OCD-HOBBS

HOBBS OCD

Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MAY 25 2012

RECEIVED

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No **NMLC-058395**	
6 If Indian, Allotee or Tribe Name **N/A**	
1a Type of work ☑ DRILL ☐ REENTER	7 If Unit or CA Agreement, Name and No **N/A**
1b Type of Well ☑ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone	8 Lease Name and Well No **S C FEDERAL #12** 37483
2. Name of Operator **COG Operating LLC** 229137	9 API Well No **30-025-** 40599
3a Address **550 W. Texas, Suite 100 Midland TX 79701** 3b Phone No. *(include area code)* **(432) 221-0336**	10 Field and Pool, or Exploratory **Maljamar; Yeso, West 44500**
4 Location of Well *(Report location clearly and in accordance with any State requirements *)* At surface **SHL: 536' FSL & 1668' FEL, UL O** At proposed prod zone **BHL: 330' FSL &, 1650' FEL, UL O**	11 Sec , T. R M or Blk and Survey or Area **Sec 22, T17S, R32E**
14 Distance in miles and direction from nearest town or post office* **2.5 miles south of Maljamar NM**	12 County or Parish **Lea** 13 State **NM**

15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any) **536'**	16 No. of acres in lease **120**	17 Spacing Unit dedicated to this well **40**
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft **353'**	19 Proposed Depth **TVD: 7100' MD: 7104'**	20. BLM/BIA Bond No on file **NMB000740; NMB000215**
21 Elevations (Show whether DF, KDB, RT, GL, etc) **3987' GL**	22 Approximate date work will start* **05/31/2012**	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 Kacie Connally	Name *(Printed/Typed)* **Kacie Connally**	Date **03/12/2012**
Title **Permitting Tech**		
Approved by *(Signature)* /s/ Don Peterson	Name *(Printed/Typed)*	Date MAY 23 2012
Title FOR 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

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

MAY 31 2012

COG Operating LLC
Master Drilling Plan Revised 3-30-12
East Maljamar Area: Maljamar; Yeso, West
Use for Sections 3-35, T17S, R32E
Lea County, NM

MASTER DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Quaternary	Surface
Rustler	820'
Top of Salt	900'
Base of Salt	1700'
Yates	2140'
Seven Rivers	2500'
Queen	3110'
Grayburg	3500'
San Andres	3870'
Glorietta	5400'
Paddock	5450'
Blinebry	5970'
Tubb	6900'

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

Water Sand	150'	Fresh Water
Grayburg	3500'	Oil/Gas
San Andres	3870'	Oil/Gas
Glorietta	5400'	Oil/Gas
Paddock	5450'	Oil/Gas
Blinebry	5970'	Oil/Gas
Tubb	6900'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to ~~840~~ 840' 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 ~~2400~~ 2400' and circulating cement, in a single or multi-stage job and/or with an ECP, back to the surface. Any shallower zones above TD, which contain commercial quantities of oil and/or gas, will have cement circulated across them. This will be achieved by cementing, with a single or multi-stage job, the 5 1/2" production casing back 200' into the intermediate casing, to be run at TD. If wellbore conditions arise that require immediate action and/or a change to this program, COG Operating LLC personnel will always react to protect the wellbore and/or the environment.

See COA

See COA

4. Casing Program

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	burst/collapse/tension
17 ½"	0-840'/1025	13 3/8"	48#	H-40/J-55 hybrid	ST&C/New	6.03/2.578/10.32
11"	0-2100'/2495	8 5/8"	24or32#	J-55	ST&C/New	1.85/1.241/4.78
7 7/8"	0-T.D.	5 1/2"	15 5or17#	J-55orL-80	LT&C/New	1.59/1.463/2.05

See COA

5. Cement Program See COA

13 3/8" Surface Casing: LEAD Class C, 4% Gel, 2% CaCl2, .25 pps CF, 325 sx, yield-1.75 + TAIL 200 sx w/ 2% CaCl2, 0.25 pps CF, yield-1.32. 133% excess

8 5/8" Intermediate Casing:

11" Hole:

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

Multi-Stage: Stage 1: Class C w/2% CaCl2, 400 sx, yield - 1.32; 48% excess Stage 2: Class C w/2% CaCl2, 200 sx, yield – 1.32, back to surface, 48% excess; assumption for tool is lost circulation. Multi stage tool to be set at approximately, depending on hole conditions, 700' (50' below the surface casing). Cement volumes will be adjusted proportionately for depth changes of multi stage tool.

5 1/2" Production Casing:

Single Stage: LEAD 35:65:6 C:Poz:Gel w/ 5% Salt + 5 pps LCM + 0.2% SMS + 0.3% FL-52A + 0.125 pps CF, 500 sx, yield-2.05 + TAIL 50:50:2 C:Poz:Gel w/ 5% Salt + 3 pps LCM + 0.6% SMS + 1% FL-25 + 1% BA-58 + 0.3% FL-52A + 0.125 pps CF, 400 sx, yield-1.37, to 200' minimum tie back to intermediate casing. 30% excess back to surface.

Multi-Stage: Stage 1: (Assumed TD of 7000') 50:50:2, C:Poz:Gel w/ 5% Salt + 3

pps LCM + 0.6% SMS + 1% FL-25 + 1% BA-58 + 0.3% FL-52A + 0.125 pps CF, 500 sx, yield - 1.37, 13% excess; Stage 2: LEAD 50:50:2 C:Poz:Gel w/ 5% Salt + 3 pps LCM + 0.6% SMS + 1% FL-25 + 1% BA-58 + 0.3% FL-52A + 0.125 pps CF, 450 sx, yield - 1.37, + TAIL Class C w/ 0.3% R-3 + 1.5% CD-32, 250 sx, yield – 1.02 43% excess calculated back to surface. Multi stage tool to be set at approximately, depending on hole conditions, 3500'. Cement volumes will be adjusted proportionately for depth changes of multi stage tool, assumption for tool is water flow.

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
0-840' 1025	Fresh Water	8.5	28	N.C.
840-2100' 2295	Brine	10	30	N.C.
2100'-TD	Cut Brine	8.7-9.1	29	N.C.

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

8. Auxiliary Well Control and Monitoring Equipment

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. Based on BHP tests in this area, the estimated bottom hole at TD is 110 degrees and the estimated maximum bottom hole pressure is 3100 psig. Measurable gas volumes or Hydrogen Sulfide levels have not been encountered during drilling operations in this area, although a Hydrogen Sulfide Drilling Operation Plan is attached to this program. No major loss of circulation zones has been reported in offsetting wells.

11. Anticipated Starting Date and Duration of Operations

Road and location work will not begin until approval has been received from the BLM. As this is a Master Drilling plan, please refer to the Form 3160-3 for the anticipated start date. Once commenced, drilling operations should be finished in approximately 15 days. If the well is productive, an additional 30 days will be required for completion and testing before a decision is made to install permanent facilities.

CONCHO

COG Operating LLC

Lea County, NM (NAN27 NME)
SC Federal #12

OH

Plan: Plan #3 - 7-7/8" Hole
SHL = 536' FSL & 1668' FEL
BHL = 380' FSL & 1660' FEL
Top of Paddock Top = 380' FSL & 1660' FEL @ 5550' TVD

Standard Planning Report

19 April, 2012

Scientific Drilling
Directional Drilling Operations

Database:	EDM 5000 1 Single User Db	**Local Co-ordinate Reference:**	Well SC Federal #12
Company:	COG Operating LLC	**TVD Reference:**	GL @ 3987 00usft
Project:	Lea County, NM (NAN27-NME)	**MD Reference:**	GL @ 3987 00usft
Site:	SC Federal #12	**North Reference:**	Grid
Well:	SC Federal #12	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 - 7-7/8" Hole		

Project Lea 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 SC Federal #12

Site Position:		**Northing:**	660,407 00 usft	**Latitude:**	32° 48' 51 086 N
From:	Map	**Easting:**	679,031 00 usft	**Longitude:**	103° 45' 2 161 W
Position Uncertainty:	0 00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0 32 °

Well SC Federal #12

Well Position	**+N/-S**	0 00 usft	**Northing:**	660,407 00 usft	**Latitude:**	32° 48' 51 086 N
	+E/-W	0 00 usft	**Easting:**	679,031 00 usft	**Longitude:**	103° 45' 2 161 W
Position Uncertainty		0 00 usft	**Wellhead Elevation:**		**Ground Level:**	3,987 00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	04/19/12	7 61	60 68	48,863

Design Plan #3 - 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	176 66

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	
2,200 00	0 00	0 00	2,200 00	0 00	0 00	0 00	0 00	0 00	0 00	
2,339 32	2 79	176 66	2,339 27	-3 38	0 20	2 00	2 00	0 00	176 66	
5,414 42	2 79	176 66	5,410 73	-152 62	8 90	0 00	0 00	0 00	0 00	
5,553 75	0 00	0 00	5,550 00	-156 00	9 10	2 00	-2 00	0 00	180 00	T1-SC Fed #12
7,103 75	0 00	0 00	7,100 00	-156 00	9 10	0 00	0 00	0 00	0 00	PBHL-SC Fed #12

Database:	EDM 5000 1 Single User Db	**Local Co-ordinate Reference:**	Well SC Federal #12
Company:	COG Operating LLC	**TVD Reference:**	GL @ 3987 00usft
Project:	Lea County, NM (NAN27 NME)	**MD Reference:**	GL @ 3987 00usft
Site:	SC Federal #12	**North Reference:**	Grid
Well:	SC Federal #12	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 - 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
2,100 00	0 00	0 00	2,100 00	0 00	0 00	0 00	0 00	0 00	0 00
8 5/8"									
2,200 00	0 00	0 00	2,200 00	0 00	0 00	0 00	0 00	0 00	0 00
KOP Start DLS 2.00°/100'									
2,300 00	2 00	176 66	2,299 98	-1 74	0 10	1 75	2 00	2 00	0 00
2,339 32	2 79	176 66	2,339 27	-3 38	0 20	3 39	2 00	2 00	0 00
Hold 2.79°									
2,400 00	2 79	176 66	2,399 87	-6 33	0 37	6 34	0 00	0 00	0 00
2,500 00	2 79	176 66	2,499 76	-11 18	0 65	11 20	0 00	0 00	0 00
2,600 00	2 79	176 66	2,599 64	-16 03	0 94	16 06	0 00	0 00	0 00
2,700 00	2 79	176 66	2,699 52	-20 89	1 22	20 92	0 00	0 00	0 00
2,800 00	2 79	176 66	2,799 40	-25 74	1 50	25 78	0 00	0 00	0 00
2,900 00	2 79	176 66	2,899 28	-30 59	1 78	30 64	0 00	0 00	0 00
3,000 00	2 79	176 66	2,999 16	-35 44	2 07	35 50	0 00	0 00	0 00
3,100 00	2 79	176 66	3,099 05	-40 30	2 35	40 37	0 00	0 00	0 00
3,200 00	2 79	176 66	3,198 93	-45 15	2 63	45 23	0 00	0 00	0 00
3,300 00	2 79	176 66	3,298 81	-50 00	2 92	50 09	0 00	0 00	0 00
3,400 00	2 79	176 66	3,398 69	-54 86	3 20	54 95	0 00	0 00	0 00
3,500 00	2 79	176 66	3,498 57	-59 71	3 48	59 81	0 00	0 00	0 00
3,600 00	2 79	176 66	3,598 45	-64 56	3 77	64 67	0 00	0 00	0 00
3,700 00	2 79	176 66	3,698 34	-69 42	4 05	69 53	0 00	0 00	0 00
3,800 00	2 79	176 66	3,798 22	-74 27	4 33	74 40	0 00	0 00	0 00
3,900 00	2 79	176 66	3,898 10	-79 12	4 62	79 26	0 00	0 00	0 00
4,000 00	2 79	176 66	3,997 98	-83 98	4 90	84 12	0 00	0 00	0 00
4,100 00	2 79	176 66	4,097 86	-88 83	5 18	88 98	0 00	0 00	0 00
4,200 00	2 79	176 66	4,197 75	-93 68	5 46	93 84	0 00	0 00	0 00
4,300 00	2 79	176 66	4,297 63	-98 53	5 75	98 70	0 00	0 00	0 00
4,400 00	2 79	176 66	4,397 51	-103 39	6 03	103 56	0 00	0 00	0 00
4,500 00	2 79	176 66	4,497 39	-108 24	6 31	108 42	0 00	0 00	0 00
4,600 00	2 79	176 66	4,597 27	-113 09	6 60	113 29	0 00	0 00	0 00
4,700 00	2 79	176 66	4,697 15	-117 95	6 88	118 15	0 00	0 00	0 00
4,800 00	2 79	176 66	4,797 04	-122 80	7 16	123 01	0 00	0 00	0 00
4,900 00	2 79	176 66	4,896 92	-127 65	7 45	127 87	0 00	0 00	0 00
5,000 00	2 79	176 66	4,996 80	-132 51	7 73	132 73	0 00	0 00	0 00
5,100 00	2 79	176 66	5,096 68	-137 36	8 01	137 59	0 00	0 00	0 00
5,200 00	2 79	176 66	5,196 56	-142 21	8 30	142 45	0 00	0 00	0 00
5,300 00	2 79	176 66	5,296 44	-147 07	8 58	147 32	0 00	0 00	0 00
5,400 00	2 79	176 66	5,396 33	-151 92	8 86	152 18	0 00	0 00	0 00
5,414 42	2 79	176 66	5,410 73	-152 62	8 90	152 88	0 00	0 00	0 00
Start Drop 2.00°/100'									
5,500 00	1 07	176 66	5,496 26	-155 50	9 07	155 76	2 00	-2 00	0 00
5,553 75	0 00	0 00	5,550 00	-156 00	9 10	156 27	2 00	-2 00	0 00
Hold 0.00° - Top of Paddock - T1 SC Fed #12									
7,103 75	0 00	0 00	7,100 00	-156 00	9 10	156 27	0 00	0 00	0 00
PBHL SC Fed #12									

Database:	EDM 5000 1 Single User Db	**Local Co-ordinate Reference:**	Well SC Federal #12
Company:	COG Operating LLC	**TVD Reference:**	GL @ 3987 00usft
Project:	Lea County, NM (NAN27 NME)	**MD Reference:**	GL @ 3987 00usft
Site:	SC Federal #12	**North Reference:**	Grid
Well:	SC Federal #12	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 - 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
T1-SC Fed #12 - plan hits target center - Point	0 00	0 00	5,550.00	-156 00	9 10	660,251 00	679,040 10	32° 48' 49 542 N	103° 45' 2 065 W
PBHL-SC Fed #12 - plan hits target center - Circle (radius 50.00)	0 00	0 00	7,100 00	-156.00	9 10	660,251 00	679,040.10	32° 48' 49 542 N	103° 45' 2 065 W

Casing Points

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

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,553 75	5,550.00	Top of Paddock		0 00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2,200 00	2,200 00	0 00	0 00	KOP Start DLS 2 00°/100'
2,339 32	2,339 27	-3 38	0.20	Hold 2 79°
5,414 42	5,410 73	-152 62	8 90	Start Drop 2 00°/100'
5,553 75	5,550 00	-156 00	9 10	Hold 0 00°

CONCHO

Scientific Drilling
Directional Drilling Operations

T G M

Azimuths to Grid North
True North -0 32°
Magnetic North 7 29°

Magnetic Field
Strength 48863 4snT
Dip Angle 60 68°
Date 04/19/2012
Model IGRF2010

To convert Magnetic North to Grid, Add 7 29°
To convert True North to Grid, Subtract 0 32°

SC Federal #12
Lea County, NM (NAN27 NME)
Northing: (Y) 660407.00
Easting: (X) 679031.00
Plan #3 - 7-7/8" Hole

WELL DETAILS: SC Federal #12

+N/-S	+E/-W	Northing	Ground Level 3987 00 Easting	Latitude	Longitude
0 00	0 00	660407 00	679031 00	32° 48' 51 086 N	103° 45' 2 161 W

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	2200 00	0 00	0 00	2200.00	0 00	0 00	0 00	0 00	0 00	
3	2339 32	2 79	176 66	2339 27	-3 38	0.20	2 00	176.66	3 39	
4	5414 42	2 79	176 66	5410 73	-152 62	8.90	0 00	0.00	152 88	
5	5553 75	0 00	0 00	5550 00	-156 00	9 10	2 00	180 00	156.27	T1-SC Fed #12
6	7103 75	0.00	0.00	7100.00	-156 00	9 10	0 00	0.00	156 27	PBHL-SC Fed #12

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
T1-SC Fed #12 - plan hits target center	5550.00	-156 00	9 10	660251 00	679040 10	32° 48' 49 542 N	103° 45' 2.065 W
PBHL-SC Fed #12 - plan hits target center	7100 00	-156.00	9 10	660251 00	679040 10	32° 48' 49 542 N	103° 45' 2 065 W

SITE DETAILS. SC Federal #12

Site Centre Northing 660407 00
Easting 679031.00

Positional Uncertainty 0 00
Convergence 0 32
Local North Grid

PROJECT DETAILS. Lea 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

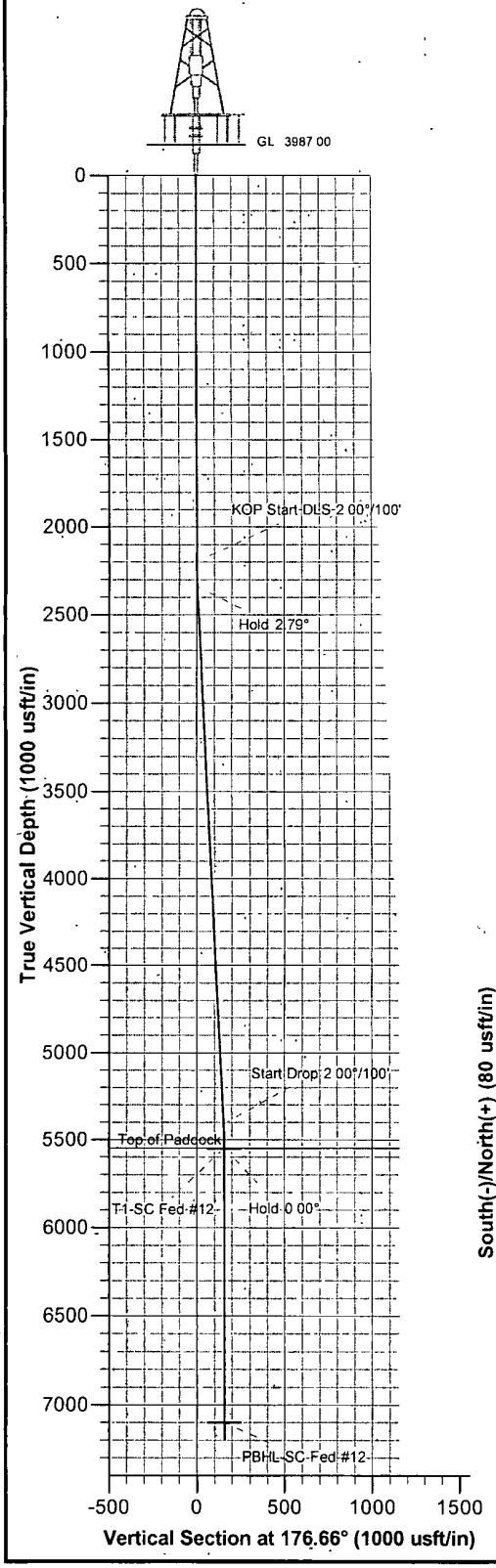
System Datum Mean Sea Level

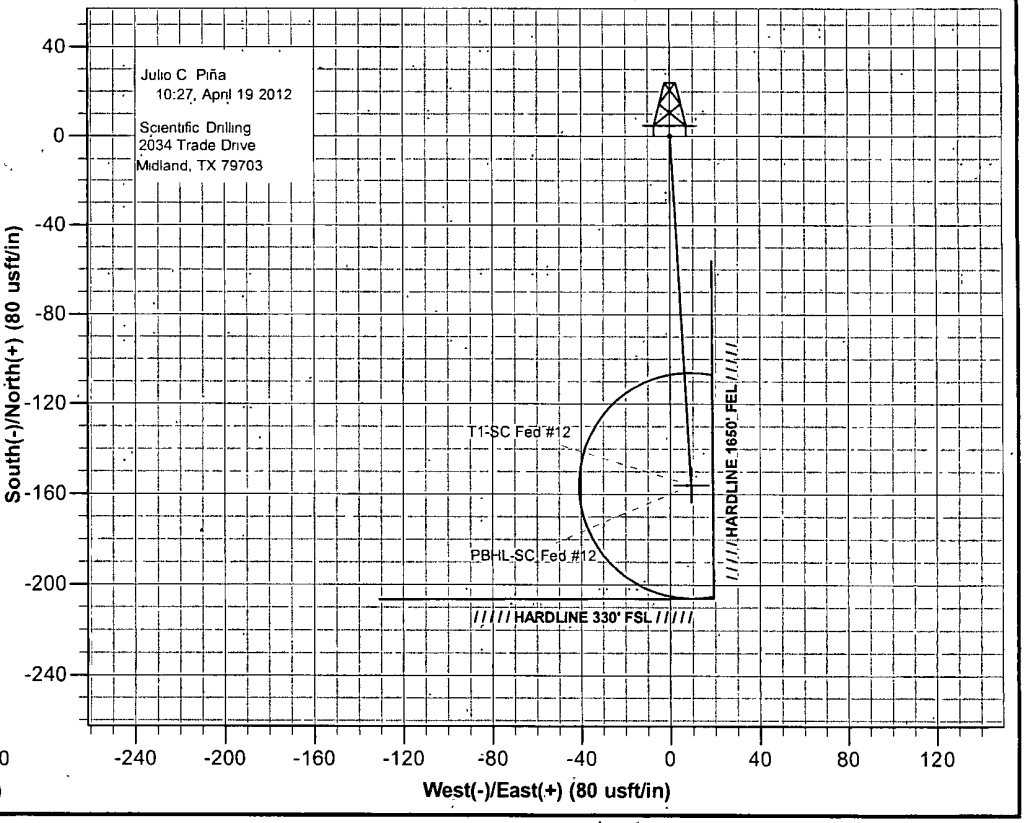
FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
5550 00	5553 75	Top of Paddock	0 00	

LEGEND

Plan #3 - 7-7/8" Hole





COG OPERATING LLC
550 West Texas, Suite 1300
Midland, TX 79701

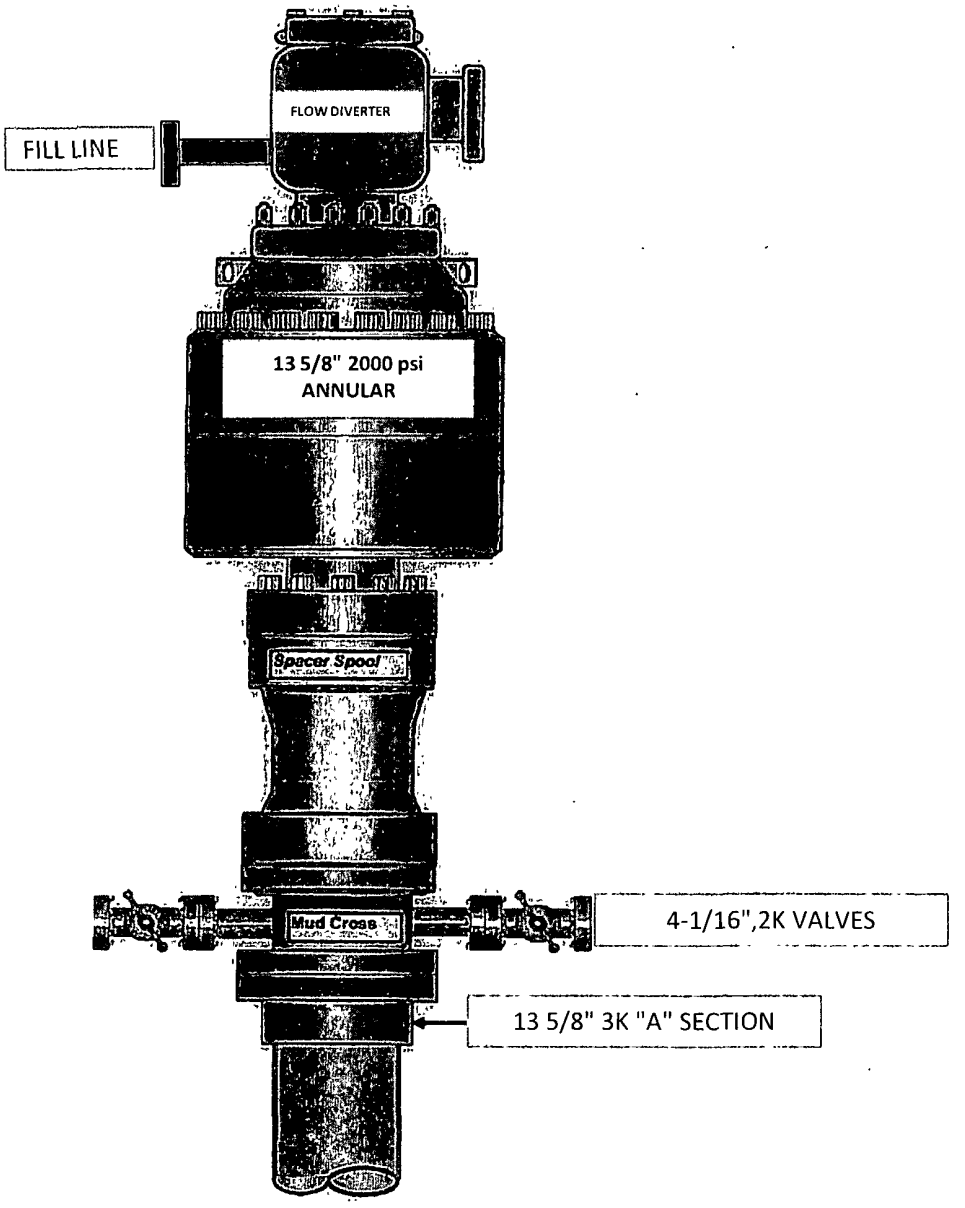
DIRECTIONAL PLAN VARIANCE REQUEST

S C FEDERAL #12
LEA, NM

SHL	536 FSL, 1668 FEL	Sec 22, T17S, R32E, Unit O
BHL	330 FSL, 1650 FEL	Sec 22, T17S, R32E, Unit O

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.

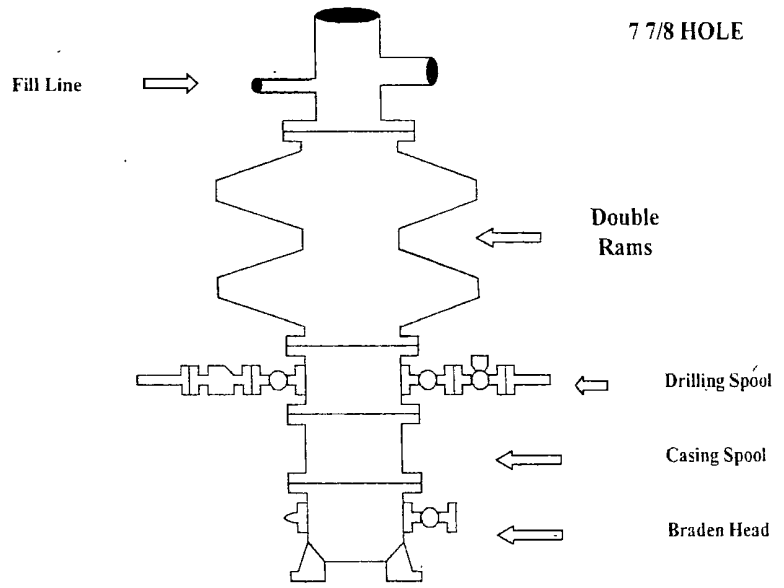
13 5/8" 2K ANNULAR



COG Operating LLC

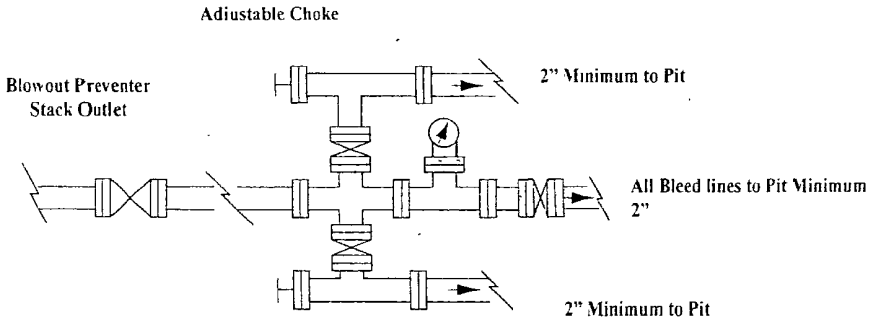
Exhibit #9

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.

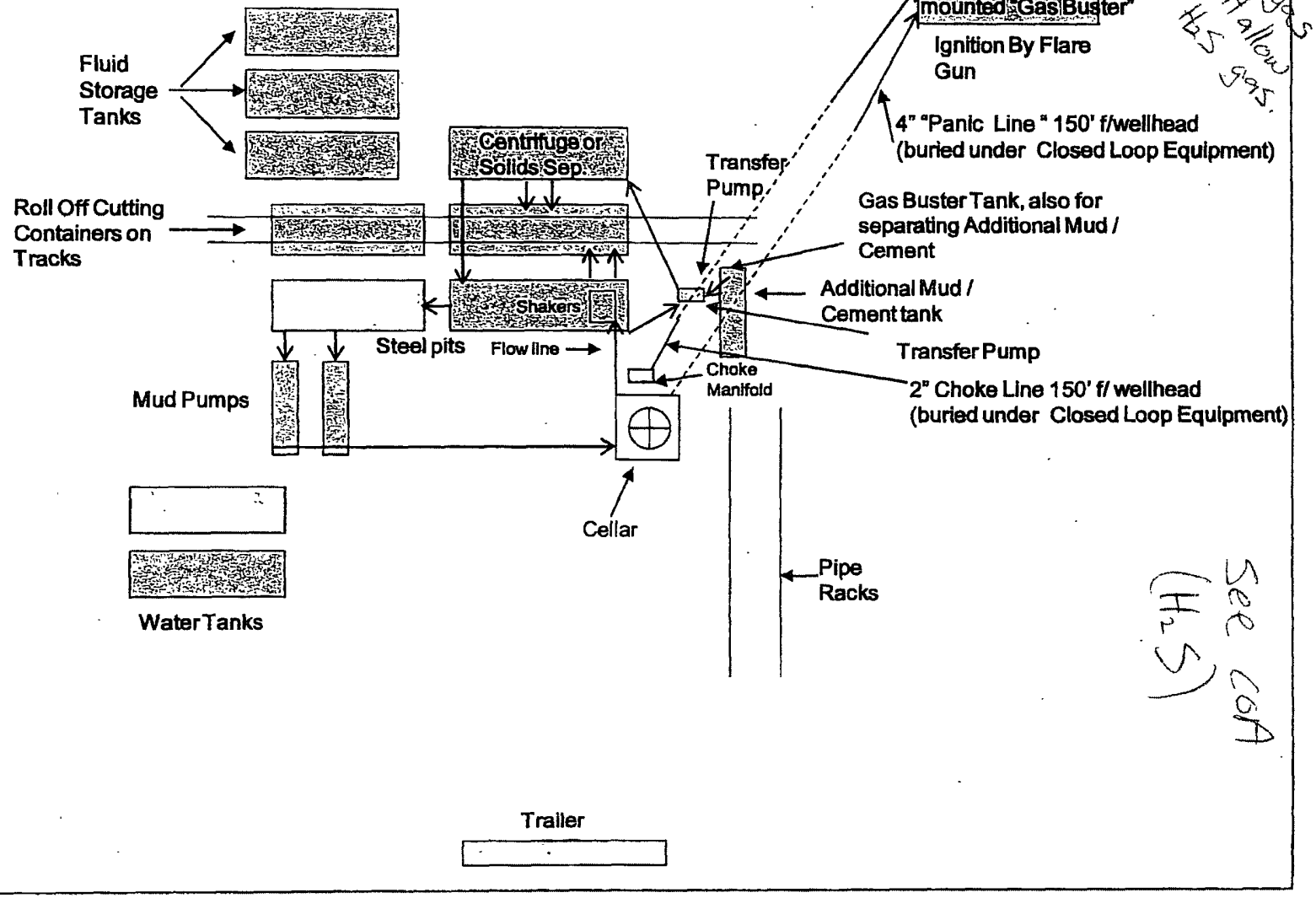
9 Extension wrenches and hands wheels to be properly installed

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

COG Operating LLC

Closed Loop Equipment Diagram



Open bottom gas buster won't allow ignition of H_2S gas.

See COA (H_2S)

All drilling fluid circulated over shaker(s) with cuttings discharged into roll off container.

Fluid and fines below shaker(s) are circulated with transfer pump through centrifuge(s) or solids separator with cuttings and fines discharged into roll off container.

Fluid is continuously re-circulated through equipment with polymer added to aid separation of cutting fines.

Roll off containers are lined and de-watered with fluids re-circulated into system.

Additional tank is used to capture unused drilling fluid or cement returns from casing jobs.

This equipment will be maintained 24 hrs./day by solids control personnel and or rig crews that stay on location.

Cuttings will be hauled to either:

CRI (permit number R9166)
or
GMI (permit number 711-019-001)

dependent upon which rig is available to drill this well.