2011	OCD-HOBBS							
Form 3160-3		1	FORM APPROVED					
(April 2004)	ΤΑΤΓΟ		OMB No 1004-0137 Expires March 31, 2007					
DEPARTMENT OF	THE INTERIOR		5 Lease Serial No. NMLC-029405B					
BUREAU OF LANI APPLICATION FOR PERMI								
		N/A						
la Type of work 🗹 DRILL	REENTER	7 If Unit o N/A	7 If Unit or CA Agreement, Name and No N/A					
lb. Type of Well 🔽 Oil Well 🔲 Gas Well 🗌 Oth	er Single Zone Mul		ame and Well No FEDERAL #6	•	ونو			
2 Name of Operator		9. API We						
COG Operating LLC 3a Address	3b Phone No (include area code)	30-02		227				
550 W. Texas, Suite 100 Midland TX 79	. ,	•	d Pool, or Explora amar; Yeso, We	•				
4 Location of Well (Report location clearly and in accordance		11. Sec., T. I	R M or Blk and	Survey or Area				
At surface         SHL: 1726' FSL & 2053' F           At proposed prod zone         BHL: 2310' FSL & 2310' F		Sec 1	9, T17S, R32E					
14 Distance in miles and direction from nearest town or post of		12 County	or Parish	13 State				
3 miles south of Maljamar NM		Lea		NN	M			
<ul> <li>15. Distance from proposed*</li> <li>location to nearest</li> <li>property or lease line, ft</li> <li>(Also to nearest drug, unit line, if any)</li> <li>1726'</li> </ul>	16 No. of acres in lease 1602	17. Spacing Unit dedicat	ed to this well					
18. Distance from proposed location*	19 Proposed Depth	20 BLM/BIA Bond No.	on file					
to nearest well, drilling, completed, applied for, on thus lease, ft 200'	7052' TVD; 7093' MD	NMB000740						
21 Elevations (Show whether DF, KDB, RT, GL, etc.) 3928' GL	22 Approximate date work will s	1	ed duration					
3720 GL	24. Attachments	10 da	ys					
The following, completed in accordance with the requirements		attached to this form.						
<ol> <li>Well plat certified by a registered surveyor.</li> <li>A Drilling Plan.</li> </ol>	4 Bond to cover Item 20 above	the operations unless cove	red by an existin	g bond on file	(see			
3 A Surface Use Plan (if the location is on National Forest SUPO shall be filed with the appropriate Forest Service Of		e specific information and/	or plans as may b	e required by tl	he			
25 Signature	Name (Printed/Typed)		Date	<u></u>				
Title	Kelly J. Holly		0	5/02/2011				
Permitting Tech								
Approved by (Signature) /s/ Don Peters	On Name (Printed/Typed)		Dat	UG <mark>8</mark>	201			
Title FIELD MANAGER	Office	CARLSBAD FIELD	OFFICE					
Application approval does not warrant or certify that the appli	cant holds legal or equitable title to those right	ghts in the subject lease whi	sh would entitle th	e applicant to				
conduct operations thereon. Conditions of approval, if any, are attached.	•	APPRO	VAL FOR	TWO Y	ΈA			

**Roswell Controlled Water Basin** 

.

••••

K2 05/11/11

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

DISTRICT I 1625 N. FRENCH DF DISTRICT II 1301 W. GRAND AV DISTRICT III	R., HOBBS, M	NM 88240 ESIA, NM 882	BS OC Dene	ergy, Miner		sources Departmen	t		Form C-102 evised July 16, 2010 ubmit to Appropriate District Office
DISTRICT III 1000 RIO BRAZOS F DISTRICT IV	RD., AZTEC,	NM 87410	G10 2011	122 Santa	0 South St. Fr a Fe, New Mex			🗆 AMI	ENDED REPORT
11885 S. ST. FRANC	CIS DR., SAM	ITA FE, NM 87	'505		-				
		WE	REEDCA		ND ACREA	GE DEDICA	TION PLAT		
	I Number			ol Code			Pool Name		
30-025 -	407	27	-44500		N	laljamar;	<u>Yeso, Wes</u>		
Property Co					Property Nam			We	Il Number
302498					GC FEDEF				61
OGRID N	0.				Operator Nam			1 -	levation
229137			1	COC	<b>GOPERATI</b>	NG, LLC			3928'
				•	Surface Locat	ion			
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
К	19	17-S	32-E		1726	SOUTH	2053	WEST	LEA
ll.		1	B	ottom Hol	e Location If Diffe	rent From Surface	, <u> </u>		
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
к	19	17-S	32-E		2310	SOUTH	2310	WEST	LEA
Dedicated Acres 4()	Joint o	r Infill C	onsolidation Cod	le Ord	ler No.	1		L <u></u>	
NO ALLOWABLE WIL	L BE ASSIGN	ed to this co	OMPLETION UNT	L ALL INTEF	RESTS HAVE BEEN (	CONSOLIDATED OR A	NON-STANDARD UNI	T HAS BEEN APPRON	ED BY THE DIVISION
LOT 1							OPER	RATOR CERTIF	
	1		1		1			rufy that the information	
								the best of my knowled anization either owns a	
	· 		1				unleased m	uneral interest in the land	f including the
							well at this	ottom hole location or ha location pursuant to a co neral or working interest,	ntract with an owner

Y=662449.3 N

X=662211 9 E

GRID AZ =23'28'32"

HORZ. DIST.=637.5'

Y=661129.2 N

X=662215.1 E

BH

2310'-

S.L.

726'

SEE DETAIL

-++

GEODETIC COORDINATES

NAD 27 NME

SURFACE LOCATION

Y=661532.5 N

X=661605.9 E

LAT = 32.817535° N

LONG.=103.807297' W

BOTTOM HOLE LOCATION

Y=662117.1 N

X=661859.9 E

DETAIL

3933 1

3929 6

600 Ο

3929.9'

LOT 2

Y=662444 2 N

X=660880.1 E

LOT 3

LOT 4

<u>Y=661124.2 N</u>

X=660885.4 E

-2310'

-2053'

4

3

pooling agreement or a compulsory pooling order heretofore entered by the division.

5-2-11 Date

Kelly J. Holly Printed Name

kholly@conchoresources E-mail Address c

### SURVEYOR CERTIFICATION 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.





### **HOBBS OCD**

AUG 1 0 2011

RECEIVED

### MASTER DRILLING PROGRAM

### **1.** Geologic Name of Surface Formation

Quaternary

### 2. Estimated Tops of Important Geologic Markers:

Surface
680'
900'
1700'
2010'
2375'
2980'
3355'
3700'
5260'
5310'
5870'
6810'

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

Water Sand	150'	Fresh Water
Grayburg	3355'	Oil/Gas
San Andres	3700'	Oil/Gas
Glorietta	5260'	Oil/Gas
Paddock	5310'	Oil/Gas
Blinebry	5870'	Oil/Gas
Tubb	6810'	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 720' 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 2000' and circulating cement, in a single or <u>multi-stage job and/or with an ECP</u>, 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.

Page 1

Directional 7052'TVD 7093'MD

4. **Casing Program** 

1500 MAA

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	burst/collapse/tension
17 1/2"	0-700-75	13 3/8"	48#	H-40orJ-55	ST&C/New	6.03/2.578/10.32
11"	0-2000	€8 5/8"	24or32#	J-55	ST&C/New	1.85/1.241/4.78
7 7/8"	0-Ť.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:

8 5/8" Intermediate 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

### 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, (770) (50' below the surface casing). Cement volumes will be adjusted proportionately for depth changes of multi stage tool.

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.) ſ

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

Master Drilling Program, Maljamar area

5 1/2" Production Casing:



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; minimum volume, will be adjusted up after caliper is run. 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.

### 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
COV	0-720'	Fresh Water	8.5	28	N.C.
J.N	7/20-2100'	Brine	10	30	N.C.
- / or -	2100'-TD	Cut Brine	8.7-9.1	29	N.C.
(*)					ـــــــــــــــــــــــــــــــــــــ

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

See COA

- 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 <sup>1</sup>/<sub>2</sub>" 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

ı.

3

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) GC Federal #61 GC Federal #61

HOBBS OCD AUG 1 0 2011 RECEIVED

ОН

Plan: Plan #2 - 7-7/8" Hole SHL = 1726' FSL & 2053' FWL BHL = 2260' FSL & 2260' FWL Paddock Top = 441' N of Surface & 168' E of Surface @ 5260' TVD

## **Standard Planning Report**

05 May, 2011



<i>`\$\$C0</i>	<b>ICH</b>	10	20%er/ddata011_cs1.cccs_epsembor		ientific Dr Planning Rep	•			9	Scientific Drilling
Database Company: Project Site: Well Wellbore: Design:	EDM-Julio COG Open Lea County GC Federa GC Federa OH Plan #2 - 7	/, NM (NAD2    #61    #61	27 NME)		Local Co-or TVD Referen MD Referen North Refer Survey Cald	ce: encē:		Well GC Feder GL Elev @ 392 GL Elev @ 392 Grid Minimum Curva	28 00usft 28.00usft	
Project	Lea County,	NM (NAD2	7 NME)	· · · · · · · · · · · · · · · · · · ·						1
Geo Datum:	US State Plan NAD 1927 (N New Mexico E	ADCON CO			System Datu	m:	٨	lean Sea Level	•	
Site	GC Federal	#61			1 m 22			00000757824232-00		
Site Position: From: Position Uncertainty:	Мар	0 00 ι	Northir Easting Isft Slot Ra	g:		32 50 usft 05.90 usft 0 "	Latitude: Longitude: Grid Conver	gence:		32° 49' 3 127 N 103° 48' 26 270 W 0.29 °
Well	GC Federal	#61	a na si ang	14			- 1-1- pulsonky - 2.720.	(* <del></del>	• <b>&gt;&gt;&gt;</b>	•
Well Position	+N/-S +E/-W	0.00 0 00		rthing: sting:		661,532 50 661,605 90		ntitude: ongitude:		32° 49' 3 127 N 103° 48' 26 270 W
Position Uncertainty	ОН	0 00		llhead Elevatio				round Level:		3,928 00 usf
Magnetics	Model	lame	Sample	Date	14 St					
		GRF2010		011/05/05	Declinati ()	1. TA 61 . Mar. 14.		<b>Angle</b> (°) 60 70	Field	· · · · · · · · · · · · · · · · · · ·
<u> </u>	(   Plan #2 - 7-	GRF2010			Q_2,7,7,4			(°)		(nT)
Design Audit Notes:	· · · · · · · · · · · · · · · · · · ·	GRF2010			Q_2,7,7,4			(°)		(nT)
Design	· · · · · · · · · · · · · · · · · · ·	GRF2010 7/8" Hole	2( Phase	: PL		7 75		(°)		(nT)
Design	· · · · · · · · · · · · · · · · · · ·	GRF2010 7/8" Hole	2( Phase	011/05/05 : PL		7 75 Tie		(5) 60 70	0 00 rection	(nT)
Design Audit Notes: Version: Vertical Section:	· · · · · · · · · · · · · · · · · · ·	GRF2010 7/8" Hole	20 Phase sthFrom((TV (ust))	011/05/05 : PL	(i)/ AN (usti)/	7 75 Tie	e On Depth: /Wi	(5) 60 70	0 00 rection	(nT)
Design Audit Notes: Version: Vertical/Section:	Plan #2 - 7.	GRF2010 7/8" Hole Der	20 Phase sthFrom((TV (ust))	0111/05/05 : PL D))	(j)/ AN (usft) 0 00	7 75 Tie (u 0 Dogleg Rate	e On Depth: (W) sft) 00 Build Rate	(;) 60 70 Di Di	0 00 rection (;) 20 89	InT) 48,956
Design Audit Notes: Version: Vertical Section: Plan, Sections Measured Depth Inclin	Plan #2 - 7.	GRF2010 7/8" Hole Der	21 Phase th From (TV (usft) 0 00 /ertical Depth (usft)	011/05/05 : PL D) 	(i)/ AN (usft) 0 00 (usft)	7 75 Tie (U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	e On Depth: (W) stt) 00 Build Rate (2/100ust)	(*) 60 70 Di Di Turn Rate (?/100usft)	0 00 rection () 20 89	nT) 48,956
Design Audit Notes: Version: Vertical Section: Plan Sections Measured Depth Inclin (usft)	Plan #2 - 7.	GRF2010 7/8" Hole Der	20 Phase th From(17V (lisft) 0 00 /ertical Depth	0111/05/05 : PL D))	(j)/ AN (usft) 0 00	7 75 Tie (u 0 Dogleg Rate	e On Depth: (W) sft) 00 Build Rate	() 60 70 Di Di U Turn Raře (//100usft) 0 0 00	0 00 rection (;) 20 89	nT) 48,956
Design Audit Notes: Version: Vertical Section: Plan Sections Measured Depth Inclin (usft) 0 00 2,200.00 2,696 67	Plan #2 - 7. Pla	GRF2010 7/8" Hole Der Der muth	21 Phase th From (TV (ust) 0 00 /ertical Depth (ust) 0 00	011/05/05 : PL D) 	AN +N/S (USTI) 0 00 tE//W (uSTI) 0.00	7 75 Tie (U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	e On Depth: (/// sft) 00 Build Rate (?/100usft) 0 0	()) 60 70 Di Di Electronic (//100usft) 00 0 000 00 0.00	0 00 rection () 20 89 	nT) 48,956 Target
Design Audit Notes: Version: Vertical Section: Plan Sections Measured Depth Inclin (usft) 0 00 2,200.00 2,696 67 4,961.87	Plan #2 - 7. Pla	GRF2010 7/8" Hole Dep Dep 0 00 0 00 20.89 20 89	21 Phase th From (TV (usft) 0 00 /ertical Depth Depth (usft) 0 00 2,200 00 2,200 00 2,694 19 4,925.43	D11/05/05 : PL D) : PL D) : PL 0 0 0 0 0 0 0 0 0 0 0 0 0	C) AN +N/S (UST) 0 00 CO 0 00 15 31 154 62	7 75 Tie (u 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	e On Depth: (//) sft) 00 Build Rate (//i00usft) 0 0 0 0 0 0 0 0 0 0 0 0	(i) 60 70 Di Di Di Function (i/100usft) 0 0 00 0 0.00 0 0.00 0 0.00 0 0.00	0 00 rection () 20 89 ) )TFO (()) (() () () () () () () () () () ()	nT) 48,956 Target
Design Audit Notes: Version: Vertical Section: Plan Sections Measured Depth Inclin (usft) 0 00 2,200.00 2,696 67	Plan #2 - 7. Pla	GRF2010 7/8" Hole Der Der Under 0 00 0 00 20.89	21 Phase th From (TV (usft) 0 00 /ertical Depth (usft) 0 00 2,200 00 2,200 00 2,694 19	D11/05/05 : PL D) (usft) 0 00 0 00 40.12	C) AN +N/S (usft) 0 00 C tE/W (usft) 0.00 0 00 15 31	7 75 Tie (u 0 0 (bogleg Rate 7/100usft) 0.00 0 00 2 00	e On Depth: (//) 00 Build Rate (?/100ust) 0 0 0 0 0 0 2 0	(i) 60 70 Di Di U U U U U U U U U U U U U U U U U	0 00 rection () 20 89 ) ) TFO) (()) (()) (()) (()) (()) (()) (()) (	nT) 48,956 Tärget

1

3 **b** 

,

.

,

.

.



•

.

•

### **Scientific Drilling**

Planning Report



Theorem and a state of the stat	entransmillion chilicairan					5.34° M. 2006, 37° M. 2006, 2007			
Database:	)M-Julio		Same and South 2003		o-ordinate Refe	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	Well GC Federa	N # 6 1	and a star base of the
	OG Operating I	110		P., 1, 197 +	Sector Sector Sector	stellce.			. *
				TVD Ref			GL Elev @ 3928		
P - 60 C - 6 C - 7 3 - 7 5 - 7 5		(NAD27 NME	)	MD Refe	rence:		GL Elev @ 3928	00usft	
Site:	Federal #61			North R	eference:		Grid		
Well:	Federal #61				Calculation Me	thod	Minimum Curvat	ure	
Wellbore:	1.					diou.		ure	•
1. 下海總管理總法的 1. 计问题 人名金利		· · ·		1.5 - 13 -					
Design: Pla	an #2 - 7-7/8"	Hole	Caracterization of the contract of the contract		1. A. A. A.			-	
Planned Survey	and the second	CALLSCO. MARKENES	LINE PORT				200 - Lands - Andrews		
Planned Survey							- -		
Print and a second second					A. A. A. A.				مر بر و و و و
Measured	RO IN		Vertical		Sec. 1	Vertical 🔅	🖄 Dogleg	Build	Turn
Depth	lination	Azimuth	Depth		+ <b>Ē</b> /-₩	Section	Rate	Rate	Rate
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		()) ())	(usft)	usft)	(usft)	(usft)	19.5 1 2 . S. S. Mary . S. L. M. D	Contraction of the second s	?/100üsft)
			Contraction of Co		19 3 A & 2 9 4			WE BEER	A SUCCESSION OF THE
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0.00	0 00	0 00
South HL-GCF #6	1 - West HL-C	GCF #61			•			•	
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			,						0.00
2,200 00	0 00	0 00	2,200 00	0 00	0.00	0 00	0.00	0.00	
		0.00	2,200 00	0.00	0.00	0.00	0.00	0 00	0 00
KOP Start Build 2				· · · ·	· * · ·	•	1. A.	-,-`` ·	* 2 ***
2,300.00	2 00	20 89	2,299 98	1 63	0.62	1 75	2 00	2.00	0 00
2,400.00	4 00	20 89	2,399 84	6.52	2.49	6 98	2 00	2 00	0 00
2,500 00	6.00	20 89	2,499.45	14 66	5,60	15 69	2 00	2 00	0 00
2,600 00	8 00	20 89	2,598.70	26 05	9.94	27 88	2.00	2 00	0 00
2,696 67	9 93	20 89	2,694.19	40 12	9.94 15.31	42 95	2.00	2 00	0 00
EOC hold 9.93°	,` •	20,00	2,007.13	70 12	10.01	42 35	200	200	0 00
						:	• • •		· •
2,700 00	9 93	20 89	2,697.47	40.66	15.52	43 52	0 00	0 00	0 00
2,800 00	9.93	20 89	2,795.97	56 78	21 67	60 77	0 00	0 00	0.00
2,900.00	9.93	20 89	2,894 47	72 89	27 82	78 02	0 00	0 00	0 00
3,000.00	9.93	20 89	2,992.97	89 01	33 97	95 27	0.00	0 00	0 00
3,100 00	9 93	20 89	3,091.47	105 13	40 12	112.52	0.00	0 00	0 00
3,200 00	9 93	20 89	3,189 97	121 25	46 27	129.77	0.00	0 00	0 00
3,300 00	9 93	20 89	3,288 47	137 36	52 42	147.02	0 00	0 00	0 00
						141.02	0.00	0.00	0.00
3,400 00	9 93	20 89	3,386 97	153 48	58 57	164 27	0 00	0 00	0 00
3,500 00	9 93	20 89	3,485.47	169 60	64.72	181 52	0 00	0 00	0 00
3,600 00	9.93	20 89	3,583 97	185 71	70 87	198 77	0 00	0 00	0 00
3,700 00	9 93	20 89	3,682 47	201 83	77 02	216 03	0.00	0 00	0 00
3,800.00	9 93	20 89	3,780 98	217 95	83.17	233 28	0 00	0.00	0 00
3,900 00	9 93	20 89	3,879.48	234 06	89 32	250.53	0 00	0.00	0.00
4,000 00	9 93	20 89	3,977 98	254 00	95 47	267 78		0 00	0 00
4,100 00	9 93	20.89	4,076.48	266.30	95 47 101 62		0 00	0 00	0 00
4,200 00						285 03	0.00	0 00	0 00
	9 93	20 89	4,174 98	282 41	107 77	302 28	0 00	0 00	0 00
4,300 00	9.93	20.89	4,273 48	298 53	113 92	319 53	0 00	0 00	0 00
4,400.00	9 93	20.89	4,371.98	314.65	120.07	336 78	0 00	0 00	0 00
4,500 00	9 93	20 89	4,470 48	330 76	126 22	354 03	0 00	0 00	0 00
4,600 00	9 93	20 89	4,568 98	346 88	132.37	371 28	0 00	0 00	0 00
4,700 00	9 93	20 89	4,667 48	363.00	138 52	388 53	0 00	0 00	0 00
4,800.00	9.93	20 89	4,765.98	379 12	144.67	405.78	0.00	0 00	0 00
4,900 00	9 93	20 89	4,864 49	395 23	150 82	423 03	0 00	0 00	0 00
4,961.87	9 93	20 89	4,925 43	405 20	154 62	433 70	0.00	0.00	0.00
Start Drop 2.00°/1					•				
5,000.00	9 17	20 89	4,963 03	411 12	156 88	440 03	2.00	-2 00	0 00
5,100 00	7 17	20 89	5,062 01	424 39	161 95	454 24	2 00	-2.00	0.00
5,200 00	5 17	20 89	5,161 42	434 44	165 78	464 99	2 00	-2 00	0.00
5,298 84	3 19	20 89	5,260 00	441.17	168 35	472 20	2 00	-2 00	0 00
EOC hold 3.19° - 1						e			
5,300.00	3 19	20 89	5,261 15	441 23	168.37	472.26	0 00	0 00	0 00
5,400 00	3 19	20 89	5,361 00	446 44	170.36	477.84	0 00	0 00	0 00
5,500 00	3 19	20 89	5,460 84	451.64	172.34	483.41	0 00	0 00	0 00
5,600 00	3 19	20 89	5,560 69	456 85	174 33	488 98	0 00	0 00	0 00
5 700 00									
5,700 00	3.19	20 89	5,660.53	462 05	176 32	494 55	0 00	0 00	0 00
5,800 00	3 19	20 89	5,760 38	467 26	178 30	500 12	0 00	0 00	0.00
5,900 00	3 19	20 89	5,860 22	472.46	180 29	505 69	0 00	0 00	0 00
6,000 00	3 19	20 89	5,960.07	477 67	182.28	511.27	0 00	0 00	0 00
6,100 00	3 19	20 89	6,059 91	482 88	184 26	516 84	0 00	0.00	0 00
6,200 00	3 19	20.89	6,159 76	488 08	186 25	522 41	0.00		
6,300.00	3 19	20.09	6,259.60	400 00		522 41	0.00	0 00	0 00
L0,000,00		20.03	0,209.00	493 29	188 24	527 98	0.00	0 00	0 00

2011/05/05 4·34 11PM

COMPASS 5000.1 Build 40

1

. .

,

### Scientific Drilling

Planning Report



		C TRUCTOR DE LA COMPANY	an de la companya de			and there have been and a state	TRACTA CARDE CRIME		and the second second	CHARGE STRATISTICS		
Database: EDN	N-Julio	and the second proved		4.586.533	Local Co	-ordinate Refer	ence:		Federal #61		ALC: NO.	C) I II
Company: CO	G Operating LL	C			TVD Refe		58574		a) 3928 000			
Project: Lea	County, NM (1	NAD27 NME	) .	. •	MD Refe			SA	້ອງ 3928 00ບ			
Site: GC	Federal #61		. • •		North Re	時任事実に希望に必要が		Grid		,		
Well:	Federal #61		· · · · ·			alculation Met	hod:	an 1977	Curvature			
Wellbore: OH		÷., .,	• .	· ·					ouvaluic	• , •	· · · ·	•
Design:	i #2'- 7-7/8" Ho	ble	•	· ·· ·			Car 1		· · ·		• .	-
	Contraction of the second	STRE, Jackston	STREET, STREET		AND A BOLL			ang Langung ang ang ang ang ang ang ang ang ang a	สารสารสารณ์ ในสาร 10 เหตุสาร พระการไฟน์			-
Planned/Survey	e longer an		eren er ser ser ser ser ser ser ser ser ser	-	NOT A TRUCK AND AND AND		. / 2. / - <sup>°</sup>	··		CALIFY FIRMORE PROP		
		CALL SHE						ing an				
Measured	shi ya shi s		Vertical		Sec. Se.		/ertical 😽 🔸	Dogleg	Buil	d 🔶	Turn	
	nation 😳 🗛	imuth .	⊖∢Depth	<b>∵</b> ,+N	I/-S <sup>™</sup> -1/2 📿	+E/-W	Section	Rate	A Rat	e) / s/ { / [	Rate	
(usft)	(°))	(°)	ु (usft) े		sft) 🐁 📜	(usft)	(usft)	:- (°/100usft	) (°/1001	usft)	(°/100usft)	
6,400 00	3 19	20 89	6,359 4	15	498 49	190 22	500 FF					6 X K (
6,500 00	3 19	20 89	6,459.2		503 70	190.22	533 55 539 12	0 0		0.00	0.00	
6,600 00	3 19	20 89	6,559 1		508.90	194 19	544 70	0.0		0 00 0 00	0 00	
6,700 00	3 19	20.00								0.00	0 00	
6,800 00	3 19	20 89 20.89	6,658 9		514 11	196.18	550 27	0.0		0 00	0 00	
6,900 00	3 19	20.89	6,758 8 6,858 6		519 31 524 52	198 17	555.84 -			0 00	0 00	
7,000 00	3 19	20.89	6,958 5		524 52 529 73	200 15 202 14	561 41 566 98	0.0		0 00	0 00	
7,093.63	3 19	20 89	7,052 0		534 60	202 14	572,20	0 0		0.00 0 00	0 00 0 00	
PBHL-GCF #61	4		р. – <u>– – –</u>		E Color (Color)	ارون کې		1. Sec. 5 1 1		1000	0.00	
		3 ; 1			~ ~		· · · · · ·		7	· Σ,	14 <b>1</b>	
			10731-2-1702 BACAL	-	C. Flaten disc as a particular	A REAL PROPERTY AND ADDRESS OF THE PROPERTY AND	PERSONAL INCOMENCE OF				·	
Design Targets		and the second second		* + , 3 			4 · · · · · · · · ·			-Condessor and	an and an	مىسىيىتىچىتى. ئۇلۇرى
'Target'Name		1 199 6									1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
2.550 million also a statistical distribution and a statistical an	$\alpha \in \mathbb{C}^{n}$		1.56.81	(Despised)	网络拉拉人名				19. A.	1 (A. 1997)		1. 200
	Angle Dip	2 X X 3 X X X X X X X X X X X X X X X X	1	FN/-S, 😒	,	Northing	Ea Ea	sting.				
- Shape	()) ()	°) (u	sft):////////////////////////////////////	(usft)	usft)	ും പ(usft) പ	(u	isft)	Latitu	le.	- Longitude	
South HL-GCF #61	0 00	0.00	0.00	504.00		LINE COLUMN COLUMN DE LE		2.45.167.45.46.16.16.76	Colling and the states			
- plan misses target center		0 00 ft ot 0 00um	0.00	584.60	254 00	662,117	10 6	61,859 90	32° 49'	8 899 N	103° 48' 23 2	260 W
- Rectangle (sides W200	00 H0 00 H0 00	11 at 0 000s1 10\		100,00	UN, UUUE)							
West HL-GCF #61	0 00	0 00	0 00	584 60	254 00	662,117	10 6	61,859 90	32° 49'	8 899 N	103° 48' 23 2	260 W
- plan misses target cente	er by 637 40us	ft at 0 00usi	ît MD (0.00	TVD, 0 0	0 N, 0 00 E)							
- Rectangle (sides W0 00	H200 00 D0 (	,0)										
PP-GCF #61	0 00	0 01 5,2	60 00	441 17	168 35	661,973	68 6	61,774 25	32° 49'	7 484 N	103° 48' 24.2	272 M
- plan hits target center								,			100 40 24.2	272 00
- Point												
PBHL-GCF #61	0 00	0 00 7.0	52 00	534 60	204 00	662,067	10 60	61,809 90	220 10	8 407 N	1028 401 00 0	
<ul> <li>plan hits target center</li> </ul>		.,.			20100	002,001		01,003 30	32 49	0407 N	103° 48' 23 8	349 VV
- Circle (radius 50 00)												
Casing Points	14 1 3 . Q. 1 S. M.	Section and the section of the secti	annissen an anna	anter constraints	1	and the second			3. 2. 1 1.			in when we
	S. S. P. P. R.		88 M. S.	<b>Sessois</b>	<b>ALLER</b>	National Astronomical Astronomical Astronomical Astronomical Astronomical Astronomical Astronomical Astronomica Astronomical Astronomical Astronomical Astronomical Astronomical Astronomical Astronomical Astronomical Astronomi	Exercised	CONFERENCE OF	a an an sao			in the second
Measure	d Vertio	al 🖓 🖓	149 Serie	ane great States								
Depth	104 10 10 10 10 10 10 10 10 10 10 10 10 10	and Aller and States	1997 - 19 19 19 19 19					Cas Dian	10 Mar 191 1 1 1 1 1 1 1 1 1 1	Hole		
(usft)	(usf	t).			Name				I CLEI	Diameter		
2,100	A TOTAL CONTRACTOR	00.00 8 5	/8" Coorna		Name -		1212.72.PQ	(1.4) 2000 I	1.5.5	(?)	A at the second second	建建建
2,100	2,1	00.00 8 5	o Casing						8-5/8	10-	5/8	
Formations					APPEND - COMPANY		-		ALAIN A- PROPERTY AND ADDRESS	D40-11-1-1-101-12-24	CARD LORM AND THE TO STATE OF LOT	
		177253755		Bisterior	a constant		and and a second se	antes a manufacture				
Measured	Vertical						1.1.1.1.		e de la composition d Composition de la composition de la comp			Sec.
Depth									19 - 18 - 18 - 18 - 18 - 18 - 18 - 18 -	Dip 🐖		
I THE ARE ADDRESS AND A REPORT OF A DESCRIPTION OF A	⊂ (usft)								Ha The State	lirection		的議論
			and the second second	lame, 🦂	$\sim 7 \approx 7.5$	LI SALAN	thology		(;) 	∽ (°), ; ; ;		
5,298.84	5,260	00 Top of	Paddock						0.00			
				<u> </u>					· <u> </u>			
Plan Annotations			Carlo Car Carlo Carlo Carl			and the second		anan ana anang			the same state and the second	Tangange ang
				S. A. C. R.	u v krateva	PO 253 ŘÍŘ	<b>STATIS</b>	he constraint	E.S. SERVER		in Thursday and	THE SECOND
Measured	Vertical		LocaliCo	ordinates								
Depth	Depth	+N	/-S		E/-W		医磷酸的					
(usft)	(usft)	in the	sft)		isft)	Comment				A 668.1		
2,200 00	2,200 00	and the second	alantes Strates	N-PF-1								
2,200 00	2,200 00		0 00 40 12		0 00	KOP Start Bui		ינ				
4,961 87	4,925 43		40 12		15 31 154 62	EOC hold 9.93 Start Drop 2.0						I
5,298 84	5,260 00		403 20		154 62	Start Drop 2 0 EOC hold 3 19						
							·					

2011/05/05 4.34 11PM

COMPASS 5000.1 Build 40



Scientific Drilling for COG Operating LLC Site: Lea County, NM (NAD27 NME) Well: GC Federal #61 Wellbore: OH Design: Plan #2 - 7-7/8" Hole

1			.7						- 1		1000	<del> </del>				<u> </u>
-600	· · · ·	· · ·	· · :	2 2 · ·	•	1 4	<u> </u>		- 1 . 17		950		-' 	G M	1 * · 1	1
-400	-, - -			 		· · · ·			- } 7.12	<u>, -</u>				$\Lambda^{\Lambda}$		
200	-11-	:	[:	1 2 7	5	: 4.				: = 	900		F	$\mathbb{X}$		
0	-						: <u></u> ::	<u>-</u>		:	850			$\oplus$		
1	·:	11. .7	0	: 	1			• • • •	25		800	· · · ·			:-	+
00	<u></u>	· · · ·	200				:;;:	·			750-		: <u>i</u> .;		ļ	
00	 		400			7.2 	;"			<u>91</u>			- (C. 7		,	-
500			600			Г47. 1 Т	÷:,-				700					:
			110			1-4				i	650	 /		<u>1-</u>	<u>.,</u>	ŀ
800-			800	Ţ., :	11. 1- 1-	1.11				F	600				*   4	
000	42					1711		- 1-	<u>т.</u>	<del>;</del> ;1	550	-7-	2742	<u>.</u>	1	
200	.: 		1200		1			- 7 <sub>117</sub> -7	+					E.	<u> </u>   + 1	
400	11.1	1- 1-2-	1400	-ar		1917	1	· · · ·			500	12 - 47	jt::		1 - 1. ; 	ľ
		<u>, li</u> r				-::: -::::	13.				450		1777 F.	, <u>, , -</u> ,		ŀ
600	14 I.		1600		4 - 4		1. 	1-7	-1-	• :	<u>€</u> 400					
800	441.		1800	8 5/8"	Casing	<u>}+</u>	4-7	4			2 3 3 3 50	7 7 7 7 7	717		1: ± · ;	
000			2000		OP Sta	Litti Int Buil		1.1.1		11	200	-7		1		ŀ
200			<b>0° 2</b> 2	00		1.55			: 12	1.	는 300 된	12	1		1	t
			00-1-	400	17 - 1 17 - 1						N. 250				4 11-11	ł
400	-H.	14	6.	長日.	11.5					1	(uj/Jim 05) (+)(Jim 10) (-)(-)(-)(-)(-)(-)(-)(-)(-)(-)(-)(-)(-)(		-11	- I.	÷+ ;	
600	117.		1.8°	2600	7-77			11.5	144	<u>.</u>	й 150-				1 	
800		111 F.	128	00	EOC	hold	9.93°	· · · · · ·	1711 1-1-1			·				ŀ
000	ī. 17] -			00		1				Ŧ.	100				1-17	ļ
]			1	200						2	50	11.				-
200-							- 1				0		111		<u> </u>	
400	- 14 -	-1 -1		3400	 		<u></u>		+	- <u>,</u>	-50		- <del></del>			
400- 600-	1417	1 · · ·	:::::	3600		· · ·				-	-50		1-11 - 7-1			
800-	+		3#	1380	o	Г.Н		171	2 · ] -		-100				====	t
	4717			<b>1</b>	00				11		-150					+
000			: 77	1-1-7	1.5 - 5	:					-200	 		1	1.75	
200		11.1 11.1	- <del></del>	<b>4</b>	200	3. 17 37 - 1		T			750	5	2.14			
400	124			1	400	17.1		· · · · · ·	i tii i tii		-250	. 2 . 		÷		
600				]	4600		art Dro	D 2 00	T100'	11	-300		· · · · · · · · ·	1, 1	1	-
	打住	ΞΗ		1.10	4800	1775	16.		1.00	5	-350	$\Box_{r}$	- ++ '		47, <sup>5</sup>	
800		<u>;</u> -11	11. 11. 11.			itu		<u></u>	ΤŪ		-400					-
000	·	<u></u> 		4-		0 5200	,	7 (1) 1 (1)		<u>., -</u>		-4	+	{	00 -2	┽
i200	Top of				6 4	5200			.Ці	77	4					
1	1.1.1.5	in d	1.1		54				Ì	Ţ	<u> </u>					
1					56	00 -	<u></u>	1.1.1	1.11		S		HL-GC		0	
5600+	<u></u>	nn Tr	GCF	#6]		7	EOC h		9" ***	11	PI		IL-GCF F #61 GCF #		5260 7052	
800	1,7	1.11	211.		- 1 E	00	1 5	7		1110-1	- 14 - FI	5712-0	GCF #	01	7052	: 1
000		1 × 1		. 141		000	1. 1. L.		1			1		· . · · ·		
200	1771		<u>.</u>	·, = `	6	200 🗄	7. <del>1</del> . 5 <del>1</del> .			1.7.1	. h. `~~			: ;		2
400-		<u></u>	Ξ			400				117	1 2 - 2	u.		#	: 11 - 11	-
+007	ja ja	-ilf			741				민			41		1		1
500	- 	,		- 1		600	17 - 77 - 27 - 12 27 - 12 -		1.1.	11. 11. 	4		111		r	
800	27.1. 11.1		• • •			6800	1 r 1	<u> </u>	111		· · ·			1 1	1	
000			<u>{</u> ,,,,,	 		7000	;	T. \ 		- 		1.57 1.11		•		
		- <sup>17</sup>	124.1		: <b>-</b>	7094	: †+ =+23	·					·		-	7
200+				· · · ·	:	<u>}.</u>								:		
H	·	~ ~ ~				<u> \-</u>		. · ·							· · · ·	-
400			1	1				<u> </u>	1						- i .	
400	·		1 1	· · ·		PBHL	GCF #	#61		· · · ·	1.1.1					

			•																				
0-		- ' T	G	 1	 Azir		to Grid		ī. : :, :											. 1 	÷;	· · ·	: :
0-	: `.	- ·	\ <b>^</b> _			True agrietic	North North	-0 28° 7 47°		·····	: .=						:: ::::::	 		· · ·	··· :		
10-	· · · . · ·	- - 1	$\mathbb{X}$		SI	trength	agnetic 48955 Angle <sup>,</sup> 6	9snT		7	: .:		) <u> </u>		. <u></u>								
0-		- 1	Ψ	•		Date	e: 2011/ el IGRI	05/05	;;;;		ļ					· · ·			;	-; ] .	··	17-	
0-					• ;	1.1.1		÷';			i - i -		1						·;		• ' •	: :	
0-				,						· · · · · · · · · · · · · · · · · · ·												2.15	
0-	1	11.1 11.1 T	 	· · · · ·	1			:::::: ; ; ;	· 4	114- +5			7		;+ <u></u>			7 11	· <u>:</u> :		1.	- 1.	
0	<u>, 1</u>				11	;	- 44							1-14				··· · ··· ·			•••• • ' ' : •		. <u>.</u> .
0	1				· · · ·			STAY	SOUTH	OF H	ARDL	INE (23	10'ES	<u>.</u>	1.5	· · · ·		11	1		1_		
0.	• •	··· + ··	н.: Н.:	12  11				-, -	·					7709		 ! !		F.		· · · · · · · · · · · ·			-
0-		iiiii J.		1.1.					1:-	PBHI	-GCF	#61	$\mathbb{Y}$	5400	O' FWL)/			· · · · ·				1.1.1° 1.1.1°	
0		++ 	1.1.		· - ·				÷н iт.r	· + 1 + +	GCF #	161	156	00	E (2310	17-7.F		1.1.1		<u></u>	<u>. 4</u>		• • • •
0				1:2:	 :;			= <u>} </u> =  :‡=	7474 (#‡*	PP-	GCF #	ro]	5000		비율	5.47	· I	, <u>;</u> ,	1			277,3 1,1	
0-	· · · · · · · · · · · · · · · · · · ·	<u></u> 11	 1			141 1.121		- <del>1 -</del>				/	4800 600	.;;)  :;;'	F HARDL	-  )  )==	· · · · ·			' : ; "'	-1	17. 1 <sup>4</sup> .	: 
0-	112 11	seji. Leo E	i		:::. (,::* .			<u>`</u>	, 	17 - 14	, <u></u>	14	00	, : :	ESTO		· (	2 	7, 7, 1, - 1, -			aria t	
0-	-1. -1.;	<u></u>	· · ·	<u> </u>   				4. <u>3</u> - 41 <sup>1</sup> -	1- 1- 		27.	420	∎ k_rtili tilir		STAY WI		· · · ·		1217				
0-			1	444 444		I., 71.	. :\;{{	-74		101		3800						1			2) (* 		
0-	· · · · ·	1445 • #			·	7 7 1.17		<u></u>			/36 /340	00 a			E								: -
0-		101	· · · · · ·	1		171. 171.	· ·		-		3200	11.1					1 []			<u>.</u>	172		
- -				. <u>  1</u> ', 1   <del> </del>	E.	142	- + + -+-! -	f		28	000 00							111.				7147 - 11	
					i.		·2] ·	- [		A	E.T							<u> </u>					
0-	1					1.7				- 40		1-1-		7.7			. }:  - ::::	1	†7		17.3		
0-	 						C Fede	ral #6								111. 1771		5,2					
0-					;		1												<u> </u>				
0-			17.1							дĘ.		771 7		1					12.5				
,	151	14						E.E.	10	rŦ	HT.		11-1 T.i	41				L 1 1	· · · ·	+			
	24.1. 4.17		:			++						AL	.L AZI		ZIMU1 1S ML					ro gr	ID	-	
0-		- - - - -	1.	1		:: T	1.1.					ID CO	RREC	TION	IS MU	ST BE	E APP	LIED	BEFO	RE PL	.отт		
0-		14	7121			÷.		평분		-8- 1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	То	conve	ert a T	rue D	irectio	on to a	a Gric	l Dire	ction,	Subtr	act 0		
<u>ار</u>	-4			300 -2	50 -2	200 -1	150 -1	00 -	50 0								1		· · · · · · · ·		· · · ·	00 6	50
			- 1										(50 us				4				0	0	~•
-	me			T	VD.	+N/-S	+E/		BORE			ETAILS	(MAP	CO-O			ngitua		паре				
Ve	uth l st H -GCI	IL-GC L-GCF #61	#61	0 0 5260	00 00. 00.	584.60 584.60 441.17	254 254 168	00 00 35	662117 662117 661973	7 10 7 10 3.67	6618 6618 6617	59 90 59 90 74.25	32°4 32°4	9' 8.89 9' 8.89 9' 7 48	9 N103 9 N103 84 N103	° 48' 23 ° 48' 23 3° 48' 2	3.260 V 3.260 V 4.272 V	V Re V Re N Po	ctangle ctangle int	(Sides (Sides	:: L20		
'E	HL-0	SCF #	51	7052		534.60	204.	00	66206	7.10	6618	09.90	32°4	9' 8 40	7 N 103	° 48' 2:	3.849 V	V Cir	cle (Ra	idius: 5	0.00 )		
						Sec		10	Inc	Az		TVD	SE +N		+E/-W			Face	Ver	ct Tar	aet		· · · ·
••				7 71		1	0.1 2 2200.	00 i	0.00 0.00	0.00 0.00	D D 22	0 00 00 00	0 0.	00 00	0 00	) 0.( ) 0.(	00 00	0.00 0.00	0 0 0.0	0	901		
+	11 -11					4	3 2696 4 4961. 5 5298.	87 9	9.93 9 93 3.19	20.89 20.89 20.89	<b>4</b> 9	94.19 25.43 60 00	40. 405 441.	20	15.31 154.62 168.35	2 0 (	00	20.89 0 00 30.00	42 9 433.7 472 2	0	GCF	#61	
	lirk Zla	1.4.7		- i ÷			5 7093.		3.19	20.89		52.00	534		204.00			0 00	472 2 572.2			#61 CF #61	
-			: :- 	1		·						WE	LL DE	TAILS	GC F	ederal	#61						
	11 11 11							N/-S	+E/			orthing		Eas	ting		Latittu			ongitu		ot	
	<u></u>	· · · ·	· '	-				00'	U	00	661	532.50	,	66160	9 90	32°49	3 127	'N 10	5*48'2	6.270	W		
							DJECT												" Hole	(GC Fe	deral	#61/OH	)
1	•		.   • •		:  .	Geod	letic Sy	/stem <sup>,</sup>	US St	ate Pla	ane 19	27 (Ex	act sol	ution)	Create	d By:	Julio F	Ріла			Date	05-M	av-1

Scientific Drilling

 Geodetic System: US State Plane 1927 (Exact solution) Created By: Julio Pina
 Date: 05-May-11

 Datum: NAD 1927 (NADCON CONUS)
 Checked:
 Date: \_\_\_\_\_

 Ellipsoid: Clarke 1866
 Checked:
 Date: \_\_\_\_\_

 Zone. New Mexico East 3001
 Mean Sea Level
 Reviewed
 Date: \_\_\_\_\_\_

 System Datum:
 Approved: \_\_\_\_\_\_
 Date: \_\_\_\_\_\_

## COG Operating LLC Exhibit #9 BOPE and Choke Schematic





### Choke Manifold Requirement (2000 psi WP) No Annular Required

Adjustable Choke



ŧ

### 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.

1



.