

OCD-HOBBS

HOBBS OCD

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

1a. Type of work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5 Lease Serial No. NMLC-029405B
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 COG Operating LLC		7 If Unit or CA Agreement, Name and No. N/A
3a Address 550 W. Texas, Suite 100 Midland TX 79701		8 Lease Name and Well No. <302498> G C FEDERAL #44
3b. Phone No. (include area code) (432) 685-4384		9 API Well No. 30-025 40237
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface 753' FSL & 2206' FEL, Unit O At proposed prod zone 545' FSL & 2250' FEL, Unit O		10 Field and Pool, or Exploratory Maljamar; Yeso, West 44500
14. Distance in miles and direction from nearest town or post office* 3 miles south of Maljamar NM		11 Sec., T R. M. or Blk and Survey or Area Sec 20, T17S, R32E
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any) 753'	16 No. of acres in lease 1602	17 Spacing Unit dedicated to this well 40
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 330'	19 Proposed Depth 7100'	20 BLM/BIA Bond No. on file NMB000740
21 Elevations (Show whether DF, KDB, RT, GL, etc.) 3977' GL	22 Approximate date work will start* 06/30/2011	23 Estimated duration 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 | 4 Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2 A Drilling Plan. | 5 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) | 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 05/06/2011
Title Permitting Tech		

Approved by (Signature) /s/ Don Peterson	Name (Printed/Typed) AUG - 9 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

APPROVAL FOR TWO YEARS

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)

CONDITIONS OF APPROVAL BY THE OCD

-- Approval for drilling only. CANNOT produce until OCD Santa Fe approve Simultaneous Dedication of Acreage and Pool/Formation.

Roswell-Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

KZ 08/16/11

AUG 17 2011
Approval Subject to General Requirements
& Special Stipulations Attached

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AUG 11 2011

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MASTER DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Quaternary	Surface
Rustler	680'
Top of Salt	900'
Base of Salt	1700'
Yates	2010'
Seven Rivers	2375'
Queen	2980'
Grayburg	3355'
San Andres	3700'
Glorietta	5260'
Paddock	5310'
Blinebry	5870'
Tubb	6810'

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

Water Sand	150'	Fresh Water
Grayburg	3355'	Oil/Gas
San Andres	3700'	Oil/Gas
Glorietta	5260'	Oil/Gas
Paddock	5310'	Oil/Gas
Blinebry	5870'	Oil/Gas
Tubb	6810'	Oil/Gas

**see COA*

*See
COA*

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 720' 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 2100' 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

→ see COA

	Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	burst/collapse/tension
740	17 1/2"	0-200'	13 3/8"	48#	H-40orJ-55	ST&C/New	6.03/2.578/10.32
2100	11"	0-2100'	8 5/8"	24or32#	J-55	ST&C/New	1.85/1.241/4.78
7100	7 7/8"	0-T.D.	5 1/2"	15.5or17#	J-55orL-80	LT&C/New	1.59/1.463/2.05

5. Cement Program

13 3/8" Surface Casing:

LEAD Class C, 4% Gel, 2% CaCl₂, .25 pps CF, 325 sx, yield-1.75 + TAIL 200 sx w/ 2% CaCl₂, 0.25 pps CF, yield-1.32. 133% excess

8 5/8" Intermediate Casing:

11" Hole:

Single Stage: LEAD 50:50:10 C:Poz:Gel w/ 5% Salt + 0.25% CF, 375 sx, yield-2.45 + TAIL Class C w/2% CaCl₂, 200 sx, yield-1.32, back to surface. 133% excess

Multi-Stage: Stage 1: Class C w/2% CaCl₂, 400 sx, yield - 1.32; 48% excess
Stage 2: Class C w/2% CaCl₂, 200 sx, yield - 1.32, back to surface, 48% excess; assumption for tool is lost circulation. Multi stage tool to be set at approximately, depending on hole conditions, 270' (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 35:65:6 C:Poz:Gel w/ 5% Salt + 5 pps LCM + 0.2% SMS + 0.3% FL-52A + 0.125 pps CF, 500 sx, yield-2.05 + TAIL 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, 400 sx, yield-1.37, (to 200' minimum tie back to intermediate casing. 30% excess back to surface.)

Multi-Stage: Stage 1: (Assumed TD of 7000') 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, 500 sx, yield - 1.37, 13% excess; minimum volume, will be adjusted up after caliper is run. Stage 2: LEAD 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, 450 sx, yield - 1.37, + TAIL Class C w/ 0.3% R-3 + 1.5% CD-32, 250 sx, yield - 1.02 43% excess calculated back to surface. Multi stage tool to be set at approximately, depending on hole conditions, 3500'. Cement volumes will be adjusted proportionately for depth changes of multi stage tool, assumption for tool is water flow.

See
COA

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.

See
* COA

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.

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:

** See COA*

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-720'	Fresh Water	8.5	28	N.C.
720-2100'	Brine	10	30	N.C.
2100'-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

- * See COA*
- 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 15 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

Lea County, NM (NAD27 NME)

GC Federal #44

GC Federal #44

HOBBS OCD

OH

AUG 11 2011

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

SHL = 753' FSL & 2206' FEL

BHL = 545' FSL & 2250' FEL

Paddock Top = 545' FSL & 2250' FEL @ 5375' TVD

Standard Planning Report

12 May, 2011



Scientific Drilling
Directional Drilling Operations



Scientific Drilling Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: GC Federal #44
Well: GC Federal #44
Wellbore: OH
Design: Plan #1 - 7-7/8" Hole

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Well GC Federal #44
GL Elev @ 3977 00usft
GL Elev @ 3977 00usft
Grid
Minimum Curvature

Project:	Lea County, NM (NAD27 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:	GC Federal #44		
Site Position:		Northing:	660,587 70 usft
From:	Map	Easting:	667,940 30 usft
Position Uncertainty:	0 00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 48' 53 460 N
		Longitude:	103° 47' 12 103 W
		Grid Convergence:	0 30 °

Well:	GC Federal #44		
Well Position	+N/-S	0 00 usft	Northing:
	+E/-W	0 00 usft	Easting:
Position Uncertainty	0 00 usft	Wellhead Elevation:	
		Latitude:	32° 48' 53 460 N
		Longitude:	103° 47' 12 103 W
		Ground Level:	3,977 00 usft

Wellbore:	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	2011/05/12	7 74
			Dip Angle
			60 70
			Field Strength
			48,954

Design:	Plan #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
			(°)
			191 56

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(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	
2,200 00	0 00	0 00	2,200 00	0 00	0 00	0 00	0 00	0 00	0 00	
2,404 62	4 09	191 56	2,404 44	-7 16	-1.46	2 00	2 00	0 00	191 56	
5,177 80	4 09	191 56	5,170 56	-201.04	-41 14	0 00	0 00	0 00	0 00	
5,382 42	0 00	0 00	5,375 00	-208 20	-42 60	2.00	-2 00	0 00	180 00	TG1-GC Fed #44
7,107 42	0 00	0 00	7,100 00	-208 20	-42 60	0 00	0 00	0 00	0 00	PBHL-GC Fed #44



Scientific Drilling
Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: GC Federal #44
Well: GC Federal #44
Wellbore: OH
Design: Plan #1 - 7-7/8" Hole

Local Co-ordinate Reference: Well GC Federal #44
TVD Reference: GL Elev @ 3977 00usft
MD Reference: GL Elev @ 3977 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
2,100 00	0 00	0 00	2,100 00	0 00	0 00	0 00	0 00	0 00	0 00
8-5/8" Casing									
2,200 00	0 00	0 00	2,200 00	0 00	0 00	0 00	0 00	0 00	0 00
KOP Start Build 2.00°/100'									
2,300 00	2 00	191 56	2,299 98	-1 71	-0 35	1 75	2 00	2 00	0 00
2,400 00	4 00	191 56	2,399 84	-6 84	-1 40	6 98	2 00	2 00	0 00
2,404 62	4 09	191 56	2,404 45	-7 16	-1 46	7 30	2 00	2 00	0 00
EOC hold 4.09°									
2,500 00	4 09	191 56	2,499 58	-13 82	-2 83	14 11	0 00	0 00	0 00
2,600 00	4 09	191 56	2,599 33	-20 82	-4 26	21 25	0 00	0 00	0 00
2,700 00	4 09	191 56	2,699 07	-27 81	-5 69	28 38	0 00	0 00	0 00
2,800 00	4 09	191 56	2,798 82	-34 80	-7 12	35 52	0 00	0 00	0 00
2,900 00	4 09	191 56	2,898 56	-41 79	-8 55	42 66	0 00	0 00	0 00
3,000 00	4 09	191 56	2,998 31	-48 78	-9 98	49 79	0 00	0 00	0 00
3,100 00	4 09	191 56	3,098 05	-55 77	-11 41	56 93	0 00	0 00	0 00
3,200 00	4 09	191 56	3,197 80	-62 77	-12 84	64 07	0 00	0 00	0 00
3,300 00	4 09	191 56	3,297 54	-69 76	-14 27	71 20	0 00	0 00	0 00
3,400 00	4 09	191 56	3,397 29	-76 75	-15 70	78 34	0 00	0 00	0 00
3,500 00	4 09	191 56	3,497 03	-83 74	-17 13	85 47	0 00	0 00	0 00
3,600 00	4 09	191 56	3,596 78	-90 73	-18 56	92 61	0 00	0 00	0 00
3,700 00	4 09	191 56	3,696 52	-97 72	-20 00	99 75	0 00	0 00	0 00
3,800 00	4 09	191 56	3,796 27	-104 71	-21 43	106 88	0 00	0 00	0 00
3,900 00	4 09	191 56	3,896 01	-111 71	-22 86	114 02	0 00	0 00	0 00
4,000 00	4 09	191 56	3,995 76	-118 70	-24 29	121 16	0 00	0 00	0 00
4,100 00	4 09	191 56	4,095 50	-125 69	-25 72	128 29	0 00	0 00	0 00
4,200 00	4 09	191 56	4,195 25	-132 68	-27 15	135 43	0 00	0 00	0 00
4,300 00	4 09	191 56	4,294 99	-139 67	-28 58	142 57	0 00	0 00	0 00
4,400 00	4 09	191 56	4,394 74	-146 66	-30 01	149 70	0 00	0 00	0 00
4,500 00	4 09	191 56	4,494 48	-153 66	-31 44	156 84	0 00	0 00	0 00
4,600 00	4 09	191 56	4,594 23	-160 65	-32 87	163 98	0 00	0 00	0 00
4,700 00	4 09	191 56	4,693 97	-167 64	-34 30	171 11	0 00	0 00	0 00
4,800 00	4 09	191 56	4,793 72	-174 63	-35 73	178 25	0 00	0 00	0 00
4,900 00	4 09	191 56	4,893 46	-181 62	-37 16	185 38	0 00	0 00	0 00
5,000 00	4 09	191 56	4,993 21	-188 61	-38 59	192 52	0 00	0 00	0 00
5,100 00	4 09	191 56	5,092 95	-195 60	-40 02	199 66	0 00	0 00	0 00
5,177 80	4 09	191 56	5,170 56	-201 04	-41 14	205 21	0 00	0 00	0 00
Start Drop 2.00°/100'									
5,200 00	3 65	191 56	5,192 70	-202 51	-41 44	206 71	2 00	-2 00	0 00
5,300 00	1 65	191 56	5,292 59	-207 04	-42 36	211 33	2 00	-2 00	0 00
5,382 42	0 00	0 00	5,375 00	-208 20	-42 60	212 51	2 00	-2 00	204 37
EOC hold 0.00° - TG1-GC Fed #44									
7,107 42	0 00	0 00	7,100 00	-208 20	-42 60	212 51	0 00	0 00	0 00
PBHL-GC Fed #44									



Scientific Drilling
Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: GC Federal #44
Well: GC Federal #44
Wellbore: OH
Design: Plan #1 - 7-7/8" Hole

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Well GC Federal #44
GL Elev @ 3977 00usft
GL Elev @ 3977 00usft
Grid
Minimum Curvature

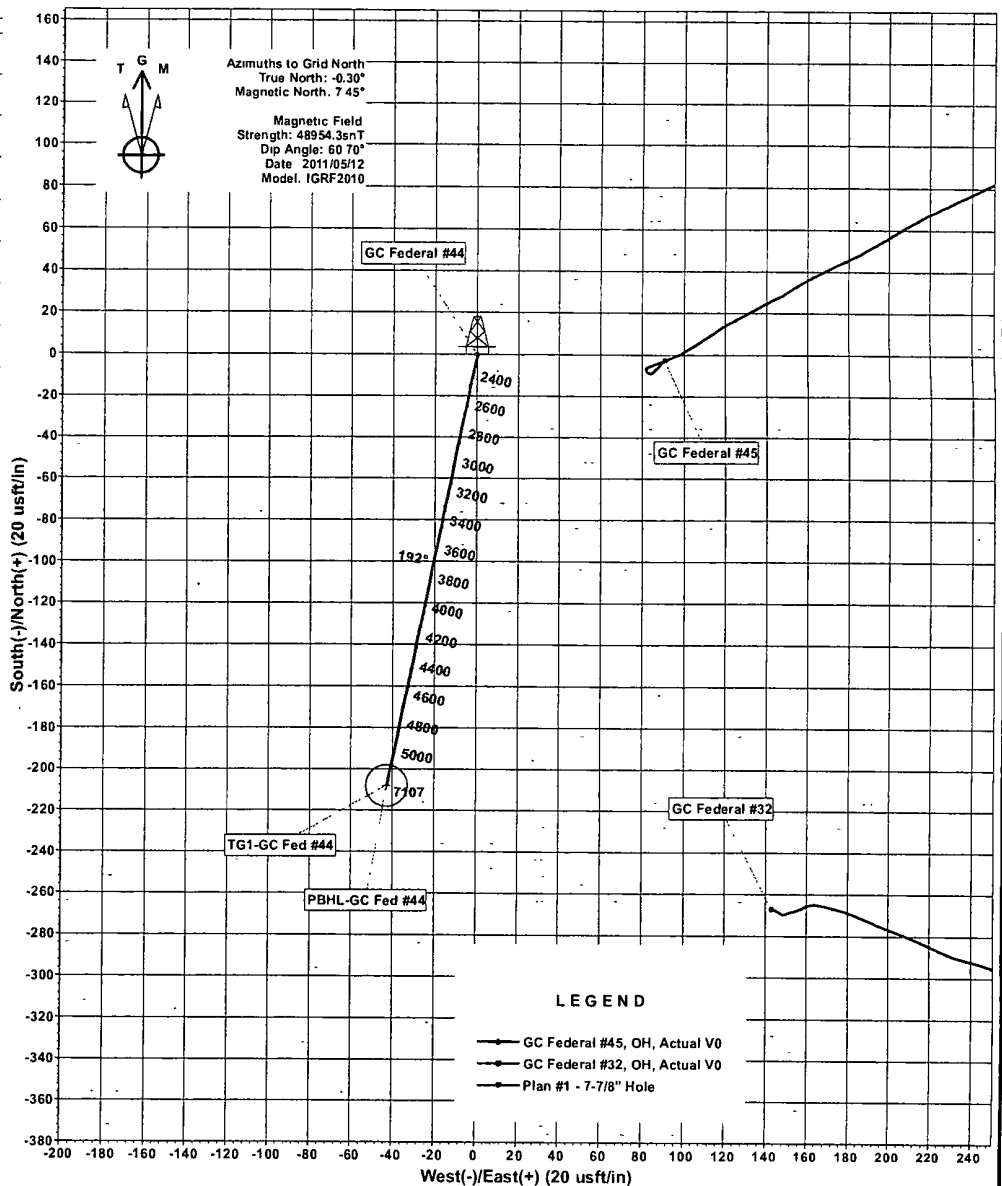
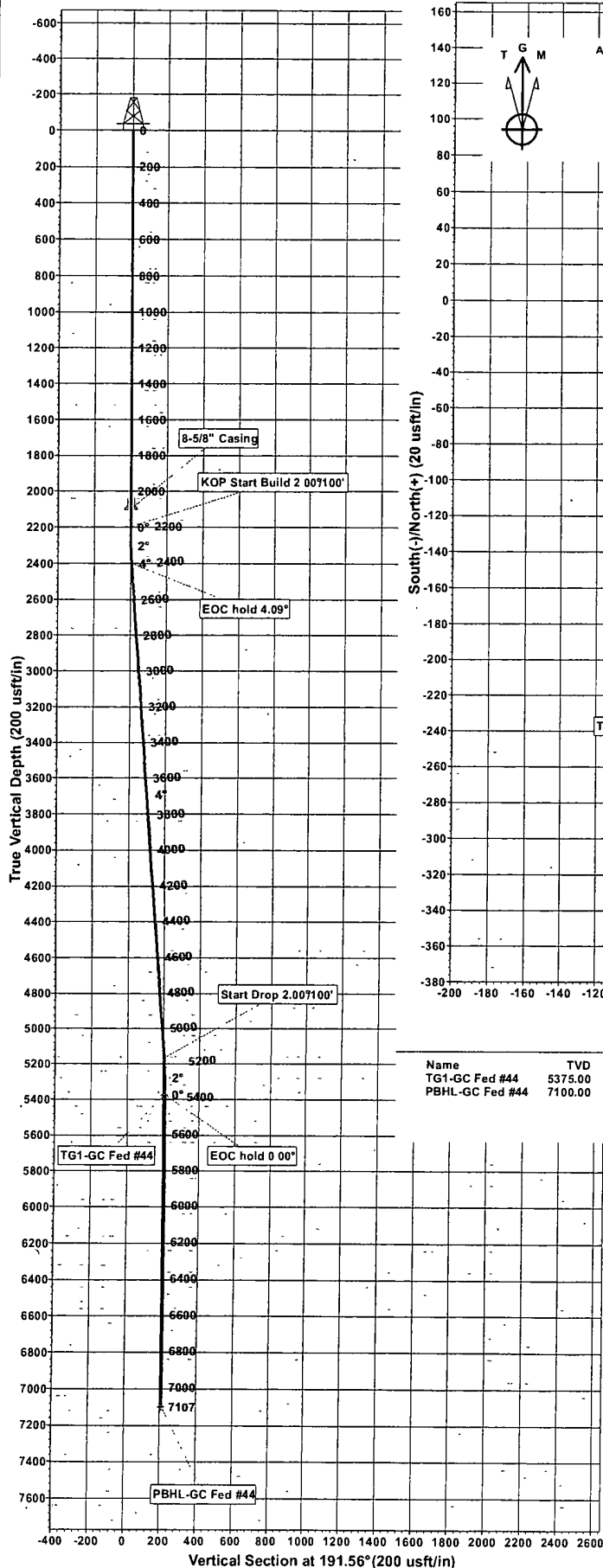
Design Targets									
Target Name	Dip Angle	Dip Dir	TVD	+N- S	+E- W	Northing	Easting	Latitude	Longitude
hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
Shape									
TG1-GC Fed #44	0 00	0 00	5,375 00	-208 20	-42 60	660,379 50	667,897 70	32° 48' 51 402 N	103° 47' 12 615 W
- plan hits target center									
- Point									
PBHL-GC Fed #44	0 00	0 00	7,100 00	-208 20	-42 60	660,379 50	667,897 70	32° 48' 51 402 N	103° 47' 12 615 W
- plan hits target center									
- Circle (radius 10 00)									

Casing Points				
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(usft)	(usft)		(")	(")
2,100 00	2,100 00	8-5/8" Casing	8-5/8	12-1/4

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N- S	+E- W	
(usft)	(usft)	(usft)	(usft)	
2,200 00	2,200 00	0 00	0 00	KOP Start Build 2 00"/100'
2,404 62	2,404 45	-7 16	-1 46	EOC hold 4 09°
5,177 80	5,170 56	-201 04	-41 14	Start Drop 2 00"/100'
5,382 42	5,375 00	-208 20	-42 60	EOC hold 0 00°



Scientific Drilling for COG Operating LLC
Site: Lea County, NM (NAD27 NME)
Well: GC Federal #44
Wellbore: OH
Design: Plan #1 - 7-7/8" Hole



WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
TG1-GC Fed #44	5375.00	-208 20	-42 60	660379 50	667897.70	32°48' 51.402 N	103°47' 12.615 W	Point
PBHL-GC Fed #44	7100.00	-208 20	-42 60	660379 50	667897.70	32°48' 51.402 N	103°47' 12.615 W	Circle (Radius: 10.00)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	
3	2404.62	4.09	191.56	2404.44	-7.16	-1.46	2.00	191.56	7.30	
4	5177.80	4.09	191.56	5170.56	-201.04	-41.14	0.00	0.00	205.21	
5	5382.42	0.00	0.00	5375.00	-208.20	-42.60	2.00	180.00	212.51	TG1-GC Fed #44
6	7107.42	0.00	0.00	7100.00	-208.20	-42.60	0.00	0.00	212.51	PBHL-GC Fed #44

WELL DETAILS: GC Federal #44

+N/-S	+E/-W	Northing	Easting	Ground Level	Latitude	Longitude	Slot
0.00	0.00	660587.70	667940.30	3977.00	32°48' 53.460 N	103°47' 12.103 W	

PROJECT DETAILS Lea County, NM (NAD27 NME)

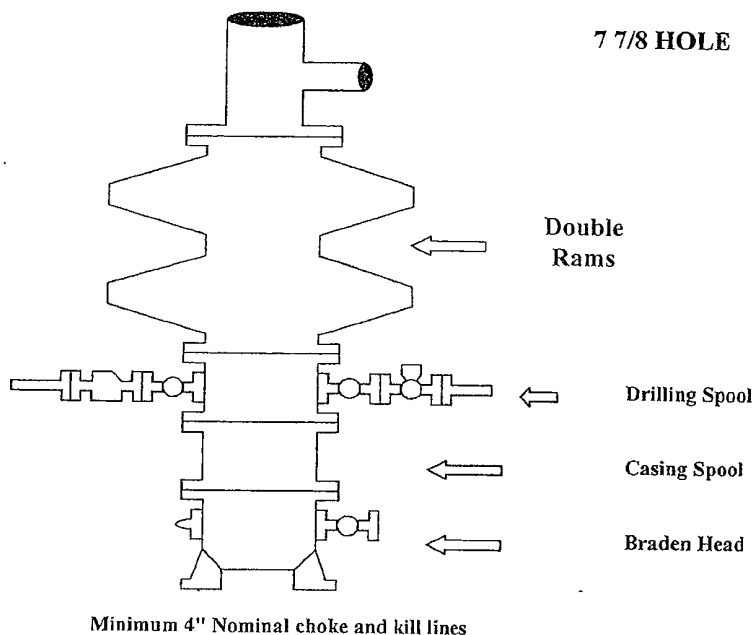
Plan: Plan #1 - 7-7/8" Hole (GC Federal #44/OH)

Geodetic System: US State Plane 1927 (Exact solution) Created By: Julio Pina Date: 12-May-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: _____

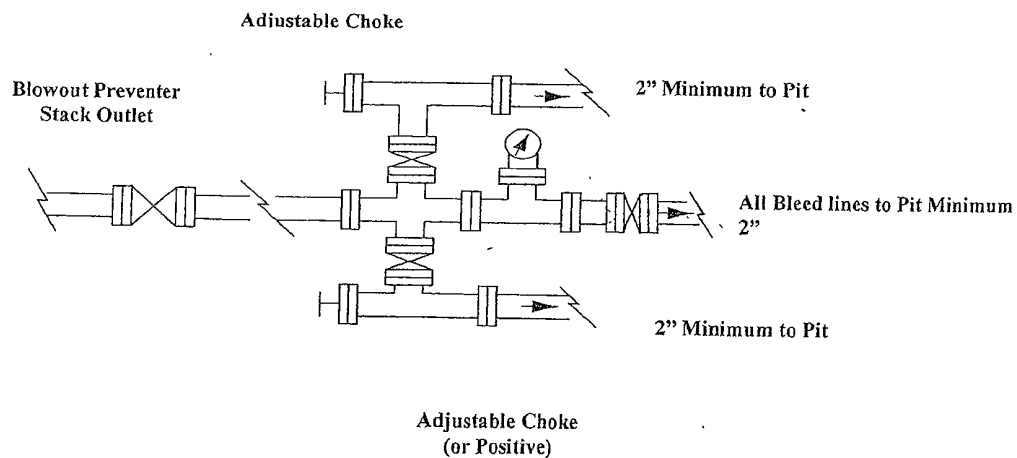
COG Operating LLC

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.

COG Operating LLC
Closed Loop Equipment Diagram

