AT5-11-277

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-028784C

6. If Indian, Allotee or Tribe Name
N/A

7 If Unit or CA Agreement, Name and No
NMNM-88525X; Burch Keely Unit

1a. Type of work: ☑ DRILL ☐ REENTER

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

8. Lease Name and Well No.
BURCH KEELY UNIT #505

2. Name of Operator
COG Operating LLC

9 API Well No.
30-015- 35438

3a Address
550 W. Texas Ave., Suite 1300
Midland, TX 79701

3b. Phone No. *(include area code)*
432-685-4384

10 Field and Pool, or Exploratory
Grayburg Jackson; SR-Q-Grbg-SA

4 Location of Well *(Report location clearly and in accordance with any State requirements *)*
At surface **230' FNL & 330' FWL, Unit D**
At proposed prod zone **330' FNL & 330' FWL, Unit D**

11. Sec., T R M. or Blk and Survey or Area
Sec 13 T17S R29E

14 Distance in miles and direction from nearest town or post office*
2 miles from Loco Hills, NM

12 County or Parish
EDDY

13 State
NM

15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drlg. unit line, if any)	16. No of acres in lease	17 Spacing Unit dedicated to this well
230'	**1440**	**40**
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19 Proposed Depth	20 BLM/BIA Bond No on file
463'	**4800' TVD; 4804' MD**	**NMB000740; NMB000215**
21 Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3633' GL	**10/31/2011**	**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)*	Date
	Kelly J. Holly	**08/23/2011**

Title **Permitting Tech**

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/s/ Don Peterson		SEP 20 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)

RECEIVED
SEP 22 2011
NMOCD ARTESIA

Roswell Controlled Water Basin

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	220'
Salt	360'
Base of Salt	780'
Yates	950'
Seven Rivers	1235'
Queen	1845'
Grayburg	2220'
San Andres	2540'
Glorieta	4000'
Paddock	4075'
Blinebry	4620'
Tubb	5520'

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

Water Sand	150'	Fresh Water
Grayburg	2150'	Oil/Gas
San Andres	2450'	Oil/Gas
Glorieta	3900'	Oil/Gas
Paddock	4075'	Oil/Gas
Blinebry	4620'	Oil/Gas
Tubb	5520'	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, (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 environment.

See COA

See COA

4. Casing Program

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	Jt.	brst/clps/ten
17 ½" See COA	0-~~300~~ 310'	13 3/8"	48#	H-40orJ-55	ST&C/New	ST&C	9.22/3.943/15.8
11" COA	0-~~850~~ 980'	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

4800

5. Cement Program

13 3/8" Surface Casing: Class C w/ 2% Cacl2 + 0.25 pps CF, 400 sx, yield 1.32, back to surface. 154% excess

8 5/8" Intermediate Casing:

11" Hole:
Single Stage: 50:50:10 C:Poz:Gel w/ 5% Salt +0.25% CF, 300 sx lead, yield-2.45 + Class C w/2% CaCl2, 200 sx tail, yield-1.32, back to surface. 363% excess
Multi-Stage: Stage 1: Class C w/2% CaCl2, 200 sx, yield - 1.32; 108% excess Stage 2: 50:50:10 C:Poz:Gel w/ 5% Salt +0.25% CF, 300 sx, yield - 2.45, back to surface, 726% excess; assumption for tool is lost circulation. Multi stage tool to be set at approximately, depending on hole conditions, 350' (50' below the surface casing). Cement volumes will be adjusted proportionately for depth changes of multi stage tool.

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. 106% open hole excess, cement calculated back to surface.
Multi-Stage: Stage 1: (Assumed TD of 4800') 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, 72% excess; Stage 2: LEAD

See COA

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 – 1.02 148% open hole excess, cement calculated back to surface. Multi stage tool to be set at approximately, depending on hole conditions, 2500'. Cement volumes will be adjusted proportionately for depth changes of multi stage tool, assumption for tool is water flow.

6. Minimum Specifications for Pressure Control

The blowout preventer equipment (BOP) shown in Exhibit #9 will consist of a double ram-type (2000 psi WP) preventer, and in some cases possibly a 2000 psi Hydril type annular preventer as provided for in Onshore Order #2. This unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top of 4 1/2" drill pipe rams on the bottom. A 13-5/8" or 11" BOP will be used, depending on the rig selected, during the drilling of the well. The BOP will be 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
0-300' 310	Fresh Water	8.5	28	N.C.
300-850' 980	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.

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
550 West Texas, Suite 1300
Midland, TX 79701

DIRECTIONAL PLAN VARIANCE REQUEST

Burch Keely Unit #505
EDDY, NM

SHL	230 FNL, 330 FWL	Sec 13, T17S, R29E, Unit D
BHL	330 FNL, 330 FWL	Sec 13, T17S, R29E, Unit D

COG Operating LLC, as Operator, desires that the APD reflect the footages as stated on the surveyor's plat. However, Operator also desires to avoid inadvertently drilling the well to a non-standard location. Therefore, due to the proximity of the plat bottom hole location to the pro-ration unit hard line(s), the attached directional plan is designed to avoid the hard lines by as much as fifty feet; said fifty feet being in either (or both) the north-south and/or east-west directions as applicable.

CONCHO

COG Operating LLC

Eddy County, NM (NAN27 NME)
Burch Keely Unit #505
Burch Keely Unit #505

OH

Plan: Plan #1 7-7/8" Hole
SHL = 230' FNL & 330' FWL
BHL = 380' FNL & 380' FWL
Top of Paddock = 380' FNL & 380' FWL @ 4200' TVD

Standard Planning Report

23 August, 2011

Scientific Drilling
Directional Drilling Operations

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Site Burch Keely Unit #505
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3633 00usft
Project:	Eddy County, NM (NAN27 NME)	**MD Reference:**	GL Elev @ 3633 00usft
Site:	Burch Keely Unit #505	**North Reference:**	Grid
Well:	Burch Keely Unit #505	**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 Burch Keely Unit #505

Site Position:		**Northing:**	669,813 30 usft	**Latitude:**	32° 50' 27 770 N
From:	Map	**Easting:**	591,546 50 usft	**Longitude:**	104° 2' 6 953 W
Position Uncertainty:	0 00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0 16 °

Well Burch Keely Unit #505

Well Position	**+N/-S**	0 00 usft	**Northing:**	669,813 30 usft	**Latitude:**	32° 50' 27 770 N
	+E/-W	0 00 usft	**Easting:**	591,546 50 usft	**Longitude:**	104° 2' 6 953 W
Position Uncertainty		0 00 usft	**Wellhead Elevation:**		**Ground Level:**	3,633 00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2011/08/23	7.82	60 67	48,916

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	161 57

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	
1,150 00	0 00	0 00	1,150 00	0.00	0 00	0 00	0 00	0 00	0 00	
1,306 39	3 13	161 57	1,306.31	-4 05	1 35	2 00	2 00	0 00	161 57	
4,047 85	3 13	161 57	4,043 69	-145 95	48 65	0.00	0 00	0 00	0 00	
4,204 24	0 00	0 00	4,200 00	-150 00	50 00	2 00	-2 00	0 00	180 00	TG1-BK #505
4,804 24	0.00	0 00	4,800 00	-150 00	50 00	0 00	0 00	0 00	0 00	PBHL-BK #505

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Site Burch Keely Unit #505
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3633 00usft
Project:	Eddy County, NM (NAN27 NME)	**MD Reference:**	GL Elev @ 3633 00usft
Site:	Burch Keely Unit #505	**North Reference:**	Grid
Well:	Burch Keely Unit #505	**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
West HL-BK #505 - North HL-BK #505									
1,150 00	0 00	0 00	1,150 00	0 00	0 00	0 00	0 00	0 00	0 00
KOP Start Build 2.00°/100'									
1,200 00	1 00	161 57	1,200 00	-0 41	0 14	0 44	2.00	2 00	0 00
1,300 00	3 00	161 57	1,299 93	-3 72	1 24	3 93	2 00	2 00	0 00
1,306 39	3 13	161 57	1,306 31	-4 05	1 35	4 27	2 00	2 00	0 00
EOC hold 3.13°									
1,350 00	3 13	161 57	1,349 86	-6 31	2 10	6.65	0 00	0 00	0 00
8-5/8" Casing									
1,400 00	3 13	161 57	1,399.78	-8 89	2 96	9 38	0 00	0 00	0 00
1,500 00	3.13	161.57	1,499 63	-14 07	4.69	14 83	0 00	0 00	0 00
1,600 00	3 13	161 57	1,599 49	-19 25	6 42	20 29	0 00	0 00	0 00
1,700 00	3 13	161 57	1,699 34	-24 42	8.14	25 74	0 00	0 00	0 00
1,800 00	3.13	161 57	1,799 19	-29 60	9 87	31 20	0 00	0 00	0 00
1,900 00	3 13	161 57	1,899 04	-34 77	11 59	36 66	0 00	0 00	0 00
2,000 00	3 13	161 57	1,998 89	-39 95	13.32	42 11	0 00	0 00	0 00
2,100 00	3 13	161 57	2,098 74	-45 13	15 04	47 57	0 00	0 00	0 00
2,200 00	3 13	161 57	2,198 59	-50 30	16 77	53 02	0 00	0.00	0 00
2,300 00	3.13	161 57	2,298 44	-55 48	18.49	58 48	0 00	0 00	0 00
2,400 00	3 13	161 57	2,398 29	-60 66	20 22	63 94	0 00	0 00	0 00
2,500 00	3 13	161 57	2,498 14	-65 83	21 94	69 39	0 00	0 00	0.00
2,600 00	3 13	161 57	2,598 00	-71 01	23 67	74 85	0 00	0 00	0 00
2,700 00	3 13	161 57	2,697 85	-76 18	25 39	80 31	0 00	0 00	0 00
2,800 00	3.13	161 57	2,797.70	-81.36	27 12	85 76	0 00	0 00	0 00
2,900 00	3 13	161 57	2,897 55	-86 54	28.85	91 22	0 00	0 00	0 00
3,000 00	3 13	161 57	2,997 40	-91 71	30 57	96 67	0 00	0 00	0 00
3,100 00	3 13	161 57	3,097 25	-96 89	32 30	102 13	0 00	0 00	0 00
3,200 00	3 13	161 57	3,197 10	-102 07	34 02	107 59	0 00	0 00	0 00
3,300 00	3 13	161 57	3,296 95	-107 24	35.75	113 04	0.00	0 00	0 00
3,400 00	3 13	161 57	3,396 80	-112 42	37 47	118 50	0 00	0 00	0 00
3,500 00	3 13	161 57	3,496 65	-117 59	39 20	123 95	0 00	0 00	0 00
3,600 00	3 13	161 57	3,596 51	-122.77	40 92	129 41	0 00	0 00	0 00
3,700 00	3 13	161 57	3,696 36	-127 95	42 65	134 87	0 00	0 00	0 00
3,800 00	3 13	161 57	3,796 21	-133 12	44 37	140 32	0 00	0 00	0 00
3,900 00	3 13	161 57	3,896.06	-138 30	46 10	145 78	0 00	0 00	0 00
4,000 00	3 13	161 57	3,995 91	-143 47	47.82	151 24	0 00	0 00	0 00
4,047 85	3 13	161 57	4,043 69	-145 95	48 65	153 85	0 00	0 00	0 00
Start Drop 2.00°/100'									
4,100 00	2 08	161 57	4,095 78	-148 20	49.40	156 22	2 00	-2 00	0 00
4,200 00	0 08	161 57	4,195 76	-150 00	50 00	158 11	2 00	-2 00	0 00
4,204 24	0 00	0 00	4,200 00	-150 00	50 00	158 11	2 00	-2 00	0 00
EOC hold 0.00° - Top of Paddock - TG1-BK #505									
4,804 24	0 00	0 00	4,800 00	-150 00	50 00	158 11	0 00	0 00	0 00
PBHL-BK #505									

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Site Burch Keely Unit #505
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3633 00usft
Project:	Eddy County, NM (NAN27 NME)	**MD Reference:**	GL Elev @ 3633 00usft
Site:	Burch Keely Unit #505	**North Reference:**	Grid
Well:	Burch Keely Unit #505	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 7-7/8" Hole		

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-BK #505 - plan misses target center by 100 00usft at 0 00usft MD (0 00 TVD, 0 00 N, 0 00 E) - Rectangle (sides W0 00 H150 00 D0.00)	0 00	0 00	0 00	-100 00	0 00	669,713 30	591,546 50	32° 50' 26 780 N	104° 2' 6 957 W
North HL-BK #505 - plan misses target center by 100 00usft at 0.00usft MD (0 00 TVD, 0 00 N, 0 00 E) - Rectangle (sides W150 00 H0 00 D0 00)	0 00	0 00	0 00	-100 00	0 00	669,713 30	591,546 50	32° 50' 26 780 N	104° 2' 6 957 W
TG1-BK #505 - plan hits target center - Point	0 00	0 00	4,200 00	-150 00	50 00	669,663 30	591,596 50	32° 50' 26 284 N	104° 2' 6 372 W
PBHL-BK #505 - plan hits target center - Circle (radius 50 00)	0 00	0 01	4,800 00	-150 00	50 00	669,663 30	591,596 50	32° 50' 26 284 N	104° 2' 6 372 W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,350 00	1,349 86	8-5/8" Casing	8-5/8	12-1/4

Formations

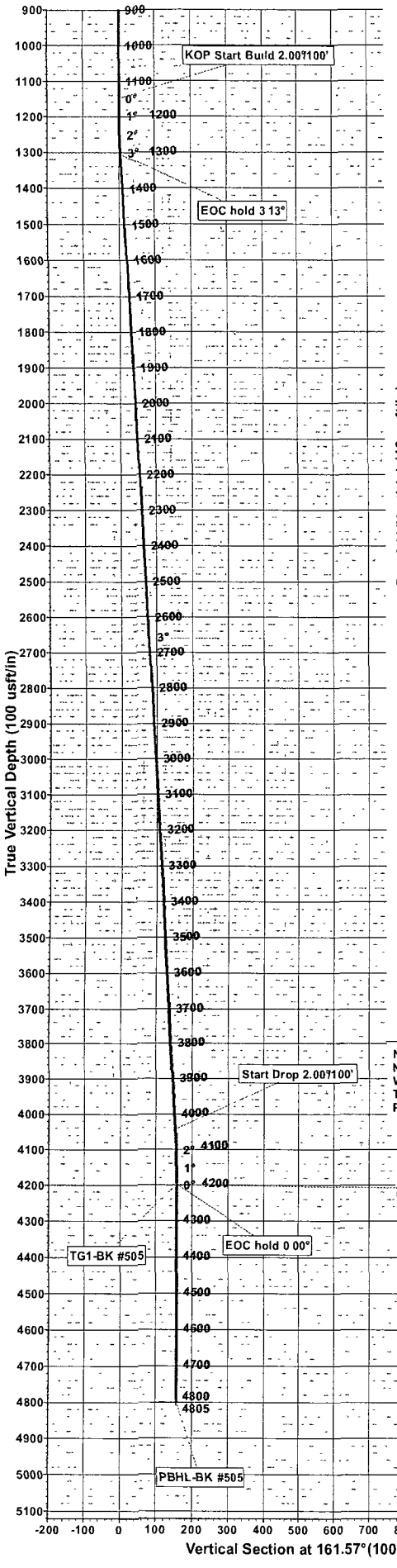
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,204 24	4,200 00	Top of Paddock		0 00	

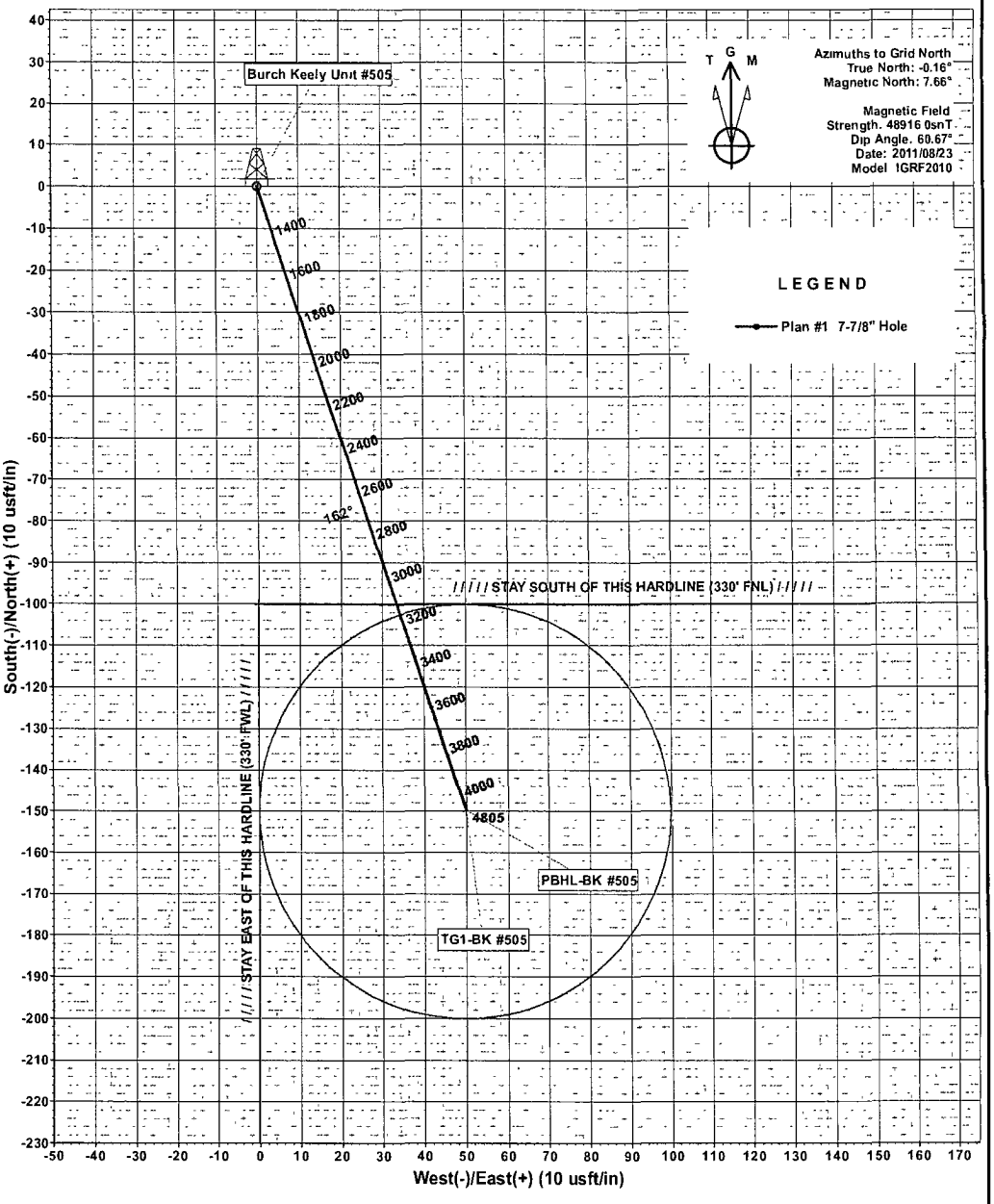
Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1,150 00	1,150 00	0 00	0 00	KOP Start Build 2 00°/100'
1,306 39	1,306 31	-4 05	1 35	EOC hold 3 13°
4,047 85	4,043 69	-145 95	48 65	Start Drop 2 00°/100'
4,204 24	4,200 00	-150 00	50 00	EOC hold 0 00°

Scientific Drilling for COG Operating LLC
Site: Eddy County, NM (NAN27 NME)
Well: Burch Keely Unit #505
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
North HL-BK #505	0.00	-100.00	0.00	669713.30	591546.50	32° 50' 26.780 N	104° 2' 6.957 W	Rectangle (Sides: L0 0 0 W150.00)
West HL-BK #505	0 00	-100.00	0.00	669713.30	591546.50	32° 50' 26.780 N	104° 2' 6.957 W	Rectangle (Sides: L150 00 W0 00)
TG1-BK #505	4200 00	-150.00	50.00	669663.30	591596.50	32° 50' 26.284 N	104° 2' 6.372 W	Point
PBHL-BK #505	4800.00	-150 00	50 00	669663 30	591596 50	32° 50' 26.284 N	104° 2' 6 372 W	Circle (Radius: 50.00)

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	1150.00	0.00	0 00	1150.00	0.00	0.00	0 00	0 00	0 00	
3	1306.39	3 13	161.57	1306.31	-4.05	1 35	2.00	161.57	4.27	
4	4047.85	3.13	161.57	4043.69	-145 95	48.65	0.00	0.00	153 85	
5	4204.24	0 00	0 00	4200.00	-150 00	50 00	2 00	180.00	158 11	TG1-BK #505
6	4804.24	0.00	0 00	4800.00	-150.00	50.00	0 00	0.00	158.11	PBHL-BK #505

WELL DETAILS: Burch Keely Unit #505

Ground Level: 3633 00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0 00	669813.30	591546 50	32°50' 27.770 N	104°2' 6 953 W	

PROJECT DETAILS Eddy County, NM (NAN27 NME)

Plan Plan #1 7-7/8" Hole (Burch Keely Unit #505/OH)

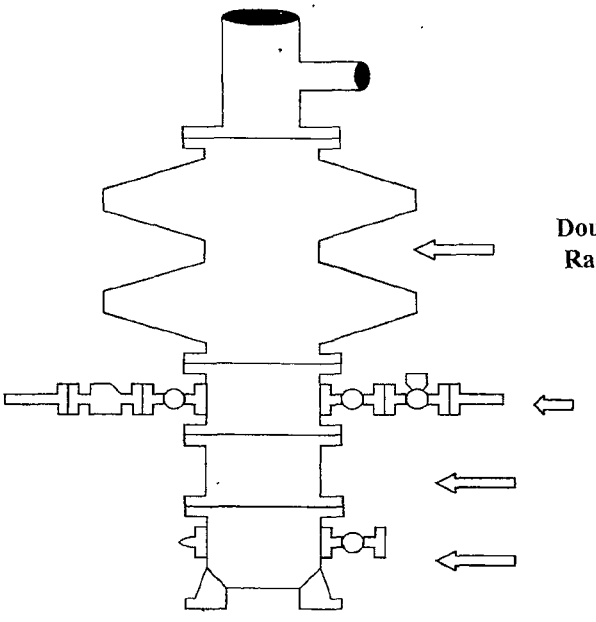
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

Created By: Julio Pina Date: 23-Aug-11
Checked: _____ Date: _____
Reviewed: _____ Date: _____
Approved _____ Date: _____

COG Operating LLC

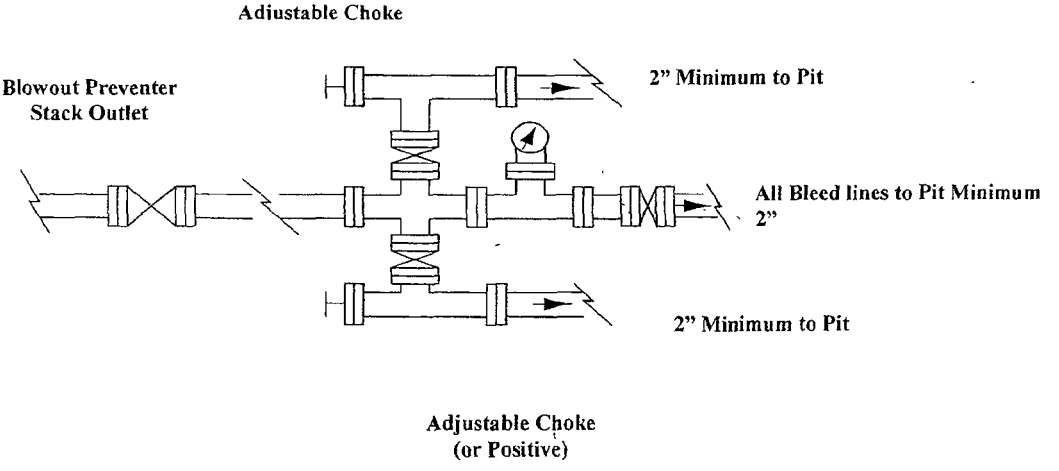
Exhibit #9

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.