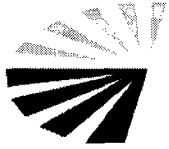


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CONCHO

NM OIL CONSERVATION
ARTESIA DISTRICT

AUG 11 2017

RECEIVED

COG OPERATING LLC

EDDY COUNTY, NM

ATLAS

MYOX 21 ST COM #34H

OWB

Plan: PWP1

Survey Report - Geographic

08 August, 2017



COG Operating LLC

Survey Report - Geographic

Company: COG OPERATING LLC
Project: EDDY COUNTY, NM
Site: ATLAS
Well: MYOX 21 ST COM #34H
Wellbore: OWB
Design: PWP1

Local Co-ordinate Reference: Well MYOX 21 ST COM #34H
TVD Reference: RKB=2978.1+25 @ 3003.1usft (LATSHAW 44)
MD Reference: RKB=2978.1+25 @ 3003.1usft (LATSHAW 44)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Project: EDDY COUNTY, NM
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: ATLAS
Site Position: **Northing:** 371,480.80 usft **Latitude:** 32° 1' 15.933 N
From: Map **Easting:** 573,599.60 usft **Longitude:** 104° 5' 45.086 W
Position Uncertainty: 0.0 usft **Slot Radius:** 13-3/16 " **Grid Convergence:** 0.13 °

Well: MYOX 21 ST COM #34H
Well Position **+N/-S** 0.0 usft **Northing:** 403,303.68 usf **Latitude:** 32° 6' 30.865 N
+E/-W 0.0 usft **Easting:** 573,811.45 usf **Longitude:** 104° 5' 41.808 W
Position Uncertainty 3.0 usft **Wellhead Elevation:** usf **Ground Level:** 2,978.1 usf

Wellbore: OWB

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM2015	12/19/2016	7.26	59.86	47,856.68386804

Design: PWP1

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 0.0 357.66

Survey Tool Program **Date** 8/8/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	19,568.9	PWP1 (OWB)	MWD	OWSG MWD - Standard

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
100.0	0.00	0.00	100.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
200.0	0.00	0.00	200.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
300.0	0.00	0.00	300.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
400.0	0.00	0.00	400.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
500.0	0.00	0.00	500.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
600.0	0.00	0.00	600.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
700.0	0.00	0.00	700.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
800.0	0.00	0.00	800.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
900.0	0.00	0.00	900.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
1,000.0	0.00	0.00	1,000.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
1,100.0	0.00	0.00	1,100.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W



COG Operating LLC

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Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,200.0	0.00	0.00	1,200.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
1,300.0	0.00	0.00	1,300.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
1,400.0	0.00	0.00	1,400.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
1,500.0	0.00	0.00	1,500.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
1,600.0	0.00	0.00	1,600.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
1,700.0	0.00	0.00	1,700.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
1,800.0	0.00	0.00	1,800.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
1,900.0	0.00	0.00	1,900.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
2,000.0	0.00	0.00	2,000.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
2,100.0	0.00	0.00	2,100.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
2,200.0	0.00	0.00	2,200.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
2,300.0	0.00	0.00	2,300.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
2,400.0	0.00	0.00	2,400.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
2,500.0	0.00	0.00	2,500.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
2,600.0	0.00	0.00	2,600.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
2,700.0	0.00	0.00	2,700.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
2,800.0	0.00	0.00	2,800.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
2,900.0	0.00	0.00	2,900.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
3,000.0	0.00	0.00	3,000.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
3,100.0	0.00	0.00	3,100.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
3,200.0	0.00	0.00	3,200.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
3,300.0	0.00	0.00	3,300.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
3,400.0	0.00	0.00	3,400.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
3,500.0	0.00	0.00	3,500.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
3,600.0	0.00	0.00	3,600.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
3,700.0	0.00	0.00	3,700.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
3,800.0	0.00	0.00	3,800.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
3,900.0	0.00	0.00	3,900.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
4,000.0	0.00	0.00	4,000.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
4,100.0	0.00	0.00	4,100.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
4,200.0	0.00	0.00	4,200.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
4,300.0	0.00	0.00	4,300.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
4,400.0	0.00	0.00	4,400.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
4,500.0	0.00	0.00	4,500.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
4,600.0	0.00	0.00	4,600.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
4,700.0	0.00	0.00	4,700.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
4,800.0	0.00	0.00	4,800.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
4,900.0	0.00	0.00	4,900.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
5,000.0	0.00	0.00	5,000.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
5,100.0	0.00	0.00	5,100.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
5,200.0	0.00	0.00	5,200.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
5,300.0	0.00	0.00	5,300.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
5,400.0	0.00	0.00	5,400.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
5,500.0	0.00	0.00	5,500.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
5,600.0	0.00	0.00	5,600.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
5,700.0	0.00	0.00	5,700.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
5,800.0	0.00	0.00	5,800.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
5,900.0	0.00	0.00	5,900.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
6,000.0	0.00	0.00	6,000.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
6,100.0	0.00	0.00	6,100.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
6,200.0	0.00	0.00	6,200.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
6,300.0	0.00	0.00	6,300.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
6,400.0	0.00	0.00	6,400.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
6,500.0	0.00	0.00	6,500.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
6,600.0	0.00	0.00	6,600.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W



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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,700.0	0.00	0.00	6,700.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
6,800.0	0.00	0.00	6,800.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
6,900.0	0.00	0.00	6,900.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
7,000.0	0.00	0.00	7,000.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
7,100.0	0.00	0.00	7,100.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
7,200.0	0.00	0.00	7,200.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
7,300.0	0.00	0.00	7,300.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
7,400.0	0.00	0.00	7,400.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
7,500.0	0.00	0.00	7,500.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
7,600.0	0.00	0.00	7,600.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
7,700.0	0.00	0.00	7,700.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
7,800.0	0.00	0.00	7,800.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
7,900.0	0.00	0.00	7,900.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
8,000.0	0.00	0.00	8,000.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
8,100.0	0.00	0.00	8,100.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
8,200.0	0.00	0.00	8,200.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
8,300.0	0.00	0.00	8,300.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
8,400.0	0.00	0.00	8,400.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
8,500.0	0.00	0.00	8,500.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
8,600.0	0.00	0.00	8,600.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
8,700.0	0.00	0.00	8,700.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
8,800.0	0.00	0.00	8,800.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
8,900.0	0.00	0.00	8,900.0	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
8,944.5	0.00	0.00	8,944.5	0.0	0.0	403,303.68	573,811.45	32° 6' 30.865 N	104° 5' 41.808 W
9,000.0	6.66	326.70	8,999.9	2.7	-1.8	403,306.37	573,809.68	32° 6' 30.892 N	104° 5' 41.829 W
9,100.0	18.66	326.70	9,097.3	21.0	-13.8	403,324.65	573,797.67	32° 6' 31.073 N	104° 5' 41.968 W
9,200.0	30.66	326.70	9,188.0	55.8	-36.6	403,359.46	573,774.81	32° 6' 31.418 N	104° 5' 42.233 W
9,300.0	42.66	326.70	9,268.1	105.6	-69.4	403,409.27	573,742.09	32° 6' 31.912 N	104° 5' 42.612 W
9,400.0	54.66	326.70	9,334.0	168.2	-110.5	403,471.90	573,700.95	32° 6' 32.532 N	104° 5' 43.089 W
9,500.0	66.66	326.70	9,382.9	240.9	-158.3	403,544.63	573,653.18	32° 6' 33.253 N	104° 5' 43.642 W
9,600.0	78.65	326.70	9,412.7	320.6	-210.6	403,624.26	573,600.87	32° 6' 34.042 N	104° 5' 44.249 W
9,694.6	90.00	326.70	9,422.0	399.1	-262.2	403,702.78	573,549.29	32° 6' 34.821 N	104° 5' 44.846 W
9,700.0	90.00	326.92	9,422.0	403.7	-265.1	403,707.33	573,546.31	32° 6' 34.866 N	104° 5' 44.881 W
9,800.0	90.00	330.92	9,422.0	489.3	-316.8	403,792.96	573,494.70	32° 6' 35.714 N	104° 5' 45.479 W
9,900.0	90.00	334.92	9,422.0	578.3	-362.3	403,881.98	573,449.18	32° 6' 36.596 N	104° 5' 46.006 W
10,000.0	90.00	338.92	9,422.0	670.3	-401.5	403,973.95	573,409.98	32° 6' 37.507 N	104° 5' 46.459 W
10,100.0	90.00	342.92	9,422.0	764.8	-434.2	404,068.44	573,377.30	32° 6' 38.443 N	104° 5' 46.837 W
10,200.0	90.00	346.92	9,422.0	861.3	-460.2	404,164.97	573,351.28	32° 6' 39.399 N	104° 5' 47.137 W
10,300.0	90.00	350.92	9,422.0	959.4	-479.4	404,263.09	573,332.06	32° 6' 40.370 N	104° 5' 47.358 W
10,400.0	90.01	354.92	9,422.0	1,058.6	-491.7	404,362.31	573,319.74	32° 6' 41.353 N	104° 5' 47.498 W
10,500.0	90.01	358.92	9,422.0	1,158.5	-497.1	404,462.14	573,314.36	32° 6' 42.341 N	104° 5' 47.558 W
10,539.5	90.01	0.50	9,422.0	1,198.0	-497.3	404,501.64	573,314.16	32° 6' 42.732 N	104° 5' 47.560 W
10,600.0	90.01	0.50	9,421.9	1,258.5	-496.8	404,562.14	573,314.69	32° 6' 43.330 N	104° 5' 47.552 W
10,700.0	90.01	0.50	9,421.9	1,358.5	-495.9	404,662.13	573,315.55	32° 6' 44.320 N	104° 5' 47.539 W
10,800.0	90.01	0.50	9,421.9	1,458.5	-495.0	404,762.13	573,316.42	32° 6' 45.310 N	104° 5' 47.527 W
10,900.0	90.01	0.50	9,421.9	1,558.4	-494.2	404,862.13	573,317.29	32° 6' 46.299 N	104° 5' 47.514 W
11,000.0	90.01	0.50	9,421.9	1,658.4	-493.3	404,962.12	573,318.16	32° 6' 47.289 N	104° 5' 47.501 W
11,100.0	90.01	0.50	9,421.9	1,758.4	-492.4	405,062.12	573,319.03	32° 6' 48.278 N	104° 5' 47.489 W
11,200.0	90.01	0.50	9,421.9	1,858.4	-491.6	405,162.11	573,319.90	32° 6' 49.268 N	104° 5' 47.476 W
11,300.0	90.01	0.50	9,421.9	1,958.4	-490.7	405,262.11	573,320.77	32° 6' 50.257 N	104° 5' 47.463 W
11,400.0	90.01	0.50	9,421.9	2,058.4	-489.8	405,362.11	573,321.64	32° 6' 51.247 N	104° 5' 47.451 W
11,500.0	90.01	0.50	9,421.9	2,158.4	-488.9	405,462.10	573,322.51	32° 6' 52.237 N	104° 5' 47.438 W
11,600.0	90.01	0.50	9,421.8	2,258.4	-488.1	405,562.10	573,323.38	32° 6' 53.226 N	104° 5' 47.425 W
11,700.0	90.01	0.50	9,421.8	2,358.4	-487.2	405,662.10	573,324.25	32° 6' 54.216 N	104° 5' 47.413 W
11,800.0	90.01	0.50	9,421.8	2,458.4	-486.3	405,762.09	573,325.12	32° 6' 55.205 N	104° 5' 47.400 W



COG Operating LLC

Survey Report - Geographic

Company: COG OPERATING LLC
Project: EDDY COUNTY, NM
Site: ATLAS
Well: MYOX 21 ST COM #34H
Wellbore: OWB
Design: PWP1

Local Co-ordinate Reference: Well MYOX 21 ST COM #34H
TVD Reference: RKB=2978.1+25 @ 3003.1usft (LATSHAW 44)
MD Reference: RKB=2978.1+25 @ 3003.1usft (LATSHAW 44)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
11,900.0	90.01	0.50	9,421.8	2,558.4	-485.5	405,862.09	573,325.99	32° 6' 56.195 N	104° 5' 47.387 W
12,000.0	90.01	0.50	9,421.8	2,658.4	-484.6	405,962.08	573,326.85	32° 6' 57.185 N	104° 5' 47.375 W
12,100.0	90.01	0.50	9,421.8	2,758.4	-483.7	406,062.08	573,327.72	32° 6' 58.174 N	104° 5' 47.362 W
12,200.0	90.01	0.50	9,421.8	2,858.4	-482.9	406,162.08	573,328.59	32° 6' 59.164 N	104° 5' 47.349 W
12,300.0	90.01	0.50	9,421.8	2,958.4	-482.0	406,262.07	573,329.46	32° 7' 0.153 N	104° 5' 47.337 W
12,400.0	90.01	0.50	9,421.8	3,058.4	-481.1	406,362.07	573,330.33	32° 7' 1.143 N	104° 5' 47.324 W
12,500.0	90.01	0.50	9,421.7	3,158.4	-480.3	406,462.06	573,331.20	32° 7' 2.133 N	104° 5' 47.311 W
12,600.0	90.01	0.50	9,421.7	3,258.4	-479.4	406,562.06	573,332.07	32° 7' 3.122 N	104° 5' 47.299 W
12,700.0	90.01	0.50	9,421.7	3,358.4	-478.5	406,662.06	573,332.94	32° 7' 4.112 N	104° 5' 47.286 W
12,800.0	90.01	0.50	9,421.7	3,458.4	-477.6	406,762.05	573,333.81	32° 7' 5.101 N	104° 5' 47.273 W
12,900.0	90.01	0.50	9,421.7	3,558.4	-476.8	406,862.05	573,334.68	32° 7' 6.091 N	104° 5' 47.261 W
13,000.0	90.01	0.50	9,421.7	3,658.4	-475.9	406,962.05	573,335.55	32° 7' 7.081 N	104° 5' 47.248 W
13,100.0	90.01	0.50	9,421.7	3,758.4	-475.0	407,062.04	573,336.42	32° 7' 8.070 N	104° 5' 47.235 W
13,200.0	90.01	0.50	9,421.7	3,858.4	-474.2	407,162.04	573,337.28	32° 7' 9.060 N	104° 5' 47.223 W
13,300.0	90.01	0.50	9,421.7	3,958.4	-473.3	407,262.03	573,338.15	32° 7' 10.049 N	104° 5' 47.210 W
13,400.0	90.01	0.50	9,421.7	4,058.4	-472.4	407,362.03	573,339.02	32° 7' 11.039 N	104° 5' 47.197 W
13,500.0	90.01	0.50	9,421.6	4,158.3	-471.6	407,462.03	573,339.89	32° 7' 12.028 N	104° 5' 47.185 W
13,600.0	90.01	0.50	9,421.6	4,258.3	-470.7	407,562.02	573,340.76	32° 7' 13.018 N	104° 5' 47.172 W
13,700.0	90.01	0.50	9,421.6	4,358.3	-469.8	407,662.02	573,341.63	32° 7' 14.008 N	104° 5' 47.159 W
13,800.0	90.01	0.50	9,421.6	4,458.3	-469.0	407,762.02	573,342.50	32° 7' 14.997 N	104° 5' 47.147 W
13,900.0	90.01	0.50	9,421.6	4,558.3	-468.1	407,862.01	573,343.37	32° 7' 15.987 N	104° 5' 47.134 W
14,000.0	90.01	0.50	9,421.6	4,658.3	-467.2	407,962.01	573,344.24	32° 7' 16.976 N	104° 5' 47.121 W
14,100.0	90.01	0.50	9,421.6	4,758.3	-466.3	408,062.00	573,345.11	32° 7' 17.966 N	104° 5' 47.109 W
14,200.0	90.01	0.50	9,421.6	4,858.3	-465.5	408,162.00	573,345.98	32° 7' 18.956 N	104° 5' 47.096 W
14,300.0	90.01	0.50	9,421.6	4,958.3	-464.6	408,262.00	573,346.85	32° 7' 19.945 N	104° 5' 47.083 W
14,400.0	90.01	0.50	9,421.5	5,058.3	-463.7	408,361.99	573,347.71	32° 7' 20.935 N	104° 5' 47.071 W
14,500.0	90.01	0.50	9,421.5	5,158.3	-462.9	408,461.99	573,348.58	32° 7' 21.924 N	104° 5' 47.058 W
14,600.0	90.01	0.50	9,421.5	5,258.3	-462.0	408,561.99	573,349.45	32° 7' 22.914 N	104° 5' 47.045 W
14,700.0	90.01	0.50	9,421.5	5,358.3	-461.1	408,661.98	573,350.32	32° 7' 23.904 N	104° 5' 47.033 W
14,800.0	90.01	0.50	9,421.5	5,458.3	-460.3	408,761.98	573,351.19	32° 7' 24.893 N	104° 5' 47.020 W
14,900.0	90.01	0.50	9,421.5	5,558.3	-459.4	408,861.97	573,352.06	32° 7' 25.883 N	104° 5' 47.008 W
15,000.0	90.01	0.50	9,421.5	5,658.3	-458.5	408,961.97	573,352.93	32° 7' 26.872 N	104° 5' 46.995 W
15,100.0	90.01	0.50	9,421.5	5,758.3	-457.7	409,061.97	573,353.80	32° 7' 27.862 N	104° 5' 46.982 W
15,200.0	90.01	0.50	9,421.5	5,858.3	-456.8	409,161.96	573,354.67	32° 7' 28.851 N	104° 5' 46.970 W
15,300.0	90.01	0.50	9,421.5	5,958.3	-455.9	409,261.96	573,355.54	32° 7' 29.841 N	104° 5' 46.957 W
15,400.0	90.01	0.50	9,421.4	6,058.3	-455.0	409,361.96	573,356.41	32° 7' 30.831 N	104° 5' 46.944 W
15,500.0	90.01	0.50	9,421.4	6,158.3	-454.2	409,461.95	573,357.28	32° 7' 31.820 N	104° 5' 46.932 W
15,600.0	90.01	0.50	9,421.4	6,258.3	-453.3	409,561.95	573,358.15	32° 7' 32.810 N	104° 5' 46.919 W
15,700.0	90.01	0.50	9,421.4	6,358.3	-452.4	409,661.94	573,359.01	32° 7' 33.799 N	104° 5' 46.906 W
15,800.0	90.01	0.50	9,421.4	6,458.3	-451.6	409,761.94	573,359.88	32° 7' 34.789 N	104° 5' 46.894 W
15,900.0	90.01	0.50	9,421.4	6,558.3	-450.7	409,861.94	573,360.75	32° 7' 35.779 N	104° 5' 46.881 W
16,000.0	90.01	0.50	9,421.4	6,658.3	-449.8	409,961.93	573,361.62	32° 7' 36.768 N	104° 5' 46.868 W
16,100.0	90.01	0.50	9,421.4	6,758.2	-449.0	410,061.93	573,362.49	32° 7' 37.758 N	104° 5' 46.856 W
16,200.0	90.01	0.50	9,421.4	6,858.2	-448.1	410,161.93	573,363.36	32° 7' 38.747 N	104° 5' 46.843 W
16,300.0	90.01	0.50	9,421.3	6,958.2	-447.2	410,261.92	573,364.23	32° 7' 39.737 N	104° 5' 46.830 W
16,400.0	90.01	0.50	9,421.3	7,058.2	-446.4	410,361.92	573,365.10	32° 7' 40.727 N	104° 5' 46.818 W
16,500.0	90.01	0.50	9,421.3	7,158.2	-445.5	410,461.91	573,365.97	32° 7' 41.716 N	104° 5' 46.805 W
16,600.0	90.01	0.50	9,421.3	7,258.2	-444.6	410,561.91	573,366.84	32° 7' 42.706 N	104° 5' 46.792 W
16,700.0	90.01	0.50	9,421.3	7,358.2	-443.7	410,661.91	573,367.71	32° 7' 43.695 N	104° 5' 46.780 W
16,800.0	90.01	0.50	9,421.3	7,458.2	-442.9	410,761.90	573,368.58	32° 7' 44.685 N	104° 5' 46.767 W
16,900.0	90.01	0.50	9,421.3	7,558.2	-442.0	410,861.90	573,369.44	32° 7' 45.675 N	104° 5' 46.754 W
17,000.0	90.01	0.50	9,421.3	7,658.2	-441.1	410,961.89	573,370.31	32° 7' 46.664 N	104° 5' 46.742 W
17,100.0	90.01	0.50	9,421.3	7,758.2	-440.3	411,061.89	573,371.18	32° 7' 47.654 N	104° 5' 46.729 W
17,200.0	90.01	0.50	9,421.3	7,858.2	-439.4	411,161.89	573,372.05	32° 7' 48.643 N	104° 5' 46.716 W
17,300.0	90.01	0.50	9,421.2	7,958.2	-438.5	411,261.88	573,372.92	32° 7' 49.633 N	104° 5' 46.704 W



COG Operating LLC
Survey Report - Geographic

Company: COG OPERATING LLC
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Wellbore: OWB
Design: PWP1

Local Co-ordinate Reference: Well MYOX 21 ST COM #34H
TVD Reference: RKB=2978.1+25 @ 3003.1usft (LATSHAW 44)
MD Reference: RKB=2978.1+25 @ 3003.1usft (LATSHAW 44)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
17,400.0	90.01	0.50	9,421.2	8,058.2	-437.7	411,361.88	573,373.79	32° 7' 50.622 N	104° 5' 46.691 W
17,500.0	90.01	0.50	9,421.2	8,158.2	-436.8	411,461.88	573,374.66	32° 7' 51.612 N	104° 5' 46.678 W
17,600.0	90.01	0.50	9,421.2	8,258.2	-435.9	411,561.87	573,375.53	32° 7' 52.602 N	104° 5' 46.666 W
17,700.0	90.01	0.50	9,421.2	8,358.2	-435.1	411,661.87	573,376.40	32° 7' 53.591 N	104° 5' 46.653 W
17,800.0	90.01	0.50	9,421.2	8,458.2	-434.2	411,761.86	573,377.27	32° 7' 54.581 N	104° 5' 46.640 W
17,900.0	90.01	0.50	9,421.2	8,558.2	-433.3	411,861.86	573,378.14	32° 7' 55.570 N	104° 5' 46.628 W
18,000.0	90.01	0.50	9,421.2	8,658.2	-432.4	411,961.86	573,379.01	32° 7' 56.560 N	104° 5' 46.615 W
18,100.0	90.01	0.50	9,421.2	8,758.2	-431.6	412,061.85	573,379.87	32° 7' 57.550 N	104° 5' 46.602 W
18,200.0	90.01	0.50	9,421.1	8,858.2	-430.7	412,161.85	573,380.74	32° 7' 58.539 N	104° 5' 46.590 W
18,300.0	90.01	0.50	9,421.1	8,958.2	-429.8	412,261.85	573,381.61	32° 7' 59.529 N	104° 5' 46.577 W
18,400.0	90.01	0.50	9,421.1	9,058.2	-429.0	412,361.84	573,382.48	32° 8' 0.518 N	104° 5' 46.564 W
18,500.0	90.01	0.50	9,421.1	9,158.2	-428.1	412,461.84	573,383.35	32° 8' 1.508 N	104° 5' 46.552 W
18,600.0	90.01	0.50	9,421.1	9,258.2	-427.2	412,561.83	573,384.22	32° 8' 2.498 N	104° 5' 46.539 W
18,700.0	90.01	0.50	9,421.1	9,358.2	-426.4	412,661.83	573,385.09	32° 8' 3.487 N	104° 5' 46.526 W
18,800.0	90.01	0.50	9,421.1	9,458.1	-425.5	412,761.83	573,385.96	32° 8' 4.477 N	104° 5' 46.514 W
18,900.0	90.01	0.50	9,421.1	9,558.1	-424.6	412,861.82	573,386.83	32° 8' 5.466 N	104° 5' 46.501 W
19,000.0	90.01	0.50	9,421.1	9,658.1	-423.8	412,961.82	573,387.70	32° 8' 6.456 N	104° 5' 46.488 W
19,100.0	90.01	0.50	9,421.0	9,758.1	-422.9	413,061.82	573,388.57	32° 8' 7.445 N	104° 5' 46.476 W
19,200.0	90.01	0.50	9,421.0	9,858.1	-422.0	413,161.81	573,389.44	32° 8' 8.435 N	104° 5' 46.463 W
19,300.0	90.01	0.50	9,421.0	9,958.1	-421.1	413,261.81	573,390.31	32° 8' 9.425 N	104° 5' 46.450 W
19,400.0	90.01	0.50	9,421.0	10,058.1	-420.3	413,361.80	573,391.17	32° 8' 10.414 N	104° 5' 46.438 W
19,500.0	90.01	0.50	9,421.0	10,158.1	-419.4	413,461.80	573,392.04	32° 8' 11.404 N	104° 5' 46.425 W
19,568.9	90.01	0.50	9,421.0	10,227.1	-418.8	413,530.74	573,392.64	32° 8' 12.086 N	104° 5' 46.416 W

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL-Myox 21 St	0.00	0.00	9,421.0	10,227.1	-418.8	413,530.74	573,392.64	32° 8' 12.086 N	104° 5' 46.416 W
- plan hits target center									
- Point									

Checked By: _____ Approved By: _____ Date: _____



WELL DETAILS: MYOX 21 ST COM #34H										
2978.1										
+N/-S	+E/-W	Northing		Easting		Latitude	Longitude		Slot	
0.0	0.0	403303.68		573811.45		32° 6' 30.865 N	104° 5' 41.808 W			
SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Diag	TFace	Vsect	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	8944.5	0.00	0.00	8944.5	0.0	0.0	0.00	0.00	0.0	
3	9694.6	90.00	326.70	9422.0	399.1	-262.2	12.00	326.70	409.5	
4	10539.5	90.01	0.50	9422.0	1198.0	-497.3	4.00	89.99	1217.3	
5	19568.9	90.01	0.50	9421.0	10227.1	-418.8	0.00	0.00	10235.6	

Project: EDDY COUNTY, NM
Site: ATLAS
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Wellbore: OWB
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