

30-015-43972

Myox 5 State Com 23H

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	17-1/2"	13-3/8"	54.5#	700'	550	0'
Intermediate	12-1/4"	9-5/8"	47#	9,450'	1500	0'
Production	8-1/2"	5-1/2"	20#	20,225'	3000	8,000'

Well Plan

Drill 13-1/2" hole to ~700' w/ fresh water spud mud. Run 13-3/8" 54.5# J55 STC casing to TD and cement to surface in one stage.

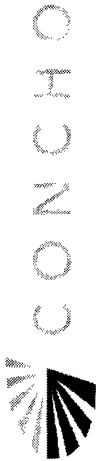
Drill 12-1/4" hole to ~9,450' with diesel brine emulsion. Run 9-5/8" 47# HCL80 casing to TD and cement to surface in one stage.

Drill 8-1/2" vertical hole, curve & lateral to 22,225' with OBM. Run 5-1/2" 20# P110 LTC casing to TD and cement to 8,000' 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.



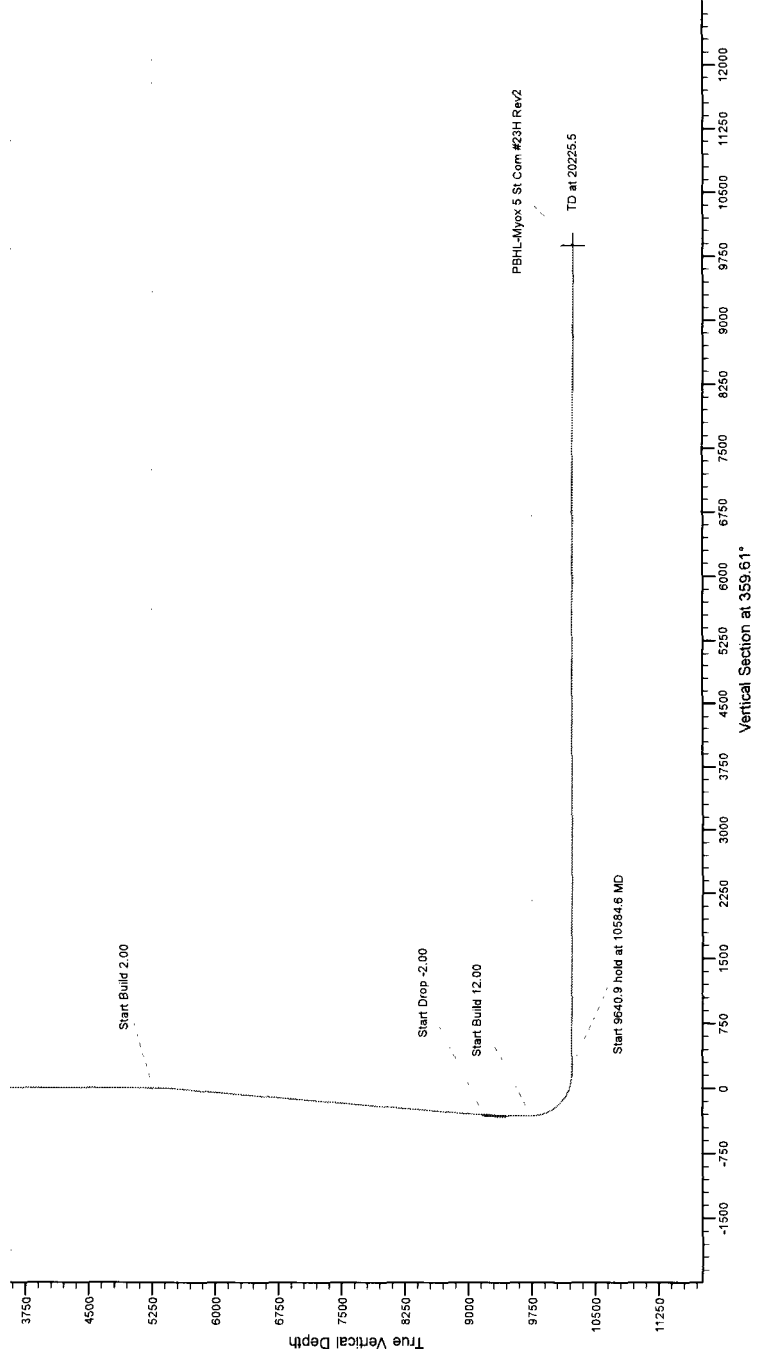
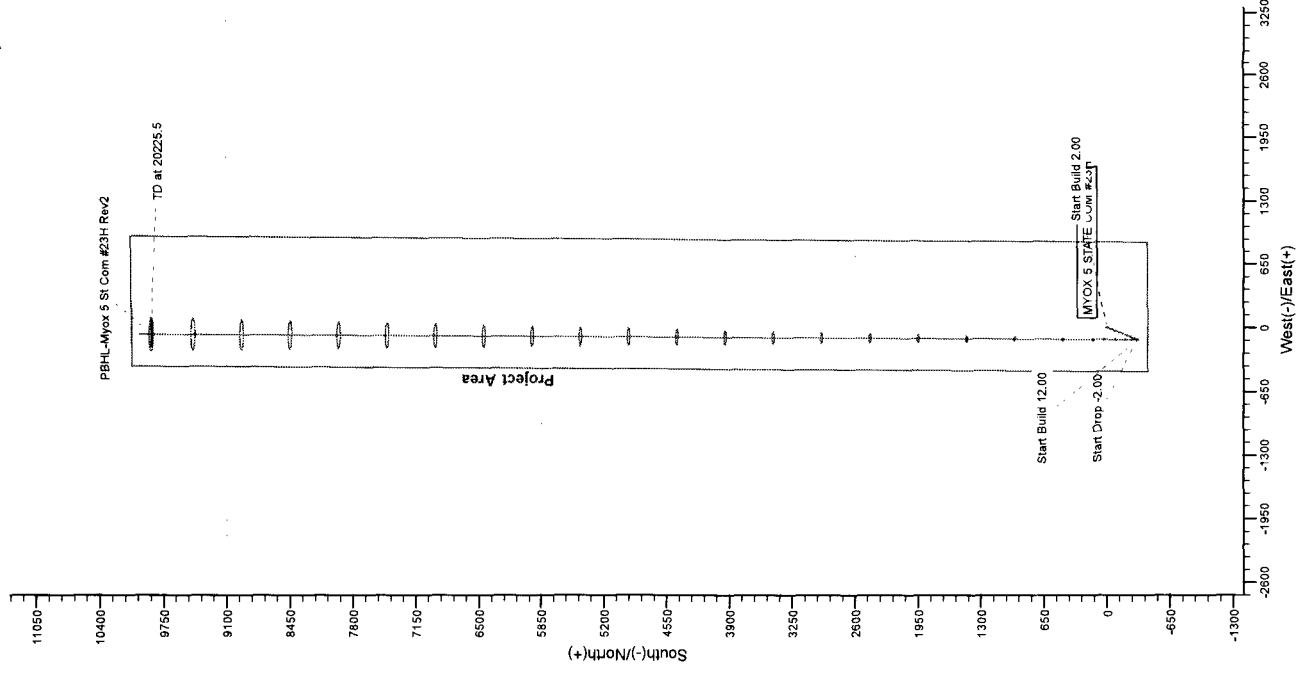
WELL DETAILS: MYOX 5 STATE COM #23H

+N/-S 0.0 +E/-W 0.0 Northing 387597.30 Easting 568606.50 Ground Level: 3045.0 Slot Longitude 104° 6' 42.700 W

Sec	SECTION DETAILS				TVD	+N/-S +E/-W			Azi	Diag			TFace	Vsect	Annotation
	MD	Inc	Azi	Diag		Diag	Diag	Diag		Diag	Diag	Diag			
1	0.0	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.0	
2	5260.0	0.00	0.00	0.00	5260.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.0	
3	5510.0	5.00	201.25	-10.2	5509.7	-10.2	-4.0	2.00	201.25	201.25	201.25	201.25	201.25	-10.1	
4	9200.0	5.00	201.25	-309.9	9185.6	-309.9	-120.5	0.00	0.00	0.00	0.00	0.00	0.00	-309.1	
5	9450.0	0.00	0.00	0.00	9435.3	-320.1	-124.5	2.00	180.00	180.00	180.00	180.00	180.00	-319.2	
6	9759.2	0.00	0.00	0.00	9744.5	-320.1	-124.5	0.00	0.00	0.00	0.00	0.00	0.00	-319.2	
7	10508.5	89.91	0.32	10222.0	156.7	-121.8	12.00	0.00	0.32	0.32	0.32	0.32	0.32	157.5	
8	10584.6	89.91	0.32	10222.1	232.8	-121.4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	233.6	
9	20225.5	89.91	0.32	10238.0	9873.5	-67.4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9873.7	

LEGEND

⊖ PWP1





CONCHO

COG OPERATING LLC

EDDY COUNTY, NM

ATLAS

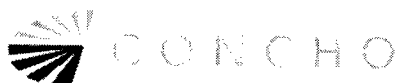
MYOX 5 STATE COM #23H

OWB

Plan: PWP1

Survey Report - Geographic

08 December, 2016



COG Operating LLC

Survey Report - Geographic

Company: COG OPERATING LLC
Project: EDDY COUNTY, NM
Site: ATLAS
Well: MYOX 5 STATE COM #23H
Wellbore: OWB
Design: PWP1

Local Co-ordinate Reference: Well MYOX 5 STATE COM #23H
TVD Reference: RKB=3045+25 @ 3070.0usft (LATSHAW 44)
MD Reference: RKB=3045+25 @ 3070.0usft (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 5 STATE COM #23H					
Well Position	+N/-S	0.0 usft	Northing:	387,597.30 usf	Latitude:	32° 3' 55.537 N
	+E/-W	0.0 usft	Easting:	568,606.50 usf	Longitude:	104° 6' 42.700 W
Position Uncertainty		3.0 usft	Wellhead Elevation:	0.0 usf	Ground Level:	3,045.0 usf

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM2015	11/16/2016	7.27	59.82	47,838.04226017

Design	PWP1				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	359.61	

Survey Tool Program	Date	12/8/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	9,700.0	PWP1 (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
9,700.0	20,225.5	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	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
100.0	0.00	0.00	100.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
200.0	0.00	0.00	200.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
300.0	0.00	0.00	300.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
400.0	0.00	0.00	400.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
500.0	0.00	0.00	500.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
600.0	0.00	0.00	600.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
700.0	0.00	0.00	700.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
800.0	0.00	0.00	800.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
900.0	0.00	0.00	900.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
1,000.0	0.00	0.00	1,000.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W



COG Operating LLC

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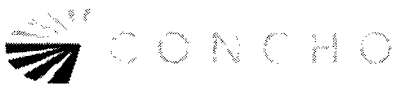
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Survey Calculation Method:
Database:

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RKB=3045+25 @ 3070.0usft (LATSHAW 44)
RKB=3045+25 @ 3070.0usft (LATSHAW 44)
Grid
Minimum Curvature
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
1,100.0	0.00	0.00	1,100.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
1,200.0	0.00	0.00	1,200.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
1,300.0	0.00	0.00	1,300.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
1,400.0	0.00	0.00	1,400.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
1,500.0	0.00	0.00	1,500.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
1,600.0	0.00	0.00	1,600.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
1,700.0	0.00	0.00	1,700.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
1,800.0	0.00	0.00	1,800.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
1,900.0	0.00	0.00	1,900.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
2,000.0	0.00	0.00	2,000.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
2,100.0	0.00	0.00	2,100.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
2,200.0	0.00	0.00	2,200.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
2,300.0	0.00	0.00	2,300.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
2,400.0	0.00	0.00	2,400.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
2,500.0	0.00	0.00	2,500.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
2,600.0	0.00	0.00	2,600.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
2,700.0	0.00	0.00	2,700.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
2,800.0	0.00	0.00	2,800.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
2,900.0	0.00	0.00	2,900.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
3,000.0	0.00	0.00	3,000.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
3,100.0	0.00	0.00	3,100.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
3,200.0	0.00	0.00	3,200.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
3,300.0	0.00	0.00	3,300.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
3,400.0	0.00	0.00	3,400.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
3,500.0	0.00	0.00	3,500.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
3,600.0	0.00	0.00	3,600.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
3,700.0	0.00	0.00	3,700.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
3,800.0	0.00	0.00	3,800.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
3,900.0	0.00	0.00	3,900.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
4,000.0	0.00	0.00	4,000.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
4,100.0	0.00	0.00	4,100.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
4,200.0	0.00	0.00	4,200.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
4,300.0	0.00	0.00	4,300.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
4,400.0	0.00	0.00	4,400.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
4,500.0	0.00	0.00	4,500.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
4,600.0	0.00	0.00	4,600.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
4,700.0	0.00	0.00	4,700.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
4,800.0	0.00	0.00	4,800.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
4,900.0	0.00	0.00	4,900.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
5,000.0	0.00	0.00	5,000.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
5,100.0	0.00	0.00	5,100.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
5,200.0	0.00	0.00	5,200.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
5,260.0	0.00	0.00	5,260.0	0.0	0.0	387,597.30	568,606.50	32° 3' 55.537 N	104° 6' 42.700 W
5,300.0	0.80	201.25	5,300.0	-0.3	-0.1	387,597.04	568,606.40	32° 3' 55.534 N	104° 6' 42.701 W
5,400.0	2.80	201.25	5,399.9	-3.2	-1.2	387,594.11	568,605.26	32° 3' 55.505 N	104° 6' 42.714 W
5,500.0	4.80	201.25	5,499.7	-9.4	-3.6	387,587.93	568,602.86	32° 3' 55.444 N	104° 6' 42.742 W
5,510.0	5.00	201.25	5,509.7	-10.2	-4.0	387,587.14	568,602.55	32° 3' 55.436 N	104° 6' 42.746 W
5,600.0	5.00	201.25	5,599.3	-17.5	-6.8	387,579.83	568,599.71	32° 3' 55.364 N	104° 6' 42.779 W
5,700.0	5.00	201.25	5,699.0	-25.6	-10.0	387,571.70	568,596.55	32° 3' 55.283 N	104° 6' 42.816 W
5,800.0	5.00	201.25	5,798.6	-33.7	-13.1	387,563.58	568,593.39	32° 3' 55.203 N	104° 6' 42.853 W
5,900.0	5.00	201.25	5,898.2	-41.8	-16.3	387,555.46	568,590.23	32° 3' 55.123 N	104° 6' 42.890 W
6,000.0	5.00	201.25	5,997.8	-50.0	-19.4	387,547.34	568,587.07	32° 3' 55.042 N	104° 6' 42.927 W
6,100.0	5.00	201.25	6,097.4	-58.1	-22.6	387,539.21	568,583.91	32° 3' 54.962 N	104° 6' 42.964 W
6,200.0	5.00	201.25	6,197.1	-66.2	-25.7	387,531.09	568,580.76	32° 3' 54.882 N	104° 6' 43.001 W
6,300.0	5.00	201.25	6,296.7	-74.3	-28.9	387,522.97	568,577.60	32° 3' 54.801 N	104° 6' 43.038 W



COG Operating LLC

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Company: COG OPERATING LLC
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Design: PWP1

Local Co-ordinate Reference: Well MYOX 5 STATE COM #23H
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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
6,400.0	5.00	201.25	6,396.3	-82.5	-32.1	387,514.84	568,574.44	32° 3' 54.721 N	104° 6' 43.074 W
6,500.0	5.00	201.25	6,495.9	-90.6	-35.2	387,506.72	568,571.28	32° 3' 54.641 N	104° 6' 43.111 W
6,600.0	5.00	201.25	6,595.5	-98.7	-38.4	387,498.60	568,568.12	32° 3' 54.560 N	104° 6' 43.148 W
6,700.0	5.00	201.25	6,695.2	-106.8	-41.5	387,490.47	568,564.96	32° 3' 54.480 N	104° 6' 43.185 W
6,800.0	5.00	201.25	6,794.8	-114.9	-44.7	387,482.35	568,561.80	32° 3' 54.400 N	104° 6' 43.222 W
6,900.0	5.00	201.25	6,894.4	-123.1	-47.9	387,474.23	568,558.64	32° 3' 54.320 N	104° 6' 43.259 W
7,000.0	5.00	201.25	6,994.0	-131.2	-51.0	387,466.11	568,555.48	32° 3' 54.239 N	104° 6' 43.296 W
7,100.0	5.00	201.25	7,093.6	-139.3	-54.2	387,457.98	568,552.33	32° 3' 54.159 N	104° 6' 43.333 W
7,200.0	5.00	201.25	7,193.3	-147.4	-57.3	387,449.86	568,549.17	32° 3' 54.079 N	104° 6' 43.370 W
7,300.0	5.00	201.25	7,292.9	-155.6	-60.5	387,441.74	568,546.01	32° 3' 53.998 N	104° 6' 43.407 W
7,400.0	5.00	201.25	7,392.5	-163.7	-63.7	387,433.61	568,542.85	32° 3' 53.918 N	104° 6' 43.444 W
7,500.0	5.00	201.25	7,492.1	-171.8	-66.8	387,425.49	568,539.69	32° 3' 53.838 N	104° 6' 43.480 W
7,600.0	5.00	201.25	7,591.7	-179.9	-70.0	387,417.37	568,536.53	32° 3' 53.757 N	104° 6' 43.517 W
7,700.0	5.00	201.25	7,691.3	-188.1	-73.1	387,409.25	568,533.37	32° 3' 53.677 N	104° 6' 43.554 W
7,800.0	5.00	201.25	7,791.0	-196.2	-76.3	387,401.12	568,530.21	32° 3' 53.597 N	104° 6' 43.591 W
7,900.0	5.00	201.25	7,890.6	-204.3	-79.4	387,393.00	568,527.05	32° 3' 53.516 N	104° 6' 43.628 W
8,000.0	5.00	201.25	7,990.2	-212.4	-82.6	387,384.88	568,523.90	32° 3' 53.436 N	104° 6' 43.665 W
8,100.0	5.00	201.25	8,089.8	-220.5	-85.8	387,376.75	568,520.74	32° 3' 53.356 N	104° 6' 43.702 W
8,200.0	5.00	201.25	8,189.4	-228.7	-88.9	387,368.63	568,517.58	32° 3' 53.275 N	104° 6' 43.739 W
8,300.0	5.00	201.25	8,289.1	-236.8	-92.1	387,360.51	568,514.42	32° 3' 53.195 N	104° 6' 43.776 W
8,400.0	5.00	201.25	8,388.7	-244.9	-95.2	387,352.38	568,511.26	32° 3' 53.115 N	104° 6' 43.813 W
8,500.0	5.00	201.25	8,488.3	-253.0	-98.4	387,344.26	568,508.10	32° 3' 53.034 N	104° 6' 43.849 W
8,600.0	5.00	201.25	8,587.9	-261.2	-101.6	387,336.14	568,504.94	32° 3' 52.954 N	104° 6' 43.886 W
8,700.0	5.00	201.25	8,687.5	-269.3	-104.7	387,328.02	568,501.78	32° 3' 52.874 N	104° 6' 43.923 W
8,800.0	5.00	201.25	8,787.2	-277.4	-107.9	387,319.89	568,498.63	32° 3' 52.793 N	104° 6' 43.960 W
8,900.0	5.00	201.25	8,886.8	-285.5	-111.0	387,311.77	568,495.47	32° 3' 52.713 N	104° 6' 43.997 W
9,000.0	5.00	201.25	8,986.4	-293.7	-114.2	387,303.65	568,492.31	32° 3' 52.633 N	104° 6' 44.034 W
9,100.0	5.00	201.25	9,086.0	-301.8	-117.4	387,295.52	568,489.15	32° 3' 52.552 N	104° 6' 44.071 W
9,200.0	5.00	201.25	9,185.6	-309.9	-120.5	387,287.40	568,485.99	32° 3' 52.472 N	104° 6' 44.108 W
9,300.0	3.00	201.25	9,285.4	-316.4	-123.0	387,280.90	568,483.46	32° 3' 52.408 N	104° 6' 44.137 W
9,400.0	1.00	201.25	9,385.3	-319.7	-124.3	387,277.65	568,482.20	32° 3' 52.376 N	104° 6' 44.152 W
9,450.0	0.00	0.00	9,435.3	-320.1	-124.5	387,277.24	568,482.04	32° 3' 52.372 N	104° 6' 44.154 W
9,500.0	0.00	0.00	9,485.3	-320.1	-124.5	387,277.24	568,482.04	32° 3' 52.372 N	104° 6' 44.154 W
9,600.0	0.00	0.00	9,585.3	-320.1	-124.5	387,277.24	568,482.04	32° 3' 52.372 N	104° 6' 44.154 W
9,700.0	0.00	0.00	9,685.3	-320.1	-124.5	387,277.24	568,482.04	32° 3' 52.372 N	104° 6' 44.154 W
9,759.2	0.00	0.00	9,744.5	-320.1	-124.5	387,277.24	568,482.04	32° 3' 52.372 N	104° 6' 44.154 W
9,800.0	4.90	0.32	9,785.3	-318.3	-124.5	387,278.98	568,482.05	32° 3' 52.389 N	104° 6' 44.154 W
9,900.0	16.90	0.32	9,883.3	-299.4	-124.3	387,297.86	568,482.15	32° 3' 52.576 N	104° 6' 44.152 W
10,000.0	28.90	0.32	9,975.2	-260.6	-124.1	387,336.69	568,482.37	32° 3' 52.960 N	104° 6' 44.149 W
10,100.0	40.90	0.32	10,057.1	-203.5	-123.8	387,393.80	568,482.69	32° 3' 53.525 N	104° 6' 44.144 W
10,200.0	52.89	0.32	10,125.3	-130.6	-123.4	387,466.67	568,483.10	32° 3' 54.246 N	104° 6' 44.137 W
10,300.0	64.89	0.32	10,176.9	-45.2	-122.9	387,552.14	568,483.57	32° 3' 55.092 N	104° 6' 44.130 W
10,400.0	76.89	0.32	10,209.6	49.2	-122.4	387,646.45	568,484.10	32° 3' 56.025 N	104° 6' 44.121 W
10,500.0	88.89	0.32	10,221.9	148.2	-121.8	387,745.50	568,484.65	32° 3' 57.006 N	104° 6' 44.112 W
10,508.5	89.91	0.32	10,222.0	156.7	-121.8	387,753.98	568,484.70	32° 3' 57.090 N	104° 6' 44.112 W
10,584.6	89.91	0.32	10,222.1	232.8	-121.4	387,830.09	568,485.13	32° 3' 57.843 N	104° 6' 44.105 W
10,600.0	89.91	0.32	10,222.1	248.2	-121.3	387,845.50	568,485.21	32° 3' 57.995 N	104° 6' 44.104 W
10,700.0	89.91	0.32	10,222.3	348.2	-120.7	387,945.50	568,485.77	32° 3' 58.985 N	104° 6' 44.095 W
10,800.0	89.91	0.32	10,222.5	448.2	-120.2	388,045.50	568,486.33	32° 3' 59.975 N	104° 6' 44.086 W
10,900.0	89.91	0.32	10,222.6	548.2	-119.6	388,145.49	568,486.89	32° 4' 0.964 N	104° 6' 44.077 W
11,000.0	89.91	0.32	10,222.8	648.2	-119.1	388,245.49	568,487.45	32° 4' 1.954 N	104° 6' 44.068 W
11,100.0	89.91	0.32	10,222.9	748.2	-118.5	388,345.49	568,488.01	32° 4' 2.943 N	104° 6' 44.059 W
11,200.0	89.91	0.32	10,223.1	848.2	-117.9	388,445.49	568,488.56	32° 4' 3.933 N	104° 6' 44.050 W
11,300.0	89.91	0.32	10,223.2	948.2	-117.4	388,545.49	568,489.12	32° 4' 4.923 N	104° 6' 44.041 W
11,400.0	89.91	0.32	10,223.4	1,048.2	-116.8	388,645.49	568,489.68	32° 4' 5.912 N	104° 6' 44.033 W



COG Operating LLC

Survey Report - Geographic

Company: COG OPERATING LLC
Project: EDDY COUNTY, NM
Site: ATLAS
Well: MYOX 5 STATE COM #23H
Wellbore: OWB
Design: PWP1

Local Co-ordinate Reference: Well MYOX 5 STATE COM #23H
TVD Reference: RKB=3045+25 @ 3070.0usft (LATSHAW 44)
MD Reference: RKB=3045+25 @ 3070.0usft (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
11,500.0	89.91	0.32	10,223.6	1,148.2	-116.3	388,745.48	568,490.24	32° 4' 6.902 N	104° 6' 44.024 W
11,600.0	89.91	0.32	10,223.7	1,248.2	-115.7	388,845.48	568,490.80	32° 4' 7.892 N	104° 6' 44.015 W
11,700.0	89.91	0.32	10,223.9	1,348.2	-115.1	388,945.48	568,491.36	32° 4' 8.881 N	104° 6' 44.006 W
11,800.0	89.91	0.32	10,224.0	1,448.2	-114.6	389,045.48	568,491.92	32° 4' 9.871 N	104° 6' 43.997 W
11,900.0	89.91	0.32	10,224.2	1,548.2	-114.0	389,145.48	568,492.47	32° 4' 10.860 N	104° 6' 43.988 W
12,000.0	89.91	0.32	10,224.3	1,648.2	-113.5	389,245.48	568,493.03	32° 4' 11.850 N	104° 6' 43.979 W
12,100.0	89.91	0.32	10,224.5	1,748.2	-112.9	389,345.47	568,493.59	32° 4' 12.840 N	104° 6' 43.970 W
12,200.0	89.91	0.32	10,224.7	1,848.2	-112.4	389,445.47	568,494.15	32° 4' 13.829 N	104° 6' 43.962 W
12,300.0	89.91	0.32	10,224.8	1,948.2	-111.8	389,545.47	568,494.71	32° 4' 14.819 N	104° 6' 43.953 W
12,400.0	89.91	0.32	10,225.0	2,048.2	-111.2	389,645.47	568,495.27	32° 4' 15.809 N	104° 6' 43.944 W
12,500.0	89.91	0.32	10,225.1	2,148.2	-110.7	389,745.47	568,495.82	32° 4' 16.798 N	104° 6' 43.935 W
12,600.0	89.91	0.32	10,225.3	2,248.2	-110.1	389,845.47	568,496.38	32° 4' 17.788 N	104° 6' 43.926 W
12,700.0	89.91	0.32	10,225.4	2,348.2	-109.6	389,945.46	568,496.94	32° 4' 18.777 N	104° 6' 43.917 W
12,800.0	89.91	0.32	10,225.6	2,448.2	-109.0	390,045.46	568,497.50	32° 4' 19.767 N	104° 6' 43.908 W
12,900.0	89.91	0.32	10,225.8	2,548.2	-108.4	390,145.46	568,498.06	32° 4' 20.757 N	104° 6' 43.899 W
13,000.0	89.91	0.32	10,225.9	2,648.2	-107.9	390,245.46	568,498.62	32° 4' 21.746 N	104° 6' 43.891 W
13,100.0	89.91	0.32	10,226.1	2,748.2	-107.3	390,345.46	568,499.18	32° 4' 22.736 N	104° 6' 43.882 W
13,200.0	89.91	0.32	10,226.2	2,848.2	-106.8	390,445.46	568,499.73	32° 4' 23.726 N	104° 6' 43.873 W
13,300.0	89.91	0.32	10,226.4	2,948.2	-106.2	390,545.45	568,500.29	32° 4' 24.715 N	104° 6' 43.864 W
13,400.0	89.91	0.32	10,226.5	3,048.2	-105.7	390,645.45	568,500.85	32° 4' 25.705 N	104° 6' 43.855 W
13,500.0	89.91	0.32	10,226.7	3,148.2	-105.1	390,745.45	568,501.41	32° 4' 26.694 N	104° 6' 43.846 W
13,600.0	89.91	0.32	10,226.9	3,248.2	-104.5	390,845.45	568,501.97	32° 4' 27.684 N	104° 6' 43.837 W
13,700.0	89.91	0.32	10,227.0	3,348.1	-104.0	390,945.45	568,502.53	32° 4' 28.674 N	104° 6' 43.828 W
13,800.0	89.91	0.32	10,227.2	3,448.1	-103.4	391,045.45	568,503.09	32° 4' 29.663 N	104° 6' 43.820 W
13,900.0	89.91	0.32	10,227.3	3,548.1	-102.9	391,145.44	568,503.64	32° 4' 30.653 N	104° 6' 43.811 W
14,000.0	89.91	0.32	10,227.5	3,648.1	-102.3	391,245.44	568,504.20	32° 4' 31.643 N	104° 6' 43.802 W
14,100.0	89.91	0.32	10,227.6	3,748.1	-101.7	391,345.44	568,504.76	32° 4' 32.632 N	104° 6' 43.793 W
14,200.0	89.91	0.32	10,227.8	3,848.1	-101.2	391,445.44	568,505.32	32° 4' 33.622 N	104° 6' 43.784 W
14,300.0	89.91	0.32	10,228.0	3,948.1	-100.6	391,545.44	568,505.88	32° 4' 34.612 N	104° 6' 43.775 W
14,400.0	89.91	0.32	10,228.1	4,048.1	-100.1	391,645.44	568,506.44	32° 4' 35.601 N	104° 6' 43.766 W
14,500.0	89.91	0.32	10,228.3	4,148.1	-99.5	391,745.43	568,506.99	32° 4' 36.591 N	104° 6' 43.757 W
14,600.0	89.91	0.32	10,228.4	4,248.1	-98.9	391,845.43	568,507.55	32° 4' 37.580 N	104° 6' 43.749 W
14,700.0	89.91	0.32	10,228.6	4,348.1	-98.4	391,945.43	568,508.11	32° 4' 38.570 N	104° 6' 43.740 W
14,800.0	89.91	0.32	10,228.7	4,448.1	-97.8	392,045.43	568,508.67	32° 4' 39.560 N	104° 6' 43.731 W
14,900.0	89.91	0.32	10,228.9	4,548.1	-97.3	392,145.43	568,509.23	32° 4' 40.549 N	104° 6' 43.722 W
15,000.0	89.91	0.32	10,229.1	4,648.1	-96.7	392,245.43	568,509.79	32° 4' 41.539 N	104° 6' 43.713 W
15,100.0	89.91	0.32	10,229.2	4,748.1	-96.2	392,345.42	568,510.35	32° 4' 42.529 N	104° 6' 43.704 W
15,200.0	89.91	0.32	10,229.4	4,848.1	-95.6	392,445.42	568,510.90	32° 4' 43.518 N	104° 6' 43.695 W
15,300.0	89.91	0.32	10,229.5	4,948.1	-95.0	392,545.42	568,511.46	32° 4' 44.508 N	104° 6' 43.686 W
15,400.0	89.91	0.32	10,229.7	5,048.1	-94.5	392,645.42	568,512.02	32° 4' 45.497 N	104° 6' 43.678 W
15,500.0	89.91	0.32	10,229.8	5,148.1	-93.9	392,745.42	568,512.58	32° 4' 46.487 N	104° 6' 43.669 W
15,600.0	89.91	0.32	10,230.0	5,248.1	-93.4	392,845.42	568,513.14	32° 4' 47.477 N	104° 6' 43.660 W
15,700.0	89.91	0.32	10,230.2	5,348.1	-92.8	392,945.41	568,513.70	32° 4' 48.466 N	104° 6' 43.651 W
15,800.0	89.91	0.32	10,230.3	5,448.1	-92.2	393,045.41	568,514.26	32° 4' 49.456 N	104° 6' 43.642 W
15,900.0	89.91	0.32	10,230.5	5,548.1	-91.7	393,145.41	568,514.81	32° 4' 50.446 N	104° 6' 43.633 W
16,000.0	89.91	0.32	10,230.6	5,648.1	-91.1	393,245.41	568,515.37	32° 4' 51.435 N	104° 6' 43.624 W
16,100.0	89.91	0.32	10,230.8	5,748.1	-90.6	393,345.41	568,515.93	32° 4' 52.425 N	104° 6' 43.615 W
16,200.0	89.91	0.32	10,230.9	5,848.1	-90.0	393,445.41	568,516.49	32° 4' 53.414 N	104° 6' 43.607 W
16,300.0	89.91	0.32	10,231.1	5,948.1	-89.5	393,545.40	568,517.05	32° 4' 54.404 N	104° 6' 43.598 W
16,400.0	89.91	0.32	10,231.3	6,048.1	-88.9	393,645.40	568,517.61	32° 4' 55.394 N	104° 6' 43.589 W
16,500.0	89.91	0.32	10,231.4	6,148.1	-88.3	393,745.40	568,518.16	32° 4' 56.383 N	104° 6' 43.580 W
16,600.0	89.91	0.32	10,231.6	6,248.1	-87.8	393,845.40	568,518.72	32° 4' 57.373 N	104° 6' 43.571 W
16,700.0	89.91	0.32	10,231.7	6,348.1	-87.2	393,945.40	568,519.28	32° 4' 58.363 N	104° 6' 43.562 W
16,800.0	89.91	0.32	10,231.9	6,448.1	-86.7	394,045.40	568,519.84	32° 4' 59.352 N	104° 6' 43.553 W
16,900.0	89.91	0.32	10,232.0	6,548.1	-86.1	394,145.39	568,520.40	32° 5' 0.342 N	104° 6' 43.544 W



COG Operating LLC

Survey Report - Geographic

Company: COG OPERATING LLC
Project: EDDY COUNTY, NM
Site: ATLAS
Well: MYOX 5 STATE COM #23H
Wellbore: OWB
Design: PWP1

Local Co-ordinate Reference: Well MYOX 5 STATE COM #23H
TVD Reference: RKB=3045+25 @ 3070.0usft (LATSHAW 44)
MD Reference: RKB=3045+25 @ 3070.0usft (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
17,000.0	89.91	0.32	10,232.2	6,648.1	-85.5	394,245.39	568,520.96	32° 5' 1.331 N	104° 6' 43.536 W
17,100.0	89.91	0.32	10,232.4	6,748.1	-85.0	394,345.39	568,521.52	32° 5' 2.321 N	104° 6' 43.527 W
17,200.0	89.91	0.32	10,232.5	6,848.1	-84.4	394,445.39	568,522.07	32° 5' 3.311 N	104° 6' 43.518 W
17,300.0	89.91	0.32	10,232.7	6,948.1	-83.9	394,545.39	568,522.63	32° 5' 4.300 N	104° 6' 43.509 W
17,400.0	89.91	0.32	10,232.8	7,048.1	-83.3	394,645.39	568,523.19	32° 5' 5.290 N	104° 6' 43.500 W
17,500.0	89.91	0.32	10,233.0	7,148.1	-82.8	394,745.38	568,523.75	32° 5' 6.280 N	104° 6' 43.491 W
17,600.0	89.91	0.32	10,233.1	7,248.1	-82.2	394,845.38	568,524.31	32° 5' 7.269 N	104° 6' 43.482 W
17,700.0	89.91	0.32	10,233.3	7,348.1	-81.6	394,945.38	568,524.87	32° 5' 8.259 N	104° 6' 43.473 W
17,800.0	89.91	0.32	10,233.5	7,448.1	-81.1	395,045.38	568,525.43	32° 5' 9.248 N	104° 6' 43.465 W
17,900.0	89.91	0.32	10,233.6	7,548.1	-80.5	395,145.38	568,525.98	32° 5' 10.238 N	104° 6' 43.456 W
18,000.0	89.91	0.32	10,233.8	7,648.1	-80.0	395,245.38	568,526.54	32° 5' 11.228 N	104° 6' 43.447 W
18,100.0	89.91	0.32	10,233.9	7,748.1	-79.4	395,345.37	568,527.10	32° 5' 12.217 N	104° 6' 43.438 W
18,200.0	89.91	0.32	10,234.1	7,848.1	-78.8	395,445.37	568,527.66	32° 5' 13.207 N	104° 6' 43.429 W
18,300.0	89.91	0.32	10,234.2	7,948.1	-78.3	395,545.37	568,528.22	32° 5' 14.197 N	104° 6' 43.420 W
18,400.0	89.91	0.32	10,234.4	8,048.1	-77.7	395,645.37	568,528.78	32° 5' 15.186 N	104° 6' 43.411 W
18,500.0	89.91	0.32	10,234.6	8,148.1	-77.2	395,745.37	568,529.33	32° 5' 16.176 N	104° 6' 43.402 W
18,600.0	89.91	0.32	10,234.7	8,248.1	-76.6	395,845.37	568,529.89	32° 5' 17.165 N	104° 6' 43.394 W
18,700.0	89.91	0.32	10,234.9	8,348.1	-76.1	395,945.36	568,530.45	32° 5' 18.155 N	104° 6' 43.385 W
18,800.0	89.91	0.32	10,235.0	8,448.1	-75.5	396,045.36	568,531.01	32° 5' 19.145 N	104° 6' 43.376 W
18,900.0	89.91	0.32	10,235.2	8,548.1	-74.9	396,145.36	568,531.57	32° 5' 20.134 N	104° 6' 43.367 W
19,000.0	89.91	0.32	10,235.3	8,648.1	-74.4	396,245.36	568,532.13	32° 5' 21.124 N	104° 6' 43.358 W
19,100.0	89.91	0.32	10,235.5	8,748.1	-73.8	396,345.36	568,532.69	32° 5' 22.114 N	104° 6' 43.349 W
19,200.0	89.91	0.32	10,235.7	8,848.1	-73.3	396,445.36	568,533.24	32° 5' 23.103 N	104° 6' 43.340 W
19,300.0	89.91	0.32	10,235.8	8,948.1	-72.7	396,545.35	568,533.80	32° 5' 24.093 N	104° 6' 43.331 W
19,400.0	89.91	0.32	10,236.0	9,048.1	-72.1	396,645.35	568,534.36	32° 5' 25.082 N	104° 6' 43.323 W
19,500.0	89.91	0.32	10,236.1	9,148.1	-71.6	396,745.35	568,534.92	32° 5' 26.072 N	104° 6' 43.314 W
19,600.0	89.91	0.32	10,236.3	9,248.0	-71.0	396,845.35	568,535.48	32° 5' 27.062 N	104° 6' 43.305 W
19,700.0	89.91	0.32	10,236.4	9,348.0	-70.5	396,945.35	568,536.04	32° 5' 28.051 N	104° 6' 43.296 W
19,800.0	89.91	0.32	10,236.6	9,448.0	-69.9	397,045.35	568,536.60	32° 5' 29.041 N	104° 6' 43.287 W
19,900.0	89.91	0.32	10,236.8	9,548.0	-69.3	397,145.34	568,537.15	32° 5' 30.031 N	104° 6' 43.278 W
20,000.0	89.91	0.32	10,236.9	9,648.0	-68.8	397,245.34	568,537.71	32° 5' 31.020 N	104° 6' 43.269 W
20,100.0	89.91	0.32	10,237.1	9,748.0	-68.2	397,345.34	568,538.27	32° 5' 32.010 N	104° 6' 43.260 W
20,200.0	89.91	0.32	10,237.2	9,848.0	-67.7	397,445.34	568,538.83	32° 5' 32.999 N	104° 6' 43.252 W
20,225.5	89.91	0.32	10,238.0	9,873.5	-67.4	397,470.80	568,539.10	32° 5' 33.251 N	104° 6' 43.248 W

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
0.00	0.00	10,238.0	9,873.5	-67.4	397,470.80	568,539.10	32° 5' 33.251 N	104° 6' 43.248 W

- plan hits target center
- Point

Checked By: _____ Approved By: _____ Date: _____