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ATS-10-352

OCT 01 2010

OCD-HOBBS

Form 3160-3
(April 2004)

HOBBSOCD

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work ☒ DRILL ☐ REENTER		5 Lease Serial No. NMLC-029509B
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, Suite 1300 Midland TX 79701		8 Lease Name and Well No. J C FEDERAL #54 <302508>
3b. Phone No. (include area code) <229137> (432) 685-4385		9 API Well No. 30-025- 39930
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface SHL: 225' FSL & 485' FWL, UL M At proposed prod zone BHL: 330' FSL & 990' FWL, UL M		10 Field and Pool, or Exploratory Maljamar; Yeso, West 44500
14 Distance in miles and direction from nearest town or post office* 2.5 miles south of Maljamar, NM		11 Sec, T, R, M or Blk and Survey or Area Sec 22, T17S, R32E
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any) 225'	16 No of acres in lease 520	17 Spacing Unit dedicated to this well 40
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 230'	19 Proposed Depth 7200' TVD; 7231' MD	20 BLM/BIA Bond No. on file NMB000215
21 Elevations (Show whether DF, KDB, RT, GL, etc) 4042' GL	22 Approximate date work will start* 08/31/2010	23 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 | 4 Bond to cover the operations unless covered by an existing bond on file (see Item 20 above) |
| 2 A Drilling Plan | 5. Operator certification |
| 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) | 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 06/21/2010
Title Regulatory Analyst		

Approved by (Signature) /s/ Don Peterson	Name (Printed/Typed) CARLSBAD FIELD OFFICE	Date SEP 30 2010
Title FIELD MANAGER		

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

K2 10/14/10
PETROLEUM ENGINEERSEE ATTACHED FOR
CONDITIONS OF APPROVALAPPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

RECEIVEDDISTRICT I
1625 N FRENCH DR., HOBBS, NM 88240

OCT 01 2010

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102

Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210**HOBBS****CONSERVATION DIVISION**11885 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410DISTRICT IV
11885 S. ST. FRANCIS DR., SANTA FE, NM 87505**WELL LOCATION AND ACREAGE DEDICATION PLAT**☐ AMENDED REPORT

API Number 30-025- 39930	Pool Code 44500	Pool Name MALJAMAR; YESO, WEST
Property Code 302508	Property Name JC FEDERAL	Well Number 54
OGRID No 229137	Operator Name COG OPERATING, LLC	Elevation 4042'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	22	17-S	32-E		225	SOUTH	485	WEST	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
M	22	17-S	32-E		330	SOUTH	990	WEST	LEA
Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No.						

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

				OPERATOR CERTIFICATION <i>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.</i> Signature Date 6/18/2010 Robyn Odom Printed Name	
GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=660085.4 N X=675915.1 E LAT = 32 813353" N LONG = 103 760747" W BOTTOM HOLE LOCATION Y=660192.2 N X=676419.2 E				SURVEYOR CERTIFICATION <i>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.</i> Date Surveyed 06/16/2010 Signature & Seal of Professional Surveyor Ronald J. Eidson Certificate No. GARY G. EIDSON 12641 RONALD J. EIDSON 3239	

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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

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.

See
COA

See
COA

4. Casing Program

See COA

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	burst/collapse/tension
17 1/2"	0-650' 15	13 3/8"	48#	H-40orJ-55	ST&C/New	6.03/2.578/10.32
11" or 11 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.

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' - See COA

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.

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, 1150' - 2000' - See COA

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:

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-650' 915	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.

See
COA

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

- 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. — See COA
- 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. — See COA

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)

JC Federal #54

JC Federal #54

OH

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

SHL = 225' FSL & 485' FWL

BHL = 380' FSL & 980' FWL

Top of Paddock = 127' N of Surface & 399' E of Surface @ 5450' TVD

Standard Planning Report

26 July, 2010





Scientific Drilling
Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: JC Federal #54
Well: JC Federal #54
Wellbore: OH
Design: Plan #1 - 7-7/8" Hole

Local Co-ordinate Reference: Well JC Federal #54
TVD Reference: GL Elev @ 4042 00usft
MD Reference: GL Elev @ 4042 00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project: Lea County, NM (NAD27 NME)

Map System: US State Plane 1927 (Exact solution)
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001

System Datum: Mean Sea Level

Site: JC Federal #54

Site Position: Northing: 660,085 40 usft Latitude: 32° 48' 48 073 N
From: Map Easting: 675,915 10 usft Longitude: 103° 45' 38 691 W
Position Uncertainty: 0 00 usft Slot Radius: 13-3/16" Grid Convergence: 0 31 °

Well: JC Federal #54

Well Position: +N/-S 0 00 usft Northing: 660,085 40 usft Latitude: 32° 48' 48 073 N
+E/-W 0 00 usft Easting: 675,915 10 usft Longitude: 103° 45' 38 691 W
Position Uncertainty: 0 00 usft Wellhead Elevation: Ground Level: 4,042 00 usft

Wellbore: OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	2010/07/26	7 81	60 74	49,068

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	72 39

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	
2,599 60	7 99	72 39	2,598 30	8 42	26 52	2 00	2 00	0 00	72 39	
5,242 10	7 99	72 39	5,215 14	119 55	376 71	0 00	0 00	0 00	0 00	
5,478 17	3 27	72 39	5,450 00	126 55	398 78	2 00	-2 00	0 00	-180 00	TG1-JC #54
7,231 02	3 27	72 39	7,200 00	156 80	494 10	0 00	0 00	0 00	0 00	PBHL-JC #54



Scientific Drilling
Planning Report



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Project: Lea County, NM (NAD27 NME)
Site: JC Federal #54
Well: JC Federal #54
Wellbore: OH
Design: Plan #1 - 7-7/8" Hole

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Well JC Federal #54
GL Elev @ 4042 00usft
GL Elev @ 4042 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
South HL-JC #54 - West HL-JC #54									
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	72 39	2,299 98	0 53	1 66	1 75	2 00	2 00	0 00
2,400 00	4 00	72 39	2,399 84	2 11	6 65	6 98	2 00	2 00	0 00
2,500 00	6 00	72 39	2,499 45	4 75	14 96	15 69	2 00	2 00	0 00
2,599 60	7 99	72 39	2,598 30	8 42	26 52	27 82	2 00	2 00	0 00
EOC hold 7.99°									
2,600 00	7 99	72 39	2,598 70	8 43	26 57	27 88	0 00	0 00	0 00
2,700 00	7 99	72 39	2,697 73	12 64	39 83	41 78	0 00	0 00	0 00
2,800 00	7 99	72 39	2,796 76	16 84	53 08	55 69	0 00	0 00	0 00
2,900 00	7 99	72 39	2,895 79	21 05	66 33	69 59	0 00	0 00	0 00
3,000 00	7 99	72 39	2,994 82	25 26	79 58	83 49	0 00	0 00	0 00
3,100 00	7 99	72 39	3,093 85	29 46	92 83	97 40	0 00	0 00	0 00
3,200 00	7 99	72 39	3,192.87	33 67	106 09	111 30	0 00	0 00	0 00
3,300 00	7 99	72 39	3,291 90	37 87	119 34	125 20	0 00	0 00	0 00
3,400 00	7 99	72 39	3,390.93	42 08	132 59	139 11	0 00	0 00	0 00
3,500 00	7 99	72 39	3,489 96	46 28	145 84	153 01	0 00	0 00	0 00
3,600 00	7 99	72 39	3,588 99	50 49	159.10	166 91	0 00	0 00	0 00
3,700 00	7 99	72 39	3,688.02	54 69	172 35	180 82	0 00	0 00	0 00
3,800 00	7 99	72 39	3,787 05	58 90	185 60	194 72	0 00	0 00	0 00
3,900 00	7 99	72 39	3,886 08	63 10	198 85	208 62	0 00	0 00	0 00
4,000 00	7 99	72 39	3,985 10	67 31	212 10	222 53	0 00	0 00	0 00
4,100 00	7 99	72 39	4,084 13	71 52	225 36	236 43	0 00	0 00	0 00
4,200 00	7 99	72 39	4,183 16	75 72	238 61	250 33	0 00	0 00	0 00
4,300 00	7 99	72 39	4,282 19	79 93	251 86	264 24	0 00	0 00	0 00
4,400 00	7 99	72 39	4,381 22	84 13	265 11	278 14	0 00	0 00	0 00
4,500 00	7 99	72 39	4,480 25	88 34	278 36	292 05	0 00	0 00	0 00
4,600 00	7 99	72 39	4,579.28	92 54	291 62	305 95	0 00	0 00	0 00
4,700 00	7 99	72 39	4,678 31	96 75	304 87	319 85	0 00	0 00	0 00
4,800 00	7 99	72 39	4,777 33	100 95	318 12	333 76	0 00	0 00	0 00
4,900 00	7 99	72 39	4,876 36	105 16	331 37	347 66	0 00	0 00	0 00
5,000 00	7 99	72 39	4,975 39	109 36	344 63	361 56	0 00	0 00	0 00
5,100 00	7 99	72 39	5,074 42	113 57	357 88	375 47	0 00	0 00	0 00
5,200 00	7 99	72 39	5,173 45	117 78	371 13	389 37	0 00	0 00	0 00
5,242 10	7 99	72 39	5,215 14	119 55	376 71	395 22	0 00	0 00	0 00
Start DLS 2.00°/100'									
5,300 00	6 83	72 39	5,272 56	121 81	383 83	402 69	2 00	-2 00	0 00
5,400 00	4 83	72 39	5,372 03	124 88	393 52	412 86	2 00	-2 00	0 00
5,478 17	3 27	72 39	5,450 00	126 55	398 78	418 38	2 00	-2 00	0 00
EOC hold 3.27° - TG1-JC #54									
5,500 00	3 27	72 39	5,471 80	126 93	399 97	419 63	0 00	0 00	0 00
5,600 00	3 27	72 39	5,571 64	128 65	405 41	425 33	0 00	0 00	0 00
5,700 00	3 27	72 39	5,671 47	130 38	410 84	431 04	0 00	0 00	0 00
5,800 00	3 27	72 39	5,771.31	132.11	416 28	436 74	0 00	0 00	0 00
5,900 00	3.27	72 39	5,871.15	133.83	421 72	442 45	0 00	0 00	0 00
6,000 00	3 27	72 39	5,970 98	135 56	427 16	448 15	0 00	0 00	0 00
6,100 00	3 27	72 39	6,070 82	137 28	432 60	453 86	0 00	0 00	0 00
6,200 00	3 27	72 39	6,170 66	139 01	438 03	459 56	0 00	0 00	0 00
6,300 00	3 27	72 39	6,270 50	140 73	443 47	465 27	0 00	0 00	0 00



Scientific Drilling Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: JC Federal #54
Well: JC Federal #54
Wellbore: OH
Design: Plan #1 - 7-7/8" Hole

Local Co-ordinate Reference: Well JC Federal #54
TVD Reference: GL Elev @ 4042 00usft
MD Reference: GL Elev @ 4042 00usft
North Reference: Grid
Survey Calculation Method: 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)
6,400.00	3 27	72 39	6,370 33	142 46	448 91	470 97	0 00	0 00	0 00
6,500.00	3 27	72 39	6,470 17	144 18	454 35	476 68	0 00	0 00	0 00
6,600.00	3 27	72 39	6,570 01	145 91	459 79	482 38	0 00	0 00	0 00
6,700.00	3 27	72 39	6,669 84	147 64	465 22	488 09	0 00	0 00	0 00
6,800.00	3 27	72 39	6,769 68	149 36	470 66	493 79	0 00	0 00	0 00
6,900.00	3 27	72 39	6,869 52	151.09	476 10	499 50	0 00	0 00	0 00
7,000.00	3 27	72 39	6,969 36	152 81	481 54	505 20	0 00	0 00	0 00
7,100.00	3 27	72 39	7,069 19	154 54	486 98	510 91	0 00	0 00	0 00
7,200.00	3 27	72 39	7,169 03	156 26	492 41	516 61	0 00	0 00	0 00
7,231.02	3 27	72 39	7,200.00	156 80	494 10	518 38	0 00	0 00	0 00

PBHL-JC #54

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
South HL-JC #54 - plan misses target center by 515 29usft at 0 00usft MD (0 00 TVD, 0 00 N, 0 00 E) - Rectangle (sides W500 00 H0 00 D0 00)	0 00	0 00	0 00	106.80	504.10	660,192 20	676,419 20	32° 48' 49 102 N	103° 45' 32.778 W
West HL-JC #54 - plan misses target center by 515 29usft at 0 00usft MD (0 00 TVD, 0 00 N, 0 00 E) - Rectangle (sides W0 00 H500 00 D0 00)	0 00	0 00	0 00	106 80	504 10	660,192 20	676,419 20	32° 48' 49 102 N	103° 45' 32.778 W
TG1-JC #54 - plan hits target center - Point	0 00	0 00	5,450 00	126 55	398 78	660,211.96	676,313 88	32° 48' 49.303 N	103° 45' 34 011 W
PBHL-JC #54 - plan hits target center - Circle (radius 50 00)	0 00	0 00	7,200 00	156 80	494 10	660,242 20	676,409 20	32° 48' 49 598 N	103° 45' 32 892 W

Casing Points

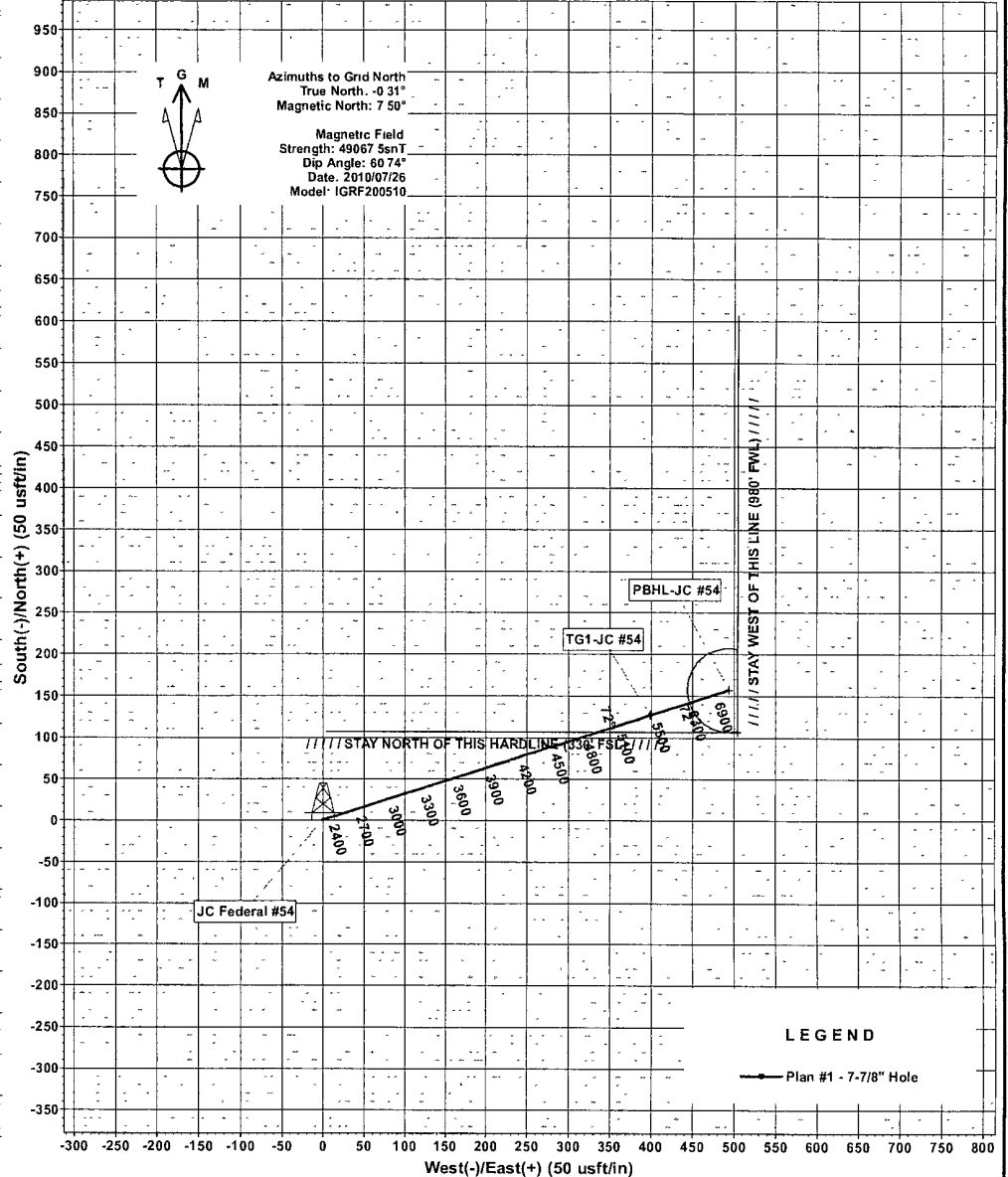
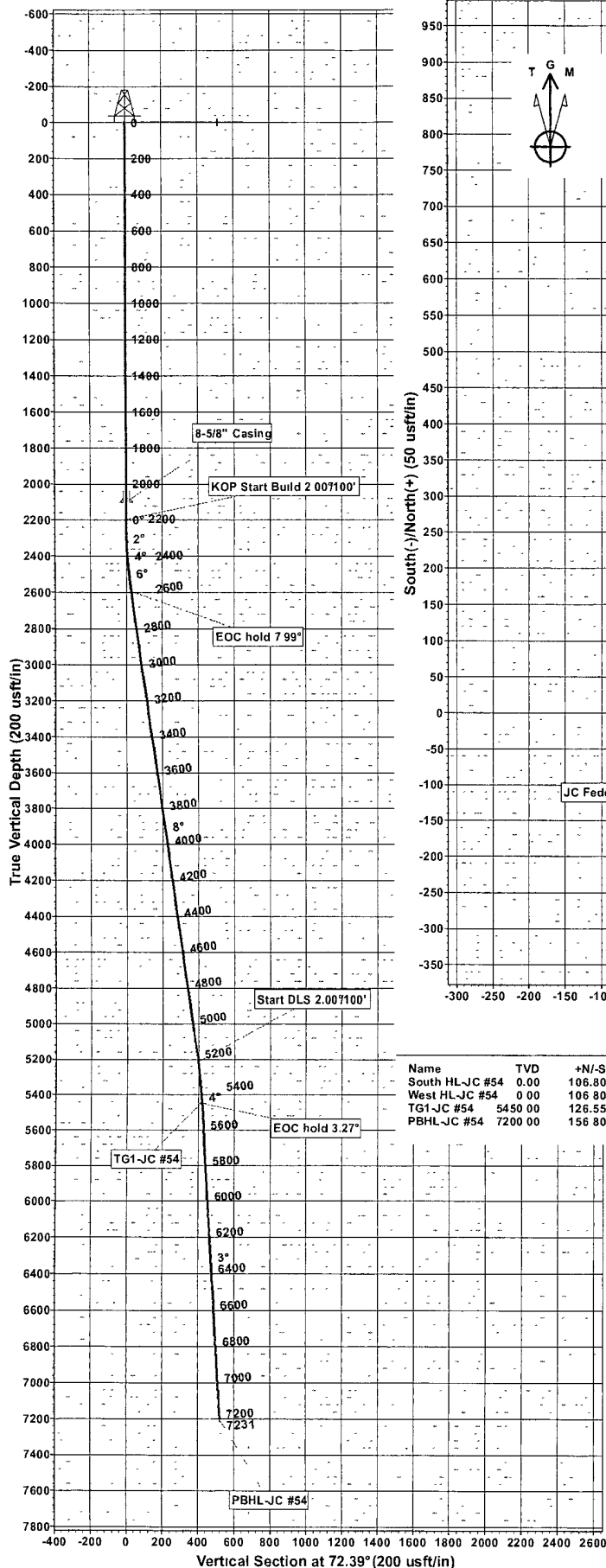
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
2,100.00	2,100.00	8-5/8" Casing	8-5/8	12-1/4

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
2,200.00	2,200.00	0 00	0 00	KOP Start Build 2.00°/100'
2,599.60	2,598.30	8 42	26 52	EOC hold 7 99°
5,242.10	5,215.14	119 55	376 71	Start DLS 2 00°/100'
5,478.17	5,450.00	126 55	398 78	EOC hold 3 27°



Scientific Drilling for COG Operating LLC
Site: Lea County, NM (NAD27 NME)
Well: JC Federal #54
Wellbore: OH
Design: Plan #1 - 7-7/8" Hole

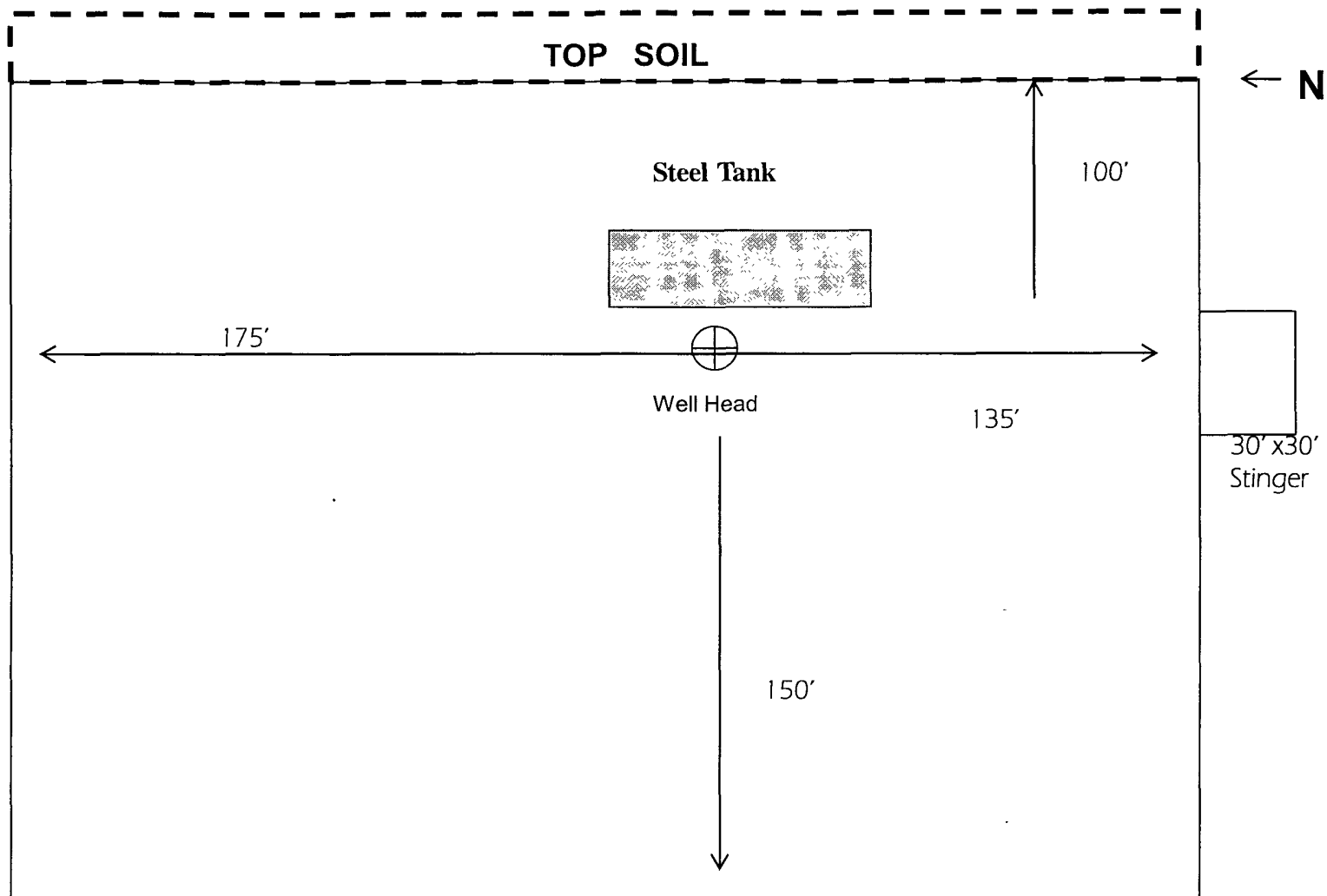


WELLBORE TARGET DETAILS (MAP CO-ORDINATES)									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
South HL-JC #54	0.00	106.80	504.10	660192.20	676419.20	32° 48' 49.102 N	103° 45' 32.778 W	Rectangle (Sides: L0 00 W500.00)	
West HL-JC #54	0.00	106.80	504.10	660192.20	676419.20	32° 48' 49.102 N	103° 45' 32.778 W	Rectangle (Sides: L50 0.00 W0 00)	
TG1-JC #54	5450.00	126.55	398.78	660211.95	676313.88	32° 48' 49.303 N	103° 45' 34.011 W	Point	
PBHL-JC #54	7200.00	156.80	494.10	660242.20	676409.20	32° 48' 49.598 N	103° 45' 32.892 W	Circle (Radius: 50.00)	

SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSeet 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	2599.60	7.99	72.39	2598.30	8.42	26.52	2.00	72.39	27.82
4	4524.10	7.99	72.39	5215.14	119.55	376.71	0.00	0.00	395.22
5	5478.17	3.27	72.39	5450.00	126.55	398.78	2.00	-180.00	418.38 TG1-JC #54
6	7231.02	3.27	72.39	7200.00	156.80	494.10	0.00	0.00	518.38 PBHL-JC #54

WELL DETAILS: JC Federal #54							
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot	
0.00	0.00	660085.40	675915.10	32° 48' 48.073 N	103° 45' 38.691 W		

PROJECT DETAILS: Lea County, NM (NAD27 NME) Plan: Plan #1 - 7-7/8" Hole (JC Federal #54/OH)
Geodetic System: US State Plane 1927 (Exact solution)Created By: Julio Pina Date: 26-Jul-10
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866 Checked: Date:
Zone: New Mexico East 3001 Reviewed: Date:
System Datum: Mean Sea Level Approved: Date:



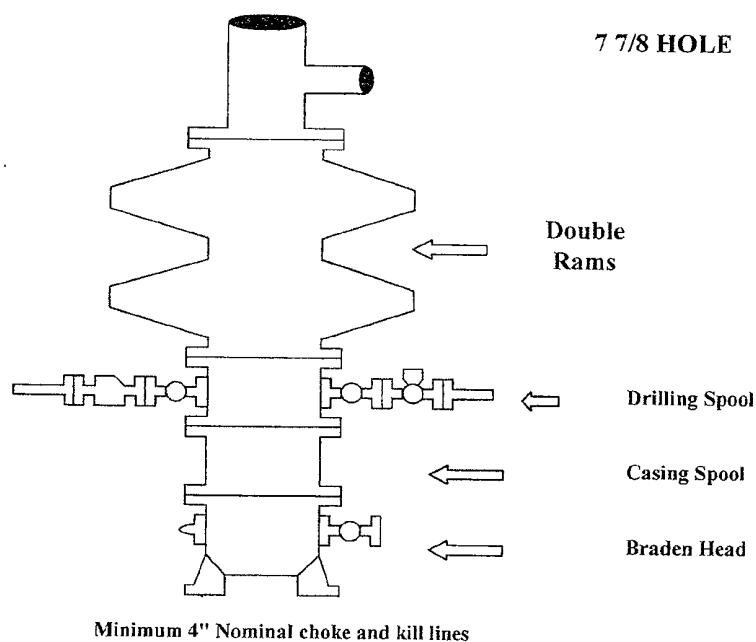
Not To Scale

COG OPERATING LLC
Rig Layout-Closed Loop
System

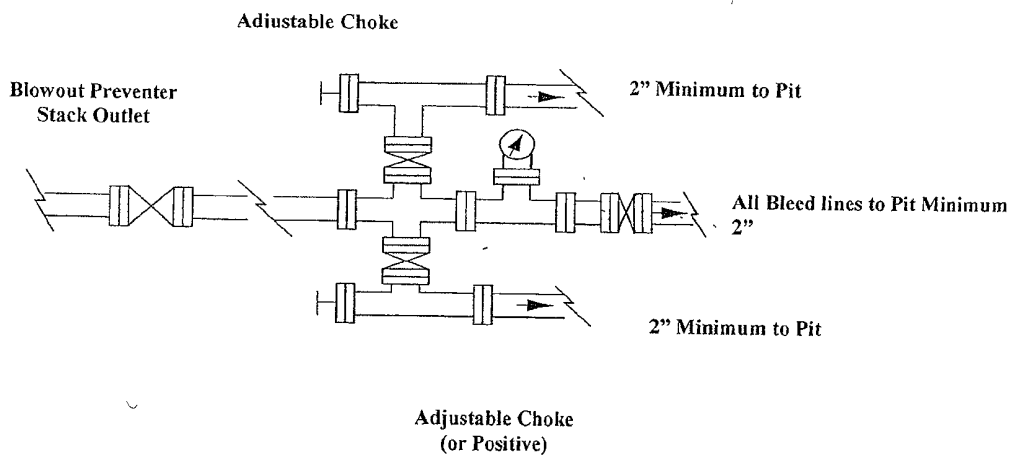
COG Operating LLC

Exhibit #9

BOPE and Choke Schematic



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.

