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Form 3160-3
(March 2012)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SECRETARY'S POTASH

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM85937

6. If Indian, Allotee or Tribe Name:

1a. Type of Work: [✓] DRILL [ ] REENTER

7. If Unit or CA Agreement, Name and No.:

1b. Type of Well: [✓] Oil Well [ ] Gas Well [ ] Other [✓] Single Zone [ ] Multiple Zone

8. Lease Name and Well No.: (38682) Airbonita 12 Federal #3H

2. Name of Operator: COG Operating LLC. (229137)

9. API Well No.: 30-025-43061

3a. Address: 2208 West Main Street, Artesia, NM 88210

3b. Phone No. *(include area code)*: 575-748-6940

10. Field and Pool, or Exploratory: (51683) Red Tank; Bone Spring

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface: 190' FSL & 2040' FWL Unit Letter N (SESW) SHL
At proposed prod. Zone: 330' FNL & 1980' FWL Unit Letter C (NENW) BHL

UNORTHODOX LOCATION

11. Sec., T.R.M. or Blk and Survey or Area: Sec. 12 - T22S - R32E

14. Distance in miles and direction from nearest town or post office*: About 25 miles from Malaga

12. County or Parish: Lea County

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
190	800	160

18. Distance from location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. on file
SHL: 30' (Proposed Airbonita #7H) BHL: 1585'	TVD: 11847' MD: 16398'	NMB000740 &NMB000215

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3658.7' GL	9/1/2015	30 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)*	Date
Mayte Reyes	Mayte Reyes	5-6-15

Title: Regulatory Analyst

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/s/George MacDonell		FEB 03 2016

Title	Office
FIELD MANAGER	BLM-CARLSBAD FIELD OFFICE

Application approval does not warrant or certify that the applicant holds legan or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations theron.
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)

SEE ATTACHED FOR CONDITIONS OF APPROVAL

KZ 02/10/16

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

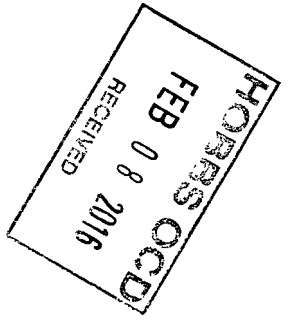
Witness Surface & Intermediate Casing

Carlsbad Controlled Water Basin

FEB 11 2016

AIRBONITA 12 FED #3H

FID	OPERATOR	WELL_NAME	LATITUDE	LONGITUDE	API	SECTION	TOWNSHIP	RANGE	FTG_NS	NS_CD	FTG_EW	EW_CD	TVD_DEPTH	COMPL_STAT
0	CABOT CORP	NEW MEXICO K STATE 001	32.400885	-103.617759	3002501796	7	22.0S	33E	660	S	660	W	4999	Plugged
1	OXY USA INC	WBR FEDERAL 001	32.393621	-103.623119	3002530137	13	22.0S	32E	1980	N	990	E	15261	Active
2	COG OPERATING LLC	PROHIBITION FEDERAL UNIT 001	32.408109	-103.634871	3002531137	12	22.0S	32E	1980	N	660	W	15112	Active
3	COG OPERATING LLC	PROHIBITION FEDERAL UNIT 002	32.404438	-103.647301	3002531716	11	22.0S	32E	1980	S	2080	W	10100	Active
4	COG OPERATING LLC	PROHIBITION FEDERAL UNIT 003	32.40814	-103.623143	3002532142	12	22.0S	32E	1980	N	990	E	13780	Active
5	COG OPERATING LLC	PROHIBITION FEDERAL UNIT 004	32.392656	-103.64344	3002532758	14	22.0S	32E	2310	N	1980	E	9000	Active
6	COG OPERATING LLC	PROHIBITION FEDERAL UNIT 006	32.392665	-103.640217	3002532760	14	22.0S	32E	2310	N	990	E	9000	Active
7	EOG RESOURCES INC	REDCHECKER 14 FEDERAL 002	32.389024	-103.640211	3002532765	14	22.0S	32E	1650	S	990	E	8905	Active
8	OXY USA INC	WBR FEDERAL 003	32.389036	-103.635914	3002533026	13	22.0S	32E	1650	S	330	W	10100	Active
9	POGO PRODUCING CO	FLINT 6 STATE 001	32.421757	-103.617793	3002534175	6	22.0S	33E	2310	N	660	W	5100	Plugged
10	OXY USA INC	NBR 7 STATE 001	32.400883	-103.616685	3002534992	7	22.0S	33E	660	S	990	W	15140	Active
11	OXY USA INC	WBR FEDERAL 005	32.386337	-103.629464	3002535256	13	22.0S	32E	660	S	2310	W	15445	Active
12	OXY USA INC	BOOTLEG RIDGE 14 FEDERAL COM 001	32.389934	-103.639138	3002535530	14	22.0S	32E	1980	S	660	E	0	
13	OXY USA INC	WBR FEDERAL 007	32.389965	-103.62947	3002535722	13	22.0S	32E	1980	S	2310	W	10150	Active
14	OXY USA INC	WBR FEDERAL 009	32.393107	-103.629671	3002536063	13	22.0S	32E	2160	N	2250	W	10050	Active
15	OXY USA INC	WBR FEDERAL 010	32.396736	-103.629482	3002536064	13	22.0S	32E	840	N	2310	W	10050	Active
16	OXY USA INC	BOOTLEG 11 FEDERAL COM 001	32.404589	-103.642386	3002536265	11	22.0S	32E	2030	S	1650	E	15160	Active
17	OXY USA INC	WBR FEDERAL 012	32.39286	-103.634423	3002536415	13	22.0S	32E	2245	N	790	W	10080	Active
18	YATES PETROLEUM CORPORATION	MICRO BREW BEU FEDERAL 001	32.387251	-103.627405	3002536883	13	22.0S	32E	990	S	2310	E	10200	Active
19	OXY USA INC	WBR FEDERAL 004	32.387502	-103.626331	3002537007	13	22.0S	32E	1080	S	1980	E	0	
20	OXY USA INC	WBR FEDERAL 008	32.385415	-103.633759	3002537008	13	22.0S	32E	330	S	990	W	0	
21	OXY USA INC	WBR FEDERAL 011D	32.398126	-103.633781	3002537009	13	22.0S	32E	330	N	990	W	0	
22	COG OPERATING LLC	PROHIBITION 12 FEDERAL 008	32.404609	-103.635028	3002537227	12	22.0S	32E	2030	S	610	W	8998	Active
23	COG OPERATING LLC	PROHIBITION 12 FEDERAL 007	32.408392	-103.631648	3002537228	12	22.0S	32E	1880	N	1650	W	8960	Active
24	COG OPERATING LLC	PROHIBITION 12 FEDERAL 010	32.404485	-103.630567	3002537819	12	22.0S	32E	1980	S	1980	W	8990	Active
25	COG OPERATING LLC	PROHIBITION 12 FEDERAL 012	32.400856	-103.630562	3002537821	12	22.0S	32E	660	S	1980	W	8990	Active
26	COG OPERATING LLC	PROHIBITION 12 FEDERAL 013	32.407716	-103.62744	3002537822	12	22.0S	32E	2130	N	2310	E	0	
27	OXY USA INC	WBR FEDERAL 011	32.398119	-103.635929	3002537929	13	22.0S	32E	330	N	330	W	10050	Active
28	COG OPERATING LLC	PROHIBITION 12 FEDERAL 014	32.404496	-103.626751	3002538238	12	22.0S	32E	1980	S	2100	E	0	
29	COG OPERATING LLC	PROHIBITION 12 FEDERAL 015	32.400868	-103.626745	3002538239	12	22.0S	32E	660	S	2100	E	0	
30	COG OPERATING LLC	AIRBONITA 12 FEDERAL COM 002	32.400085	-103.626353	3002540179	12	22.0S	32E	375	S	1980	E	14110	New (Not drilled or compl)
31	OXY USA INC	WBR 13 SWD 001	32.389974	-103.622159	3002541380	13	22.0S	32E	1974	S	697	E	0	New (Not drilled or compl)
32	COG OPERATING LLC	AIRBONITA 12 FEDERAL COM 001H	32.399593	-103.62098	3002541491	12	22.0S	32E	190	S	330	E	11937	New (Not drilled or compl)
33	OXY USA INC	SPEAK EASY UNIT 002H	32.418496	-103.635961	3002540306	1	22.0S	32E	1800	S	330	W	12735	New (Not drilled or compl)
34	OXY USA INC	RUM RUNNER 2 FEDERAL COM 001H	32.422615	-103.638115	3002540095	2	22.0S	32E	1980	N	330	E	13774	New (Not drilled or compl)
35	OXY USA INC	RIDGE RUNNER 7 STATE 001H	32.403746	-103.619375	3002541646	7	22.0S	33E	1700	S	165	W	0	New (Not drilled or compl)



COG Operating LLC, Airbonita 12 Federal 3H

1. Geologic Formations

TVD of target	11847	Pilot hole depth	N/A
MD at TD:	16398	Deepest expected fresh water:	580

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	869	Water	
Top of Salt	953	Salt	
Lamar	4709		
Delaware Group	4808	Oil/Gas	
Bone Spring	8580	Oil/Gas	
Third Bone Spring	11555	Target Zone	
Wolfcamp	11902	Will Not Penetrate	

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

See COA

2. Casing Program

Hole Size	Casing Interval From	To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17.5"	0	~~920~~ 970	13.375"	54.5	J55	STC	2.62	1.23	10.25
12.25"	0	4300	9.625"	40	J55	BTC	1.28	0.71*	3.32
12.25"	4300	4750	9.625"	40	L80	BTC	1.39	1.04	50.89
8.75"	0	16398	5.5"	17	P110	BTC	1.35	1.92	1.96D
				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 used on all safety factor calculations
- Assumed 9 ppg MW equivalent pore pressure
- *Explanation for SF's below BLM's minimum standards:
  - 9-5/8" Burst SF @ 0.71 – used BLM's frac gradiant scenario to qualify
    - 3950 psi/4750'=0.83>0.7

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? 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).	N
Will the intermediate 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.	
Is well located in SOPA but not in R-111-P?	Y
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	Y
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?	

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H_20 gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	425	13.5	1.75	9.15	5.5	Lead: Class C + 4.0% Gel + 2.0% CaCl2
	240	14.8	1.35	6.57	7	Tail: Class C + 2.0% CaCl2
Inter.	1080	13.5	1.73	9.15	5.5	Lead: Class C + 4.0% Gel
	350	14.8	1.34	6.47	5.5	Tail: Class C
Prod.	1145	10.3	3.5	21.16	90	Lead: Tuned Lite + 2 lb/sk Kol-Seal + 0.125 lb/sk. Pol-E-Flake + 0.5 lb/sk HALAD-9 + 0.25 lb/sk D-Air 5000
	1220	14.4	1.25	5.69	19	Tail: Class H + 0.5% HALAD-9 + 0.05% SA-1015 + 1% NaCL + 2% Gel

Casing String	TOC	% Excess
Surface	0'	66%
Intermediate	0'	66%
Production	0'	45%

4. Pressure Control Equipment

N	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	WP
			Blind Ram		
			Pipe Ram		WP
			Double Ram		
			Other*		
8-3/4"	13-5/8"	~~3M~~ 5M	Annular	X	50% WP
			Blind Ram	X	
			Pipe Ram	X	WP
			Double Ram		
			Other *		

See COA

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.

N	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.
Y	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.
N	Are anchors required by manufacturer?
N	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. See attached schematic.

See COA

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surf. shoe	FW Gel	8.4-9.4	32-34	N/C
Surf csg	Int shoe	Saturated Brine	10.0-10.2	28-30	N/C
Int shoe	TD	Cut Brine	8.8-9.2	28-30	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

Logging, Coring and Testing.	
X	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned		Interval
	Resistivity	
	Density	
	CBL	
X	Mud log	Production
	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	5544 psi @ 11847' TVD
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe: No abnormal drilling conditions are expected to occur.

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.	
N	H2S is present
Y	H2S Plan attached

8. Other facets of operation

Is this a walking operation? ~~Yes~~ No, if operator is drilling multiple wells. Submit Sundry
Will be pre-setting casing? No

Attachments

- Directional Plan
- BOP & Choke Schematics
- C102 and supporting maps
- Rig plat
- H2S schematic
- H2S contingency plan
- Interim reclamation plat
- Variance for Flex Hose