300 Midland, TX 79701 Phone (432) 683-7443 (office)

(432) 631-9762 (cell)

Erick Nelson. Division Operations Manager COG Operating LLC 550 W. Texas, Suite 1300 Midland, TX 79701

Phone (505) 746-2210 (office) (432) 238-7591 (cell)

Page 4 Surface Use Plan

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 make 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 1<sup>th</sup> day of August, 2009.

Signed:

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@conchoresources.com

#### **Exhibits:**

Exhibit #1	Wellsite and Elevation Plat Form C-102 Well location and acreage dedication plat
Exhibit #2	Topographic Map (West)
Exhibit #3	Vicinity Map and area roads
Exhibit #4	Elevation Plat (West)
Exhibit #5	Topographic extract showing wells, roads and flowlines
Exhibit #6	Pad Layout and orientation
Exhibit #7	H2S Signage
Exhibit #8	H2S Equipment location
Exhibit #9	BOP and Choke diagrams
Exhibit #10	Form C-144 NMOCD pit permit application

# PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG OPERATING LLC
LEASE NO.:,	
WELL NAME & NO.:	FOLK FEDERAL #38
SURFACE HOLE FOOTAGE:	1500' FSL & 2310' FWL
BOTTOM HOLE FOOTAGE	
LOCATION:	Section 17, 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 Site
	Noxious Weeds
<u>,</u> [23]	Special Requirements
4-	Protecting water quality
+ 23	V-door: northeast
$\boxtimes$	Construction.
٠	Notification
13.5	Topsoil
13. Na. + 1	Closed Loop System
	Federal Mineral Material Pits
	Well Pads
` .	Roads
	Road Section Diagram
	<b>Drilling</b>
<del>.</del>	Onshore Order 6 – H2S requirements
٠. ،	Logging Requirements
	Casing/Cement
	Production (Post Drilling)
	Well Structures & Facilities
	Interim Reclamation
=	Final Ahandonment/Reclamation

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, applicable laws and regulations. To Code of Foucial Regulations of the Conservation on Shore 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.

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

## ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES Sundry Notice is required for this 60 day extension.) III.

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 appropriate actions that shall be responsible for the cost of 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.

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)

#### Protecting water quality:

The operator shall berm the southeastern sides of the well pad as well as the production facilities to further protect the drainage to the southeast from contaminants. Water flow shall be diverted around the pad on the uphill side so the water flow is not disrupted and water does not flow onto the pad.

V-door: Northeast

#### 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) 234-5972 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 of the well pad. The topsoil shall not be used to backfill the reserve pit and 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

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. 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 thirty (30) 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

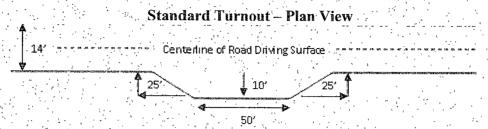
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

#### Ditching:

Ditching shall be required on both sides of the road.

#### Turnouts:

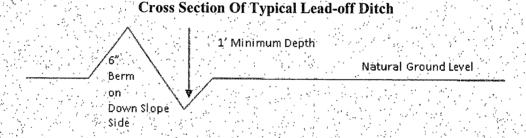
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



#### Drainage

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



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 foot road with 4% road slope: 400'/4% + 100' = 200' 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.

- cen'er line of roadway teroul 10' 100' Intervisible fundatis shall be confireded on all single lone roads on all blind corves with a additional turburs as needed to keep spacing lefaw 1000 feet. Typical Turnout Plan height af lift at shoulder embaakman stope 3:1 2:1 **Embankment Section** ecuh sirfoce .03 - .05 h/h 02 - .04 ft/ft pared surface .02 - .03,6/H Depth measured from the bottom of the dist Side Hill Section travel soriace 4 **Typical Outsloped Section** Typical Inslope Section

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 (H2S) Drilling Plan should be activated 500 feet prior to drilling into the Grayburg formation. 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.
- 3. The record of the drilling rate along with the CAL/GR/N well log run from TD to surface will 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 and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time 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. 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.

Possible loss of circulation in the Grayburg and San Andres formations Possible brine and water flows in the Salado and Artesia Groups.

- 1. The 13-3/8 inch surface casing shall be set at approximately 230 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.
  - 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 a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
  - 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.

Brine water mud will be used to drill intermediate hole.

- 2. The minimum required fill of cement behind the 8-5/8 inch intermediate casing is:
  - Cement to surface. If cement does not circulate see B.1.a, c-d above.
- 3. The minimum required fill of cement behind the 5-1/2 inch production casing is:
  - Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.
- 4. 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. The tests shall be done by an independent service company.
  - b. The results of the test shall be reported to the appropriate BLM office.
  - c. 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.
  - d. 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.
  - e. Effective November 1, 2008, no variances will be granted on reduced pressure tests on the surface casing and BOP/BOPE. Onshore Order 2 requirements will be in effect.

#### D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

DHW 102709

#### 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

#### IX. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting 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.

The operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions 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 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.

#### Seed Mixture 2, for Sandy 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:

Species 1b/a	<u>cre</u>
	· .
Sand dropseed (Sporobolus cryptandrus)	
Sand love grass (Eragrostis trichodes)	
Plains bristlegrass (Setaria macrostachya) 2.0	. ;

<sup>\*</sup>Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

### X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.