



CONCHO

NM OIL CONSERVATION
ARTESIA DISTRICT

JAN 31 2019

RECEIVED

COG Operating L L C

Eddy County, NM (NAD 27 NME)

Sec 05,T-26-S,R28-E

SRO 5 State Com 507H

Wellbore #1

30-015-45534

Plan: Plan #1

Standard Survey Report

29 January, 2019



INTEGRITY
DIRECTIONAL

Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Site: Sec 05,T-26-S,R28-E
Well: SRO 5 State Com 507H
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well SRO 5 State Com 507H
TVD Reference: KB=30' @ 3039.20usft
MD Reference: KB=30' @ 3039.20usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1

Project	Eddy County, NM (NAD 27 NME)		
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 05,T-26-S,R28-E				
Site Position:		Northing:	392,156.20 usft	Latitude:	32.07794
From:	Map	Easting:	571,275.90 usft	Longitude:	-104.10322
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.12 °

Well	SRO 5 State Com 507H				
Well Position	+N/-S	0.00 usft	Northing:	392,155.20 usft	Latitude: 32.07795
	+E/-W	0.00 usft	Easting:	570,681.00 usft	Longitude: -104.10514
Position Uncertainty	0.00 usft		Wellhead Elevation:	0.00 usft	Ground Level: 3,009.20 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	12/31/2018	7.15	59.77	47,873

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	184.91	

Survey Tool Program	Date 1/29/2019				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	18,341.43	Plan #1 (Wellbore #1)	MWD	MWD - Standard	

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00

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1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00

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5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
5,700.00	2.00	305.17	5,699.98	1.01	-1.43	-0.88	2.00	2.00	0.00
5,800.00	4.00	305.17	5,799.84	4.02	-5.70	-3.52	2.00	2.00	0.00
5,900.00	6.00	305.17	5,899.45	9.04	-12.83	-7.91	2.00	2.00	0.00
6,000.00	8.00	305.17	5,998.70	16.06	-22.79	-14.05	2.00	2.00	0.00
6,083.58	9.67	305.17	6,081.28	23.45	-33.29	-20.52	2.00	2.00	0.00
Start 1359.54 hold at 6083.58 MD									
6,100.00	9.67	305.17	6,097.47	25.04	-35.54	-21.91	0.00	0.00	0.00
6,200.00	9.67	305.17	6,196.05	34.72	-49.27	-30.37	0.00	0.00	0.00
6,300.00	9.67	305.17	6,294.63	44.39	-63.01	-38.84	0.00	0.00	0.00
6,400.00	9.67	305.17	6,393.21	54.07	-76.74	-47.30	0.00	0.00	0.00
6,500.00	9.67	305.17	6,491.79	63.74	-90.48	-55.77	0.00	0.00	0.00
6,600.00	9.67	305.17	6,590.37	73.42	-104.21	-64.23	0.00	0.00	0.00
6,700.00	9.67	305.17	6,688.95	83.10	-117.94	-72.70	0.00	0.00	0.00
6,800.00	9.67	305.17	6,787.52	92.77	-131.68	-81.16	0.00	0.00	0.00
6,900.00	9.67	305.17	6,886.10	102.45	-145.41	-89.63	0.00	0.00	0.00
7,000.00	9.67	305.17	6,984.68	112.12	-159.14	-98.09	0.00	0.00	0.00
7,100.00	9.67	305.17	7,083.26	121.80	-172.88	-106.56	0.00	0.00	0.00
7,200.00	9.67	305.17	7,181.84	131.48	-186.61	-115.02	0.00	0.00	0.00
7,300.00	9.67	305.17	7,280.42	141.15	-200.34	-123.49	0.00	0.00	0.00
7,400.00	9.67	305.17	7,379.00	150.83	-214.08	-131.95	0.00	0.00	0.00
7,443.12	9.67	305.17	7,421.50	155.00	-220.00	-135.60	0.00	0.00	0.00
Start DLS 10.00 TFO -92.78									
7,500.00	10.97	273.81	7,477.51	158.11	-229.31	-137.91	10.00	2.28	-55.13
7,600.00	17.96	244.02	7,574.40	151.98	-252.72	-129.79	10.00	7.00	-29.78
7,700.00	26.89	231.96	7,666.79	131.24	-284.48	-106.41	10.00	8.93	-12.06
7,800.00	36.35	225.72	7,751.88	96.52	-323.60	-68.47	10.00	9.46	-6.24
7,900.00	46.02	221.81	7,827.06	48.90	-368.92	-17.14	10.00	9.67	-3.92
8,000.00	55.78	219.00	7,890.06	-10.20	-419.05	46.03	10.00	9.76	-2.81
8,100.00	65.59	216.78	7,938.97	-78.97	-472.46	119.12	10.00	9.81	-2.22
8,200.00	75.43	214.89	7,972.30	-155.33	-527.54	199.91	10.00	9.84	-1.89
8,300.00	85.28	213.15	7,989.03	-236.95	-582.61	285.95	10.00	9.85	-1.73
8,347.85	90.00	212.35	7,991.00	-277.15	-608.47	328.21	10.00	9.86	-1.68
Start DLS 4.00 TFO -90.16									
8,400.00	89.99	210.26	7,991.00	-321.70	-635.56	374.92	4.00	-0.01	-4.00
8,500.00	89.98	206.26	7,991.02	-409.76	-682.91	466.71	4.00	-0.01	-4.00
8,600.00	89.97	202.26	7,991.06	-500.91	-723.99	561.04	4.00	-0.01	-4.00
8,700.00	89.96	198.26	7,991.11	-594.70	-758.62	657.45	4.00	-0.01	-4.00
8,800.00	89.95	194.26	7,991.19	-690.68	-786.62	755.47	4.00	-0.01	-4.00
8,900.00	89.94	190.26	7,991.29	-788.38	-807.86	854.63	4.00	-0.01	-4.00
9,000.00	89.93	186.26	7,991.40	-887.32	-822.23	954.44	4.00	-0.01	-4.00

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9,100.00	89.92	182.26	7,991.53	-987.02	-829.66	1,054.41	4.00	-0.01	-4.00
9,149.13	89.92	180.30	7,991.60	-1,036.14	-830.76	1,103.44	4.00	-0.01	-4.00
Start 9192.30 hold at 9149.13 MD									
9,200.00	89.92	180.30	7,991.67	-1,087.01	-831.03	1,154.15	0.00	0.00	0.00
9,300.00	89.92	180.30	7,991.82	-1,187.01	-831.55	1,253.82	0.00	0.00	0.00
9,400.00	89.92	180.30	7,991.96	-1,287.01	-832.07	1,353.50	0.00	0.00	0.00
9,500.00	89.92	180.30	7,992.11	-1,387.00	-832.59	1,453.18	0.00	0.00	0.00
9,600.00	89.92	180.30	7,992.25	-1,487.00	-833.11	1,552.85	0.00	0.00	0.00
9,700.00	89.92	180.30	7,992.40	-1,587.00	-833.63	1,652.53	0.00	0.00	0.00
9,800.00	89.92	180.30	7,992.55	-1,687.00	-834.16	1,752.20	0.00	0.00	0.00
9,900.00	89.92	180.30	7,992.69	-1,787.00	-834.68	1,851.88	0.00	0.00	0.00
10,000.00	89.92	180.30	7,992.84	-1,887.00	-835.20	1,951.56	0.00	0.00	0.00
10,100.00	89.92	180.30	7,992.98	-1,986.99	-835.72	2,051.23	0.00	0.00	0.00
10,200.00	89.92	180.30	7,993.13	-2,086.99	-836.24	2,150.91	0.00	0.00	0.00
10,300.00	89.92	180.30	7,993.27	-2,186.99	-836.76	2,250.58	0.00	0.00	0.00
10,400.00	89.92	180.30	7,993.42	-2,286.99	-837.28	2,350.26	0.00	0.00	0.00
10,500.00	89.92	180.30	7,993.57	-2,386.99	-837.81	2,449.94	0.00	0.00	0.00
10,600.00	89.92	180.30	7,993.71	-2,486.99	-838.33	2,549.61	0.00	0.00	0.00
10,700.00	89.92	180.30	7,993.86	-2,586.99	-838.85	2,649.29	0.00	0.00	0.00
10,800.00	89.92	180.30	7,994.00	-2,686.98	-839.37	2,748.97	0.00	0.00	0.00
10,900.00	89.92	180.30	7,994.15	-2,786.98	-839.89	2,848.64	0.00	0.00	0.00
11,000.00	89.92	180.30	7,994.30	-2,886.98	-840.41	2,948.32	0.00	0.00	0.00
11,100.00	89.92	180.30	7,994.44	-2,986.98	-840.94	3,047.99	0.00	0.00	0.00
11,200.00	89.92	180.30	7,994.59	-3,086.98	-841.46	3,147.67	0.00	0.00	0.00
11,300.00	89.92	180.30	7,994.73	-3,186.98	-841.98	3,247.35	0.00	0.00	0.00
11,400.00	89.92	180.30	7,994.88	-3,286.98	-842.50	3,347.02	0.00	0.00	0.00
11,500.00	89.92	180.30	7,995.02	-3,386.97	-843.02	3,446.70	0.00	0.00	0.00
11,600.00	89.92	180.30	7,995.17	-3,486.97	-843.54	3,546.38	0.00	0.00	0.00
11,700.00	89.92	180.30	7,995.32	-3,586.97	-844.06	3,646.05	0.00	0.00	0.00
11,800.00	89.92	180.30	7,995.46	-3,686.97	-844.59	3,745.73	0.00	0.00	0.00
11,900.00	89.92	180.30	7,995.61	-3,786.97	-845.11	3,845.40	0.00	0.00	0.00
12,000.00	89.92	180.30	7,995.75	-3,886.97	-845.63	3,945.08	0.00	0.00	0.00
12,100.00	89.92	180.30	7,995.90	-3,986.97	-846.15	4,044.76	0.00	0.00	0.00
12,200.00	89.92	180.30	7,996.05	-4,086.96	-846.67	4,144.43	0.00	0.00	0.00
12,300.00	89.92	180.30	7,996.19	-4,186.96	-847.19	4,244.11	0.00	0.00	0.00
12,400.00	89.92	180.30	7,996.34	-4,286.96	-847.71	4,343.79	0.00	0.00	0.00
12,500.00	89.92	180.30	7,996.48	-4,386.96	-848.24	4,443.46	0.00	0.00	0.00
12,600.00	89.92	180.30	7,996.63	-4,486.96	-848.76	4,543.14	0.00	0.00	0.00
12,700.00	89.92	180.30	7,996.77	-4,586.96	-849.28	4,642.81	0.00	0.00	0.00
12,800.00	89.92	180.30	7,996.92	-4,686.96	-849.80	4,742.49	0.00	0.00	0.00
12,900.00	89.92	180.30	7,997.07	-4,786.95	-850.32	4,842.17	0.00	0.00	0.00
13,000.00	89.92	180.30	7,997.21	-4,886.95	-850.84	4,941.84	0.00	0.00	0.00
13,100.00	89.92	180.30	7,997.36	-4,986.95	-851.37	5,041.52	0.00	0.00	0.00

Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Site: Sec 05,T-26-S,R28-E
Well: SRO 5 State Com 507H
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well SRO 5 State Com 507H
TVD Reference: KB=30' @ 3039.20usft
MD Reference: KB=30' @ 3039.20usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1

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)
13,200.00	89.92	180.30	7,997.50	-5,086.95	-851.89	5,141.20	0.00	0.00	0.00
13,300.00	89.92	180.30	7,997.65	-5,186.95	-852.41	5,240.87	0.00	0.00	0.00
13,400.00	89.92	180.30	7,997.79	-5,286.95	-852.93	5,340.55	0.00	0.00	0.00
13,500.00	89.92	180.30	7,997.94	-5,386.94	-853.45	5,440.22	0.00	0.00	0.00
13,600.00	89.92	180.30	7,998.09	-5,486.94	-853.97	5,539.90	0.00	0.00	0.00
13,700.00	89.92	180.30	7,998.23	-5,586.94	-854.49	5,639.58	0.00	0.00	0.00
13,800.00	89.92	180.30	7,998.38	-5,686.94	-855.02	5,739.25	0.00	0.00	0.00
13,900.00	89.92	180.30	7,998.52	-5,786.94	-855.54	5,838.93	0.00	0.00	0.00
14,000.00	89.92	180.30	7,998.67	-5,886.94	-856.06	5,938.61	0.00	0.00	0.00
14,100.00	89.92	180.30	7,998.82	-5,986.94	-856.58	6,038.28	0.00	0.00	0.00
14,200.00	89.92	180.30	7,998.96	-6,086.93	-857.10	6,137.96	0.00	0.00	0.00
14,300.00	89.92	180.30	7,999.11	-6,186.93	-857.62	6,237.63	0.00	0.00	0.00
14,400.00	89.92	180.30	7,999.25	-6,286.93	-858.15	6,337.31	0.00	0.00	0.00
14,500.00	89.92	180.30	7,999.40	-6,386.93	-858.67	6,436.99	0.00	0.00	0.00
14,600.00	89.92	180.30	7,999.54	-6,486.93	-859.19	6,536.66	0.00	0.00	0.00
14,700.00	89.92	180.30	7,999.69	-6,586.93	-859.71	6,636.34	0.00	0.00	0.00
14,800.00	89.92	180.30	7,999.84	-6,686.93	-860.23	6,736.01	0.00	0.00	0.00
14,900.00	89.92	180.30	7,999.98	-6,786.92	-860.75	6,835.69	0.00	0.00	0.00
15,000.00	89.92	180.30	8,000.13	-6,886.92	-861.27	6,935.37	0.00	0.00	0.00
15,100.00	89.92	180.30	8,000.27	-6,986.92	-861.80	7,035.04	0.00	0.00	0.00
15,200.00	89.92	180.30	8,000.42	-7,086.92	-862.32	7,134.72	0.00	0.00	0.00
15,300.00	89.92	180.30	8,000.57	-7,186.92	-862.84	7,234.40	0.00	0.00	0.00
15,400.00	89.92	180.30	8,000.71	-7,286.92	-863.36	7,334.07	0.00	0.00	0.00
15,500.00	89.92	180.30	8,000.86	-7,386.92	-863.88	7,433.75	0.00	0.00	0.00
15,600.00	89.92	180.30	8,001.00	-7,486.91	-864.40	7,533.42	0.00	0.00	0.00
15,700.00	89.92	180.30	8,001.15	-7,586.91	-864.92	7,633.10	0.00	0.00	0.00
15,800.00	89.92	180.30	8,001.29	-7,686.91	-865.45	7,732.78	0.00	0.00	0.00
15,900.00	89.92	180.30	8,001.44	-7,786.91	-865.97	7,832.45	0.00	0.00	0.00
16,000.00	89.92	180.30	8,001.59	-7,886.91	-866.49	7,932.13	0.00	0.00	0.00
16,100.00	89.92	180.30	8,001.73	-7,986.91	-867.01	8,031.81	0.00	0.00	0.00
16,200.00	89.92	180.30	8,001.88	-8,086.91	-867.53	8,131.48	0.00	0.00	0.00
16,300.00	89.92	180.30	8,002.02	-8,186.90	-868.05	8,231.16	0.00	0.00	0.00
16,400.00	89.92	180.30	8,002.17	-8,286.90	-868.58	8,330.83	0.00	0.00	0.00
16,500.00	89.92	180.30	8,002.32	-8,386.90	-869.10	8,430.51	0.00	0.00	0.00
16,600.00	89.92	180.30	8,002.46	-8,486.90	-869.62	8,530.19	0.00	0.00	0.00
16,700.00	89.92	180.30	8,002.61	-8,586.90	-870.14	8,629.86	0.00	0.00	0.00
16,800.00	89.92	180.30	8,002.75	-8,686.90	-870.66	8,729.54	0.00	0.00	0.00
16,900.00	89.92	180.30	8,002.90	-8,786.90	-871.18	8,829.22	0.00	0.00	0.00
17,000.00	89.92	180.30	8,003.04	-8,886.89	-871.70	8,928.89	0.00	0.00	0.00
17,100.00	89.92	180.30	8,003.19	-8,986.89	-872.23	9,028.57	0.00	0.00	0.00
17,200.00	89.92	180.30	8,003.34	-9,086.89	-872.75	9,128.24	0.00	0.00	0.00
17,300.00	89.92	180.30	8,003.48	-9,186.89	-873.27	9,227.92	0.00	0.00	0.00
17,400.00	89.92	180.30	8,003.63	-9,286.89	-873.79	9,327.60	0.00	0.00	0.00
17,500.00	89.92	180.30	8,003.77	-9,386.89	-874.31	9,427.27	0.00	0.00	0.00

Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Site: Sec 05,T-26-S,R28-E
Well: SRO 5 State Com 507H
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well SRO 5 State Com 507H
TVD Reference: KB=30' @ 3039.20usft
MD Reference: KB=30' @ 3039.20usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1

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)
17,600.00	89.92	180.30	8,003.92	-9,486.88	-874.83	9,526.95	0.00	0.00	0.00
17,700.00	89.92	180.30	8,004.06	-9,586.88	-875.35	9,626.63	0.00	0.00	0.00
17,800.00	89.92	180.30	8,004.21	-9,686.88	-875.88	9,726.30	0.00	0.00	0.00
17,900.00	89.92	180.30	8,004.36	-9,786.88	-876.40	9,825.98	0.00	0.00	0.00
18,000.00	89.92	180.30	8,004.50	-9,886.88	-876.92	9,925.65	0.00	0.00	0.00
18,100.00	89.92	180.30	8,004.65	-9,986.88	-877.44	10,025.33	0.00	0.00	0.00
18,200.00	89.92	180.30	8,004.79	-10,086.88	-877.96	10,125.01	0.00	0.00	0.00
18,300.00	89.92	180.30	8,004.94	-10,186.87	-878.48	10,224.68	0.00	0.00	0.00
18,341.43	89.92	180.30	8,005.00	-10,228.30	-878.70	10,265.97	0.00	0.00	0.00
TD at 18341.43									

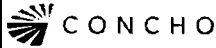
Design Targets
Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SRO 5 State Com 507	0.00	0.00	7,365.01	212.60	-822.90	392,367.80	569,858.10	32.07853	-104.10779
- plan misses target center by 606.79usft at 7526.68usft MD (7503.64 TVD, 157.92 N, -234.70 E)									
- Point									
SRO 5 State Com 507	0.00	0.00	8,004.73	-10,178.30	-878.50	381,976.90	569,802.50	32.04997	-104.10804
- plan misses target center by 0.21usft at 18291.43usft MD (8004.93 TVD, -10178.30 N, -878.44 E)									
- Point									
SRO 5 State Com 507	0.00	0.00	8,005.00	-10,228.30	-878.70	381,926.90	569,802.30	32.04983	-104.10804
- plan hits target center									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5600	5600	0	0	Start Build 2.00
6084	6081	23	-33	Start 1359.54 hold at 6083.58 MD
7443	7422	155	-220	Start DLS 10.00 TFO -92.78
8348	7991	-277	-608	Start DLS 4.00 TFO -90.16
9149	7992	-1036	-831	Start 9192.30 hold at 9149.13 MD
18,341	8005	-10,228	-879	TD at 18341.43

Checked By: _____ **Approved By:** _____ **Date:** _____

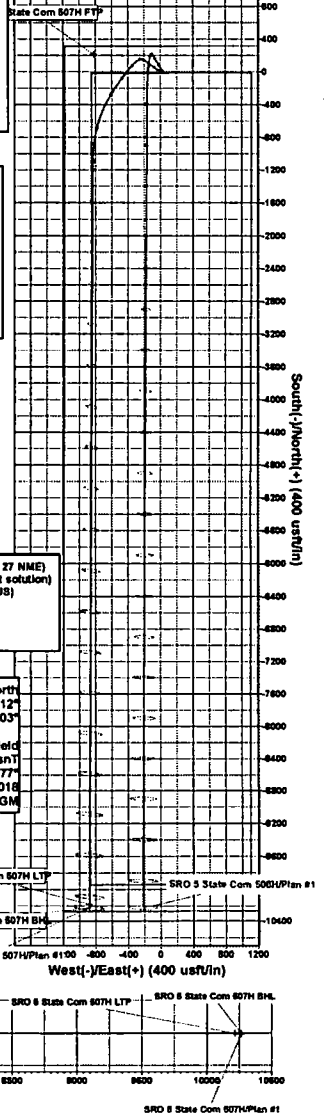


COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Site: Sec 05, T-28-S, R28-E
Well: SRO 5 State Com 507H
Wellbore: Wellbore #1
Plan: Plan #1 (SRO 5 State Com 507H/Wellbore #1)

WELL DETAILS: SRO 5 State Com 507H

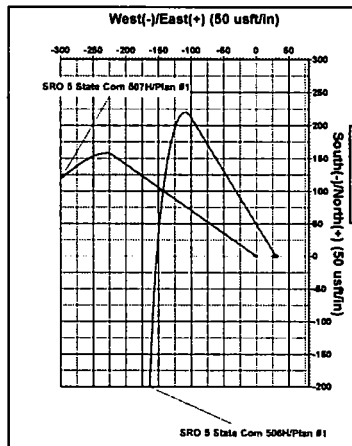
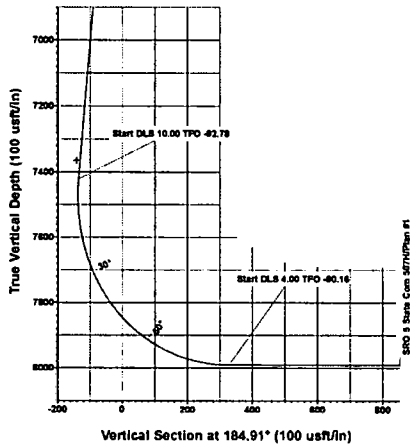
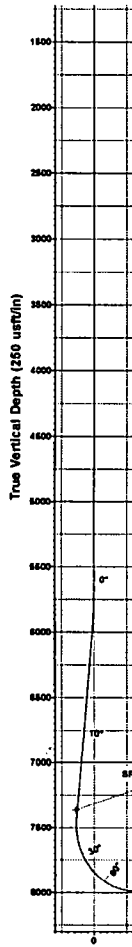
Ground Elevation:: 3009.20
RKB Elevation: KB=30' @ 3039.20usft
Rig Name:

Northing 392155.20 Easting 570681.00 Latitude 32.07794 Longitude -104.10513

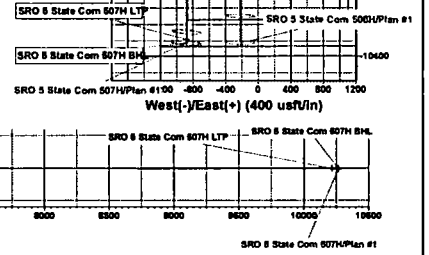
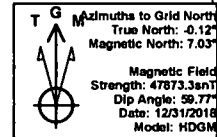


Planned Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
2	5600.00	0.00	0.00	5600.00	0.00	0.00	0.00	0.00	0.00	Start 1359.54 hold at 6083.58 MD
3	6083.58	9.87	305.17	6081.28	23.45	-33.28	2.00	305.17	-20.52	Start DLS 10.00 TFO -92.78
4	7443.12	9.87	305.17	7421.50	155.00	-220.00	0.00	0.00	-135.60	Start DLS 4.00 TFO -90.16
5	8347.85	90.00	212.35	7991.00	-277.15	-808.47	10.00	-92.78	328.21	Start 9192.30 hold at 9148.13 MD
6	9149.13	89.92	180.30	7991.80	-1036.14	-830.76	4.00	-90.16	1103.44	TD at 18341.43
7	18341.43	89.92	180.30	8005.00	-10228.30	-878.70	0.00	0.0010265.97		



PROJECT DETAILS: Eddy County, NM (NAD 27 NME)
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1884
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid



Vertical Section at 184.91° (250 usft/in)