ATS-11-291

OCD-ARTESIA

Form 3160-3
(April 2004)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No.	NMLC - 029418 (b)
6. If Indian, Allotee or Tribe Name	N/A
7 If Unit or CA Agreement, Name and No.	N/A
8 Lease Name and Well No	Tex Mack 11 Federal #58 H
9 API Well No.	30-015- 39312
10 Field and Pool, or Exploratory	Fren; Glorieta-Yeso, East 97213
11 Sec , T. R. M or Blk. and Survey or Area	Sec 11 T17S R31E
12 County or Parish	EDDY
13 State	NM

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone

2 Name of Operator: COG Operating LLC

3a. Address: 550 W. Texas Ave., Suite 100, 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: 2150' FNL & 1030' FEL, Unit H

At proposed prod zone: 2310' FNL & 1650' FEL, Unit G

14 Distance in miles and direction from nearest town or post office*: 6 miles East of Loco Hills, NM

15 Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	1030'	16 No. of acres in lease	1200
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	7000' TVD; 7052' MD
20 BLM/BIA Bond No. on file	NMB000740		
21 Elevations (Show whether DF, KDB, RT, GL, etc)	3966' GR	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 06/08/2011
Title: Permitting Tech		
Approved by *(Signature)* /s/ Don Peterson	Name *(Printed/Typed)*	Date AUG 8 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 U.S.C Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

Roswell Controlled Water Basin

RECEIVED
AUG 11 2011
NMOCD ARTESIA

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

MASTER DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Quaternary	Surface
Rustler	670'
Top of Salt	801'
Base of Salt	1771'
Yates	2006'
Seven Rivers	2332'
Queen	2952'
Grayburg	3392'
San Andres	3718'
Glorietta	5222'
Paddock	5285'
Blinebry	5688'
Tubb	6700'

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

Water Sand	150'	Fresh Water
Grayburg	3392'	Oil/Gas
San Andres	3718'	Oil/Gas
Glorieta	5222'	Oil/Gas
Paddock	5285'	Oil/Gas
Blinebry	5688'	Oil/Gas
Tubb	6700'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to ~~695'~~ 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, (but calculated to surface) 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

See COA

4. Casing Program

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	Jt.	burst/collapse/tension
17 ½" See COA	0-695'	13 3/8"	48#	H-40orJ-55	New	ST&C	8.71/3.724/14.91
11" COA	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 or17#	J-55orL80	New	LT&C	1.71/1.574/2.20

750
1850
7052

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, ~~745~~ 300 (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 (no need for excess in casing overlap).

Multi-Stage: Stage 1: (Assumed TD of 6900') 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, 9% excess; **this is a**

TD of well → 7000'; won't have 9% excess, 7/12/11

See COA

minimum volume and will be adjusted up after caliper is 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 (no need for excess in casing overlap). 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 nippled 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 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.

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
0-695' 750	Fresh Water	8.5	28	N.C.
695-1800' 1650	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 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 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.

CONCHO

COG Operating LLC

Eddy County, NM (NAN27 NME)
Tex Mack 11 Federal #58
Tex Mack 11 Federal #58

OH

Plan: Plan #1 7-7/8" Hole
SHL = 2150' FNL & 1030' FEL
BHL = 2300' FNL & 1660' FEL
Top of Paddock = 130' S of Surface & 532' W of Surface @ 5220' TVD

Standard Planning Report

12 April, 2011

Scientific Drilling
Directional Drilling Operations

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Site Tex Mack 11 Federal #58
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3966 00usft
Project:	Eddy County, NM (NAN27 NME)	**MD Reference:**	GL Elev @ 3966 00usft
Site:	Tex Mack 11 Federal #58	**North Reference:**	Grid
Well:	Tex Mack 11 Federal #58	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 7-7/8" Hole		

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 Tex Mack 11 Federal #58

Site Position:		**Northing:**	673,447.70 usft	**Latitude:**	32° 51' 1 433 N
From:	Map	**Easting:**	653,173 60 usft	**Longitude:**	103° 50' 4 419 W
Position Uncertainty:	0 00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0 27 °

Well Tex Mack 11 Federal #58

Well Position	**+N/-S**	0 00 usft	**Northing:**	673,447 70 usft	**Latitude:**	32° 51' 1 433 N
	+E/-W	0 00 usft	**Easting:**	653,173 60 usft	**Longitude:**	103° 50' 4 419 W
Position Uncertainty		0 00 usft	**Wellhead Elevation:**		**Ground Level:**	3,966 00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2011/04/12	7 78	60 73	48,979

Design Plan #1 7-7/8" Hole

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0 00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0 00	0 00	0 00	256 23

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
1,950 00	0 00	0 00	1,950.00	0 00	0 00	0 00	0 00	0 00	0 00	
2,491 16	10 82	256 23	2,487 95	-12 13	-49 50	2 00	2 00	0 00	256 23	
4,888 61	10 82	256 23	4,842 75	-119 25	-486 75	0 00	0 00	0 00	0 00	
5,268 99	3 22	256 23	5,220 00	-130 30	-531 87	2 00	-2 00	0 00	-180 00	TG1-Tex Mack 11 #5
7,051 80	3 22	256 23	7,000 00	-154 10	-629 00	0 00	0 00	0 00	0 00	PBHL-Tex Mack 11 #

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Site Tex Mack 11 Federal #58
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Site:	Tex Mack 11 Federal #58	**North Reference:**	Grid
Well:	Tex Mack 11 Federal #58	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 7-7/8" Hole		

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
East HL-Tex Mack 11 #58 - South HL-Tex Mack 11 #58									
1,850 00	0 00	0 00	1,850 00	0 00	0 00	0 00	0 00	0 00	0 00
8-5/8" Casing									
1,950 00	0 00	0 00	1,950 00	0 00	0 00	0 00	0 00	0 00	0 00
KOP Start Build 2.00°/100'									
2,000 00	1 00	256 23	2,000 00	-0 10	-0 42	0 44	2 00	2 00	0 00
2,100 00	3 00	256 23	2,099 93	-0 93	-3 81	3 93	2 00	2 00	0 00
2,200 00	5 00	256 23	2,199 68	-2 59	-10 59	10 90	2 00	2 00	0 00
2,300 00	7 00	256 23	2,299 13	-5 08	-20 74	21 35	2 00	2 00	0 00
2,400 00	9 00	256 23	2,398 15	-8 39	-34 26	35 27	2 00	2 00	0 00
2,491 16	10 82	256 23	2,487 95	-12 13	-49 50	50 96	2 00	2 00	0 00
EOC hold 10.82°									
2,500 00	10 82	256 23	2,496 63	-12 52	-51 11	52 62	0 00	0 00	0 00
2,600 00	10 82	256 23	2,594 85	-16 99	-69 35	71 40	0 00	0 00	0 00
2,700 00	10 82	256 23	2,693 07	-21 46	-87 59	90 18	0 00	0 00	0 00
2,800 00	10 82	256 23	2,791 29	-25 93	-105 82	108 95	0 00	0 00	0 00
2,900 00	10 82	256 23	2,889 51	-30 39	-124 06	127 73	0 00	0 00	0 00
3,000 00	10 82	256 23	2,987 74	-34 86	-142 30	146 51	0 00	0 00	0 00
3,100 00	10 82	256 23	3,085 96	-39 33	-160 54	165 29	0 00	0 00	0 00
3,200 00	10 82	256 23	3,184 18	-43 80	-178 78	184 07	0 00	0 00	0 00
3,300 00	10 82	256 23	3,282 40	-48 27	-197 02	202 84	0 00	0 00	0 00
3,400 00	10 82	256 23	3,380 62	-52 74	-215 26	221 62	0 00	0 00	0 00
3,500 00	10 82	256 23	3,478 84	-57 20	-233 49	240 40	0 00	0 00	0 00
3,600 00	10 82	256 23	3,577 06	-61 67	-251 73	259 18	0 00	0 00	0 00
3,700 00	10 82	256 23	3,675 28	-66 14	-269.97	277 96	0 00	0 00	0 00
3,800 00	10 82	256 23	3,773 50	-70 61	-288 21	296 73	0 00	0 00	0 00
3,900 00	10 82	256 23	3,871 73	-75 08	-306 45	315 51	0 00	0 00	0 00
4,000 00	10 82	256 23	3,969 95	-79 55	-324 69	334 29	0 00	0 00	0 00
4,100 00	10 82	256 23	4,068 17	-84 01	-342 93	353 07	0 00	0 00	0 00
4,200 00	10 82	256 23	4,166 39	-88 48	-361 16	371 84	0 00	0 00	0 00
4,300 00	10 82	256 23	4,264 61	-92 95	-379 40	390 62	0 00	0 00	0 00
4,400 00	10 82	256 23	4,362 83	-97 42	-397 64	409 40	0 00	0 00	0 00
4,500 00	10 82	256 23	4,461 05	-101 89	-415 88	428 18	0 00	0 00	0 00
4,600 00	10 82	256 23	4,559 27	-106 36	-434 12	446 96	0 00	0 00	0 00
4,700 00	10 82	256 23	4,657 50	-110 82	-452 36	465 73	0 00	0 00	0 00
4,800 00	10 82	256 23	4,755 72	-115 29	-470 59	484 51	0 00	0 00	0 00
4,888 61	10 82	256 23	4,842 75	-119 25	-486 76	501 15	0 00	0 00	0 00
Start Drop 2.00°/100'									
4,900 00	10 60	256 23	4,853 94	-119 75	-488 81	503 27	2 00	-2 00	0 00
5,000 00	8 60	256 23	4,952 54	-123 72	-505 00	519 93	2.00	-2 00	0 00
5,100 00	6 60	256 23	5,051 66	-126 87	-517 84	533 15	2 00	-2 00	0 00
5,200 00	4 60	256 23	5,151 17	-129 19	-527 31	542 90	2 00	-2 00	0 00
5,268 99	3 22	256 23	5,220 00	-130 30	-531 87	547 60	2 00	-2 00	0 00
EOC hold 3.22° - TG1-Tex Mack 11 #58									
5,300 00	3 22	256 23	5,250 96	-130 72	-533 56	549 34	0 00	0 00	0 00
5,400 00	3 22	256 23	5,350 81	-132 05	-539 01	554 95	0 00	0 00	0 00
5,500 00	3 22	256 23	5,450 65	-133 39	-544 46	560 56	0 00	0 00	0 00
5,600 00	3 22	256 23	5,550 49	-134 72	-549.90	566 17	0 00	0.00	0 00
5,700 00	3 22	256 23	5,650 33	-136.06	-555 35	571.78	0 00	0 00	0 00
5,800 00	3 22	256 23	5,750 18	-137 39	-560 80	577 39	0 00	0 00	0 00
5,900 00	3 22	256 23	5,850 02	-138 73	-566 25	582 99	0 00	0 00	0 00
6,000 00	3 22	256 23	5,949 86	-140 06	-571 70	588 60	0 00	0 00	0 00

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Site Tex Mack 11 Federal #58
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3966 00usft
Project:	Eddy County, NM (NAN27 NME)	**MD Reference:**	GL Elev @ 3966 00usft
Site:	Tex Mack 11 Federal #58	**North Reference:**	Grid
Well:	Tex Mack 11 Federal #58	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 7-7/8" Hole		

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)
6,100 00	3 22	256 23	6,049 70	-141 40	-577 15	594 21	0 00	0 00	0 00
6,200 00	3 22	256 23	6,149 55	-142 73	-582 59	599 82	0.00	0 00	0 00
6,300 00	3 22	256.23	6,249 39	-144 07	-588 04	605 43	0 00	0 00	0 00
6,400 00	3 22	256 23	6,349 23	-145.40	-593 49	611 04	0 00	0 00	0 00
6,500 00	3 22	256 23	6,449 07	-146.73	-598 94	616 65	0 00	0 00	0 00
6,600 00	3 22	256 23	6,548 92	-148 07	-604.39	622 26	0 00	0 00	0 00
6,700 00	3 22	256 23	6,648 76	-149.40	-609 83	627 87	0 00	0 00	0.00
6,800 00	3 22	256 23	6,748 60	-150 74	-615.28	633 48	0.00	0 00	0 00
6,900 00	3 22	256 23	6,848 44	-152 07	-620 73	639 09	0 00	0 00	0 00
7,000 00	3 22	256 23	6,948 29	-153 41	-626.18	644 70	0 00	0 00	0 00
7,051 80	3 22	256 23	7,000 00	-154 10	-629 00	647 60	0 00	0 00	0 00
PBHL-Tex Mack 11 #58									

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
East HL-Tex Mack 11 #5	0 00	0 00	0 00	-164 10	-619 00	673,283 60	652,554 60	32° 50' 59 838 N	103° 50' 11 684 W
- plan misses target center by 640 38usft at 0 00usft MD (0 00 TVD, 0 00 N, 0 00 E)									
- Rectangle (sides W0 00 H500 00 D0 00)									
South HL-Tex Mack 11 #	0 00	0 00	0 00	-164 10	-619 00	673,283 60	652,554 60	32° 50' 59 838 N	103° 50' 11 684 W
- plan misses target center by 640 38usft at 0 00usft MD (0 00 TVD, 0 00 N, 0 00 E)									
- Rectangle (sides W500 00 H0 00 D0 00)									
TG1-Tex Mack 11 #58	0 00	0 00	5,220 00	-130.30	-531 87	673,317 39	652,641 73	32° 51' 0 168 N	103° 50' 10 661 W
- plan hits target center									
- Point									
PBHL-Tex Mack 11 #58	0 00	0 01	7,000 00	-154 10	-629 00	673,293 60	652,544 60	32° 50' 59 937 N	103° 50' 11 801 W
- plan hits target center									
- Circle (radius 10 00)									

Casing Points

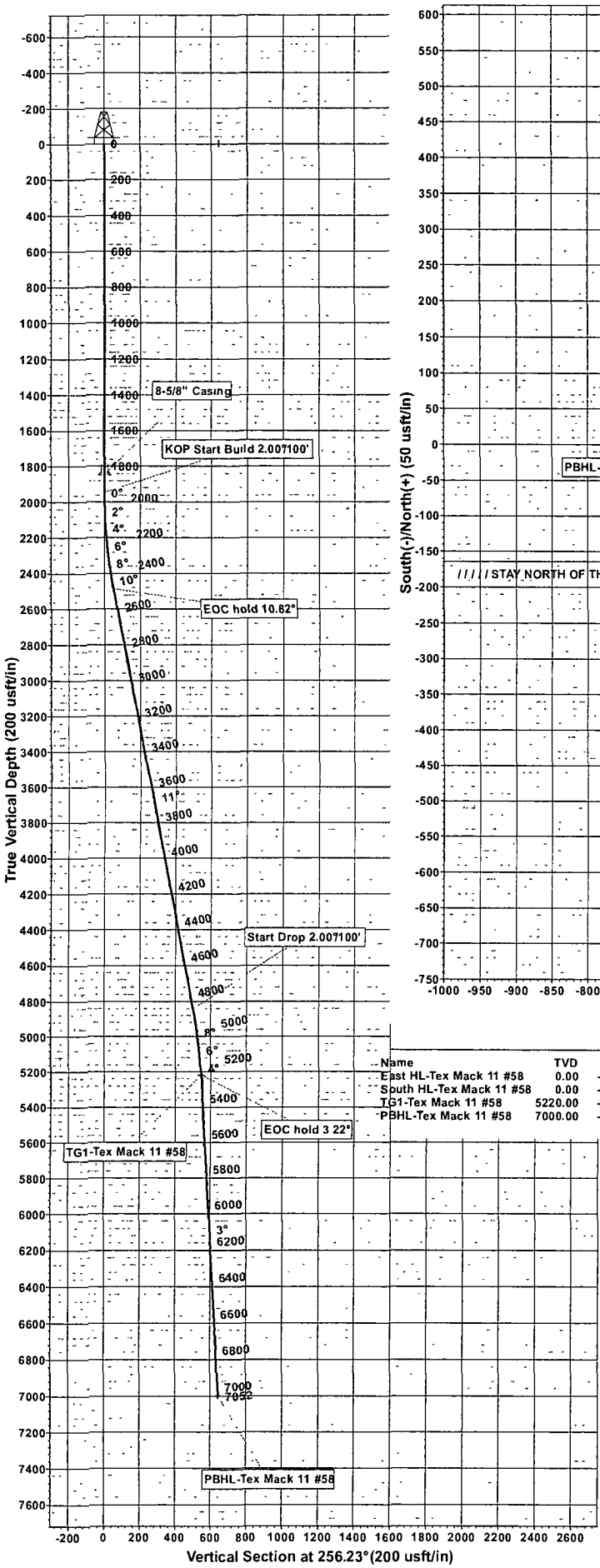
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,850 00	1,850 00	8-5/8" Casing	8-5/8	12-1/4

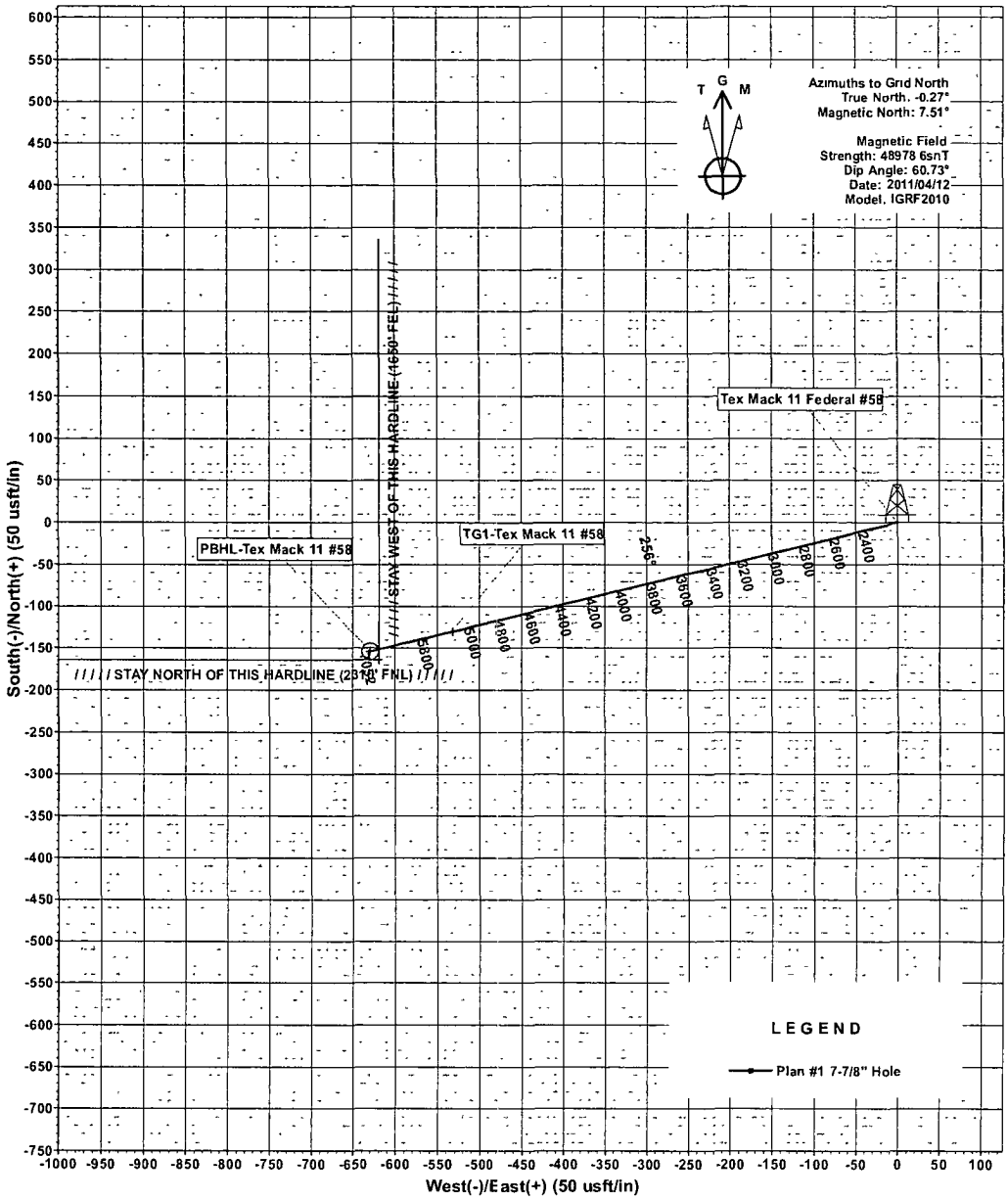
Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1,950 00	1,950 00	0 00	0 00	KOP Start Build 2 00°/100'
2,491 16	2,487 95	-12 13	-49 50	EOC hold 10 82°
4,888 61	4,842 75	-119 25	-486 76	Start Drop 2 00°/100'
5,268 99	5,220 00	-130 30	-531 87	EOC hold 3 22°

Scientific Drilling for COG Operating LLC
Site: Eddy County, NM (NAN27 NME)
Well: Tex Mack 11 Federal #58
Wellbore: OH
Design: Plan #1 7-7/8" Hole

Scientific Drilling
Directional Drilling Operations





WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
East HL-Tex Mack 11 #58	0.00	-164.10	-619.00	673283.60	652554.60	32° 50' 59.838 N	103° 50' 11.684 W	Rectangle (Sides: L500.00 W0.00)
South HL-Tex Mack 11 #58	0.00	-164.10	-619.00	673283.60	652554.60	32° 50' 59.838 N	103° 50' 11.684 W	Rectangle (Sides: L0.00 W500.00)
TG1-Tex Mack 11 #58	5220.00	-130.30	-531.87	673317.40	652641.73	32° 51' 0.168 N	103° 50' 10.661 W	Point
PBHL-Tex Mack 11 #58	7000.00	-154.10	-629.00	673293.60	652544.60	32° 50' 59.937 N	103° 50' 11.801 W	Circle (Radius: 10.00)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1950.00	0.00	0.00	1950.00	0.00	0.00	0.00	0.00	0.00	
3	2491.16	10.82	256.23	2487.95	-12.13	-49.50	2.00	256.23	50.96	
4	4888.61	10.82	256.23	4842.75	-119.25	-486.75	0.00	0.00	501.15	
5	5268.99	3.22	256.23	5220.00	-130.30	-531.87	2.00	-180.00	547.60	TG1-Tex Mack 11 #58
6	7051.80	3.22	256.23	7000.00	-154.10	-629.00	0.00	0.00	647.60	PBHL-Tex Mack 11 #58

WELL DETAILS: Tex Mack 11 Federal #58

Ground Level: 3966.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	673447.70	653173.60	32° 51' 1.433 N	103° 50' 4.419 W	

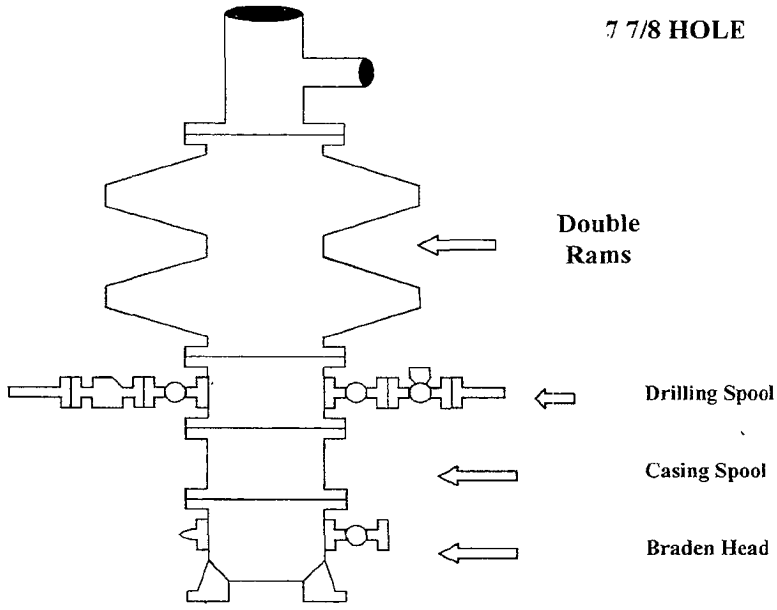
PROJECT DETAILS: Eddy County, NM (NAN27 NME)

Plan: Plan #1 7-7/8" Hole (Tex Mack 11 Federal #58/OH)

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

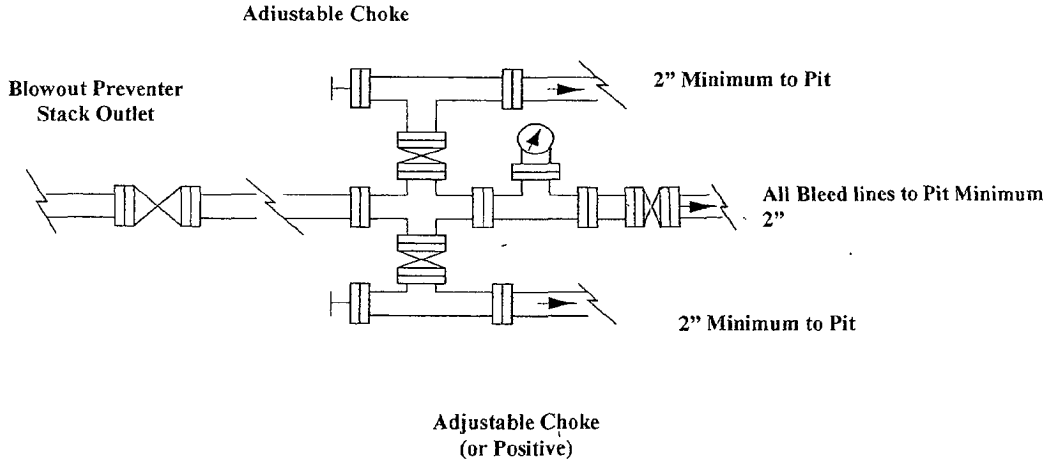
Created By: Julio Pina Date: 12-Apr-11
Checked: _____ Date: _____
Reviewed: _____ Date: _____
Approved: _____ Date: _____

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



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.