

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 Road, 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 and Natural Resources

Form C-101
Revised July 18, 2013

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

NM OIL CONSERVATION
ARTESIA DISTRICT
JUL 17 2017

RECEIVED

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address COG Operating LLC 2208 West Main Street Artesia, NM 88210		² OGRID Number 229137
⁴ Property Code 318350		³ API Number 30-015-44319
⁵ Property Name Copperhead 31 Fee		⁶ Well No 20H

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
2	31	26S	29E	2	670'	South	400'	West	Eddy

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
2	19	26S	29E	2	1650'	North	315'	West	Eddy

9. Pool Information

Pool Name	Pool Code
Purple Sage: Wolfcamp	98220

Additional Well Information

¹¹ Work Type New Well	¹² Well Type Oil	¹³ Cable/Rotary	¹⁴ Lease Type State	¹⁵ Ground Level Elevation 2928.7'
¹⁶ Multiple N	¹⁷ Proposed Depth 21245	¹⁸ Formation Wolfcamp	¹⁹ Contractor	²⁰ Spud Date 8/1/2017
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	24	20	94	400	430	
Intrmd	17.5	13.375	68	2650	1500	
Intrmd 2	12.25	9.625	47	9900	1200	
Production	8.5	5.5	20	21245	2400	2400

Casing/Cement Program: Additional Comments

Drill 24" hole to 400' into the Rustler (Preset). Run 20" 94# J55 Surface pipe to TD and cement to surface in one stage. Will set in Rustler and cover water depth. Drill 17-1/2" hole to ~2650' w/ 10# Brine mud. Run 13-3/8" 68# HC-L80 STC casing to TD and cement to surface in one stage. Drill 12-1/4" hole to ~9,900' with Cut Brine. Run 9-5/8" 47# HCL-80 casing to TD and cement to surface in one stage. Drill 8-1/2" vertical hole, curve & lateral to 21,245' with OBM. Run 5-1/2" 20# P110 BTC casing to TD and cement to 9,400' in one stage.

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	5000	5000	Cameron

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

I further certify that I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒, if applicable.

Signature: *Mayte Reyes*

Printed name: Mayte Reyes

Title: Regulatory Analyst

E-mail Address: mreyes1@concho.com

Date: 7/14/2017

Phone: 575-748-6945

OIL CONSERVATION DIVISION

Approved By:

Title:

Approved Date: 7-17-17

Expiration Date: 7-17-19

Conditions of Approval Attached

NSP-

DISTRICT I
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611 S. FIRST ST., ARTESIA, NM 88210
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Phone: (505) 334-6178 Fax: (505) 334-6170

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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 30-015-44319	Pool Code 98220	Pool Name Purple Sage; Wolfcamp
Property Code 318350	Property Name COPPERHEAD 31 FEE	Well Number 20H
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 2928.7'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
2	31	26-S	29-E		670	SOUTH	400	WEST	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
2	19	26-S	29-E		1650	NORTH	375	WEST	EDDY

Dedicated Acres 687.01	Joint or Infill	Consolidation Code	Order No. NSP required
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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

Y=375426.6 N X=634658.8 E NAD 83 NME PROPOSED BOTTOM HOLE LOCATION Y=375091.2 N X=635036.5 E LAT.=32.030845° N LONG.=104.030966° W LTP 1780' FNL & 375' FWL LAT.=32.030488° N LONG.=104.030969° W NAD 83 NME SURFACE LOCATION Y=364566.1 N X=635001.2 E LAT.=32.001912° N LONG.=104.031175° W FTP 330' FSL & 375' FWL LAT.=32.000979° N LONG.=104.031225° W GRID AZ. TO FTP 182°27'22" Y=363894.8 N X=634621.6 E Y=363901.1 N X=635946.2 E	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. <i>Mayte Reyes</i> 7-17-17 Signature Date Mayte Reyes Printed Name mreyes1@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. MAY 1, 2017 Date of Survey Signature & Seal of Professional Surveyor Chad L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR 5/17/17 Certificate No. CHAD HARCROW 17777 W.O. # 17-526 DRAWN BY: SA
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Copperhead 31 Fee #20H

Casing and Cement

<u>String</u>	<u>Hole Size</u>	<u>Csg OD</u>	<u>PPF</u>	<u>Depth</u>	<u>Sx Cement</u>	<u>TOC</u>
Surface	24"	20"	94#	400'	430	0'
Intermediate 1	17-1/2"	13-3/8"	68#	2,650'	1,500	0'
Intermediate 2	12-1/4"	9-5/8"	47#	9,900'	1,200	0'
Production	8-1/2"	5-1/2"	20#	21,245'	2,400	9,400'

Well Plan

Drill 24" hole to 400' into the Rustler (Preset). Run 20" 94# J55 Surface pipe to TD and cement to surface in one stage. Will set in Rustler and cover water depth.

Drill 17-1/2" hole to ~2650' w/ 10# Brine mud. Run 13-3/8" 68# HC-L80 STC casing to TD and cement to surface in one stage.

Drill 12-1/4" hole to ~9,900' with Cut Brine. Run 9-5/8" 47# HCL-80 casing to TD and cement to surface in one stage.

Drill 8-1/2" vertical hole, curve & lateral to 21,245' with OBM. Run 5-1/2" 20# P110 BTC casing to TD and cement to 9,400' in one stage.

Well Control

After setting 13-3/8" casing and installing 3000 psi casing head, NU 13-5/8" Cameron BOP. Test annular and casing to 1500 psi and other BOP equipment to 3000 psi.

After setting 9-5/8" casing and installing 5000 psi casing spool, NU 13-5/8" Cameron BOP. Test annular to 3000 psi and other BOP equipment to 5000 psi.



COG Operating, LLC

Eddy County, NM (NAD 27)

Sec 31, T26-S, R29-E

Copperhead 31 Fee #20H

Wellbore #1

Plan: Design #1

QES Well Planning Report

29 June, 2017



Database: EDM5002
Company: COG Operating, LLC
Project: Eddy County, NM (NAD 27)
Site: Sec 31, T26-S, R29-E
Well: Copperhead 31 Fee #20H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Copperhead 31 Fee #20H
TVD Reference: RKB @ 2953.0usft (Ensign #156)
MD Reference: RKB @ 2953.0usft (Ensign #156)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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 31, T26-S, R29-E				
Site Position:		Northing:	364,508.90 usft	Latitude:	32° 0' 6.435 N
From:	Map	Easting:	593,815.60 usft	Longitude:	104° 1' 50.491 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.16 °

Well	Copperhead 31 Fee #20H					
Well Position	+N/-S	0.0 usft	Northing:	364,508.90 usft	Latitude:	32° 0' 6.435 N
	+E/-W	0.0 usft	Easting:	593,815.60 usft	Longitude:	104° 1' 50.491 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	2,929.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/12/2017	7.14	59.78	47,753

Design	Design #1				
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	359.95	

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	
7,316.0	0.00	0.00	7,316.0	0.0	0.0	0.00	0.00	0.00	0.00	
7,651.1	6.70	189.37	7,650.4	-19.3	-3.2	2.00	2.00	0.00	189.37	
10,089.0	6.70	189.37	10,071.6	-300.1	-49.5	0.00	0.00	0.00	0.00	
10,890.5	89.56	0.26	10,604.0	170.6	-57.2	12.00	10.34	21.32	170.84	
21,245.0	89.56	0.26	10,683.0	10,524.7	-9.4	0.00	0.00	0.00	0.00	PBHL - Copperhead 3

Database: EDM5002
Company: COG Operating, LLC
Project: Eddy County, NM (NAD 27)
Site: Sec 31, T26-S, R29-E
Well: Copperhead 31 Fee #20H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Copperhead 31 Fee #20H
TVD Reference: RKB @ 2953.0usft (Ensign #156)
MD Reference: RKB @ 2953.0usft (Ensign #156)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
Rustler									
355.0	0.00	0.00	355.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
TOS									
908.0	0.00	0.00	908.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
BOS (Fletcher)									
2,438.0	0.00	0.00	2,438.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
LMAR (Top Delaware)									
2,621.0	0.00	0.00	2,621.0	0.0	0.0	0.0	0.00	0.00	0.00
BLCN									
2,667.0	0.00	0.00	2,667.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
CYCN									
3,539.0	0.00	0.00	3,539.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00

Database: EDM5002
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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)
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
BYCN									
4,846.0	0.00	0.00	4,846.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00
Bone Sprng (BSGL)									
6,316.0	0.00	0.00	6,316.0	0.0	0.0	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00
U Avalon Sh									
6,606.0	0.00	0.00	6,606.0	0.0	0.0	0.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00
L Avalon Sh									
6,841.0	0.00	0.00	6,841.0	0.0	0.0	0.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00
FBSG_sand									
7,242.0	0.00	0.00	7,242.0	0.0	0.0	0.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,300.0	0.0	0.0	0.0	0.00	0.00	0.00
Build 2°/100'									
7,316.0	0.00	0.00	7,316.0	0.0	0.0	0.0	0.00	0.00	0.00
7,400.0	1.68	189.37	7,400.0	-1.2	-0.2	-1.2	2.00	2.00	0.00
7,500.0	3.68	189.37	7,499.9	-5.8	-1.0	-5.8	2.00	2.00	0.00
7,600.0	5.68	189.37	7,599.5	-13.9	-2.3	-13.9	2.00	2.00	0.00
EOB @ 6.70° Inc / 189.37° Azm									
7,651.1	6.70	189.37	7,650.4	-19.3	-3.2	-19.3	2.00	2.00	0.00
7,700.0	6.70	189.37	7,698.9	-24.9	-4.1	-24.9	0.00	0.00	0.00
7,800.0	6.70	189.37	7,798.2	-36.5	-6.0	-36.5	0.00	0.00	0.00
7,900.0	6.70	189.37	7,897.5	-48.0	-7.9	-48.0	0.00	0.00	0.00

Database: EDM5002
Company: COG Operating, LLC
Project: Eddy County, NM (NAD 27)
Site: Sec 31, T26-S, R29-E
Well: Copperhead 31 Fee #20H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Well Copperhead 31 Fee #20H
 RKB @ 2953.0usft (Ensign #156)
 RKB @ 2953.0usft (Ensign #156)
 Grid
 Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,000.0	6.70	189.37	7,996.9	-59.5	-9.8	-59.5	0.00	0.00	0.00
SBSG_sand									
8,025.3	6.70	189.37	8,022.0	-62.4	-10.3	-62.4	0.00	0.00	0.00
8,100.0	6.70	189.37	8,096.2	-71.0	-11.7	-71.0	0.00	0.00	0.00
8,200.0	6.70	189.37	8,195.5	-82.5	-13.6	-82.5	0.00	0.00	0.00
8,300.0	6.70	189.37	8,294.8	-94.0	-15.5	-94.0	0.00	0.00	0.00
8,400.0	6.70	189.37	8,394.1	-105.6	-17.4	-105.6	0.00	0.00	0.00
8,500.0	6.70	189.37	8,493.4	-117.1	-19.3	-117.1	0.00	0.00	0.00
8,600.0	6.70	189.37	8,592.8	-128.6	-21.2	-128.6	0.00	0.00	0.00
8,700.0	6.70	189.37	8,692.1	-140.1	-23.1	-140.1	0.00	0.00	0.00
8,800.0	6.70	189.37	8,791.4	-151.6	-25.0	-151.6	0.00	0.00	0.00
8,900.0	6.70	189.37	8,890.7	-163.1	-26.9	-163.1	0.00	0.00	0.00
9,000.0	6.70	189.37	8,990.0	-174.7	-28.8	-174.6	0.00	0.00	0.00
TBSG_sand									
9,078.5	6.70	189.37	9,068.0	-183.7	-30.3	-183.7	0.00	0.00	0.00
9,100.0	6.70	189.37	9,089.3	-186.2	-30.7	-186.1	0.00	0.00	0.00
9,200.0	6.70	189.37	9,188.6	-197.7	-32.6	-197.7	0.00	0.00	0.00
9,300.0	6.70	189.37	9,288.0	-209.2	-34.5	-209.2	0.00	0.00	0.00
9,400.0	6.70	189.37	9,387.3	-220.7	-36.4	-220.7	0.00	0.00	0.00
WFMP									
9,412.8	6.70	189.37	9,400.0	-222.2	-36.7	-222.2	0.00	0.00	0.00
9,500.0	6.70	189.37	9,486.6	-232.2	-38.3	-232.2	0.00	0.00	0.00
9,600.0	6.70	189.37	9,585.9	-243.8	-40.2	-243.7	0.00	0.00	0.00
9,700.0	6.70	189.37	9,685.2	-255.3	-42.1	-255.2	0.00	0.00	0.00
9,800.0	6.70	189.37	9,784.5	-266.8	-44.0	-266.7	0.00	0.00	0.00
9,900.0	6.70	189.37	9,883.9	-278.3	-45.9	-278.3	0.00	0.00	0.00
10,000.0	6.70	189.37	9,983.2	-289.8	-47.8	-289.8	0.00	0.00	0.00
WFMP B									
10,002.8	6.70	189.37	9,986.0	-290.1	-47.9	-290.1	0.00	0.00	0.00
Build 12°/100'									
10,089.0	6.70	189.37	10,071.6	-300.1	-49.5	-300.0	0.00	0.00	0.00
10,100.0	5.41	191.59	10,082.5	-301.2	-49.7	-301.2	12.00	-11.81	20.27
10,125.0	2.54	205.08	10,107.4	-302.9	-50.2	-302.8	12.00	-11.49	53.94
WFMP C									
10,146.6	1.10	285.29	10,129.0	-303.2	-50.6	-303.2	12.00	-6.65	372.04
10,150.0	1.27	303.54	10,132.4	-303.2	-50.7	-303.2	12.00	4.97	530.62
10,175.0	3.85	344.24	10,157.4	-302.2	-51.1	-302.2	12.00	10.30	162.77
10,200.0	6.78	351.28	10,182.3	-300.0	-51.6	-299.9	12.00	11.73	28.18
10,225.0	9.76	354.07	10,207.0	-296.4	-52.0	-296.4	12.00	11.90	11.14
10,250.0	12.74	355.56	10,231.6	-291.6	-52.4	-291.5	12.00	11.94	5.96
10,275.0	15.73	356.49	10,255.8	-285.4	-52.9	-285.4	12.00	11.97	3.73
10,300.0	18.73	357.13	10,279.7	-278.0	-53.3	-278.0	12.00	11.98	2.56
10,325.0	21.72	357.60	10,303.1	-269.4	-53.7	-269.4	12.00	11.98	1.88
10,350.0	24.72	357.96	10,326.1	-259.6	-54.0	-259.5	12.00	11.99	1.44
10,375.0	27.72	358.25	10,348.5	-248.5	-54.4	-248.5	12.00	11.99	1.15
10,400.0	30.72	358.48	10,370.3	-236.3	-54.8	-236.3	12.00	11.99	0.94
10,425.0	33.71	358.68	10,391.5	-223.0	-55.1	-222.9	12.00	11.99	0.79
10,450.0	36.71	358.84	10,411.9	-208.6	-55.4	-208.5	12.00	11.99	0.67
10,475.0	39.71	358.99	10,431.5	-193.1	-55.7	-193.1	12.00	11.99	0.58
10,500.0	42.71	359.12	10,450.4	-176.7	-56.0	-176.6	12.00	12.00	0.51
WFMP D									
10,521.8	45.32	359.22	10,466.0	-161.5	-56.2	-161.5	12.00	12.00	0.46
10,525.0	45.71	359.23	10,468.3	-159.2	-56.2	-159.2	12.00	12.00	0.44

Database: EDM5002
Company: COG Operating, LLC
Project: Eddy County, NM (NAD 27)
Site: Sec 31, T26-S, R29-E
Well: Copperhead 31 Fee #20H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Copperhead 31 Fee #20H
TVD Reference: RKB @ 2953.0usft (Ensign #156)
MD Reference: RKB @ 2953.0usft (Ensign #156)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,550.0	48.71	359.34	10,485.3	-140.9	-56.4	-140.8	12.00	12.00	0.41
10,575.0	51.71	359.43	10,501.3	-121.7	-56.6	-121.6	12.00	12.00	0.38
10,600.0	54.71	359.52	10,516.2	-101.7	-56.8	-101.6	12.00	12.00	0.35
10,625.0	57.70	359.60	10,530.1	-80.9	-57.0	-80.8	12.00	12.00	0.32
10,650.0	60.70	359.68	10,542.9	-59.4	-57.1	-59.4	12.00	12.00	0.30
10,675.0	63.70	359.75	10,554.6	-37.3	-57.2	-37.3	12.00	12.00	0.28
10,700.0	66.70	359.81	10,565.1	-14.6	-57.3	-14.6	12.00	12.00	0.27
10,725.0	69.70	359.88	10,574.3	8.6	-57.4	8.6	12.00	12.00	0.26
10,750.0	72.70	359.94	10,582.4	32.3	-57.4	32.3	12.00	12.00	0.25
10,775.0	75.70	0.00	10,589.2	56.3	-57.4	56.4	12.00	12.00	0.24
10,800.0	78.70	0.06	10,594.7	80.7	-57.4	80.7	12.00	12.00	0.23
10,825.0	81.70	0.12	10,599.0	105.3	-57.4	105.4	12.00	12.00	0.23
10,850.0	84.70	0.17	10,602.0	130.1	-57.3	130.2	12.00	12.00	0.23
10,875.0	87.70	0.23	10,603.6	155.1	-57.2	155.1	12.00	12.00	0.22
EOC @ 89.56° Inc / 0.26° Azm / 10604.0' TVD									
10,890.5	89.56	0.26	10,604.0	170.6	-57.2	170.7	12.00	12.00	0.22
10,900.0	89.56	0.26	10,604.1	180.1	-57.1	180.1	0.00	0.00	0.00
11,000.0	89.56	0.26	10,604.8	280.1	-56.7	280.1	0.00	0.00	0.00
11,100.0	89.56	0.26	10,605.6	380.1	-56.2	380.1	0.00	0.00	0.00
11,200.0	89.56	0.26	10,606.4	480.1	-55.7	480.1	0.00	0.00	0.00
11,300.0	89.56	0.26	10,607.1	580.1	-55.3	580.1	0.00	0.00	0.00
11,400.0	89.56	0.26	10,607.9	680.1	-54.8	680.1	0.00	0.00	0.00
11,500.0	89.56	0.26	10,608.6	780.1	-54.4	780.1	0.00	0.00	0.00
11,600.0	89.56	0.26	10,609.4	880.0	-53.9	880.1	0.00	0.00	0.00
11,700.0	89.56	0.26	10,610.2	980.0	-53.4	980.1	0.00	0.00	0.00
11,800.0	89.56	0.26	10,610.9	1,080.0	-53.0	1,080.1	0.00	0.00	0.00
11,900.0	89.56	0.26	10,611.7	1,180.0	-52.5	1,180.1	0.00	0.00	0.00
12,000.0	89.56	0.26	10,612.5	1,280.0	-52.0	1,280.1	0.00	0.00	0.00
12,100.0	89.56	0.26	10,613.2	1,380.0	-51.6	1,380.1	0.00	0.00	0.00
12,200.0	89.56	0.26	10,614.0	1,480.0	-51.1	1,480.1	0.00	0.00	0.00
12,300.0	89.56	0.26	10,614.7	1,580.0	-50.7	1,580.1	0.00	0.00	0.00
12,400.0	89.56	0.26	10,615.5	1,680.0	-50.2	1,680.1	0.00	0.00	0.00
12,500.0	89.56	0.26	10,616.3	1,780.0	-49.7	1,780.1	0.00	0.00	0.00
12,600.0	89.56	0.26	10,617.0	1,880.0	-49.3	1,880.1	0.00	0.00	0.00
12,700.0	89.56	0.26	10,617.8	1,980.0	-48.8	1,980.0	0.00	0.00	0.00
12,800.0	89.56	0.26	10,618.6	2,080.0	-48.4	2,080.0	0.00	0.00	0.00
12,900.0	89.56	0.26	10,619.3	2,180.0	-47.9	2,180.0	0.00	0.00	0.00
13,000.0	89.56	0.26	10,620.1	2,280.0	-47.4	2,280.0	0.00	0.00	0.00
13,100.0	89.56	0.26	10,620.8	2,380.0	-47.0	2,380.0	0.00	0.00	0.00
13,200.0	89.56	0.26	10,621.6	2,480.0	-46.5	2,480.0	0.00	0.00	0.00
13,300.0	89.56	0.26	10,622.4	2,580.0	-46.0	2,580.0	0.00	0.00	0.00
13,400.0	89.56	0.26	10,623.1	2,680.0	-45.6	2,680.0	0.00	0.00	0.00
13,500.0	89.56	0.26	10,623.9	2,780.0	-45.1	2,780.0	0.00	0.00	0.00
13,600.0	89.56	0.26	10,624.7	2,880.0	-44.7	2,880.0	0.00	0.00	0.00
13,700.0	89.56	0.26	10,625.4	2,980.0	-44.2	2,980.0	0.00	0.00	0.00
13,800.0	89.56	0.26	10,626.2	3,080.0	-43.7	3,080.0	0.00	0.00	0.00
13,900.0	89.56	0.26	10,627.0	3,180.0	-43.3	3,180.0	0.00	0.00	0.00
14,000.0	89.56	0.26	10,627.7	3,280.0	-42.8	3,280.0	0.00	0.00	0.00
14,100.0	89.56	0.26	10,628.5	3,379.9	-42.4	3,380.0	0.00	0.00	0.00
14,200.0	89.56	0.26	10,629.2	3,479.9	-41.9	3,480.0	0.00	0.00	0.00
14,300.0	89.56	0.26	10,630.0	3,579.9	-41.4	3,580.0	0.00	0.00	0.00
14,400.0	89.56	0.26	10,630.8	3,679.9	-41.0	3,680.0	0.00	0.00	0.00
14,500.0	89.56	0.26	10,631.5	3,779.9	-40.5	3,780.0	0.00	0.00	0.00

Database: EDM5002
Company: COG Operating, LLC
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Site: Sec 31, T28-S, R29-E
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North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,600.0	89.56	0.26	10,632.3	3,879.9	-40.1	3,880.0	0.00	0.00	0.00
14,700.0	89.56	0.26	10,633.1	3,979.9	-39.6	3,980.0	0.00	0.00	0.00
14,800.0	89.56	0.26	10,633.8	4,079.9	-39.1	4,080.0	0.00	0.00	0.00
14,900.0	89.56	0.26	10,634.6	4,179.9	-38.7	4,179.9	0.00	0.00	0.00
15,000.0	89.56	0.26	10,635.3	4,279.9	-38.2	4,279.9	0.00	0.00	0.00
15,100.0	89.56	0.26	10,636.1	4,379.9	-37.7	4,379.9	0.00	0.00	0.00
15,200.0	89.56	0.26	10,636.9	4,479.9	-37.3	4,479.9	0.00	0.00	0.00
15,300.0	89.56	0.26	10,637.6	4,579.9	-36.8	4,579.9	0.00	0.00	0.00
15,400.0	89.56	0.26	10,638.4	4,679.9	-36.4	4,679.9	0.00	0.00	0.00
15,500.0	89.56	0.26	10,639.2	4,779.9	-35.9	4,779.9	0.00	0.00	0.00
15,600.0	89.56	0.26	10,639.9	4,879.9	-35.4	4,879.9	0.00	0.00	0.00
15,700.0	89.56	0.26	10,640.7	4,979.9	-35.0	4,979.9	0.00	0.00	0.00
15,800.0	89.56	0.26	10,641.5	5,079.9	-34.5	5,079.9	0.00	0.00	0.00
15,900.0	89.56	0.26	10,642.2	5,179.9	-34.1	5,179.9	0.00	0.00	0.00
16,000.0	89.56	0.26	10,643.0	5,279.9	-33.6	5,279.9	0.00	0.00	0.00
16,100.0	89.56	0.26	10,643.7	5,379.9	-33.1	5,379.9	0.00	0.00	0.00
16,200.0	89.56	0.26	10,644.5	5,479.9	-32.7	5,479.9	0.00	0.00	0.00
16,300.0	89.56	0.26	10,645.3	5,579.9	-32.2	5,579.9	0.00	0.00	0.00
16,400.0	89.56	0.26	10,646.0	5,679.9	-31.7	5,679.9	0.00	0.00	0.00
16,500.0	89.56	0.26	10,646.8	5,779.9	-31.3	5,779.9	0.00	0.00	0.00
16,600.0	89.56	0.26	10,647.6	5,879.8	-30.8	5,879.9	0.00	0.00	0.00
16,700.0	89.56	0.26	10,648.3	5,979.8	-30.4	5,979.9	0.00	0.00	0.00
16,800.0	89.56	0.26	10,649.1	6,079.8	-29.9	6,079.9	0.00	0.00	0.00
16,900.0	89.56	0.26	10,649.8	6,179.8	-29.4	6,179.9	0.00	0.00	0.00
17,000.0	89.56	0.26	10,650.6	6,279.8	-29.0	6,279.9	0.00	0.00	0.00
17,100.0	89.56	0.26	10,651.4	6,379.8	-28.5	6,379.9	0.00	0.00	0.00
17,200.0	89.56	0.26	10,652.1	6,479.8	-28.1	6,479.8	0.00	0.00	0.00
17,300.0	89.56	0.26	10,652.9	6,579.8	-27.6	6,579.8	0.00	0.00	0.00
17,400.0	89.56	0.26	10,653.7	6,679.8	-27.1	6,679.8	0.00	0.00	0.00
17,500.0	89.56	0.26	10,654.4	6,779.8	-26.7	6,779.8	0.00	0.00	0.00
17,600.0	89.56	0.26	10,655.2	6,879.8	-26.2	6,879.8	0.00	0.00	0.00
17,700.0	89.56	0.26	10,655.9	6,979.8	-25.8	6,979.8	0.00	0.00	0.00
17,800.0	89.56	0.26	10,656.7	7,079.8	-25.3	7,079.8	0.00	0.00	0.00
17,900.0	89.56	0.26	10,657.5	7,179.8	-24.8	7,179.8	0.00	0.00	0.00
18,000.0	89.56	0.26	10,658.2	7,279.8	-24.4	7,279.8	0.00	0.00	0.00
18,100.0	89.56	0.26	10,659.0	7,379.8	-23.9	7,379.8	0.00	0.00	0.00
18,200.0	89.56	0.26	10,659.8	7,479.8	-23.4	7,479.8	0.00	0.00	0.00
18,300.0	89.56	0.26	10,660.5	7,579.8	-23.0	7,579.8	0.00	0.00	0.00
18,400.0	89.56	0.26	10,661.3	7,679.8	-22.5	7,679.8	0.00	0.00	0.00
18,500.0	89.56	0.26	10,662.1	7,779.8	-22.1	7,779.8	0.00	0.00	0.00
18,600.0	89.56	0.26	10,662.8	7,879.8	-21.6	7,879.8	0.00	0.00	0.00
18,700.0	89.56	0.26	10,663.6	7,979.8	-21.1	7,979.8	0.00	0.00	0.00
18,800.0	89.56	0.26	10,664.3	8,079.8	-20.7	8,079.8	0.00	0.00	0.00
18,900.0	89.56	0.26	10,665.1	8,179.8	-20.2	8,179.8	0.00	0.00	0.00
19,000.0	89.56	0.26	10,665.9	8,279.8	-19.8	8,279.8	0.00	0.00	0.00
19,100.0	89.56	0.26	10,666.6	8,379.7	-19.3	8,379.8	0.00	0.00	0.00
19,200.0	89.56	0.26	10,667.4	8,479.7	-18.8	8,479.8	0.00	0.00	0.00
19,300.0	89.56	0.26	10,668.2	8,579.7	-18.4	8,579.8	0.00	0.00	0.00
19,400.0	89.56	0.26	10,668.9	8,679.7	-17.9	8,679.7	0.00	0.00	0.00
19,500.0	89.56	0.26	10,669.7	8,779.7	-17.4	8,779.7	0.00	0.00	0.00
19,600.0	89.56	0.26	10,670.4	8,879.7	-17.0	8,879.7	0.00	0.00	0.00
19,700.0	89.56	0.26	10,671.2	8,979.7	-16.5	8,979.7	0.00	0.00	0.00
19,800.0	89.56	0.26	10,672.0	9,079.7	-16.1	9,079.7	0.00	0.00	0.00
19,900.0	89.56	0.26	10,672.7	9,179.7	-15.6	9,179.7	0.00	0.00	0.00

Database: EDM5002
Company: COG Operating, LLC
Project: Eddy County, NM (NAD 27)
Site: Sec 31, T26-S, R29-E
Well: Copperhead 31 Fee #20H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Copperhead 31 Fee #20H
TVD Reference: RKB @ 2953.0usft (Ensign #156)
MD Reference: RKB @ 2953.0usft (Ensign #156)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
20,000.0	89.56	0.26	10,673.5	9,279.7	-15.1	9,279.7	0.00	0.00	0.00
20,100.0	89.56	0.26	10,674.3	9,379.7	-14.7	9,379.7	0.00	0.00	0.00
20,200.0	89.56	0.26	10,675.0	9,479.7	-14.2	9,479.7	0.00	0.00	0.00
20,300.0	89.56	0.26	10,675.8	9,579.7	-13.8	9,579.7	0.00	0.00	0.00
20,400.0	89.56	0.26	10,676.6	9,679.7	-13.3	9,679.7	0.00	0.00	0.00
20,500.0	89.56	0.26	10,677.3	9,779.7	-12.8	9,779.7	0.00	0.00	0.00
20,600.0	89.56	0.26	10,678.1	9,879.7	-12.4	9,879.7	0.00	0.00	0.00
20,700.0	89.56	0.26	10,678.8	9,979.7	-11.9	9,979.7	0.00	0.00	0.00
20,800.0	89.56	0.26	10,679.6	10,079.7	-11.5	10,079.7	0.00	0.00	0.00
20,900.0	89.56	0.26	10,680.4	10,179.7	-11.0	10,179.7	0.00	0.00	0.00
21,000.0	89.56	0.26	10,681.1	10,279.7	-10.5	10,279.7	0.00	0.00	0.00
21,100.0	89.56	0.26	10,681.9	10,379.7	-10.1	10,379.7	0.00	0.00	0.00
21,200.0	89.56	0.26	10,682.7	10,479.7	-9.6	10,479.7	0.00	0.00	0.00
TD @ 21245.0' MD / 10683.0' TVD									
21,245.0	89.56	0.26	10,683.0	10,524.7	-9.4	10,524.7	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP - Copperhead 31 Fee #20H	0.00	0.00	10,607.9	-339.7	-59.5	364,169.15	593,756.08	32° 0' 3.074 N	104° 1' 51.193 W
- hit/miss target									
- plan misses target center by 226.8usft at 10500.1usft MD (10450.4 TVD, -176.6 N, -56.0 E)									
- Point									
LTP - Copperhead 31 Fee #20H	0.00	0.00	10,682.5	10,394.7	-9.9	374,903.55	593,805.68	32° 1' 49.307 N	104° 1' 50.268 W
- hit/miss target									
- plan misses target center by 0.5usft at 21115.0usft MD (10682.0 TVD, 10394.7 N, -10.0 E)									
- Point									
PBHL - Copperhead 31 Fee #20H	0.00	0.00	10,683.0	10,524.7	-9.4	375,033.60	593,806.20	32° 1' 50.594 N	104° 1' 50.258 W
- hit/miss target									
- plan hits target center									
- Point									

Database: EDM5002
Company: COG Operating, LLC
Project: Eddy County, NM (NAD 27)
Site: Sec 31, T26-S, R29-E
Well: Copperhead 31 Fee #20H
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Design: Design #1

Local Co-ordinate Reference: Well Copperhead 31 Fee #20H
TVD Reference: RKB @ 2953.0usft (Ensign #156)
MD Reference: RKB @ 2953.0usft (Ensign #156)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
355.0	355.0	Rustler			
908.0	908.0	TOS			
2,438.0	2,438.0	BOS (Fletcher)			
2,621.0	2,621.0	LMAR (Top Delaware)			
2,667.0	2,667.0	BLCN			
3,539.0	3,539.0	CYCN			
4,846.0	4,846.0	BYCN			
6,316.0	6,316.0	Bone Sprg (BSGL)			
6,606.0	6,606.0	U Avalon Sh			
6,841.0	6,841.0	L Avalon Sh			
7,242.0	7,242.0	FBSG_sand			
8,025.3	8,022.0	SBSG_sand			
9,078.5	9,068.0	TBSG_sand			
9,412.8	9,400.0	WFMP			
10,002.8	9,986.0	WFMP B			
10,146.6	10,129.0	WFMP C			
10,521.8	10,466.0	WFMP D			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,316.0	7,316.0	0.0	0.0	Build 2°/100'
7,651.1	7,650.4	-19.3	-3.2	EOB @ 6.70° Inc / 189.37° Azm
10,089.0	10,071.6	-300.1	-49.5	Build 12°/100'
10,890.5	10,604.0	170.6	-57.2	EOC @ 89.56° Inc / 0.26° Azm / 10604.0' TVD
21,245.0	10,683.0	10,524.7	-9.4	TD @ 21245.0' MD / 10683.0' TVD

Company Name: COG Operating, LLC
Copperhead 31 Fee #20H
Eddy County, NM (NAD 27)
Rig: Ensign #156
Created By: Chase Chambers
Date: 8/28/17

Copperhead 31 Fee #20H
Eddy County, NM (NAD 27)
Q170*** & WT-170***
Design #1

WELL DETAILS: Copperhead 31 Fee #20H

WOB	WOB	WOB	WOB	WOB	WOB	WOB	WOB
100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PROJECT DETAILS: Eddy County, NM (NAD 27)

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

CONCHO

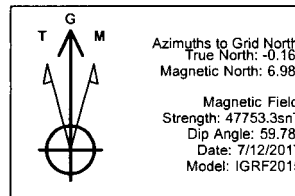
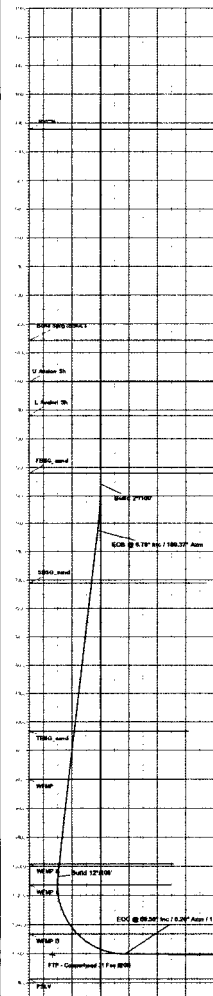
QES

ANNOTATIONS

MD	TH	AS	TYD	WOB	WOB	WOB	WOB	WOB	WOB
7310.0	0.00	0.00	7310.0	0.0	0.0	0.0	0.0	0.0	0.0
10011.1	0.10	0.10	10011.1	0.1	0.1	0.1	0.1	0.1	0.1

DESIGN TARGET DETAIL

Station	TH	AS	TYD	WOB	WOB	WOB	WOB	WOB	WOB
FTP - Copperhead 31 Fee #20H	10000.0	0.00	10000.0	0.0	0.0	0.0	0.0	0.0	0.0
LTP - Copperhead 31 Fee #20H	10000.0	0.00	10000.0	0.0	0.0	0.0	0.0	0.0	0.0



Vertical Section at 359.95° (200 surface)



Vertical Section at 359.95° (200 surface)

