

OCD-ARTESIA

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. NMLC-049998A	
6 If Indian, Allottee or Tribe Name N/A	
7 If Unit or CA Agreement, Name and No N/A	
8 Lease Name and Well No. FOSTER EDDY #26	
9 API Well No. 30-015- 39339	
1a. Type of work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER	10. Field and Pool, or Exploratory Cedar Lake; Glorieta-Yeso
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	11 Sec, T. R. M. or Blk. and Survey or Area Sec 17 T17S R31E
2 Name of Operator COG Operating LLC	
3a. Address 550 W. Texas Ave., Suite 1300 Midland, TX 79701	3b. Phone No. (include area code) 432-685-4384
4 Location of Well (Report location clearly and in accordance with any State requirements.)* At surface 1440' FNL & 1783' FWL, Unit F At proposed prod zone 1650' FNL & 1650' FWL, Unit F	
14 Distance in miles and direction from nearest town or post office* 9 miles East of Loco Hills, NM	12 County or Parish EDDY
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any) 1440'	13 State NM
16 No. of acres in lease 280	17 Spacing Unit dedicated to this well 40
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 450'	20. BLM/BIA Bond No. on file NMB000740
21 Elevations (Show whether DF, KDB, RT, GL, etc) 3710' GL	22 Approximate date work will start* 08/31/2011
23 Estimated duration 15 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.

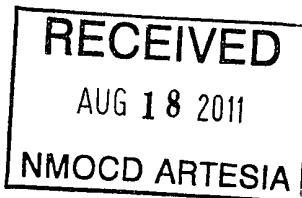
- | | |
|--|---|
| 1 Well plat certified by a registered surveyor.
2 A Drilling Plan.
3 A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office) | 4 Bond to cover the operations unless covered by an existing bond on file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

25 Signature	Name (Printed/Typed) Kelly J. Holly	Date 06/15/2011
Title Permitting Tech		
Approved by (Signature) /s/ Don Peterson	Name (Printed/Typed)	Date AUG 11 2011
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached

Title 18 USC Section 1001 and Title 43 USC 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

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

**Approval Subject to General Requirements
& Special Stipulations Attached**

MASTER DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Quaternary	Surface
Rustler	375'
Top of Salt	600'
Base of Salt	1200'
Yates	1525'
Seven Rivers	1850'
Queen	2475'
Grayburg	2875'
San Andres	3175'
Glorietta	4700'
Paddock	4775'
Blaine	5250'
Tubb	6200'

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

Water Sand	150'	Fresh Water
Grayburg	2875'	Oil/Gas
San Andres	3175'	Oil/Gas
Glorieta	4700'	Oil/Gas
Paddock	4775'	Oil/Gas
Blaine	5250'	Oil/Gas
Tubb	6200'	Oil/Gas

See
COA

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 450' 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 1800' 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 the environment.

See
COA

4. Casing Program

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	Jt.	burst/collapse/tension
17 1/2" <i>See COA</i>	0-450'	13 3/8"	48#	H-40orJ-55	New	ST&C	8.71/3.724/14.91
11"	0-1800'	8 5/8"	24or32#	J-55	New	ST&C	2.91/1.46/5.65
7 7/8"	0-T.D.	5 1/2"	15.5 or 17#	J-55orL80	New	LT&C	1.71/1.574/2.20

5. Cement Program

13 3/8" Surface Casing:

Class C, 475 sx w/ 2% CaCl₂, 0.25 pps CF, yield-1.32, back to surface 100% excess

8 5/8" Intermediate Casing:

11" Hole:

Single Stage: LEAD 350 sx 50:50:10 C:Poz:Gel w/ 5% Salt +0.25% CF, yield-2.45 + TAIL 200 sx Class C w/2% CaCl₂, yield-1.32, back to surface. 145% excess

Multi-Stage: Stage 1: 350 sx Class C, w/2% CaCl₂, yield - 1.32. 40% excess
Stage 2: 200 sx Class C w/2% CaCl₂, yield - 1.32, back to surface, 108% excess
Multi stage tool to be set at approximately, depending on hole conditions, 500' (50' below the surface casing). Cement volumes will be adjusted proportionately for depth changes of multi stage tool.

See COA

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 + 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, to 200' minimum tie back to intermediate casing. 44.4% open hole excess, cement calculated back to surface.

Multi-Stage: Stage 1: (Assumed TD of 6700') 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, 7% excess; minimum volume, will be adjusted up after caliper is

See COA

run. 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, + TAIL
250 sx Class C w/ 0.3% R-3 + 1.5% CD-32,
yield - 1.02 152% open hole excess, cement
calculated back to surface. Multi stage tool
to be set at approximately, depending on
hole conditions, 3000'. 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 (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.

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
0-450' <i>460</i>	Fresh Water	8.5	28	N.C.
450 -1800'	Brine	10	30	N.C.
1800'-TD	Cut Brine	8.7-9.1	29	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 8 5/8" casing shoe.
- 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 hold 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.

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 12 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

Eddy County, NM (NAN27 NME)

Foster Eddy #26

Foster Eddy #26

OH

Plan: Plan #1 Rev 1 7-7/8" Hole

SHL = 1400' FNL & 1783' FWL

BHL = 1700' FNL & 1700' FWL

Top of Paddock = 1700' FNL & 1700' FWL @ 4900' TVD

Standard Planning Report

17 June, 2011



Scientific Drilling
Directional Drilling Operations



Scientific Drilling
Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Foster Eddy #26
Well: Foster Eddy #26
Wellbore: OH
Design: Plan #1 Rev 1 7-7/8" Hole

Local Co-ordinate Reference: Site Foster Eddy #26
TVD Reference: GL Elev @ 3710 00usft
MD Reference: GL Elev @ 3710 00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project:	Eddy County, NM (NAN27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site:	Foster Eddy #26		
Site Position:		Northing:	668,788 20 usft
From:	Map	Easting:	634,892 10 usft
Position Uncertainty:	0 00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 50' 16 130 N
		Longitude:	103° 53' 38 946 W
		Grid Convergence:	0 24 °

Well:	Foster Eddy #26		
Well Position	+N/-S	0 00 usft	Northing:
	+E/-W	0 00 usft	Easting:
Position Uncertainty	0 00 usft	Wellhead Elevation:	Ground Level:
			3,710 00 usft

Wellbore:	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	2011/06/17	7 78
			Dip Angle
			60 70
			Field Strength
			48,948

Design:	Plan #1 Rev 1 7-7/8" Hole		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0 00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0 00	0 00	0 00
			Direction
			195 18

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
2,000 00	0 00	0 00	2,000 00	0 00	0 00	0 00	0 00	0 00	0 00	
2,348 24	6 96	195 18	2,347 38	-20 40	-5 53	2 00	2 00	0 00	195 18	
4,569 87	6 96	195 18	4,552 62	-280 40	-76 07	0 00	0 00	0 00	0 00	
4,918 11	0 00	0 00	4,900 00	-300 80	-81 60	2 00	-2 00	0 00	180 00	TG1-Foster #26
6,318 11	0 00	0 00	6,300 00	-300 80	-81 60	0 00	0 00	0 00	0 00	PBHL-Foster #26



Scientific Drilling
Planning Report



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MD Reference: GL Elev @ 3710 00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
West HL-Foster #26 - North HL-Foster #26									
1,900 00	0 00	0 00	1,900 00	0 00	0 00	0 00	0 00	0 00	0 00
8-5/8" Casing									
2,000 00	0 00	0 00	2,000 00	0 00	0 00	0 00	0 00	0 00	0 00
KOP Start Build 2.00°/100'									
2,100 00	2 00	195 18	2,099 98	-1 68	-0 46	1 75	2 00	2 00	0 00
2,200 00	4 00	195 18	2,199 84	-6 74	-1 83	6 98	2 00	2 00	0 00
2,300 00	6 00	195 18	2,299 45	-15 15	-4 11	15 69	2 00	2 00	0 00
2,348 24	6 96	195 18	2,347 38	-20 40	-5 53	21 14	2 00	2 00	0 00
EOC hold 6.96°									
2,400 00	6 96	195 18	2,398 76	-26 46	-7 18	27 42	0 00	0 00	0 00
2,500 00	6 96	195 18	2,498 02	-38 16	-10 35	39 54	0 00	0 00	0 00
2,600 00	6 96	195 18	2,597 29	-49 87	-13 53	51 67	0 00	0 00	0 00
2,700 00	6 96	195 18	2,696 55	-61 57	-16 70	63 79	0 00	0 00	0 00
2,800 00	6 96	195 18	2,795 81	-73 27	-19 88	75 92	0 00	0 00	0 00
2,900 00	6 96	195 18	2,895 07	-84 97	-23 05	88 05	0 00	0 00	0 00
3,000 00	6 96	195 18	2,994 33	-96 68	-26 23	100 17	0 00	0 00	0 00
3,100 00	6 96	195 18	3,093 60	-108 38	-29 40	112 30	0 00	0 00	0 00
3,200 00	6 96	195 18	3,192 86	-120 08	-32 58	124 42	0 00	0 00	0 00
3,300 00	6 96	195 18	3,292 12	-131 79	-35 75	136 55	0 00	0 00	0 00
3,400 00	6 96	195 18	3,391 38	-143 49	-38 93	148 68	0 00	0 00	0 00
3,500 00	6 96	195 18	3,490 64	-155 19	-42 10	160 80	0 00	0 00	0 00
3,600 00	6 96	195 18	3,589 91	-166 89	-45 27	172 93	0 00	0 00	0 00
3,700 00	6 96	195 18	3,689 17	-178 60	-48 45	185 05	0 00	0 00	0 00
3,800 00	6 96	195 18	3,788 43	-190 30	-51 62	197 18	0 00	0 00	0 00
3,900 00	6 96	195 18	3,887 69	-202 00	-54 80	209 30	0 00	0 00	0 00
4,000 00	6 96	195 18	3,986 95	-213 71	-57 97	221 43	0 00	0 00	0 00
4,100 00	6 96	195 18	4,086 22	-225 41	-61 15	233 56	0 00	0 00	0 00
4,200 00	6 96	195 18	4,185 48	-237 11	-64 32	245 68	0 00	0 00	0 00
4,300 00	6 96	195 18	4,284 74	-248 82	-67 50	257 81	0 00	0 00	0 00
4,400 00	6 96	195 18	4,384 00	-260 52	-70 67	269 93	0 00	0 00	0 00
4,500 00	6 96	195 18	4,483 27	-272 22	-73 85	282 06	0 00	0 00	0 00
4,569 87	6 96	195 18	4,552 62	-280 40	-76 07	290 53	0 00	0 00	0 00
Start Drop 2.00°/100'									
4,600 00	6 36	195 18	4,582 55	-283 77	-76 98	294 03	2 00	-2 00	0 00
4,700 00	4 36	195 18	4,682 10	-292 79	-79 43	303 37	2 00	-2 00	0 00
4,800 00	2 36	195 18	4,781 93	-298 45	-80 96	309 24	2 00	-2 00	0 00
4,900 00	0 36	195 18	4,881 89	-300 74	-81 59	311 61	2 00	-2 00	0 00
4,918 11	0 00	0 00	4,900 00	-300 80	-81 60	311 67	2 00	-2 00	910 24
EOC hold 0.00° - TG1-Foster #26									
6,318 11	0 00	0 00	6,300 00	-300 80	-81 60	311 67	0 00	0 00	0 00
PBHL-Foster #26									



Scientific Drilling Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Foster Eddy #26
Well: Foster Eddy #26
Wellbore: OH
Design: Plan #1 Rev 1 7-7/8" Hole

Local Co-ordinate Reference: Site Foster Eddy #26
TVD Reference: GL Elev @ 3710 00usft
MD Reference: GL Elev @ 3710 00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Design Targets

Target Name	hit/miss target	Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
West HL-Foster #26			0 00	0 00	0 00	-250.80	-131 60	668,537 40	634,760.50	32° 50' 13 654 N	103° 53' 40 501 W
- plan misses target center by 283.23usft at 0 00usft MD (0 00 TVD, 0 00 N, 0 00 E)											
- Rectangle (sides W0 00 H200 00 D0 00)											
North HL-Foster #26			0 00	0 00	0 00	-250 80	-131 60	668,537 40	634,760 50	32° 50' 13.654 N	103° 53' 40 501 W
- plan misses target center by 283.23usft at 0 00usft MD (0 00 TVD, 0 00 N, 0 00 E)											
- Rectangle (sides W200 00 H0 00 D0 00)											
TG1-Foster #26			0 00	0 00	4,900 00	-300 80	-81 60	668,487 40	634,810 50	32° 50' 13 157 N	103° 53' 39 917 W
- plan hits target center											
- Point											
PBHL-Foster #26			0 00	0 01	6,300 00	-300 80	-81 60	668,487 40	634,810 50	32° 50' 13 157 N	103° 53' 39 917 W
- plan hits target center											
- Circle (radius 50 00)											

Casing Points

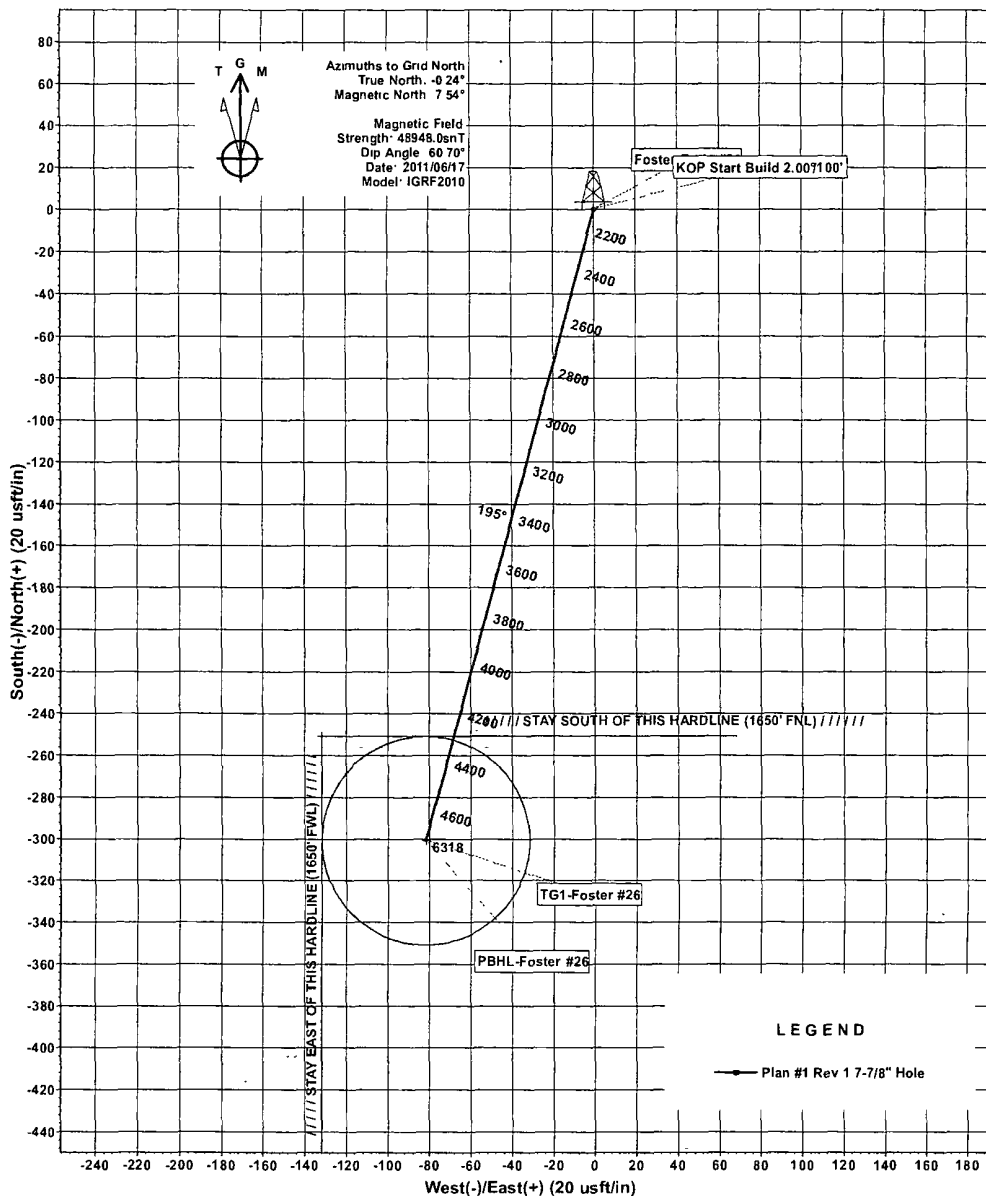
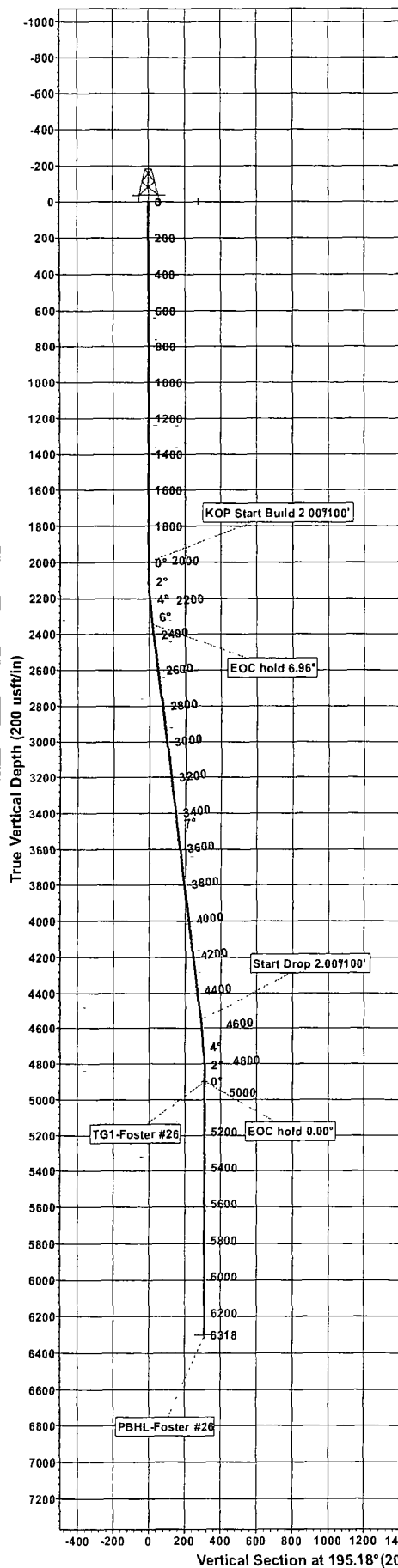
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,900 00	1,900 00	8-5/8" Casing	8-5/8	12-1/4

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
2,000 00	2,000 00	0 00	0 00	KOP Start Build 2 00°/100'
2,348 24	2,347 38	-20 40	-5 53	EOC hold 6 96°
4,569 87	4,552 62	-280 40	-76 07	Start Drop 2 00°/100'
4,918 11	4,900 00	-300.80	-81 60	EOC hold 0 00°



Scientific Drilling for COG Operating LLC
Site: Eddy County, NM (NAN27 NME)
Well: Foster Eddy #26
Wellbore: OH
Design: Plan #1 Rev 1 7-7/8" Hole



Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
North HL-Foster #26	0.00	-250.80	-131.60	668537.40	634760.50	32°50' 13.654 N	103°53' 40.501 W	Rectangle (Side s L0.00 W200.00)
West HL-Foster #26	0.00	-250.80	-131.60	668537.40	634760.50	32°50' 13.654 N	103°53' 40.501 W	Rectangle (Side s L200.00 W0.00)
TG1-Foster #26	4900.00	-300.80	-81.60	668487.40	634810.50	32°50' 13.157 N	103°53' 39.917 W	Point
PBHL-Foster #26	6300.00	-300.80	-81.60	668487.40	634810.50	32°50' 13.157 N	103°53' 39.917 W	Circle (Radius: 50.00)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
3	2348.24	6.96	195.18	2347.38	-20.40	-5.53	2.00	195.18	21.14	
4	4569.87	6.96	195.18	4552.62	-280.40	-76.07	0.00	0.00	290.53	
5	54918.11	0.00	0.00	4900.00	-300.80	-81.60	2.00	180.00	311.67	TG1-Foster #26
6	66318.11	0.00	0.00	6300.00	-300.80	-81.60	0.00	0.00	311.67	PBHL-Foster #26

WELL DETAILS: Foster Eddy #26

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	668788.20	634892.10	32°50' 16.130 N	103°53' 38.946 W	

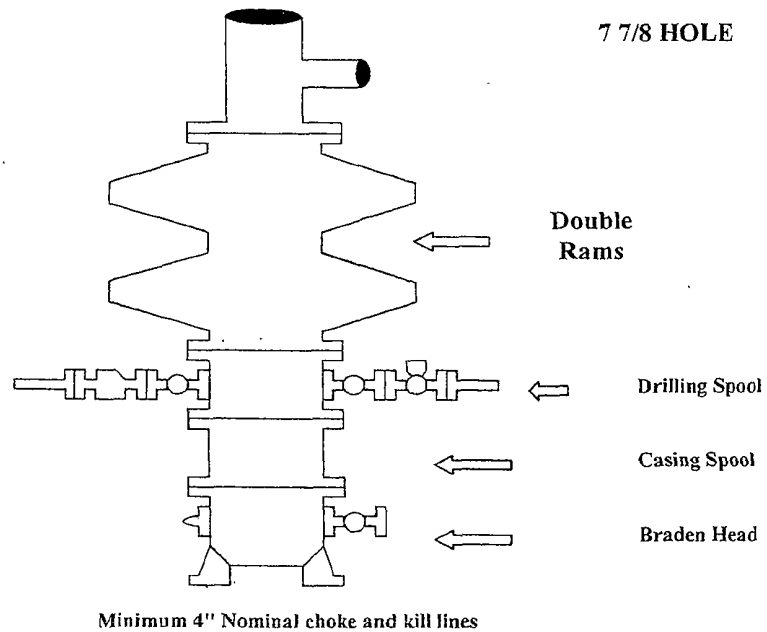
PROJECT DETAILS Eddy County, NM (NAN27 NME) Plan, Plan #1 Rev 1 7-7/8" Hole (Foster Eddy #26/OH)

Geodetic System: US State Plane 1927 (Exact solution) Created By: Julio Pima Date: 17-Jun-11
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Checked: _____ Date: _____
Reviewed: _____ Date: _____
Approved: _____ Date: _____

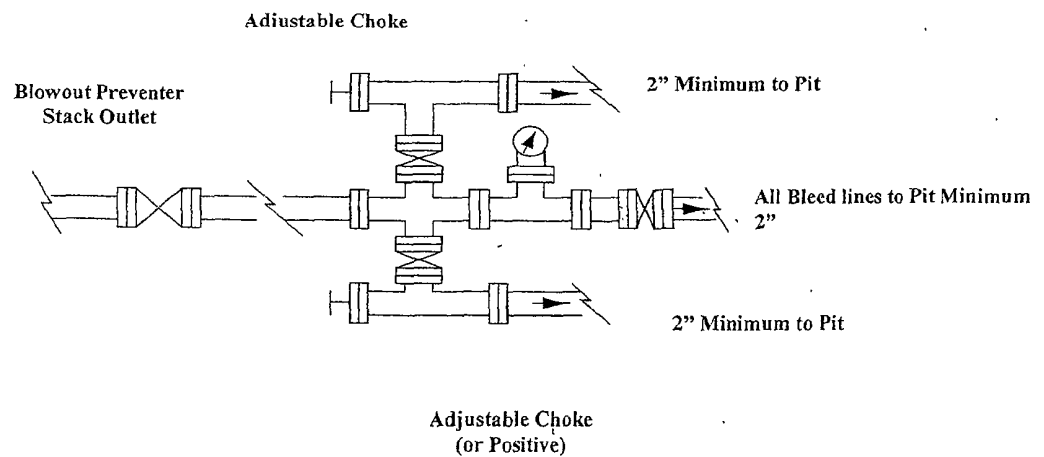
COG Operating LLC

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.