Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

5. Lease Serial No. ~~NMNM96848~~ NMNM 115413 nonwilline A

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
ADMIRAL FEDERAL COM 2H

2. Name of Operator
COG OPERATING LLC
Contact: MAYTE X REYES
E-Mail: mreyes1@concho.com

9. API Well No.
30-015-42820-00-X1

3a. Address
ONE CONCHO CENTER 600 W ILLINOIS AVENUE
MIDLAND, TX 79701

3b. Phone No. (include area code)
Ph: 575-748-6945

10. Field and Pool, or Exploratory
WILLOW LAKE

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*

Sec 28 T25S R29E SWSE 190FSL 1980FEL
32.093948 N Lat, 103.986586 W Lon

11. County or Parish, and State
EDDY COUNTY, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A PD
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

COG Operating LLC respectfully requests approval for the following drilling and BHL changes to the original approved APD.

C102 attached.

Drilling program attached.

SEE ATTACHED FOR CONDITIONS OF APPROVAL

NM OIL CONSERVATION
ARTESIA DISTRICT
FEB 12 2015
RECEIVED

RD 2/18/15
Accepted for record
NMOCD

Operator will need additional cement on production string

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #289662 verified by the BLM Well Information System
For COG OPERATING LLC, sent to the Carlsbad
Committed to AFMSS for processing by JENNIFER MASON on 02/05/2015 (15JAM0213SE)

Name *(Printed/Typed)* MAYTE X REYES — Title REGULATORY ANALYST

Signature (Electronic Submission) — Date 01/28/2015

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

APPROVED
FEB 5 2015
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

Approved By ____ Title ____ Date ____

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

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.

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. FIRST ST., ARTESIA, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-42820	96217	Willow Lake; Bone Spring, Southeast

Property Code	Property Name	Well Number
313927	ADMIRAL FEDERAL COM	2H

OGRID No.	Operator Name	Elevation
229137	COG OPERATING LLC	2987.5

Surface Location

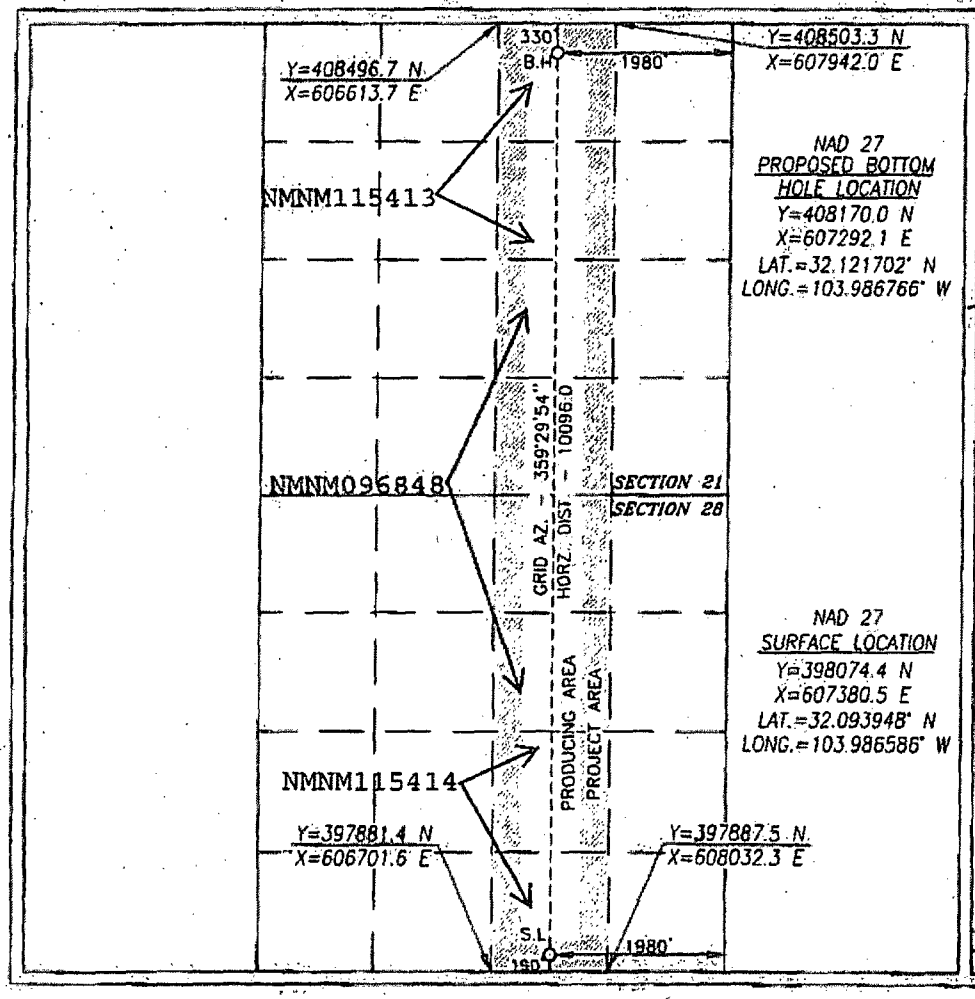
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	28	25-S	29-E		190'	SOUTH	1980'	EAST	EDDY

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
B	21	25-S	29-E		330'	NORTH	1980'	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320			

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 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.

Melanie J Parker 1/28/15
Signature Date

Melanie J Parker
Printed Name

mparker@concho.com
E-mail Address

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.

FEBRUARY 14, 2014
Date of Survey

Signature & Seal of Professional Surveyor

CHAD L. HARCROW
NEW MEXICO
17777
LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow 1/13/15

Certificate No. CHAD HARCROW 17777

W.O. # 15-22 DRAWN BY: AF

CONCHO

COG Operating, LLC

Eddy County, NM (NAD 27)
Sec 28, T25S, R29E
Admiral Federal Com #2H

Wellbore #1

Plan: Design #2

DDC Well Planning Report

16 January, 2015

DDC
The DIRECTIONAL DRILLING COMPANY

Database:	Compass	**Local Co-ordinate Reference:**	Well Admiral Federal Com #2H
Company:	COG Operating LLC	**TVD Reference:**	Well @ 3006.0usft (Patterson #79)
Project:	Eddy County NM (NAD 27)	**MD Reference:**	Well @ 3006.0usft (Patterson #79)
Site:	Sec 28 T25S R29E	**North Reference:**	Grid
Well:	Admiral Federal Com #2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Project Eddy County NM (NAD 27)

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 Sec 28 T25S R29E

Site Position:		**Northing:**	398,074.40 usft	**Latitude:**	32° 5' 38.212 N
From:	Map	**Easting:**	607,380.50 usft	**Longitude:**	103° 59' 11.708 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.18 °

Well Admiral Federal Com #2H

Well Position	**+N/-S**	0.0 usft	**Northing:**	398,074.40 usft	**Latitude:**	32° 5' 38.212 N
	+E/-W	0.0 usft	**Easting:**	607,380.50 usft	**Longitude:**	103° 59' 11.708 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	0.0 usft	**Ground Level:**	2,988.0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/12/2014	7.41	59.92	48,205

Design Design #2

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	359.50

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
8,225.5	0.00	0.00	8,225.5	0.0	0.0	0.00	0.00	0.00	0.00	
8,974.4	89.86	359.50	8,703.0	476.3	-4.2	12.00	12.00	-0.07	359.50	
18,594.0	89.86	359.50	8,726.0	10,095.6	-88.4	0.00	0.00	0.00	0.00	PBHL Admiral Federa

Database:	Compass	**Local Co-ordinate Reference:**	Well Admiral Federal Com #2H
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Site:	Sec 28 T25S R29E	**North Reference:**	Grid
Well:	Admiral Federal Com #2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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)
KOP / Build 12°/100									
8,225.5	0.00	0.00	8,225.5	0.0	0.0	0.0	0.00	0.00	0.00
8,300.0	8.94	359.50	8,299.7	5.8	-0.1	5.8	12.00	12.00	0.00
8,400.0	20.94	359.50	8,396.1	31.5	-0.3	31.5	12.00	12.00	0.00
8,500.0	32.94	359.50	8,485.1	76.8	-0.7	76.8	12.00	12.00	0.00
SBSG Sand									
8,525.6	36.01	359.50	8,506.2	91.2	-0.8	91.2	12.00	12.00	0.00
8,600.0	44.94	359.50	8,562.8	139.5	-1.2	139.5	12.00	12.00	0.00
8,700.0	56.94	359.50	8,625.7	217.0	-1.9	217.0	12.00	12.00	0.00
8,800.0	68.94	359.50	8,671.1	305.9	-2.7	305.9	12.00	12.00	0.00
8,900.0	80.94	359.50	8,697.0	402.3	-3.5	402.3	12.00	12.00	0.00
EOC @ 8974' MD / 89.86° Inc / 8703' TVD									
8,974.4	89.86	359.50	8,703.0	476.3	-4.2	476.3	12.00	12.00	0.00
9,000.0	89.86	359.50	8,703.0	501.9	-4.4	502.0	0.00	0.00	0.00
9,100.0	89.86	359.50	8,703.3	601.9	-5.3	602.0	0.00	0.00	0.00
9,200.0	89.86	359.50	8,703.5	701.9	-6.1	702.0	0.00	0.00	0.00
9,300.0	89.86	359.50	8,703.7	801.9	-7.0	802.0	0.00	0.00	0.00
9,400.0	89.86	359.50	8,704.0	901.9	-7.9	902.0	0.00	0.00	0.00
9,500.0	89.86	359.50	8,704.2	1,001.9	-8.8	1,002.0	0.00	0.00	0.00
9,600.0	89.86	359.50	8,704.5	1,101.9	-9.6	1,102.0	0.00	0.00	0.00
9,700.0	89.86	359.50	8,704.7	1,201.9	-10.5	1,202.0	0.00	0.00	0.00
9,800.0	89.86	359.50	8,704.9	1,301.9	-11.4	1,302.0	0.00	0.00	0.00
9,900.0	89.86	359.50	8,705.2	1,401.9	-12.3	1,402.0	0.00	0.00	0.00
10,000.0	89.86	359.50	8,705.4	1,501.9	-13.2	1,502.0	0.00	0.00	0.00
10,100.0	89.86	359.50	8,705.7	1,601.9	-14.0	1,602.0	0.00	0.00	0.00
10,200.0	89.86	359.50	8,705.9	1,701.9	-14.9	1,702.0	0.00	0.00	0.00
10,300.0	89.86	359.50	8,706.1	1,801.9	-15.8	1,802.0	0.00	0.00	0.00
10,400.0	89.86	359.50	8,706.4	1,901.9	-16.7	1,902.0	0.00	0.00	0.00
10,500.0	89.86	359.50	8,706.6	2,001.9	-17.5	2,002.0	0.00	0.00	0.00
10,600.0	89.86	359.50	8,706.9	2,101.9	-18.4	2,102.0	0.00	0.00	0.00
10,700.0	89.86	359.50	8,707.1	2,201.9	-19.3	2,202.0	0.00	0.00	0.00
10,800.0	89.86	359.50	8,707.3	2,301.9	-20.2	2,302.0	0.00	0.00	0.00
10,900.0	89.86	359.50	8,707.6	2,401.9	-21.0	2,402.0	0.00	0.00	0.00
11,000.0	89.86	359.50	8,707.8	2,501.9	-21.9	2,502.0	0.00	0.00	0.00
11,100.0	89.86	359.50	8,708.1	2,601.9	-22.8	2,602.0	0.00	0.00	0.00
11,200.0	89.86	359.50	8,708.3	2,701.9	-23.7	2,702.0	0.00	0.00	0.00
11,300.0	89.86	359.50	8,708.5	2,801.9	-24.5	2,802.0	0.00	0.00	0.00
11,400.0	89.86	359.50	8,708.8	2,901.8	-25.4	2,902.0	0.00	0.00	0.00
11,500.0	89.86	359.50	8,709.0	3,001.8	-26.3	3,002.0	0.00	0.00	0.00
11,600.0	89.86	359.50	8,709.3	3,101.8	-27.2	3,102.0	0.00	0.00	0.00
11,700.0	89.86	359.50	8,709.5	3,201.8	-28.0	3,202.0	0.00	0.00	0.00
11,800.0	89.86	359.50	8,709.7	3,301.8	-28.9	3,302.0	0.00	0.00	0.00
11,900.0	89.86	359.50	8,710.0	3,401.8	-29.8	3,402.0	0.00	0.00	0.00
12,000.0	89.86	359.50	8,710.2	3,501.8	-30.7	3,502.0	0.00	0.00	0.00
12,100.0	89.86	359.50	8,710.4	3,601.8	-31.5	3,602.0	0.00	0.00	0.00
12,200.0	89.86	359.50	8,710.7	3,701.8	-32.4	3,702.0	0.00	0.00	0.00
12,300.0	89.86	359.50	8,710.9	3,801.8	-33.3	3,802.0	0.00	0.00	0.00
12,400.0	89.86	359.50	8,711.2	3,901.8	-34.2	3,902.0	0.00	0.00	0.00
12,500.0	89.86	359.50	8,711.4	4,001.8	-35.0	4,002.0	0.00	0.00	0.00
12,600.0	89.86	359.50	8,711.6	4,101.8	-35.9	4,102.0	0.00	0.00	0.00
12,700.0	89.86	359.50	8,711.9	4,201.8	-36.8	4,202.0	0.00	0.00	0.00
12,800.0	89.86	359.50	8,712.1	4,301.8	-37.7	4,302.0	0.00	0.00	0.00
12,900.0	89.86	359.50	8,712.4	4,401.8	-38.5	4,402.0	0.00	0.00	0.00

Database:	Compass	Local Co-ordinate Reference:	Well Admiral Federal Com #2H
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Site:	Sec 28, T25S, R29E	North Reference:	Grid
Well:	Admiral Federal Com #2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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)
13,000.0	89.86	359.50	8,712.6	4,501.8	-39.4	4,502.0	0.00	0.00	0.00
13,100.0	89.86	359.50	8,712.8	4,601.8	-40.3	4,602.0	0.00	0.00	0.00
13,200.0	89.86	359.50	8,713.1	4,701.8	-41.2	4,702.0	0.00	0.00	0.00
13,300.0	89.86	359.50	8,713.3	4,801.8	-42.0	4,802.0	0.00	0.00	0.00
13,400.0	89.86	359.50	8,713.6	4,901.8	-42.9	4,902.0	0.00	0.00	0.00
13,500.0	89.86	359.50	8,713.8	5,001.8	-43.8	5,002.0	0.00	0.00	0.00
13,600.0	89.86	359.50	8,714.0	5,101.8	-44.7	5,102.0	0.00	0.00	0.00
13,700.0	89.86	359.50	8,714.3	5,201.8	-45.5	5,202.0	0.00	0.00	0.00
13,800.0	89.86	359.50	8,714.5	5,301.7	-46.4	5,302.0	0.00	0.00	0.00
13,900.0	89.86	359.50	8,714.8	5,401.7	-47.3	5,402.0	0.00	0.00	0.00
14,000.0	89.86	359.50	8,715.0	5,501.7	-48.2	5,502.0	0.00	0.00	0.00
14,100.0	89.86	359.50	8,715.2	5,601.7	-49.1	5,602.0	0.00	0.00	0.00
14,200.0	89.86	359.50	8,715.5	5,701.7	-49.9	5,701.9	0.00	0.00	0.00
14,300.0	89.86	359.50	8,715.7	5,801.7	-50.8	5,801.9	0.00	0.00	0.00
14,400.0	89.86	359.50	8,716.0	5,901.7	-51.7	5,901.9	0.00	0.00	0.00
14,500.0	89.86	359.50	8,716.2	6,001.7	-52.6	6,001.9	0.00	0.00	0.00
14,600.0	89.86	359.50	8,716.4	6,101.7	-53.4	6,101.9	0.00	0.00	0.00
14,700.0	89.86	359.50	8,716.7	6,201.7	-54.3	6,201.9	0.00	0.00	0.00
14,800.0	89.86	359.50	8,716.9	6,301.7	-55.2	6,301.9	0.00	0.00	0.00
14,900.0	89.86	359.50	8,717.2	6,401.7	-56.1	6,401.9	0.00	0.00	0.00
15,000.0	89.86	359.50	8,717.4	6,501.7	-56.9	6,501.9	0.00	0.00	0.00
15,100.0	89.86	359.50	8,717.6	6,601.7	-57.8	6,601.9	0.00	0.00	0.00
15,200.0	89.86	359.50	8,717.9	6,701.7	-58.7	6,701.9	0.00	0.00	0.00
15,300.0	89.86	359.50	8,718.1	6,801.7	-59.6	6,801.9	0.00	0.00	0.00
15,400.0	89.86	359.50	8,718.4	6,901.7	-60.4	6,901.9	0.00	0.00	0.00
15,500.0	89.86	359.50	8,718.6	7,001.7	-61.3	7,001.9	0.00	0.00	0.00
15,600.0	89.86	359.50	8,718.8	7,101.7	-62.2	7,101.9	0.00	0.00	0.00
15,700.0	89.86	359.50	8,719.1	7,201.7	-63.1	7,201.9	0.00	0.00	0.00
15,800.0	89.86	359.50	8,719.3	7,301.7	-63.9	7,301.9	0.00	0.00	0.00
15,900.0	89.86	359.50	8,719.5	7,401.7	-64.8	7,401.9	0.00	0.00	0.00
16,000.0	89.86	359.50	8,719.8	7,501.7	-65.7	7,501.9	0.00	0.00	0.00
16,100.0	89.86	359.50	8,720.0	7,601.7	-66.6	7,601.9	0.00	0.00	0.00
16,200.0	89.86	359.50	8,720.3	7,701.6	-67.4	7,701.9	0.00	0.00	0.00
16,300.0	89.86	359.50	8,720.5	7,801.6	-68.3	7,801.9	0.00	0.00	0.00
16,400.0	89.86	359.50	8,720.7	7,901.6	-69.2	7,901.9	0.00	0.00	0.00
16,500.0	89.86	359.50	8,721.0	8,001.6	-70.1	8,001.9	0.00	0.00	0.00
16,600.0	89.86	359.50	8,721.2	8,101.6	-70.9	8,101.9	0.00	0.00	0.00
16,700.0	89.86	359.50	8,721.5	8,201.6	-71.8	8,201.9	0.00	0.00	0.00
16,800.0	89.86	359.50	8,721.7	8,301.6	-72.7	8,301.9	0.00	0.00	0.00
16,900.0	89.86	359.50	8,721.9	8,401.6	-73.6	8,401.9	0.00	0.00	0.00
17,000.0	89.86	359.50	8,722.2	8,501.6	-74.4	8,501.9	0.00	0.00	0.00
17,100.0	89.86	359.50	8,722.4	8,601.6	-75.3	8,601.9	0.00	0.00	0.00
17,200.0	89.86	359.50	8,722.7	8,701.6	-76.2	8,701.9	0.00	0.00	0.00
17,300.0	89.86	359.50	8,722.9	8,801.6	-77.1	8,801.9	0.00	0.00	0.00
17,400.0	89.86	359.50	8,723.1	8,901.6	-77.9	8,901.9	0.00	0.00	0.00
17,500.0	89.86	359.50	8,723.4	9,001.6	-78.8	9,001.9	0.00	0.00	0.00
17,600.0	89.86	359.50	8,723.6	9,101.6	-79.7	9,101.9	0.00	0.00	0.00
17,700.0	89.86	359.50	8,723.9	9,201.6	-80.6	9,201.9	0.00	0.00	0.00
17,800.0	89.86	359.50	8,724.1	9,301.6	-81.4	9,301.9	0.00	0.00	0.00
17,900.0	89.86	359.50	8,724.3	9,401.6	-82.3	9,401.9	0.00	0.00	0.00
18,000.0	89.86	359.50	8,724.6	9,501.6	-83.2	9,501.9	0.00	0.00	0.00
18,100.0	89.86	359.50	8,724.8	9,601.6	-84.1	9,601.9	0.00	0.00	0.00
18,200.0	89.86	359.50	8,725.1	9,701.6	-84.9	9,701.9	0.00	0.00	0.00
18,300.0	89.86	359.50	8,725.3	9,801.6	-85.8	9,801.9	0.00	0.00	0.00

Database:	Compass	Local Co-ordinate Reference:	Well Admiral Federal Com #2H
Company:	COG Operating LLC	TVD Reference:	Well @ 3006.0usft (Patterson #79)
Project:	Eddy County NM (NAD 27)	MD Reference:	Well @ 3006.0usft (Patterson #79)
Site:	Sec 28 T25S R29E	North Reference:	Grid
Well:	Admiral Federal Com #2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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)
18,400.0	89.86	359.50	8,725.5	9,901.6	-86.7	9,901.9	0.00	0.00	0.00
18,500.0	89.86	359.50	8,725.8	10,001.6	-87.6	10,001.9	0.00	0.00	0.00
PBHL @ 18594' MD / 8726' TVD									
18,594.0	89.86	359.50	8,726.0	10,095.6	-88.4	10,096.0	0.00	0.00	0.00

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
PBHL Admiral Federal # - plan misses target center by 20.7usft at 13287.1usft MD (8713.3 TVD, 4788.9 N, -41.9 E) - Point	0.00	0.00	8,725.0	4,788.7	-59.0	402,863.10	607,321.50	32° 6' 25.605 N	103° 59' 12.215 W
PBHL Admiral Federal # - plan hits target center - Point	0.00	0.00	8,726.0	10,095.6	-88.4	408,170.00	607,292.10	32° 7' 18.125 N	103° 59' 12.358 W

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
297.0	297.0	Rustler		0.14	359.29
655.0	655.0	TOS		0.14	359.50
2,789.0	2,789.0	BOS		0.14	359.50
2,984.0	2,984.0	LMAR		0.14	359.50
3,006.0	3,006.0	Formation 16			
3,028.0	3,028.0	BLCN		0.14	359.50
3,874.0	3,874.0	CYCN		0.14	359.50
5,291.0	5,291.0	BYCN		0.14	359.50
6,769.0	6,769.0	Bone Spring		0.14	359.50
7,071.0	7,071.0	Upper Avalon Shale		0.14	359.50
7,312.0	7,312.0	Lower Avalon Shale		0.14	359.50
7,658.0	7,658.0	FBSG Sand		0.14	359.50
8,525.6	8,506.2	SBSG Sand		0.14	359.50

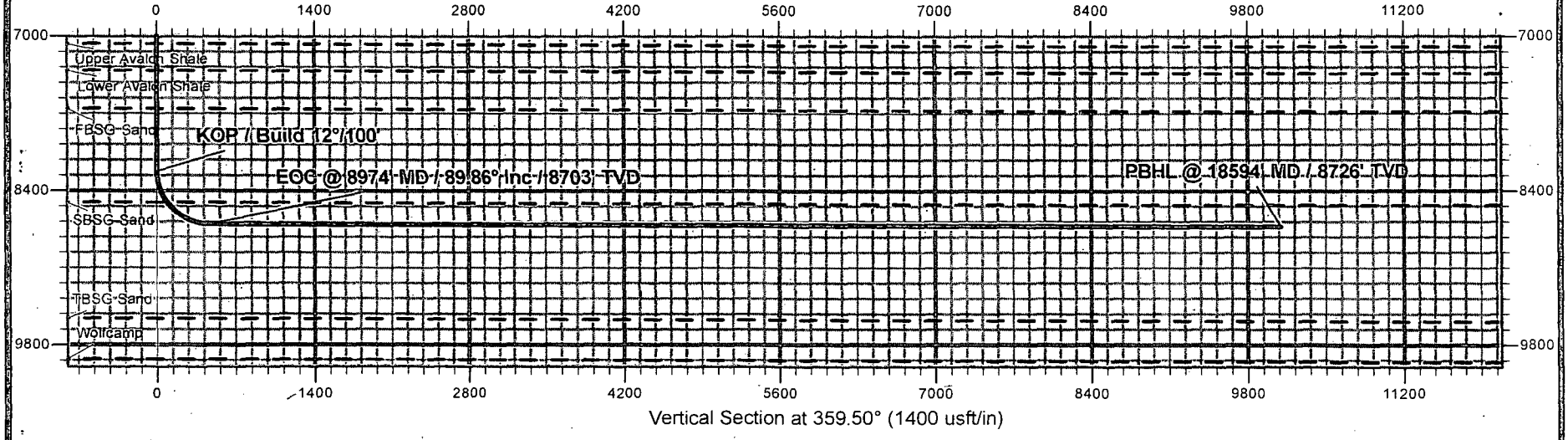
Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
8,225.5	8,225.5	0.0	0.0	KOP / Build 12°/100'
8,974.4	8,703.0	476.3	-4.2	EOC @ 8974' MD / 89.86° Inc / 8703' TVD
18,594.0	8,726.0	10,095.6	-88.4	PBHL @ 18594' MD / 8726' TVD

CONCHO

RDC
The DIRECTIONAL DRILLING COMPANY

Eddy County, NM (NAD 27)
Sec 28, T25S, R29E
Admiral Federal Com #2H
Design #2



Vertical Section at 359.50° (1400 usft/in)

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG Operating, LLC
LEASE NO.:	NMNM-96848
WELL NAME & NO.:	Admiral Federal Com 2H
SURFACE HOLE FOOTAGE:	0190' FSL & 1980' FEL
BOTTOM HOLE FOOTAGE	0330' FNL & 1980' FEL Sec. 21, T. 25 S., R 29 E.
LOCATION:	Section 28, T. 25 S., R 29 E., NMPM
COUNTY:	Eddy County, New Mexico
API:	30-015-42820

The original COAs still stand with the following drilling modifications:

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

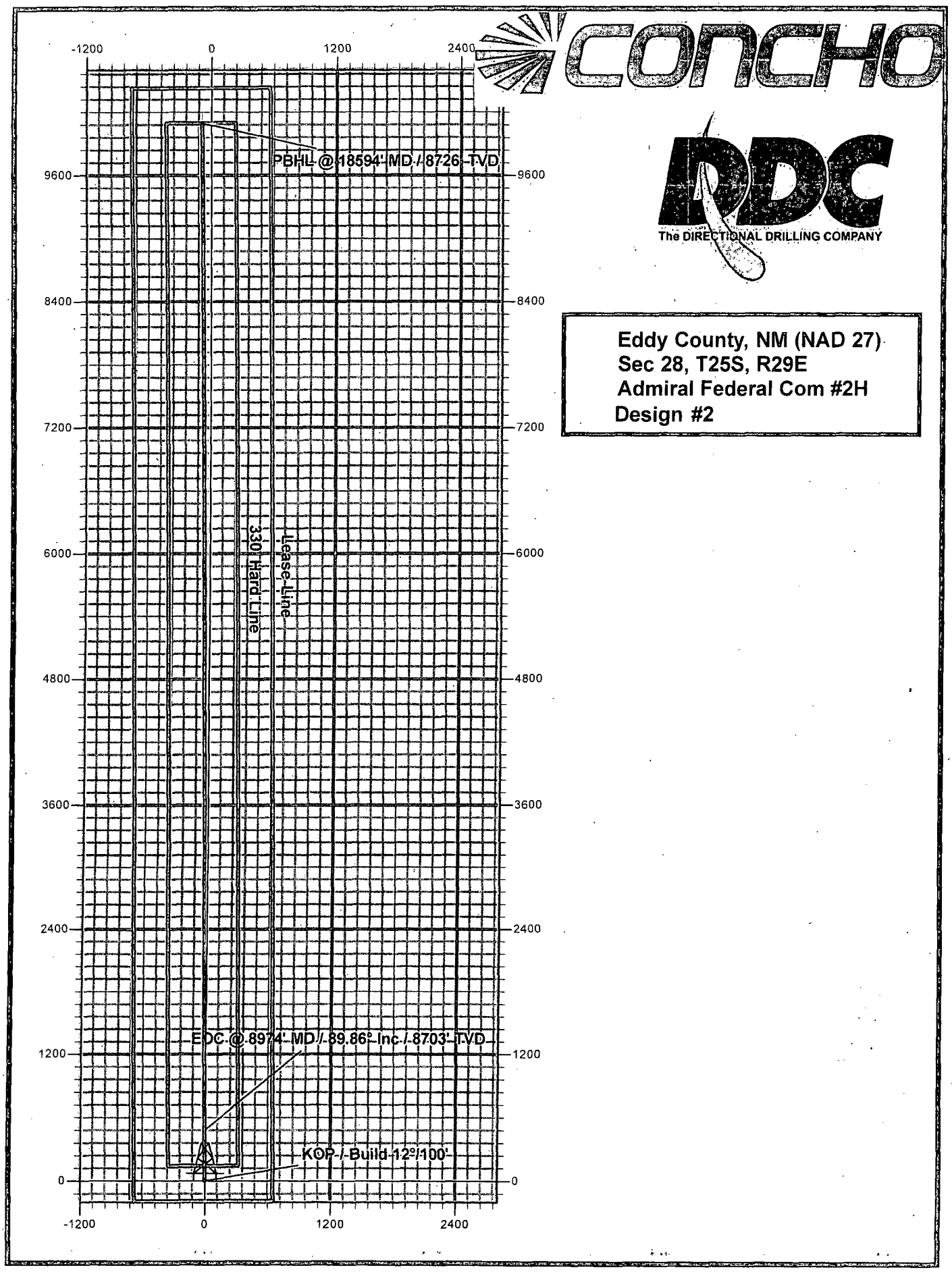
a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. **Although there are no measured amounts of Hydrogen Sulfide reported, it is always a potential hazard. Operator has stated that they will have monitoring equipment in place prior to drilling out of the surface shoe. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.



CONCHO

DDC
The DIRECTIONAL DRILLING COMPANY

Eddy County, NM (NAD 27)
Sec 28, T25S, R29E
Admiral Federal Com #2H
Design #2

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) for Water basin:
After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Medium Cave/Karst
Possibility of water flows in the Salado and Castile.
Possibility of lost circulation in the Rustler, Red Beds, and Delaware.

1. The **13-3/8** inch surface casing shall be set at approximately **640** feet (**in a competent bed below the Magenta Dolomite, which is a Member of the Rustler, and if salt is encountered, set casing at least 25 feet above the salt**) and cemented to the surface. **Excess calculates to 21% - Additional cement may be required**

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing, which shall be set at approximately **2960** feet (**in the base of the Castile or within the Lamar Limestone**), is:

    ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.**

If 75% or greater lost circulation occurs while drilling the intermediate casing hole, the cement on the production casing must come to surface.

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

Pilot hole is required to have a plug at the bottom of the hole. If two plugs are set, the BLM is to be contacted (575-361-2822) prior to tag of bottom plug, which must be a minimum of 200' in length. Operator can set one plug from bottom of pilot hole to kick-off point and save the WOC time for tagging the first plug.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

   ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification. **Excess calculates to negative 14% - Additional cement will be required**

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

   a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** intermediate casing shoe shall be **5000 (5M)** psi. **5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

   a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

d. The results of the test shall be reported to the appropriate BLM office.

e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

JAM 020515