

RECEIVED

ATS-10-358

AUG 02 2010

OCD-HOBBS

Form 3160-3
(April 2004)

HOBBSOCD

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, 20075 Lease Serial No.
NMLC-029509A6. If Indian, Allottee or Tribe Name
N/A7 If Unit or CA Agreement, Name and No
N/A8. Lease Name and Well No.
M C FEDERAL #51 *<302519>*9 API Well No.
30-025- **39874**10 Field and Pool, or Exploratory
Maljamar; Yeso, West 4450011 Sec, T. R. M or Blk and Survey or Area
Sec 21, T17S, R32E12 County or Parish
Lea13. State
NM1a. Type of work: ☒ DRILL ☐ REENTER1b. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone2 Name of Operator
COG Operating LLC3a Address
550 W. Texas, Suite 1300 Midland TX 797013b. Phone No. (include area code)
(432) 685-4385

4. Location of Well (Report location clearly and in accordance with any State requirements *)

At surface **SHL: 1770' FNL & 100' FEL, Unit H**At proposed prod zone **BHL: 1650' FNL & 330' FEL, Unit H****SURFACE
UNORTHODOX
LOCATION**14 Distance in miles and direction from nearest town or post office*
2.5 miles south of Maljamar NM15 Distance from proposed*
location to nearest
property or lease line, ft
(Also to nearest drig unit line, if any) **100'**16 No of acres in lease
64017 Spacing Unit dedicated to this well
4018. Distance from proposed location*
to nearest well, drilling, completed,
applied for, on this lease, ft **550'**19 Proposed Depth
7211' - MD
7200' - TVD20 BLM/BIA Bond No. on file
NMB00021521 Elevations (Show whether DF, KDB, RT, GL, etc.)
4011' GL22 Approximate date work will start*
07/31/201023 Estimated duration
10 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)

Robyn M. Odom

Date

04/19/2010

Title

Regulatory Analyst

Approved by (Signature)

/s/ Don Peterson

Name (Printed/Typed)

Date **JUL 29 2010**

Title

FIELD MANAGER

Office

CARLSBAD FIELD OFFICEApplication 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 YEARSTitle 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) well becomes orthodox @ approx. 4000' - MD

Roswell Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations Attached**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

RECEIVED

State of New Mexico

DISTRICT I

1625 N. FRENCH DR., BOBBS, NM 88210

AUG 02 2010

Energy, Minerals and Natural Resources Department

DISTRICT II

1301 W. GRAND AVENUE, ARTESIA, NM 88210

HOBBS OIL

CONSERVATION DIVISION

1220 SOUTH ST. FRANCIS DR.

Santa Fe, New Mexico 87505

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV

1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025- 39874	Pool Code 44500	Pool Name MALJAMAR; YESO, WEST
Property Code 302519	Property Name MC FEDERAL	Well Number 51
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 4011'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	21	17-S	32-E		1770	NORTH	100	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	21	17-S	32-E		1650	NORTH	330	EAST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<p>PENETRATION POINT 1660' FAX. + 341' FEL</p> <p>GRID. AZ. -297°22'45" HORZ. DIST. -259.8'</p> <p>100' S.L. SEE DETAIL</p> <p>GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=663365.5 N X=675309.1 E</p> <p>LAT.=32.822378° N LONG.=103.762662° W</p> <p>BOTTOM HOLE LOCATION Y=663485.0 N X=675078.4 E</p> <p>DETAIL</p> <p>4013.4' 4005.2' 4020.9' 4009.5'</p>	<h3>OPERATOR CERTIFICATION</h3> <p>I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Robyn Odom</i> 4/19/2010 Signature Date</p> <p>Robyn Odom Printed Name</p> <h3>SURVEYOR CERTIFICATION</h3> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>GARY G. EIDSON APR 14 2010 Date Surveyed LA</p> <p><i>Gary G. Eidson</i> Signature & Seal of Professional Surveyor</p> <p>10-17-0034</p> <p>Certificate No. GARY EIDSON 12841 RONALD J. EIDSON 3239</p>
--	---

RECEIVED

AUG 02 2010

HOBBSOCD

MASTER DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Quaternary	Surface
Top of Salt	900'
Base of Salt	1700'
Yates	2000'
Seven Rivers	2375'
Queen	2975'
Grayburg	3475'
San Andres	3775'
Glorietta	5225'
Yeso Group	5325'

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

Water Sand	150'	Fresh Water
Grayburg	3475'	Oil/Gas
San Andres	3775'	Oil/Gas
Glorietta	5225'	Oil/Gas
Yeso Group	5325'	Oil/Gas

See
con

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 650' 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 2100' 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.

4. Casing Program

See
COA

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	burst/collapse/tension
17 1/2"	0- 650' 325'	13 3/8"	48#	H-40orJ-55	ST&C/New	6.03/2.578/10.32
11"or 12 1/4"	0-2100'	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

5. Cement Program

13 3/8" Surface Casing:

Class C, 4% Gel, 2% CaCl₂, .25 pps CF, 450 sx lead, yield-1.98 + 200 sx tail, yield-1.32.

8 5/8" Intermediate Casing:

11" Hole:

Single Stage: 50:50:10, 400 sx lead, yield-2.45 + Class C, 200 sx tail, yield-1.32, back to surface.

See
COA

Multi-Stage: Stage 1: Class C, 400 sx, yield - 1.32; Stage 2: Class C, 200 sx, yield - 1.32, back to surface. Multi stage tool to be set at approximately, depending on hole conditions, 650'

5 1/2" Production Casing:

Single Stage: 35:65:6, 500 sx Lead, yield-2.05 + 50:50:2, 400 sx Tail, yield-1.37, to 200' minimum tie back to intermediate casing.

See
COA

Multi-Stage: Stage 1: 50:50:2, 400 sx, yield - 1.37; Stage 2: 35:65:6, 500 sx, yield - 2.05, to 200' minimum tie back to intermediate casing. Multi stage tool to be set at approximately, depending on hole conditions, ~~TD 2000'~~.

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. 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. The BOP will be nipped up on the 13 3/8" surface casing with BOP equipment and tested ~~together to 1000 psi by rig pump in one test.~~ The BOP will then be nipped 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. All BOP's and accessory equipment will be tested to 2000 psi before drilling out of the intermediate casing. 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.

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:

See COA

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-650'	Fresh Water	8.5	28	N.C.
650-2100'	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 1/2" production casing has been cemented at TD, based on drill shows and log evaluation.

10. Abnormal Conditions, Pressure, Temperatures and Potential Hazards

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 110 degrees and the estimated maximum bottom hold pressure is 2300 psig. Measurable gas volumes or Hydrogen Sulfide levels have not been encountered during drilling operations in this area, although a Hydrogen Sulfide Drilling Operation Plan is attached to this program. No major loss of circulation zones has been reported in offsetting wells.

11. Anticipated Starting Date and Duration of Operations

Road and location work will not begin until approval has been received from the BLM. As this is a Master Drilling plan, please refer to the Form 3160-3 for the anticipated start date. Once commenced, drilling operations should be finished in approximately 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.



COG Operating LLC

Lea County, NM (NAD27 NME)

MC Federal #51

MC Federal #51

OH

Plan: Plan #1 - 7-7/8" Hole

SHL = 1770' FNL & 100' FEL

BHL = 1660' FNL & 340' FEL

Top of Paddock = 1660' FNL & 340' FEL @ 5450' TVD

Standard Planning Report

21 May, 2010



Scientific Drilling
Directional Drilling Operations



Scientific Drilling Planning Report



Database: EDM 5000 1 Single User Db
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: MC Federal #51
Well: MC Federal #51
Wellbore: OH
Design: Plan #1 - 7-7/8" Hole

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Well MC Federal #51
GL Elev @ 4011.00ft
GL Elev @ 4011.00ft
Grid
Minimum Curvature

Project: Lea County, NM (NAD27 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: MC Federal #51

Site Position: Northing: 663,365 50 ft Latitude: 32° 49' 20 561 N
From: Map Easting: 675,309 10 ft Longitude: 103° 45' 45 584 W
Position Uncertainty: 0 00 ft Slot Radius: 0" Grid Convergence: 0 31 °

Well: MC Federal #51

Well Position: +N/-S 0 00 ft Northing: 663,365 50 ft Latitude: 32° 49' 20 561 N
+E/-W 0 00 ft Easting: 675,309 10 ft Longitude: 103° 45' 45 584 W
Position Uncertainty: 0 00 ft Wellhead Elevation: Ground Level: 4,011.00 ft

Wellbore: OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	2010/05/21	7 84	60 75	49,090

Design: Plan #1 - 7-7/8" Hole

Audit Notes:

Version: Phase: PLAN Tie On Depth: 0 00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0 00	0 00	0 00	294 46

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	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	
2,452 05	5 04	294 46	2,451 73	4 59	-10 09	2 00	2 00	0 00	294 46	
5,209 26	5 04	294 46	5,198 27	104 91	-230 61	0 00	0 00	0 00	0 00	
5,461 32	0 00	0 00	5,450 00	109 50	-240 70	2 00	-2 00	0 00	180 00	TG1-MC #51
7,211 32	0 00	0 00	7,200 00	109 50	-240 70	0 00	0 00	0 00	0 00	PBHL-MC #51



Scientific Drilling Planning Report



Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	Well MC Federal #51
Company:	COG Operating LLC	TVD Reference:	GL Elev @ 4011 00ft
Project:	Lea County, NM (NAD27 NME)	MD Reference:	GL Elev @ 4011 00ft
Site:	MC Federal #51	North Reference:	Grid
Well:	MC Federal #51	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 - 7-7/8" Hole		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
East HL-MC #51 - North HL-MC #51									
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" Casing									
2,200 00	0 00	0 00	2,200.00	0 00	0.00	0 00	0 00	0 00	0 00
KOP Start Build 2.00°/100'									
2,300 00	2 00	294.46	2,299.98	0.72	-1.59	1.75	2.00	2.00	0.00
2,400 00	4 00	294.46	2,399.84	2.89	-6.35	6.98	2.00	2.00	0.00
2,452.05	5.04	294.46	2,451.73	4.59	-10.09	11.08	2.00	2.00	0.00
EOC Hold 5.04°									
2,500 00	5.04	294.46	2,499.49	6.33	-13.92	15.29	0.00	0.00	0.00
2,600 00	5.04	294.46	2,599.10	9.97	-21.92	24.08	0.00	0.00	0.00
2,700 00	5.04	294.46	2,698.72	13.61	-29.92	32.87	0.00	0.00	0.00
2,800 00	5.04	294.46	2,798.33	17.25	-37.92	41.65	0.00	0.00	0.00
2,900 00	5.04	294.46	2,897.94	20.89	-45.91	50.44	0.00	0.00	0.00
3,000 00	5.04	294.46	2,997.56	24.53	-53.91	59.23	0.00	0.00	0.00
3,100 00	5.04	294.46	3,097.17	28.16	-61.91	68.02	0.00	0.00	0.00
3,200.00	5.04	294.46	3,196.78	31.80	-69.91	76.80	0.00	0.00	0.00
3,300 00	5.04	294.46	3,296.40	35.44	-77.91	85.59	0.00	0.00	0.00
3,400 00	5.04	294.46	3,396.01	39.08	-85.91	94.38	0.00	0.00	0.00
3,500 00	5.04	294.46	3,495.62	42.72	-93.90	103.16	0.00	0.00	0.00
3,600 00	5.04	294.46	3,595.23	46.36	-101.90	111.95	0.00	0.00	0.00
3,700 00	5.04	294.46	3,694.85	50.00	-109.90	120.74	0.00	0.00	0.00
3,800 00	5.04	294.46	3,794.46	53.63	-117.90	129.52	0.00	0.00	0.00
3,900 00	5.04	294.46	3,894.07	57.27	-125.90	138.31	0.00	0.00	0.00
4,000 00	5.04	294.46	3,993.69	60.91	-133.89	147.10	0.00	0.00	0.00
4,100 00	5.04	294.46	4,093.30	64.55	-141.89	155.89	0.00	0.00	0.00
4,200 00	5.04	294.46	4,192.91	68.19	-149.89	164.67	0.00	0.00	0.00
4,300 00	5.04	294.46	4,292.53	71.83	-157.89	173.46	0.00	0.00	0.00
4,400 00	5.04	294.46	4,392.14	75.47	-165.89	182.25	0.00	0.00	0.00
4,500 00	5.04	294.46	4,491.75	79.10	-173.89	191.03	0.00	0.00	0.00
4,600.00	5.04	294.46	4,591.37	82.74	-181.88	199.82	0.00	0.00	0.00
4,700 00	5.04	294.46	4,690.98	86.38	-189.88	208.61	0.00	0.00	0.00
4,800 00	5.04	294.46	4,790.59	90.02	-197.88	217.39	0.00	0.00	0.00
4,900.00	5.04	294.46	4,890.21	93.66	-205.88	226.18	0.00	0.00	0.00
5,000.00	5.04	294.46	4,989.82	97.30	-213.88	234.97	0.00	0.00	0.00
5,100.00	5.04	294.46	5,089.43	100.94	-221.87	243.75	0.00	0.00	0.00
5,200 00	5.04	294.46	5,189.05	104.57	-229.87	252.54	0.00	0.00	0.00
5,209.26	5.04	294.46	5,198.27	104.91	-230.61	253.36	0.00	0.00	0.00
Start DLS 2.00°/100'									
5,300 00	3.23	294.46	5,288.77	107.62	-236.57	259.90	2.00	-2.00	0.00
5,400 00	1.23	294.46	5,388.69	109.23	-240.10	263.78	2.00	-2.00	0.00
5,461.32	0.00	294.46	5,450.00	109.50	-240.70	264.44	2.00	-2.00	0.00
EOC Hold 0.00° - TG1-MC #51									
7,211.32	0.00	0 00	7,200.00	109.50	-240.70	264.44	0 00	0 00	0 00
PBHL-MC #51									



Scientific Drilling Planning Report



Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	Well MC Federal #51
Company:	COG Operating LLC	TVD Reference:	GL Elev @ 4011 00ft
Project:	Lea County, NM (NAD27 NME)	MD Reference:	GL Elev @ 4011 00ft
Site:	MC Federal #51	North Reference:	Grid
Well:	MC Federal #51	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 - 7-7/8" Hole		

Design Targets									
Target Name	hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude Longitude
East HL-MC #51		0 00	0 00	0 00	119 50	-230 70	663,485 00	675,078 40	32° 49' 21 756 N 103° 45' 48 280 W
- plan misses target center by 259 81ft at 0 00ft MD (0 00 TVD, 0 00 N, 0 00 E)									
- Rectangle (sides W0 00 H200 00 D0 00)									
North HL-MC #51		0 00	0 00	0 00	119 50	-230 70	663,485 00	675,078 40	32° 49' 21 756 N 103° 45' 48 280 W
- plan misses target center by 259 81ft at 0 00ft MD (0 00 TVD, 0 00 N, 0 00 E)									
- Rectangle (sides W200 00 H0 00 D0 00)									
TG1-MC #51		0 00	0 00	5,450 00	109 50	-240 70	663,475 00	675,068 40	32° 49' 21 658 N 103° 45' 48 398 W
- plan hits target center									
- Point									
PBHL-MC #51		0 00	0 00	7,200 00	109 50	-240 70	663,475 00	675,068 40	32° 49' 21 658 N 103° 45' 48 398 W
- plan hits target center									
- Circle (radius 10 00)									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
2,100.00	2,100 00	8-5/8" Casing	8-5/8	12-1/4

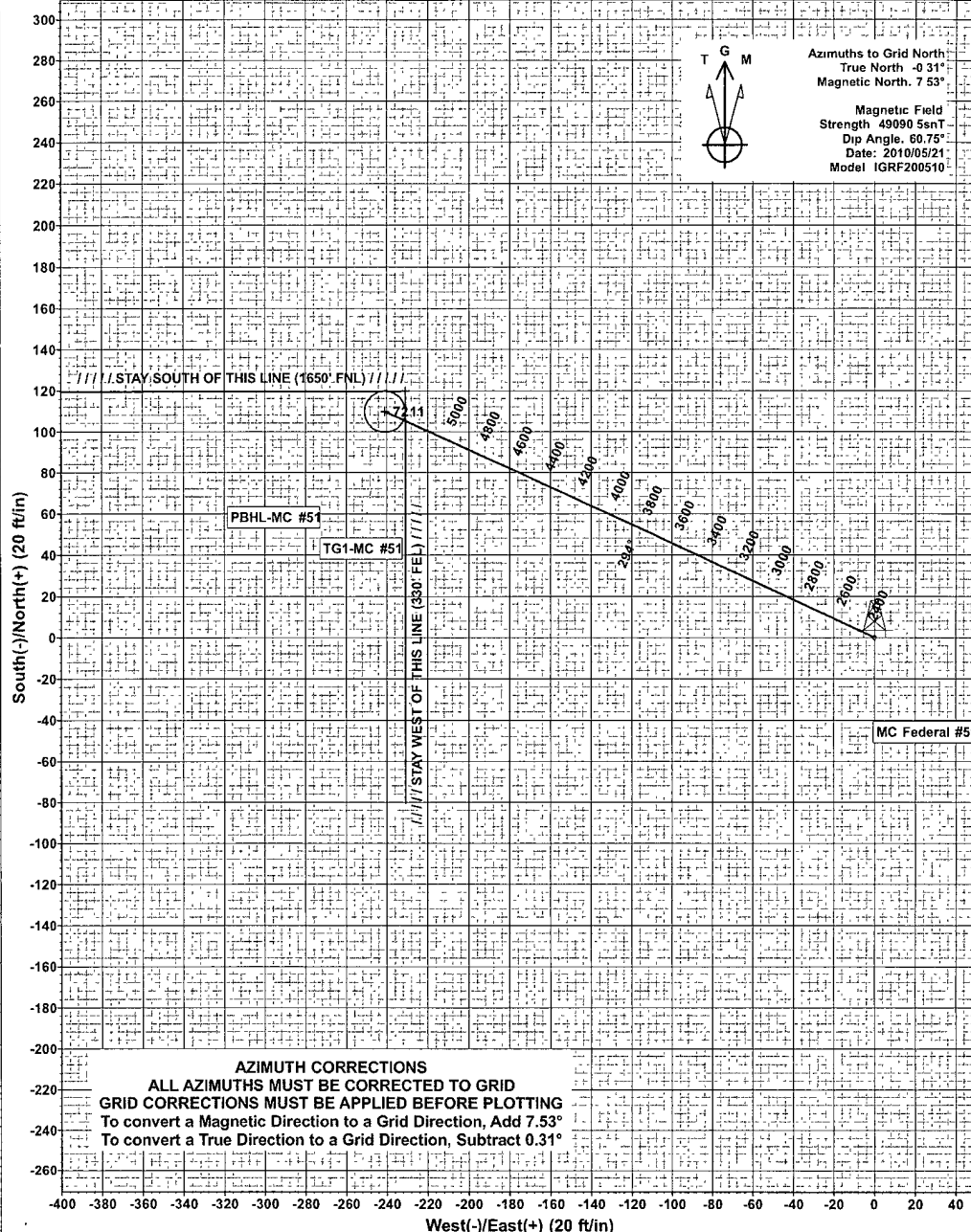
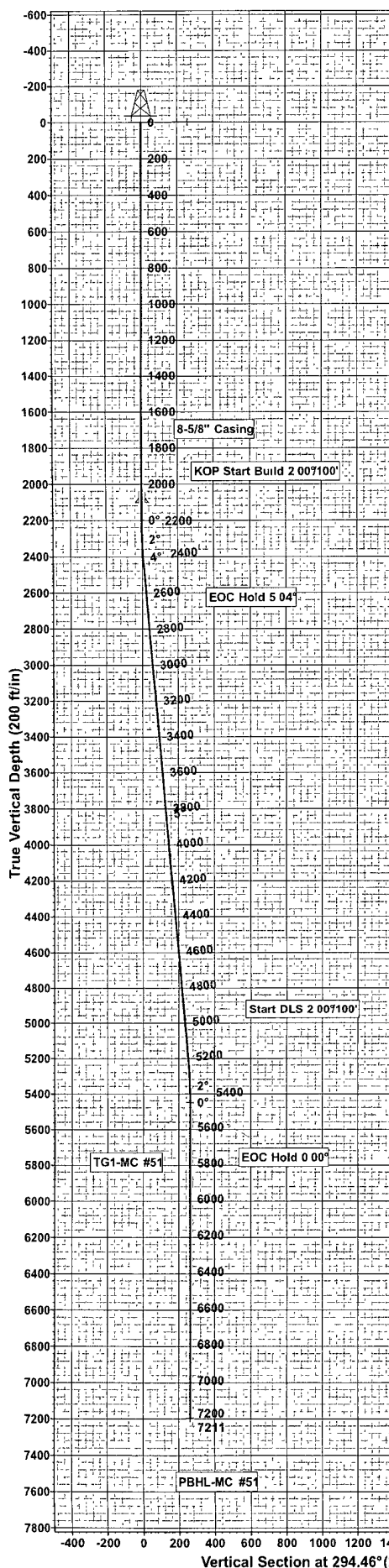
Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,200 00	2,200 00	0 00	0 00	KOP Start Build 2 00°/100'
2,452 05	2,451 73	4 59	-10 09	EOC Hold 5 04°
5,209 26	5,198 27	104 91	-230.61	Start DLS 2 00°/100'
5,461 32	5,450 01	109 50	-240 70	EOC Hold 0 00°



Scientific Drilling for COG Operating LLC
Site: Lea County, NM (NAD27 NME)
Well: MC Federal #51
Wellbore: OH
Design: Plan #1 - 7-7/8" Hole



Scientific Drilling
Directional Drilling Operations



Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
East HL-MC #51	0.00	119.50	-230.70	663485.00	675078.40	32° 49' 21.756 N	103° 45' 48.280 W	Rectangle (Sides: L2 00.00 W0.00)
North HL-MC #51	0.00	119.50	-230.70	663485.00	675078.40	32° 49' 21.756 N	103° 45' 48.280 W	Rectangle (Sides: L 0.00 W200.00)
TG1-MC #51	5450.00	109.50	-240.70	663475.00	675068.40	32° 49' 21.658 N	103° 45' 48.398 W	Point
PBHL-MC #51	7200.00	109.50	-240.70	663475.00	675068.40	32° 49' 21.658 N	103° 45' 48.398 W	Circle (Radius: 10 0 0)

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	2452.05	5.04	294.46	2451.73	4.59	-10.09	2.00	294.46	11.08	
4	5209.26	5.04	294.46	5198.27	104.91	-230.61	0.00	0.00	253.36	
5	5461.32	0.00	0.00	5450.00	109.50	-240.70	2.00	180.00	264.44	TG1-MC #51
6	7211.32	0.00	0.00	7200.00	109.50	-240.70	0.00	0.00	264.44	PBHL-MC #51

WELL DETAILS: MC Federal #51

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	663365.50	675309.10	32° 49' 20.561 N	103° 45' 45.584 W	

PROJECT DETAILS: Lea County, NM (NAD27 NME)

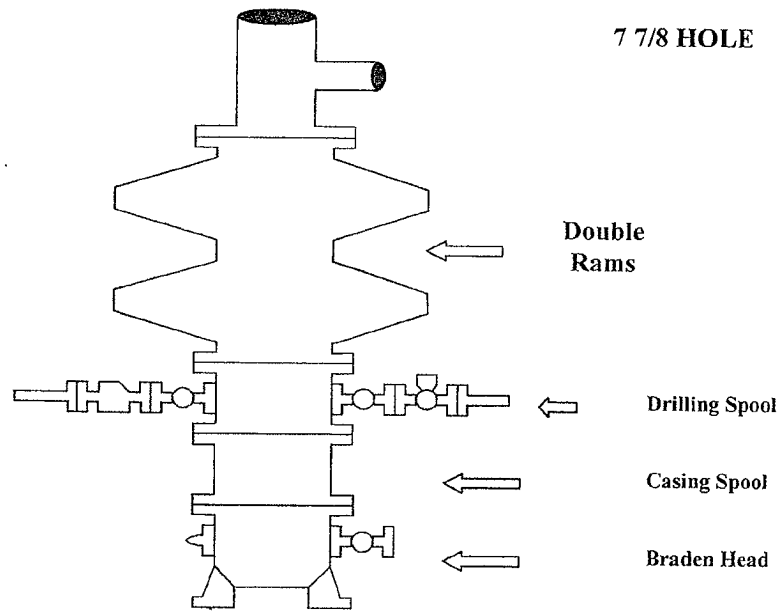
Plan: Plan #1 - 7-7/8" Hole (MC Federal #51/OH)

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
Checked: _____
Reviewed: _____
Approved: _____
Date: 21-May-10
Date: _____
Date: _____
Date: _____

COG Operating LLC

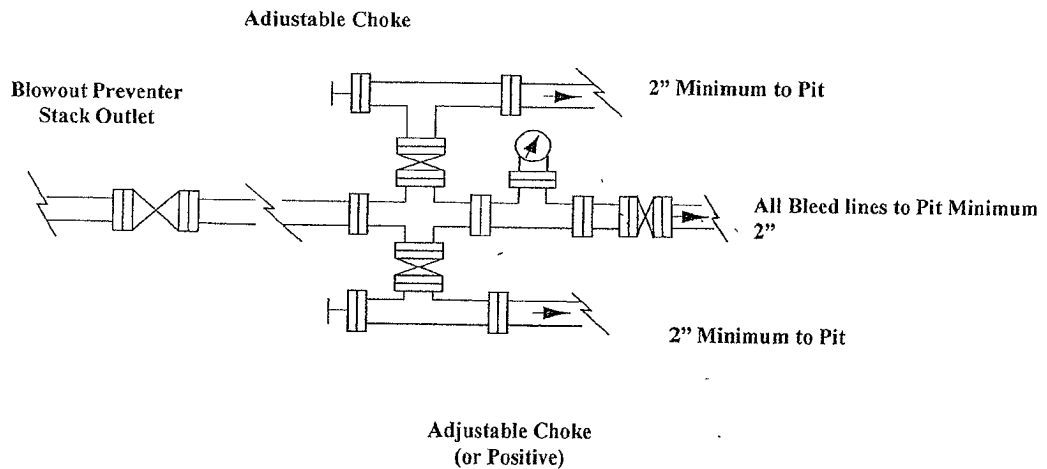
Exhibit #9

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.