OCD-ARTESIA

ATS-11-25

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-054406

6 If Indian, Allotee or Tribe Name
N/A

7 If Unit or CA Agreement, Name and No.
NMNM - 88525X

8 Lease Name and Well No.
BURCH KEELY UNIT #624

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

9 API Well No.
30-015- 39126

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 **2458' FSL & 2464' FWL, Unit K**
At proposed prod zone **2310' FNL & ~~2640'~~ 2630 FWL, Unit F**

11. Sec., T R M or Blk and Survey or Area
Sec 24 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 drig unit line, if any)
2458'

16 No of acres in lease
40

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
TVD: 4800' MD: 4842' ✓

20 BLM/BIA Bond No. on file
NMB000215

21 Elevations (Show whether DF, KDB, RT, GL, etc.)
3611' GL ✓

22 Approximate date work will start*
03/31/2010

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 **01/14/2011**

Title **Permitting Tech**

Approved by *(Signature)* **/s/ Don Peterson**
Name *(Printed/Typed)*
Date **APR 29 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)*

Approval Subject to General Requirements & Special Stipulations Attached

Roswell Controlled Water Basin

RECEIVED
MAY 03 2011
NMOCD ARTESIA

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

See COA

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~~ 950 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

4. Casing Program

See COA

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	Jt.	brst/clps/ten
17 ½"	0-300'	13 3/8"	48#	H-40orJ-55	ST&C/New	ST&C	9.22/3.943/15.8
11"	0-~~850~~350	8 5/8"	24or32#	J-55	ST&C/New	ST&C	3.03/2.029/7.82
7 7/8"	0-TD	5 1/2"	15.5or17#	J-55orL-80	LT&C/New	LT&C	1.88/1.731/2.42

5. Cement Program

See COA

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.

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

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'	Fresh Water	8.5	28	N.C.
300-~~850'~~ 950'	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.

CONCHO

COG Operating LLC

Eddy County, NM (NAN27 NME)
Burch Keely Unit #624
Burch Keely Unit #624

OH

Plan: Plan #1 7-7/8" Hole
SHL = 2458' FSL & 2464' FEL
BHL = 2310' FNL & 1640' FWL
Top of Paddock = 414' North of Surface & 142' East of Surface @ 4000' TVD

Standard Planning Report

12 January, 2011

Scientific Drilling
Directional Drilling Operations

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Site Burch Keely Unit #624
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3611 00usft
Project:	Eddy County, NM (NAN27 NME)	**MD Reference:**	GL Elev @ 3611 00usft
Site:	Burch Keely Unit #624	**North Reference:**	Grid
Well:	Burch Keely Unit #624	**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 #624

Site Position:		**Northing:**	661,953 10 usft	**Latitude:**	32° 49' 9 930 N
From:	Map	**Easting:**	593,698 20 usft	**Longitude:**	104° 1' 41 999 W
Position Uncertainty:	0 00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0 17 °

Well Burch Keely Unit #624

Well Position	**+N/-S**	0 00 usft	**Northing:**	661,953 10 usft	**Latitude:**	32° 49' 9 930 N
	+E/-W	0 00 usft	**Easting:**	593,698 20 usft	**Longitude:**	104° 1' 41 999 W
Position Uncertainty		0 00 usft	**Wellhead Elevation:**		**Ground Level:**	3,611 00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2011/01/12	7 89	60 67	48,965

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	18 98

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	
1,628 76	9 58	18 98	1,626 53	37 74	12 98	2 00	2 00	0 00	18 98	
3,912 86	9 58	18 98	3,878 81	397 02	136 58	0 00	0 00	0 00	0 00	
4,035 35	7 13	18 98	4,000 00	413 84	142 37	2 00	-2 00	0 00	-180 00	TG1-BK #624
4,841 58	7 13	18 98	4,800 00	508 40	174 90	0 00	0 00	0 00	0 00	PBHL-BK #624

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Site Burch Keely Unit #624
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3611 00usft
Project:	Eddy County, NM (NAN27 NME)	**MD Reference:**	GL Elev @ 3611 00usft
Site:	Burch Keely Unit #624	**North Reference:**	Grid
Well:	Burch Keely Unit #624	**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
1,050 00	0 00	0 00	1,050.00	0 00	0.00	0.00	0 00	0 00	0 00
8-5/8" Casing									
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	18 98	1,200.00	0 41	0 14	0 44	2 00	2 00	0 00
1,300 00	3 00	18 98	1,299 93	3 71	1 28	3 93	2 00	2 00	0 00
1,400 00	5 00	18 98	1,399 68	10 31	3 55	10 90	2 00	2 00	0 00
1,500.00	7 00	18 98	1,499 13	20 19	6.95	21 35	2 00	2 00	0 00
1,600 00	9 00	18 98	1,598 15	33 35	11 47	35.27	2 00	2 00	0 00
1,628 76	9.58	18 98	1,626 53	37 74	12.98	39 91	2 00	2 00	0 00
EOC hold 9.58°									
1,700 00	9 58	18 98	1,696 78	48 95	16 84	51 76	0 00	0 00	0 00
1,800 00	9 58	18 98	1,795 39	64 68	22 25	68 40	0 00	0 00	0 00
1,900 00	9 58	18 98	1,894 00	80 41	27 66	85 03	0 00	0 00	0 00
2,000 00	9.58	18 98	1,992 60	96 13	33 07	101 66	0 00	0 00	0 00
2,100 00	9 58	18 98	2,091 21	111 86	38 48	118 30	0.00	0 00	0.00
2,200 00	9 58	18 98	2,189.82	127 59	43 89	134 93	0 00	0 00	0.00
2,300 00	9 58	18 98	2,288 42	143 32	49 31	151 57	0 00	0 00	0 00
2,400 00	9.58	18 98	2,387 03	159 05	54 72	168 20	0 00	0 00	0 00
2,500 00	9 58	18 98	2,485 64	174 78	60 13	184 84	0 00	0 00	0.00
2,600 00	9 58	18 98	2,584 24	190 51	65 54	201 47	0 00	0 00	0 00
2,700 00	9 58	18 98	2,682 85	206 24	70 95	218 10	0 00	0 00	0 00
2,800 00	9 58	18 98	2,781 46	221 97	76.36	234 74	0 00	0 00	0 00
2,900 00	9 58	18 98	2,880 06	237 70	81 77	251 37	0 00	0 00	0.00
3,000 00	9 58	18 98	2,978 67	253 43	87 18	268 01	0 00	0.00	0 00
3,100 00	9 58	18 98	3,077 28	269 16	92 60	284 64	0 00	0 00	0 00
3,200 00	9 58	18.98	3,175 88	284 89	98 01	301 27	0 00	0 00	0 00
3,300 00	9 58	18 98	3,274 49	300 62	103 42	317 91	0 00	0 00	0 00
3,400 00	9 58	18 98	3,373 10	316 35	108 83	334 54	0 00	0 00	0 00
3,500 00	9 58	18 98	3,471 70	332 08	114 24	351.18	0 00	0 00	0 00
3,600 00	9 58	18 98	3,570 31	347 80	119 65	367 81	0 00	0.00	0 00
3,700 00	9 58	18 98	3,668 92	363 53	125 06	384 44	0 00	0 00	0 00
3,800 00	9 58	18 98	3,767.53	379 26	130 47	401 08	0 00	0 00	0 00
3,900 00	9 58	18 98	3,866 13	394 99	135 89	417 71	0 00	0 00	0 00
3,912 86	9 58	18 98	3,878 81	397 02	136 58	419 85	0 00	0 00	0 00
Start Drop 2.00°/100'									
4,000 00	7 83	18 98	3,964 95	409 48	140 87	433.04	2 00	-2 00	0 00
4,035 35	7 13	18 98	4,000 00	413 84	142 37	437 64	2 00	-2 00	0 00
EOC hold 7.13° - TG1-BK #624									
4,100 00	7 13	18 98	4,064 15	421 42	144 98	445 66	0 00	0 00	0 00
4,200 00	7 13	18 98	4,163 37	433 15	149 01	458 06	0 00	0 00	0 00
4,300 00	7 13	18 98	4,262 60	444 88	153 05	470 47	0 00	0 00	0 00
4,400 00	7 13	18 98	4,361 83	456 61	157 08	482 87	0 00	0 00	0 00
4,500 00	7 13	18 98	4,461 06	468 34	161 12	495 27	0 00	0 00	0 00
4,600 00	7.13	18 98	4,560 28	480 06	165 15	507 68	0 00	0 00	0 00
4,700 00	7 13	18 98	4,659 51	491 79	169 19	520 08	0 00	0 00	0 00
4,800 00	7 13	18 98	4,758.74	503 52	173 22	532 49	0 00	0 00	0 00
4,841 58	7 13	18 98	4,800 00	508 40	174 90	537 64	0 00	0.00	0 00
PBHL-BK #624									

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Site Burch Keely Unit #624
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3611.00usft
Project:	Eddy County, NM (NAN27 NME)	**MD Reference:**	GL Elev @ 3611 00usft
Site:	Burch Keely Unit #624	**North Reference:**	Grid
Well:	Burch Keely Unit #624	**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
TG1-BK #624 - plan hits target center - Point	0 00	0 00	4,000 00	413 84	142 37	662,366 94	593,840 57	32° 49' 14 021 N	104° 1' 40 316 W
PBHL-BK #624 - plan hits target center - Circle (radius 10 00)	0.00	0 01	4,800 00	508 40	174.90	662,461 50	593,873 10	32° 49' 14 956 N	104° 1' 39 932 W

Casing Points

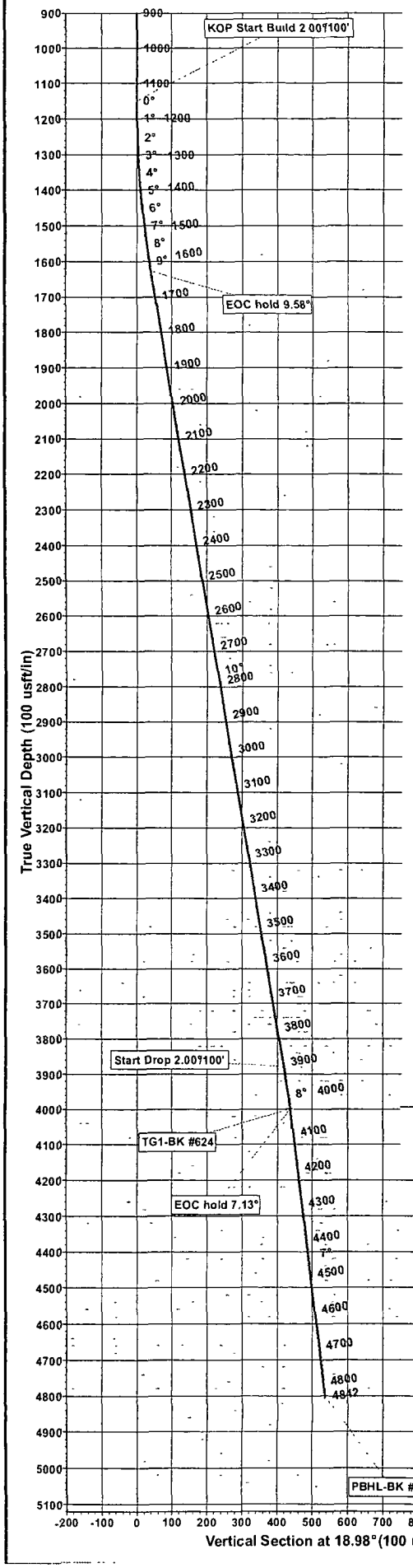
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,050 00	1,050 00	8-5/8" Casing	8-5/8	12-1/4

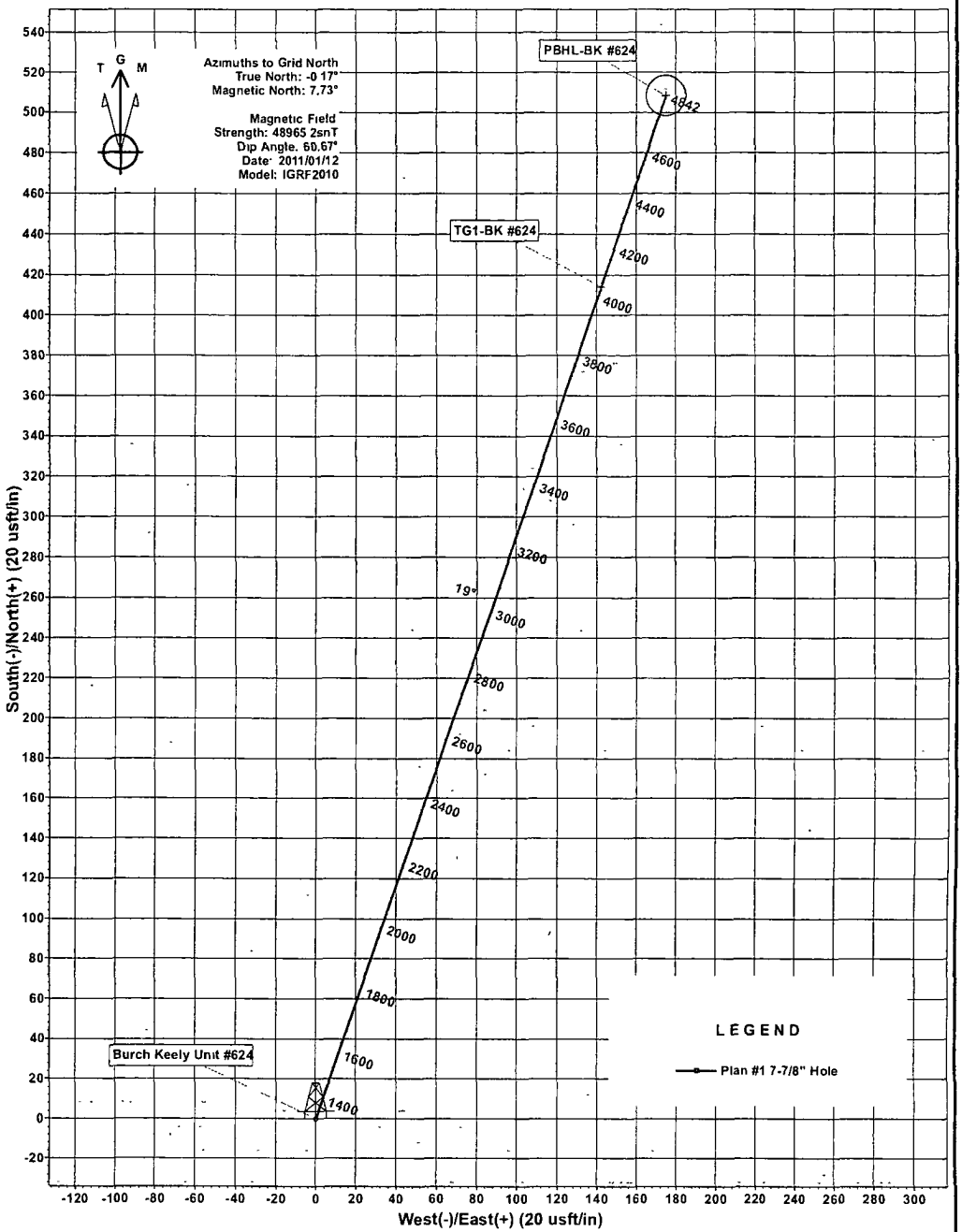
Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1,150 00	1,150 00	0 00	0 00	KOP Start Build 2 00°/100'
1,628 76	1,626 53	37.74	12 98	EOC hold 9 58°
3,912 86	3,878 81	397 02	136 58	Start Drop 2 00°/100'
4,035 35	4,000 00	413 84	142 37	EOC hold 7 13°

Scientific Drilling for COG Operating LLC
Site: Eddy County, NM (NAN27 NME)
Well: Burch Keely Unit #624
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
TG1-BK #624	4000.00	413.84	142.37	662366.94	593840.57	32° 49' 14.021 N	104°1' 40.316 W	Point
PBHL-BK #624	4800.00	508.40	174.90	662461.50	593873.10	32° 49' 14.956 N	104°1' 39.932 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	1150.00	0.00	0.00	1150.00	0.00	0.00	0.00	0.00	0.00	
3	1628.76	9.58	18.98	1626.53	37.74	12.98	2.00	18.98	39.91	
4	3912.86	9.58	18.98	3878.81	397.02	136.58	0.00	0.00	419.85	
5	4035.35	7.13	18.98	4000.00	413.84	142.37	2.00	-180.00	437.64	TG1-BK #624
6	4841.58	7.13	18.98	4800.00	508.40	174.90	0.00	0.00	537.64	PBHL-BK #624

WELL DETAILS: Burch Keely Unit #624

Ground Level: 3611.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	661953.10	593698.20	32° 49' 9.930 N	104°1' 41.999 W	

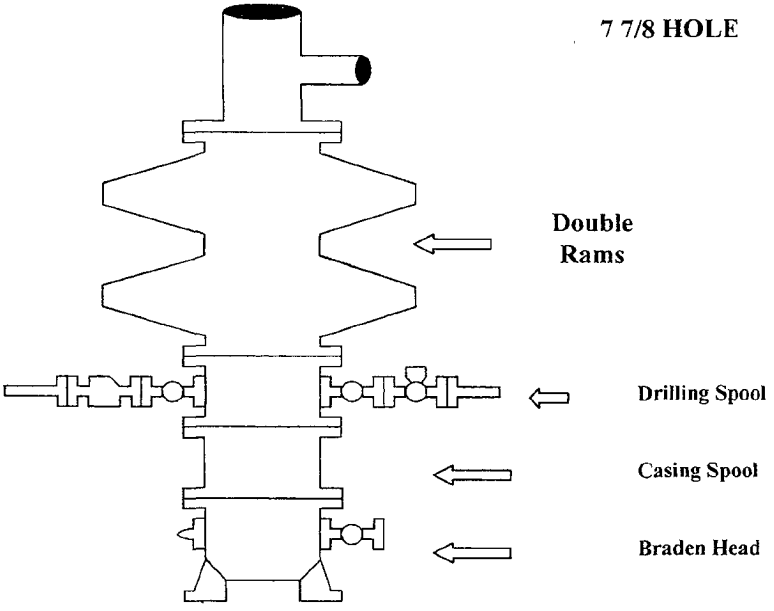
PROJECT DETAILS: Eddy County, NM (NAN27 NME)

Plan: Plan #1 7-7/8" Hole (Burch Keely Unit #624/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

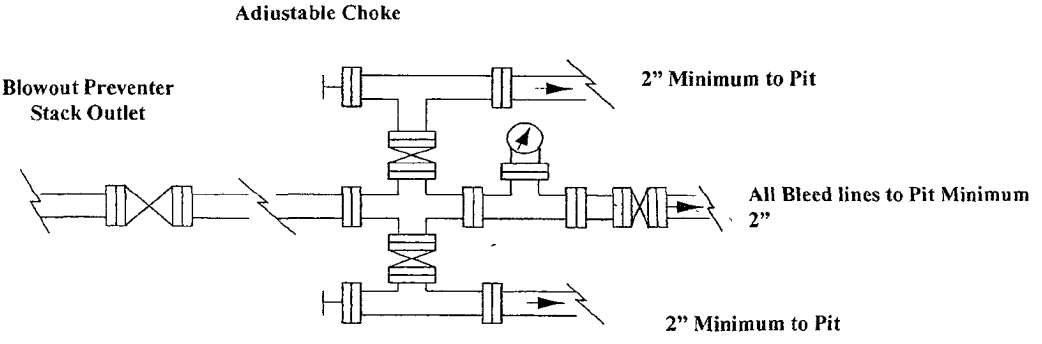
Created By: Julio Pina Date: 12-Jan-11
Checked: _____ Date: _____
Reviewed _____ Date: _____
Approved. _____ Date: _____

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



Adjustable Choke
(or Positive)

NOTES REGARDING THE BLOWOUT PREVENTERS
Master Drilling Plan
Eddy County, New Mexico

1. Drilling nipple to be so constructed that it can be removed without use of a welder through rotary table opening, with minimum I.D. equal to preventer bore.
2. Wear ring to be properly installed in head.
3. Blow out preventer and all fittings must be in good condition, 2000 psi WP minimum.
4. All fittings to be flanged.
5. Safety valve must be available on rig floor at all times with proper connections, valve to be full 2000 psi WP minimum.
6. All choke and fill lines to be securely anchored especially ends of choke lines.
7. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.
8. Kelly cock on Kelly.
9. Extension wrenches and hands wheels to be properly installed.
10. Blow out preventer control to be located as close to driller's position as feasible.
11. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation all API specifications.