15-584

HOBBS OCD

Form 3160-3
(March 2012)

APR 04 2016

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

5. Lease Serial No.
NMLC-0061842

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 (40481)

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
FLAT HEAD FEDERAL COM #27H

2. Name of Operator COG Operating LLC (229137)

9. API Well No.
30-025- - 43147

3a. Address One Concho Center, 600 W. Illinois Ave
Midland, TX 79701

3b. Phone No. *(include area code)*
432-685-4384

10. Field and Pool, or Exploratory
Maljamar; Yeso, West (44500) KZ

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

At surface SHL: 1170' FNL & 990' FEL, Unit A, Sec 14

At proposed prod. zone BHL: 330' FNL & 990' FEL, Unit A, Sec 11

11. Sec., T. R. M. or Blk. and Survey or Area
Sec 11 & 14 T17S R32E

14. Distance in miles and direction from nearest town or post office*
2 miles from Loco Hills, 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)	16. No. of acres in lease	17. Spacing Unit dedicated to this well
990'	320	200
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19. Proposed Depth**	**20. BLM/BIA Bond No. on file**
515'	TVD: 6550' MD: 12446' EOC: 6550' TVD	NMB000740; NMB000215
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
4100' GL	10/30/2015	15 Days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must 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 must 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 BLM.

25. Signature	Name *(Printed/Typed)*	Date
	Kelly J. Holly	04/17/2015

Title
Permitting Tech

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
FIELD MANAGER		MAR 28 2016
Title	**Office**	
Steve Caffey	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.

(Continued on page 2)

*(Instructions on page 2)

KZ 04/06/16

Roswell Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

APR 14 2016

COG Operating LLC
Flat Head Federal Com #27H

1. Geologic Formations

TVD of target	6550	Pilot hole depth	NA
MD at TD:	12446	Deepest expected fresh water:	132'

Back Reef

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Fresh Water	
Rustler	1020'	Brackish Water	
Top of Salt	1080'	Salt	
Tansill	1975'	Barren	
Yates	2315'	Oil/Gas	
Queen	3285'	Oil/Gas	
Grayburg	3730'	Oil/Gas	
San Andres	4055'	Oil/Gas	
Glorieta	5520'	Oil/Gas	
Paddock	5600'	Oil/Gas	
Blinebry	6085'	Target	
Tubb	6970'	Will not penetrate	

*H2S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program See COA

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17.5"	0	~~1045'~~ 1140	13.375"	54	J55	STC	2.36	5.17	9.11
12.25"	0	~~1995'~~ 2420	9.625"	40	J55	LTC	2.48	1.29	6.52
8.75"	0	6029'	7.0"	29	L80	LTC	3.24	1.33	2.07
8.75"	6029'	6847'	5.5"	17	L80	LTC	2.61	1.26	3.09
7.875"	6847'	12446'	5.5"	17	L80	LTC	2.61	1.33	6.17
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h
BLM standard formulas where used on all SF calculations

COG Operating LLC
Flat Head Federal Com #27H

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	N
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

COG Operating LLC
Flat Head Federal Com #27H

3. Cementing Program See COA

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H_20 gal/s k	500# Comp. Strength (hours)	Slurry Description
Surf.	250	13.5	1.75	9.2	13	Lead: Class C + 4.0% Bentonite + 2% Cacl2 + .25 pps Cello flake
	250	14.8	1.32	6.3	6	Tail: Class C + 2% Cacl2 + .25 pps Celloflake
Inter.	325	11.8	2.45	14.4	72	1st stage Lead: 50:50:10 C: Poz:Gel w/ 5% Salt + 5 pps Lcm + 0.25 pps Cello flake
	200	14.8	1.32	6.3	6	1st stage Tail: Class C w/ 2% Cacl2
	IF DV Tool +/- ~~4095'~~ 1190					
	150	11.8	2.45	14.4	72	1st stage Lead: 50:50:10 C: Poz:Gel w/ 5% Salt + 5 pps Lcm + 0.25 pps Cello flake
	200	14.8	1.32	6.3	6	1st stage Tail: Class C w/ 2% Cacl2
	225	11.8	2.45	14.4	72	2nd stage Lead: 50:50:10 C: Poz:Gel w/ 5% Salt + 5 pps Lcm + 0.25 pps Cello flake
Prod.	600	12.5	2.01	11.4	22	1st stage Lead: 35:65:6 C:Poz Gel w/5% salt + 5 pps LCM + 0.2% SMS + 1% FL-25 + 1% Ba-58+0.3% FL-52A + 0.125 pps CF
	1200	14	1.37	6.4	10	1st stage Tail: 50:50:2 C:Pox Gel w/5% salt+3 pps LCM + 0.6% SMS + 1% FL-25 +1% BA-58+ 0.125 pps CF
	DV/ECP Tool +/- 4155'					
	425	12.5	2.01	11.4	22	2nd Stage Lead: 35:65;6 C:Poz Gel w/5% salt+5 pps LCM+0.2% SMS + 1% FL-25+1% BA-58+0.3% FL-52A+ 0.125 pps CF
	150	16.8	.99	4.8	6	2nd Stage Tail: Class"C" w/0.3% R-3 + 1.5% CD-32
	200	12.5	2.01	11.4	22	1st stage Lead: 35:65:6 C: PozGel w/5% salt + 5 pp LCM + 0.2% SMS + 1% FL-25+ 1% BA-58 + 0.3% FL-52A + 0.125 pps CF
	1200	14	1.37	6.4	10	1st stage Tail: 50:50:2 C: PozGel w/5% salt + 3 pps LCM + 0.6% SMS + 1% FL-25 + 1% BA-58 + 0.125 pps CF

Extremely Low Cement See COA

Depth change to DV tool See COA

Low cement See COA

Casing String	TOC	% Excess
Surface	0'	50%
Intermediate	0'	50%
Production	0'	35%

4. Pressure Control Equipment * See attachment for further details*****

No	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

BOP installed and tested before drilling which hole?	Size?	Min Required WP	Type	✓	Tested to:
12-1/4"	13-5/8"	2M	Annular	X	2000 psi
			Blind Ram		Per Operator, See e-mail ~~2000 psi~~
			Pipe Ram		
			Double Ram	X	
			Other*		
8-3/4" & 7 7/8"	13-5/8"	2M	Annular	X	2000 psi
			Blind Ram		Per Operator, See email ~~2000 psi~~
			Pipe Ram		
			Double Ram	X	
			Other*		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other*		

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

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 will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

NA	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or

	greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
NA	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
	NA Are anchors required by manufacturer?
NA	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. • Provide description here See attached schematic.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surf. shoe	FW Gel	8.6-8.8	28-34	N/C
Surf shoe	Int shoe	Saturated Brine	10.0-10.2	28-34	N/C
Int shoe	TD	FW-Cut Brine	8.5-9.2	28-34	N/C

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

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring

6. Logging and Testing Procedures See COA

Logging, Coring and Testing.	
X	Will run Cased hole GR/CNL from KOP to surface. Stated logs run will be in the Completion Report and submitted to the BLM.
X	Open hole logs are planned from KOP to Intermediate casing shoe.
No	Drill stem test? If yes, explain
No	Coring? If yes, explain

Additional logs planned		Interval
	Resistivity	Int. shoe to KOP
X	Density	Int. shoe to KOP
X	CBL	Production casing
X	Mud log	Intermediate shoe to TD
X	PEX/HRLA/HNGS	Intermediate shoe to KOP

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	2882 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
~~NO~~ Yes	H2S is present
Yes	H2S Plan attached

8. Other facets of operation

Is this a walking operation? No.
Will be pre-setting casing? No

Attachments:
Directional Plan
Multi-stage Cement deatils