

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

1a. Type of work. ☒ DRILL ☐ REENTER		5. Lease Serial No. NMLC029415B
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ 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 Ave., Suite 1300 Midland, TX 79701	3b. Phone No. (include area code) 432-685-4384	8. Lease Name and Well No. Puckett 12 Federal #2H
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface SHL: 110' FNL & 990' FWL, UL D At proposed prod. zone BHL: 330' FSL & 990' FWL, UL M		9. API Well No. 30-015-39475
14. Distance in miles and direction from nearest town or post office* 9 miles East of Loco Hills, NM		10. Field and Pool, or Exploratory Fren; Glorieta-Yeso, East
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any) 110'		11. Sec, T, R, M or Blk. and Survey or Area Sec 12 T17S R31E
16. No. of acres in lease 1920		12. County or Parish EDDY
17. Spacing Unit dedicated to this well 160		13. State NM
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 653'		20. BLM/BIA Bond No. on file NMB000740; NMB000215
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3990' GL		22. Approximate date work will start* 10/30/2011
23. Estimated duration 15 days		

**UNORTHODOX
LOCATION**

24. Attachments
- The following, completed in accordance with the requirements of Onshore Oil and Gas Order No 1, shall be attached to this form:
- Well plat certified by a registered surveyor
 - A Drilling Plan
 - A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office)
 - Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
 - Operator certification
 - 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 **08/04/2011**

Title **Permitting Tech**

Approved by (Signature) **/s/ Don Peterson** Name (Printed/Typed) _____ Date **SEP 30 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 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

**SUBJECT TO LIKE
APPROVAL BY STATE**

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

**APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED**

ATTACHMENT TO FORM 3160-3
COG Operating, LLC
Puckett 12 Federal #2H
SHL: 110' FNL & 990' FWL, Unit D
BHL: 330' FSL & 990' FWL, Unit M
Sec 12, T17S, R31E
Eddy County, NM

1. Proration Unit Spacing: 160 Acres
2. Ground Elevation: 3990'
3. Proposed Depths: Horizontal TVD = 6,600', MD = 11236'
4. Estimated tops of geological markers:

Quaternary	Surface
Rustler	682'
Top of Salt	900'
Base of Salt	1923'
Yates	2028'
Seven Rivers	2356'
Queen	2980'
Grayburg	3415'
San Andres	3739'
Glorieta	5247'
Paddock	5317'
Blinberry	5745'
Tubb	6700'

5. Possible mineral bearing formations:

Water Sand	150'	Fresh Water
Grayburg	3415'	Oil/Gas
San Andres	3739'	Oil/Gas
Glorieta	5247'	Oil/Gas
Paddock	5317'	Oil/Gas
Blinberry	5745'	Oil/Gas
Tubb	6700'	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 700' and circulating cement back to the surface will protect the surface fresh water sand. The Salt Section will be protected by setting 9 5/8" casing to 2000' 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 (although cement volume is actually 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

ATTACHMENT TO FORM 3160-3
COG Operating, LLC
Puckett 12 Federal #2H
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6. Casing Program - Proposed

	<u>Hole size</u>	<u>Interval</u>	<u>OD of Casing</u>	<u>Weight</u>	<u>Cond.</u>	<u>Collar</u>	<u>Grade</u>
See COA	17-1/2"	0' - +/- 770' 770	13-3/8"	48#	New	STC	H-40 or J/K-55
	Collapse sf - 3.87, Burst sf - 8.70, Tension sf - 14.91						
	12-1/4"	0' - +/- 2050' 2050	9-5/8"	36#	New	STC	J/K-55
	Collapse sf - 2.88, Burst sf - 5.01, Tension sf - 8.11						
	8-3/4"	0' - 11236'	7" x 5-1/2"	26#/17#	New	LTC	L-80
	Collapse sf - 1.87, Burst sf - 2.48, Tension sf - 2.08						

Production string will be a tapered string with 7" 26# L-80 LTC ran from surface to kick off point and then crossed over to 5 1/2" 17# L-80 LTC.

7. Cement Program

See
COA **13 3/8" Surface Csg:** Set at +/- 700'MD, Lead Slurry: 450sx Class "C" w/ 2% CaCl₂ & .25 pps CF, 1.32 yield. 45% excess, calculated to surface.

9 5/8" Intrmd. Csg: Set at +/- 2000'MD. **Single Stage:** Lead Slurry: 300 sx 50:50:10:C:Poz:Gel w/ 5% salt, 5 pps LCM-1 .25 pps CF, 2.45 yield. Tail Slurry: 200 sx Class "C" w/ 2% CaCl₂, 1.32 yield. 76% excess, calculated to surface.

See
COA **Multi Stage:** **Stage 1:** 200 sx Class "C" w/ 2% CaCl₂, 1.32 yield. 80% excess. **Stage 2:** 300 sx 50:50:10:C:Poz:Gel w/ 5% salt, 5 pps LCM-1 .25 pps CF, 2.45 yield, back to surface, 166% excess; assumption for tool is lost circulation. Multi stage tool to be set at approximately, depending on hole conditions, 750' (50' below the surface casing). Cement volumes will be adjusted proportionately for depth changes of multi stage tool.

7 x 5 1/2" Production Csg: Set at +/- 11236'MD. **Single Stage:** Lead Slurry: 400 sx 35:65:6:C:Poz:Gel w/ 5% salt, 5 pps LCM, .2% SMS, .3% FL-52A, .125 pps CF, 2.01 yd. Inter. Slurry: 300 sx 50:50:2:C:Poz:Gel w/ 5% salt, 3 pps LCM, .6% SMS, 1% FL-25, 1% BA-58, .125 pps CF, .3% FL-52A; 1.37 yield Tail Slurry: 450 sx Class "H" SOLUCEM-H w/ .7% HR-601, 2.62 yield 60% excess in open hole, calculated to surface. **This is a minimum volume and will be adjusted up after caliper is run.**

Multi Stage: **Stage 1:** (Assumed TD of 11236'MD to DV at 3550') Lead Slurry: 450 sx 50:50:2:C:Poz:Gel w/ 5% salt, 3 pps LCM, .6% SMS, 1% FL-25, 1% BA-58, .125 pps CF, .3% FL-52A; 1.37 yield Tail Slurry: 450 sx Class "H" SOLUCEM-H w/ .7% HR-601, 2.62 yield; 7% excess. **This is a minimum volume and will be adjusted up after caliper is run.** **Stage 2:** Lead Slurry: 350 sx 50:50:2:C:Poz:Gel w/ 5% salt, 3 pps LCM, .6% SMS, 1% FL-25, 1% BA-58, .125 pps CF, .3% FL-52A; 1.37 yield. Tail Slurry: 150 sx Class C w/ 0.3% R-3 + 1.5% CD-32, 1.02 yield. 28% excess calculated back to surface (no need for excess in casing overlap). **This is a minimum volume and will be adjusted up after caliper is run.**

Multi stage tool to be set at approximately, depending on hole conditions, 3550'. Cement volumes will be adjusted proportionately for depth changes of multi stage tool; assumption for use of tool is water flow.

ATTACHMENT TO FORM 3160-3

COG Operating, LLC
Puckett 12 Federal #2H
Page 3 of 4

8. Pressure Control Equipment:

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" will be used 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. After setting 9-5/8" the BOP will then be nipped up on the 9-5/8" 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.

9. Proposed Mud Circulating System

Interval	Mud Wt.	Visc.	FL	Type Mud System
0' - 700' <i>770</i>	8.5	28	NC	Fresh water native mud w/ paper for seepage and sweeps. Lime for PH.
700' - 2000' <i>2050</i>	10	30	NC	Brine mud, lime for PH and paper for seepage and sweeps.
2000' - 11236'	9.1	29	NC	Drill section with fresh water/cut brine circulating the reserve utilizing periodic sweeps of paper as needed for seepage control and solids removal.

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times.

10. Production Hole Drilling Summary:

Drill 8 3/4" hole and kick off at +/- 6123', building curve over +/- 750' to horizontal at 6600' TVD. Drill horizontal section in a Easterly direction for +/-4363' lateral to TD at +/-11236' MD, 6600' TVD. Run 7" x 5-1/2" production casing in Open hole lateral and cement to surface.

11. 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.

ATTACHMENT TO FORM 3160-3
COG Operating, LLC
Puckett 12 Federal #2H
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12. Logging, Testing and Coring Program:

- A. No electric logging to be performed on this well. *see COA*
- B. The mud logging program will consist of lagged 10' samples from intermediate casing point to T.D. in vertical pilot hole and from Kick off point to TD in Horizontal hole.
- C. Drill Stem test is not anticipated.
- D. No conventional coring is anticipated.
- E. Further testing procedures will be determined after the 7" x 5 1/2" production casing has been cemented at TD based on drill shows and log evaluation.

13. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 90 degrees and estimated maximum bottom hole pressure is 1800 psig. Measurable gas volumes or Hydrogen Sulfide levels have not been encountered during drilling operations in this area, however an H2S plan is attached to the Drilling Program. No major loss of circulation zones has been reported in offsetting wells.

14. Anticipated Starting Date

Drilling operations will commence approximately on October 30, 2011 with drilling and completion operations lasting approximately 90 days.



COG Operating LLC

Eddy County, NM (NAN27 NME)

Puckett 12 Federal #2H

Puckett 12 Federal #2H

OH

Plan: Plan #1 8-3/4" Hole

SHL = 110' FNL & 990' FWL

PP = 330' FNL & 990' FWL

BHL = 330' FSL & 990' FWL

Standard Planning Report

03 August, 2011





Scientific Drilling Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Puckett 12 Federal #2H
Well: Puckett 12 Federal #2H
Wellbore: OH
Design: Plan #1 8-3/4" Hole

Local Co-ordinate Reference: Site Puckett 12 Federal #2H
TVD Reference: GL Elev @ 3990 00usft
MD Reference: GL Elev @ 3990 00usft
North Reference: Gnd
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:	Puckett 12 Federal #2H		
Site Position:		Northing:	675,501 00 usft
From:	Map	Easting:	655,181 70 usft
Position Uncertainty:	0 00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 51' 21.656 N
		Longitude:	103° 49' 40.765 W
		Grid Convergence:	0 27 °

Well:	Puckett 12 Federal #2H		
Well Position	+N/-S	0 00 usft	Northing:
	+E/-W	0 00 usft	Easting:
Position Uncertainty	0 00 usft	Wellhead Elevation:	Ground Level:
			3,990 00 usft

Wellbore:	OH		
Magnetics:	Model Name	Sample Date	Declination
	IGRF2010	2011/07/29	7 74
			Dip Angle
			60 72
			Field Strength
			48,953

Design:	Plan #1 8-3/4" 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
			179 68

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	
6,122.54	0 00	0 00	6,122.54	0 00	0 00	0 00	0 00	0 00	0 00	
6,872.54	90 00	179.68	6,600.00	-477.46	2.66	12.00	12.00	0 00	179.68	
11,236.35	90 00	179.68	6,600.00	-4,841.20	27.00	0.00	0 00	0 00	0 00	PBHL-Puckett 12 #2H



Scientific Drilling Planning Report



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Company: COG Operating LLC
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Well: Puckett 12 Federal #2H
Wellbore: OH
Design: Plan #1 8-3/4" Hole

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Site Puckett 12 Federal #2H
GL Elev @ 3990 00usft
GL Elev @ 3990 00usft
Grid
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
6,122 54	0 00	0 00	6,122 54	0 00	0 00	0 00	0 00	0 00	0 00
KOP Start Build 12.00°/100'									
6,200 00	9 30	179 68	6,199 66	-6 27	0 03	6 27	12 00	12 00	0 00
6,300 00	21 30	179 68	6,295 94	-32 60	0 18	32 60	12 00	12 00	0 00
6,400 00	33 30	179 68	6,384 65	-78 38	0 44	78 38	12 00	12 00	0 00
6,500 00	45 30	179 68	6,461 89	-141 59	0 79	141 59	12 00	12 00	0 00
6,600 00	57 30	179 68	6,524 31	-219 49	1 22	219 49	12 00	12 00	0 00
6,600 61	57 37	179 68	6,524 64	-220 00	1 23	220 01	12 00	12 00	0 00
PP=330' FNL, Puckett 12 #2H									
6,700 00	69 30	179 68	6,569 16	-308 66	1 72	308 66	12 00	12 00	0 00
6,800 00	81 30	179 68	6,594 50	-405 20	2 26	405 21	12 00	12 00	0 00
6,872 54	90 00	179 68	6,600 00	-477 46	2 66	477 47	12 00	12 00	0 00
Land EOC hold 90.00°									
6,900 00	90 00	179 68	6,600 00	-504 92	2 82	504 93	0 00	0 00	0 00
7,000 00	90 00	179 68	6,600 00	-604 92	3 37	604 93	0 00	0 00	0 00
7,100 00	90 00	179 68	6,600 00	-704 92	3 93	704 93	0 00	0 00	0 00
7,200 00	90 00	179 68	6,600 00	-804 92	4 49	804 93	0 00	0 00	0 00
7,300 00	90 00	179 68	6,600 00	-904 92	5 05	904 93	0 00	0 00	0 00
7,400 00	90 00	179 68	6,600 00	-1,004 91	5 60	1,004 93	0 00	0 00	0 00
7,500 00	90 00	179 68	6,600 00	-1,104 91	6 16	1,104 93	0 00	0 00	0 00
7,600 00	90 00	179 68	6,600 00	-1,204 91	6 72	1,204 93	0 00	0 00	0 00
7,700 00	90 00	179 68	6,600 00	-1,304 91	7 28	1,304 93	0 00	0 00	0 00
7,800 00	90 00	179 68	6,600 00	-1,404 91	7 84	1,404 93	0 00	0 00	0 00
7,900 00	90 00	179 68	6,600 00	-1,504 91	8 39	1,504 93	0 00	0 00	0 00
8,000 00	90 00	179 68	6,600 00	-1,604 90	8 95	1,604 93	0 00	0 00	0 00
8,100 00	90 00	179 68	6,600 00	-1,704 90	9 51	1,704 93	0 00	0 00	0 00
8,200 00	90 00	179 68	6,600 00	-1,804 90	10 07	1,804 93	0 00	0 00	0 00
8,300 00	90 00	179 68	6,600 00	-1,904 90	10 62	1,904 93	0 00	0 00	0 00
8,400 00	90 00	179 68	6,600 00	-2,004 90	11 18	2,004 93	0 00	0 00	0 00
8,500 00	90 00	179 68	6,600 00	-2,104 90	11 74	2,104 93	0 00	0 00	0 00
8,600 00	90 00	179 68	6,600 00	-2,204 90	12 30	2,204 93	0 00	0 00	0 00
8,700 00	90 00	179 68	6,600 00	-2,304 89	12 85	2,304 93	0 00	0 00	0 00
8,800 00	90 00	179 68	6,600 00	-2,404 89	13 41	2,404 93	0 00	0 00	0 00
8,900 00	90 00	179 68	6,600 00	-2,504 89	13 97	2,504 93	0 00	0 00	0 00
9,000 00	90 00	179 68	6,600 00	-2,604 89	14 53	2,604 93	0 00	0 00	0 00
9,100 00	90 00	179 68	6,600 00	-2,704 89	15 09	2,704 93	0 00	0 00	0 00
9,200 00	90 00	179 68	6,600 00	-2,804 89	15 64	2,804 93	0 00	0 00	0 00
9,300 00	90 00	179 68	6,600 00	-2,904 88	16 20	2,904 93	0 00	0 00	0 00
9,400 00	90 00	179 68	6,600 00	-3,004 88	16 76	3,004 93	0 00	0 00	0 00
9,500 00	90 00	179 68	6,600 00	-3,104 88	17 32	3,104 93	0 00	0 00	0 00
9,600 00	90 00	179 68	6,600 00	-3,204 88	17 87	3,204 93	0 00	0 00	0 00
9,700 00	90 00	179 68	6,600 00	-3,304 88	18 43	3,304 93	0 00	0 00	0 00
9,800 00	90 00	179 68	6,600 00	-3,404 88	18 99	3,404 93	0 00	0 00	0 00
9,900 00	90 00	179 68	6,600 00	-3,504 88	19 55	3,504 93	0 00	0 00	0 00
10,000 00	90 00	179 68	6,600 00	-3,604 87	20 10	3,604 93	0 00	0 00	0 00
10,100 00	90 00	179 68	6,600 00	-3,704 87	20 66	3,704 93	0 00	0 00	0 00
10,200 00	90 00	179 68	6,600 00	-3,804 87	21 22	3,804 93	0 00	0 00	0 00
10,300 00	90 00	179 68	6,600 00	-3,904 87	21 78	3,904 93	0 00	0 00	0 00
10,400 00	90 00	179 68	6,600 00	-4,004 87	22 34	4,004 93	0 00	0 00	0 00
10,500 00	90 00	179 68	6,600 00	-4,104 87	22 89	4,104 93	0 00	0 00	0 00
10,600 00	90 00	179 68	6,600 00	-4,204 86	23 45	4,204 93	0 00	0 00	0 00
10,700 00	90 00	179 68	6,600 00	-4,304 86	24 01	4,304 93	0 00	0 00	0 00



Scientific Drilling Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Puckett 12 Federal #2H
Well: Puckett 12 Federal #2H
Wellbore: OH
Design: Plan #1 8-3/4" Hole

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Site Puckett 12 Federal #2H
GL Elev @ 3990 00usft
GL Elev @ 3990 00usft
Grid
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)
10,800 00	90 00	179 68	6,600 00	-4,404 86	24 57	4,404 93	0 00	0 00	0 00
10,900 00	90 00	179 68	6,600 00	-4,504 86	25 12	4,504 93	0 00	0 00	0 00
11,000 00	90 00	179 68	6,600 00	-4,604 86	25 68	4,604 93	0 00	0 00	0 00
11,100 00	90 00	179 68	6,600 00	-4,704 86	26 24	4,704 93	0 00	0 00	0 00
11,200 00	90 00	179 68	6,600 00	-4,804 86	26 80	4,804 93	0 00	0 00	0 00
11,236 35	90 00	179 68	6,600 00	-4,841 20	27 00	4,841 28	0 00	0 00	0 00

PBHL-Puckett 12 #2H

Design Targets

Target Name	Hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PP=330' FNL, Puckett 1.	- plan hits target center - Point	0 00	0 00	6,524 64	-220 00	1 23	675,280 99	555,182 93	32° 51' 19.479 N	103° 49' 40 763 W
PBHL-Puckett 12 #2H	- plan hits target center - Point	0 00	0 00	6,600 00	-4,841.20	27 00	670,659 80	555,208 70	32° 50' 33 751 N	103° 49' 40 720 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
6,122 54	6,122 54	0 00	0 00	KOP Start Build 12 00°/100'
6,872 54	6,600 00	-477 46	2 66	Land EOC hold 90 00°



Scientific Drilling for COG Operating LLC
Site: Eddy County, NM (NAN27 NME)
Well: Puckett 12 Federal #2H
Wellbore: OH
Design: Plan #1 8-3/4" Hole



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Oleg	TFace	Vsect	Target
1	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
2	6122 54	0 00	0 00	6122 54	0 00	0 00	0 00	0 00	0 00	
3	6872 54	90 00	179 68	6600 00	-477.46	2.66	12 00	179.68	477.46	
4	11236 35	90 00	179 68	6600.00	-4841 20	27 00	0.00	0.00	4841.28	PBHL-Puckett 12 #2H

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PP=330' FNL, Puckett 12 #2H	26524 64	-220.00	1 23	675281.00	655182.93	32°51' 19.479 N	103°49' 40.763 W	Point
PBHL-Puckett 12 #2H	6600 00	-4841.20	27 00	670659.80	655208 70	32°50' 33 751 N	103°49' 40.720 W	Point

WELL DETAILS: Puckett 12 Federal #2H

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0 00	0 00	675501.00	655181 70	32°51' 21.656 N	103°49' 40.765 W	

Puckett 12 Federal #2H

Created By: Julio Pina Date: 29-Jul-11

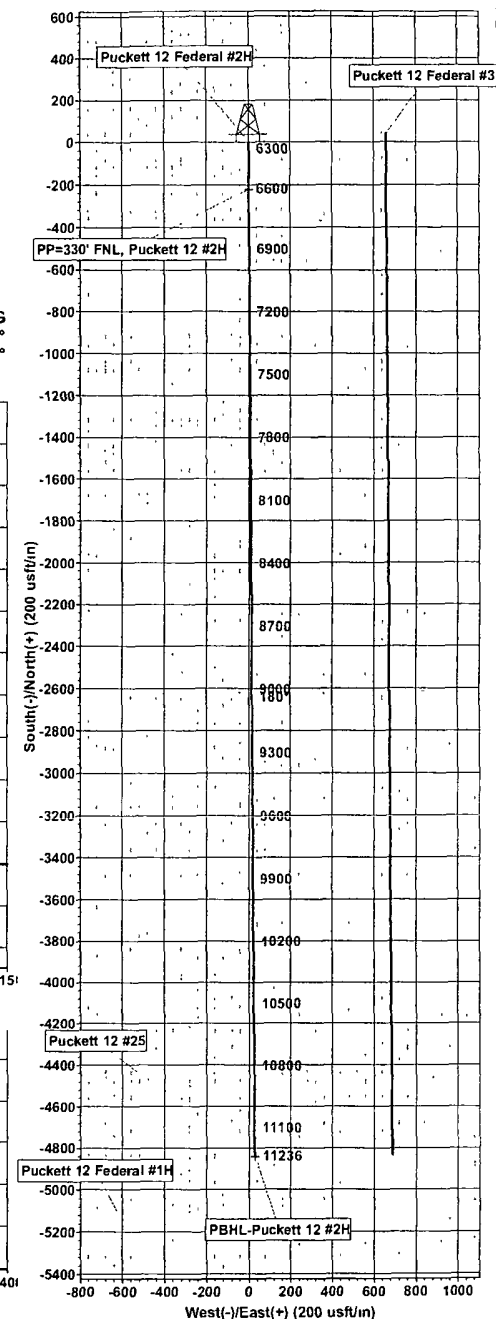
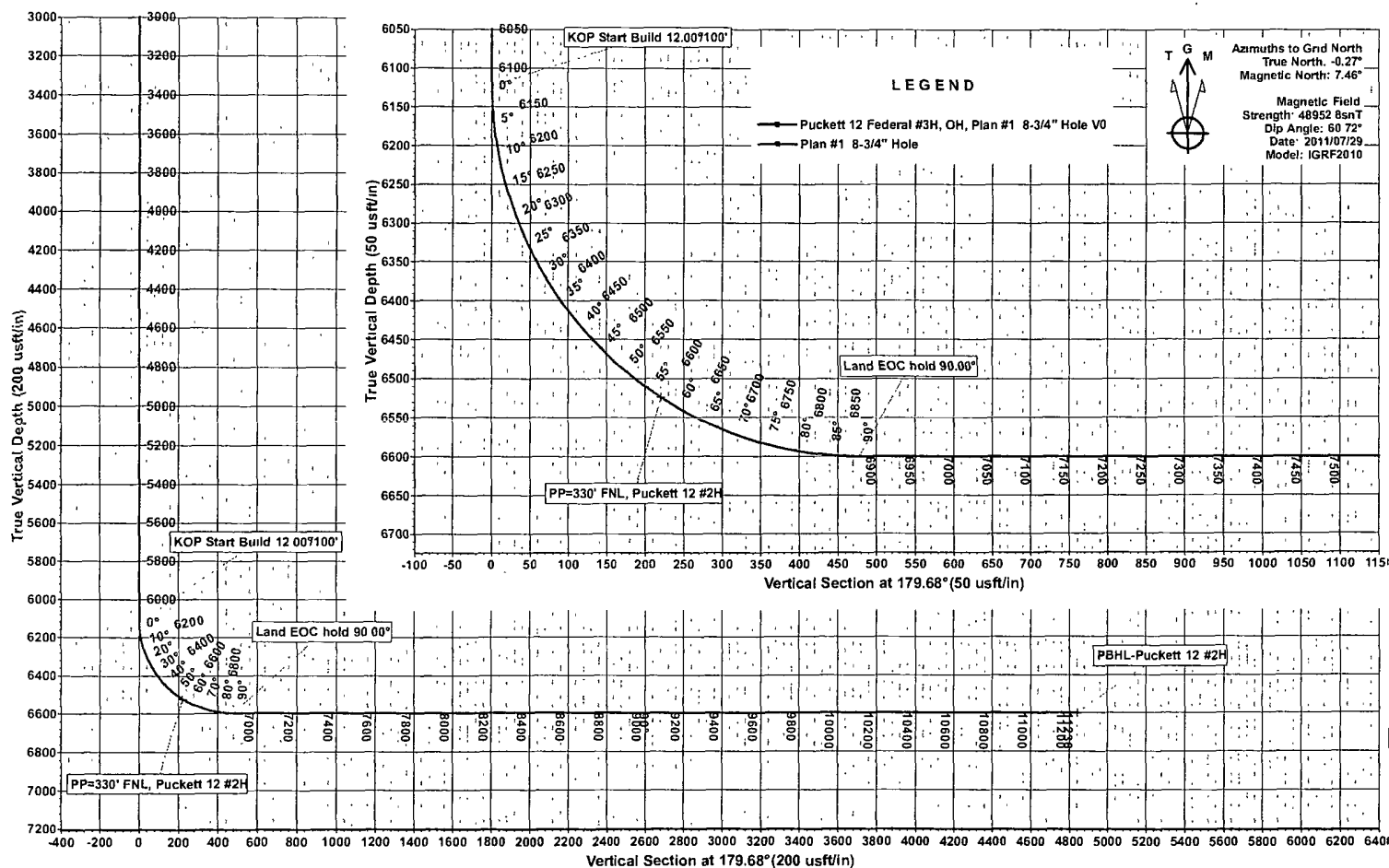
Checked _____ Date _____

Reviewed _____ Date _____

PROJECT DETAILS: Eddy County, NM (NAN27 NME)

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

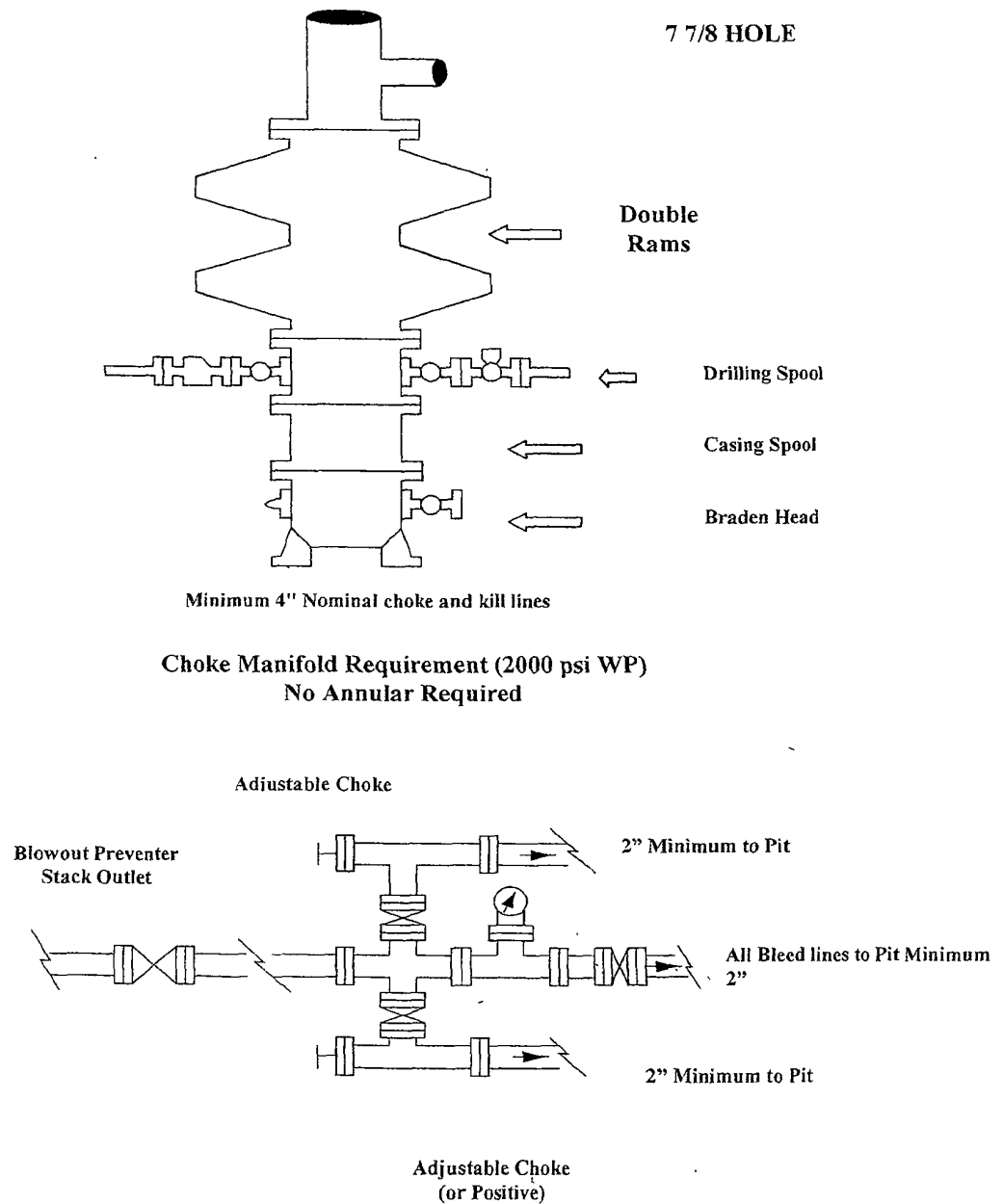
AZIMUTH CORRECTIONS
ALL AZIMUTHS MUST BE CORRECTED TO GRID
GRID CORRECTIONS MUST BE APPLIED BEFORE PLOTTING
To convert a Magnetic Direction to a Grid Direction, Add 7.46°
To convert a True Direction to a Grid Direction, Subtract 0.27°



COG Operating LLC

Exhibit #9

BOPE and Choke Schematic



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.

DISTRICT 2 -- CHECKLIST FOR INTENTS TO DRILL

Operator COG OAR OGRID # 229134
 Well Name & # Pockett 12 Federal 2H Surface Type (F)(S)(P)
 Location: UL D Sect 12 Township 11 s, RNG 31 e, Sub-surface Type (F)(S)(P)

A. Date C101 rec'd 10/4/2011 C101 reviewed 10/5/2011

B. 1. Check mark, Information is OK on Forms:

OGRID ☒, BONDING ☒, PROP CODE ☒, WELL # ☒, SIGNATURE ☒

2. Inactive Well list as of: 10/5/2011 # wells 306, # Inactive wells 11

a. District Grant APD but see number of inactive wells:

No letter required ☒; Sent Letter to Operator ☐, to Santa Fe ☐

3. Additional Bonding as of: 10/5/2011

a. District Denial because operator needs addition bonding:

No Letter required ☒; Sent Letter to Operator ☐, To Santa Fe ☐

b. District Denial because of Inactive well list and Financial Assurance:

No Letter required ☒; Sent Letter to Operator ☐, To Santa Fe ☐

C. C102 YES ☒ NO ☐ Signature [Signature]

1. Pool FREN; GIBRIETA-YESO EAST, Code 26770

a. Dedicated acreage ☐, What Units ☐

b. SUR. Location Standard ☐; Non-Standard Location ☐

c. Well shares acres: Yes ☐ No ☐ # of wells ☐ plus this well # ☐

2. 2nd. Operator in same acreage, Yes ☐ No ☒

Agreement Letter ☐ Disagreement letter ☐

3. Intent to Directional Drill Yes ☒ No ☐

a. Dedicated acreage 160, What Units D-E-L-M

b. Bottomhole Location Standard ☐ Non-Standard Bottomhole ☒

4. Downhole Commingle: Yes ☐ No ☐

a. Pool #2 ☐ Code ☐ Acres ☐

Pool #3 ☐ Code ☐ Acres ☐

Pool #4 ☐ Code ☐ Acres ☐

5. POTASH Area Yes ☐ No ☐

D. Blowout Preventer Yes ☒ No ☐

E. H2S Yes ☒ No ☐

F. C144 Pit Registration Yes ☐ No ☐

G. Does APD require Santa Fe Approval:

1. Non-Standard Location: Yes ☐ No ☐ NSL # ☐

2. Non-Standard Proration: Yes ☐ No ☐ NSP # ☐

3. Simultaneous Dedication: Yes ☐ No ☐ SD # ☐

Number of wells ☐ Plus # ☐

4. Injection order Yes ☐ No ☒; PMX # ☐ or WFX # ☐

5. SWD order Yes ☐ NO ☒; SWD # ☐

6. DHC from SF ☐; DHC-HOB ☐; Holding ☐

7. OCD Approval Date 10/5/2011

API #30-015-39475

8. Reviewers ☐