



CONCHO

NM OIL CONSERVATION  
ARTESIA DISTRICT

FEB 13 2019

RECEIVED

## COG Operating L L C

Eddy County, NM (NAD 27 NME)

Sec. 24, T 25S. , R 27 E

Daisy State Com #504H

Wellbore #1

*30-015-45748*

Plan: Plan #1

## Standard Survey Report

06 February, 2019



INTEGRITY  
DIRECTIONAL

**Company:** COG Operating L L C  
**Project:** Eddy County, NM (NAD 27 NME)  
**Site:** Sec. 24, T 25S. , R 27 E  
**Well:** Daisy State Com #504H  
**Wellbore:** Wellbore #1  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well Daisy State Com #504H  
**TVD Reference:** KB=26' @ 3083.20usft (Scandrift Freedom)  
**MD Reference:** KB=26' @ 3083.20usft (Scandrift Freedom)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.1

<b>Project</b>	Eddy County, NM (NAD 27 NME)		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	New Mexico East 3001		

<b>Site</b>	Sec. 24, T 25S. , R 27 E				
<b>Site Position:</b>		<b>Northing:</b>	408,345.40 usft	<b>Latitude:</b>	32.12253
<b>From:</b>	Map	<b>Easting:</b>	556,167.10 usft	<b>Longitude:</b>	-104.15191
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.10 °

<b>Well</b>	Daisy State Com #504H					
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	408,085.00 usft	<b>Latitude:</b>	32.12180
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	558,167.60 usft	<b>Longitude:</b>	-104.14545
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	0.00 usft	<b>Ground Level:</b>	3,057.20 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	12/31/2018	7.23	59.83	47,880

<b>Design</b>	Plan #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00	
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	178.86	

<b>Survey Tool Program</b>	Date 2/6/2019			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	18,033.52	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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**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)
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	
<b>Start Build 2.00</b>										
5,700.00	2.00	16.94	5,699.98	1.67	0.51	-1.66	2.00	2.00	0.00	
5,800.00	4.00	16.94	5,799.84	6.68	2.03	-6.63	2.00	2.00	0.00	
5,900.00	6.00	16.94	5,899.45	15.01	4.57	-14.92	2.00	2.00	0.00	
5,982.27	7.65	16.94	5,981.14	24.36	7.42	-24.21	2.00	2.00	0.00	
<b>Start 1188.35 hold at 5982.27 MD</b>										
6,000.00	7.65	16.94	5,998.71	26.62	8.11	-26.45	0.00	0.00	0.00	
6,100.00	7.65	16.94	6,097.82	39.34	11.99	-39.10	0.00	0.00	0.00	
6,200.00	7.65	16.94	6,196.93	52.07	15.86	-51.75	0.00	0.00	0.00	
6,300.00	7.65	16.94	6,296.04	64.80	19.74	-64.39	0.00	0.00	0.00	
6,400.00	7.65	16.94	6,395.15	77.52	23.62	-77.04	0.00	0.00	0.00	
6,500.00	7.65	16.94	6,494.26	90.25	27.50	-89.69	0.00	0.00	0.00	
6,600.00	7.65	16.94	6,593.38	102.98	31.37	-102.33	0.00	0.00	0.00	
6,700.00	7.65	16.94	6,692.49	115.70	35.25	-114.98	0.00	0.00	0.00	
6,800.00	7.65	16.94	6,791.60	128.43	39.13	-127.63	0.00	0.00	0.00	
6,900.00	7.65	16.94	6,890.71	141.16	43.01	-140.27	0.00	0.00	0.00	
7,000.00	7.65	16.94	6,989.82	153.88	46.88	-152.92	0.00	0.00	0.00	
7,100.00	7.65	16.94	7,088.93	166.61	50.76	-165.57	0.00	0.00	0.00	
7,170.63	7.65	16.94	7,158.93	175.60	53.50	-174.50	0.00	0.00	0.00	
<b>Start DLS 10.00 TFO 162.22</b>										
7,200.00	4.93	27.44	7,188.12	178.59	54.65	-177.47	10.00	-9.24	35.72	
7,300.00	6.11	157.00	7,287.91	177.50	58.72	-176.30	10.00	1.18	129.56	
7,400.00	15.82	171.06	7,385.98	159.09	62.93	-157.80	10.00	9.71	14.07	
7,500.00	25.75	174.48	7,479.36	123.91	67.15	-122.55	10.00	9.93	3.41	
7,600.00	35.72	176.07	7,565.20	73.04	71.25	-71.60	10.00	9.97	1.59	
7,700.00	45.70	177.04	7,640.91	8.01	75.11	-6.52	10.00	9.98	0.97	
7,800.00	55.69	177.72	7,704.18	-69.18	78.61	70.74	10.00	9.99	0.68	
7,900.00	65.67	178.26	7,753.09	-156.21	81.65	157.80	10.00	9.99	0.54	
8,000.00	75.67	178.72	7,786.15	-250.42	84.13	252.05	10.00	9.99	0.46	
8,100.00	85.66	179.13	7,802.35	-348.95	85.97	350.59	10.00	9.99	0.42	
8,144.63	90.12	179.32	7,804.00	-393.54	86.57	395.18	10.00	9.99	0.41	
<b>Start 9888.89 hold at 8144.63 MD</b>										
8,200.00	90.12	179.32	7,803.89	-448.90	87.23	450.55	0.00	0.00	0.00	
8,300.00	90.12	179.32	7,803.69	-548.90	88.43	550.55	0.00	0.00	0.00	
8,400.00	90.12	179.32	7,803.48	-648.89	89.62	650.54	0.00	0.00	0.00	
8,500.00	90.12	179.32	7,803.28	-748.88	90.81	750.54	0.00	0.00	0.00	
8,600.00	90.12	179.32	7,803.08	-848.87	92.01	850.54	0.00	0.00	0.00	
8,700.00	90.12	179.32	7,802.88	-948.87	93.20	950.53	0.00	0.00	0.00	
8,800.00	90.12	179.32	7,802.67	-1,048.86	94.39	1,050.53	0.00	0.00	0.00	
8,900.00	90.12	179.32	7,802.47	-1,148.85	95.59	1,150.53	0.00	0.00	0.00	
9,000.00	90.12	179.32	7,802.27	-1,248.84	96.78	1,250.52	0.00	0.00	0.00	

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9,100.00	90.12	179.32	7,802.07	-1,348.84	97.97	1,350.52	0.00	0.00	0.00
9,200.00	90.12	179.32	7,801.87	-1,448.83	99.17	1,450.52	0.00	0.00	0.00
9,300.00	90.12	179.32	7,801.66	-1,548.82	100.36	1,550.51	0.00	0.00	0.00
9,400.00	90.12	179.32	7,801.46	-1,648.82	101.56	1,650.51	0.00	0.00	0.00
9,500.00	90.12	179.32	7,801.26	-1,748.81	102.75	1,750.51	0.00	0.00	0.00
9,600.00	90.12	179.32	7,801.06	-1,848.80	103.94	1,850.50	0.00	0.00	0.00
9,700.00	90.12	179.32	7,800.85	-1,948.79	105.14	1,950.50	0.00	0.00	0.00
9,800.00	90.12	179.32	7,800.65	-2,048.79	106.33	2,050.50	0.00	0.00	0.00
9,900.00	90.12	179.32	7,800.45	-2,148.78	107.52	2,150.49	0.00	0.00	0.00
10,000.00	90.12	179.32	7,800.25	-2,248.77	108.72	2,250.49	0.00	0.00	0.00
10,100.00	90.12	179.32	7,800.05	-2,348.76	109.91	2,350.49	0.00	0.00	0.00
10,200.00	90.12	179.32	7,799.84	-2,448.76	111.10	2,450.48	0.00	0.00	0.00
10,300.00	90.12	179.32	7,799.64	-2,548.75	112.30	2,550.48	0.00	0.00	0.00
10,400.00	90.12	179.32	7,799.44	-2,648.74	113.49	2,650.48	0.00	0.00	0.00
10,500.00	90.12	179.32	7,799.24	-2,748.73	114.68	2,750.47	0.00	0.00	0.00
10,600.00	90.12	179.32	7,799.03	-2,848.73	115.88	2,850.47	0.00	0.00	0.00
10,700.00	90.12	179.32	7,798.83	-2,948.72	117.07	2,950.47	0.00	0.00	0.00
10,800.00	90.12	179.32	7,798.63	-3,048.71	118.27	3,050.46	0.00	0.00	0.00
10,900.00	90.12	179.32	7,798.43	-3,148.71	119.46	3,150.46	0.00	0.00	0.00
11,000.00	90.12	179.32	7,798.23	-3,248.70	120.65	3,250.46	0.00	0.00	0.00
11,100.00	90.12	179.32	7,798.02	-3,348.69	121.85	3,350.45	0.00	0.00	0.00
11,200.00	90.12	179.32	7,797.82	-3,448.68	123.04	3,450.45	0.00	0.00	0.00
11,300.00	90.12	179.32	7,797.62	-3,548.68	124.23	3,550.45	0.00	0.00	0.00
11,400.00	90.12	179.32	7,797.42	-3,648.67	125.43	3,650.44	0.00	0.00	0.00
11,500.00	90.12	179.32	7,797.21	-3,748.66	126.62	3,750.44	0.00	0.00	0.00
11,600.00	90.12	179.32	7,797.01	-3,848.65	127.81	3,850.44	0.00	0.00	0.00
11,700.00	90.12	179.32	7,796.81	-3,948.65	129.01	3,950.43	0.00	0.00	0.00
11,800.00	90.12	179.32	7,796.61	-4,048.64	130.20	4,050.43	0.00	0.00	0.00
11,900.00	90.12	179.32	7,796.41	-4,148.63	131.39	4,150.43	0.00	0.00	0.00
12,000.00	90.12	179.32	7,796.20	-4,248.62	132.59	4,250.42	0.00	0.00	0.00
12,100.00	90.12	179.32	7,796.00	-4,348.62	133.78	4,350.42	0.00	0.00	0.00
12,200.00	90.12	179.32	7,795.80	-4,448.61	134.97	4,450.42	0.00	0.00	0.00
12,300.00	90.12	179.32	7,795.60	-4,548.60	136.17	4,550.41	0.00	0.00	0.00
12,400.00	90.12	179.32	7,795.39	-4,648.60	137.36	4,650.41	0.00	0.00	0.00
12,500.00	90.12	179.32	7,795.19	-4,748.59	138.56	4,750.40	0.00	0.00	0.00
12,600.00	90.12	179.32	7,794.99	-4,848.58	139.75	4,850.40	0.00	0.00	0.00
12,700.00	90.12	179.32	7,794.79	-4,948.57	140.94	4,950.40	0.00	0.00	0.00
12,800.00	90.12	179.32	7,794.58	-5,048.57	142.14	5,050.39	0.00	0.00	0.00
12,900.00	90.12	179.32	7,794.38	-5,148.56	143.33	5,150.39	0.00	0.00	0.00
13,000.00	90.12	179.32	7,794.18	-5,248.55	144.52	5,250.39	0.00	0.00	0.00
13,100.00	90.12	179.32	7,793.98	-5,348.54	145.72	5,350.38	0.00	0.00	0.00
13,200.00	90.12	179.32	7,793.78	-5,448.54	146.91	5,450.38	0.00	0.00	0.00
13,300.00	90.12	179.32	7,793.57	-5,548.53	148.10	5,550.38	0.00	0.00	0.00

**Company:** COG Operating L L C  
**Project:** Eddy County, NM (NAD 27 NME)  
**Site:** Sec. 24, T 25S. , R 27 E  
**Well:** Daisy State Com #504H  
**Wellbore:** Wellbore #1  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well Daisy State Com #504H  
**TVD Reference:** KB=26' @ 3083.20usft (Scandril Freedom)  
**MD Reference:** KB=26' @ 3083.20usft (Scandril Freedom)  
**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)
13,400.00	90.12	179.32	7,793.37	-5,648.52	149.30	5,650.37	0.00	0.00	0.00
13,500.00	90.12	179.32	7,793.17	-5,748.51	150.49	5,750.37	0.00	0.00	0.00
13,600.00	90.12	179.32	7,792.97	-5,848.51	151.68	5,850.37	0.00	0.00	0.00
13,700.00	90.12	179.32	7,792.76	-5,948.50	152.88	5,950.36	0.00	0.00	0.00
13,800.00	90.12	179.32	7,792.56	-6,048.49	154.07	6,050.36	0.00	0.00	0.00
13,900.00	90.12	179.32	7,792.36	-6,148.49	155.26	6,150.36	0.00	0.00	0.00
14,000.00	90.12	179.32	7,792.16	-6,248.48	156.46	6,250.35	0.00	0.00	0.00
14,100.00	90.12	179.32	7,791.96	-6,348.47	157.65	6,350.35	0.00	0.00	0.00
14,200.00	90.12	179.32	7,791.75	-6,448.46	158.85	6,450.35	0.00	0.00	0.00
14,300.00	90.12	179.32	7,791.55	-6,548.46	160.04	6,550.34	0.00	0.00	0.00
14,400.00	90.12	179.32	7,791.35	-6,648.45	161.23	6,650.34	0.00	0.00	0.00
14,500.00	90.12	179.32	7,791.15	-6,748.44	162.43	6,750.34	0.00	0.00	0.00
14,600.00	90.12	179.32	7,790.94	-6,848.43	163.62	6,850.33	0.00	0.00	0.00
14,700.00	90.12	179.32	7,790.74	-6,948.43	164.81	6,950.33	0.00	0.00	0.00
14,800.00	90.12	179.32	7,790.54	-7,048.42	166.01	7,050.33	0.00	0.00	0.00
14,900.00	90.12	179.32	7,790.34	-7,148.41	167.20	7,150.32	0.00	0.00	0.00
15,000.00	90.12	179.32	7,790.14	-7,248.41	168.39	7,250.32	0.00	0.00	0.00
15,100.00	90.12	179.32	7,789.93	-7,348.40	169.59	7,350.32	0.00	0.00	0.00
15,200.00	90.12	179.32	7,789.73	-7,448.39	170.78	7,450.31	0.00	0.00	0.00
15,300.00	90.12	179.32	7,789.53	-7,548.38	171.97	7,550.31	0.00	0.00	0.00
15,400.00	90.12	179.32	7,789.33	-7,648.38	173.17	7,650.31	0.00	0.00	0.00
15,500.00	90.12	179.32	7,789.12	-7,748.37	174.36	7,750.30	0.00	0.00	0.00
15,600.00	90.12	179.32	7,788.92	-7,848.36	175.56	7,850.30	0.00	0.00	0.00
15,700.00	90.12	179.32	7,788.72	-7,948.35	176.75	7,950.30	0.00	0.00	0.00
15,800.00	90.12	179.32	7,788.52	-8,048.35	177.94	8,050.29	0.00	0.00	0.00
15,900.00	90.12	179.32	7,788.32	-8,148.34	179.14	8,150.29	0.00	0.00	0.00
16,000.00	90.12	179.32	7,788.11	-8,248.33	180.33	8,250.29	0.00	0.00	0.00
16,100.00	90.12	179.32	7,787.91	-8,348.32	181.52	8,350.28	0.00	0.00	0.00
16,200.00	90.12	179.32	7,787.71	-8,448.32	182.72	8,450.28	0.00	0.00	0.00
16,300.00	90.12	179.32	7,787.51	-8,548.31	183.91	8,550.28	0.00	0.00	0.00
16,400.00	90.12	179.32	7,787.30	-8,648.30	185.10	8,650.27	0.00	0.00	0.00
16,500.00	90.12	179.32	7,787.10	-8,748.30	186.30	8,750.27	0.00	0.00	0.00
16,600.00	90.12	179.32	7,786.90	-8,848.29	187.49	8,850.27	0.00	0.00	0.00
16,700.00	90.12	179.32	7,786.70	-8,948.28	188.68	8,950.26	0.00	0.00	0.00
16,800.00	90.12	179.32	7,786.49	-9,048.27	189.88	9,050.26	0.00	0.00	0.00
16,900.00	90.12	179.32	7,786.29	-9,148.27	191.07	9,150.26	0.00	0.00	0.00
17,000.00	90.12	179.32	7,786.09	-9,248.26	192.26	9,250.25	0.00	0.00	0.00
17,100.00	90.12	179.32	7,785.89	-9,348.25	193.46	9,350.25	0.00	0.00	0.00
17,200.00	90.12	179.32	7,785.69	-9,448.24	194.65	9,450.25	0.00	0.00	0.00
17,300.00	90.12	179.32	7,785.48	-9,548.24	195.85	9,550.24	0.00	0.00	0.00
17,400.00	90.12	179.32	7,785.28	-9,648.23	197.04	9,650.24	0.00	0.00	0.00
17,500.00	90.12	179.32	7,785.08	-9,748.22	198.23	9,750.24	0.00	0.00	0.00
17,600.00	90.12	179.32	7,784.88	-9,848.21	199.43	9,850.23	0.00	0.00	0.00

**Company:** COG Operating L L C  
**Project:** Eddy County, NM (NAD 27 NME)  
**Site:** Sec. 24, T 25S. , R 27 E  
**Well:** Daisy State Com #504H  
**Wellbore:** Wellbore #1  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well Daisy State Com #504H  
**TVD Reference:** KB=26' @ 3083.20usft (Scandrill Freedom)  
**MD Reference:** KB=26' @ 3083.20usft (Scandrill Freedom)  
**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)	Buld Rate (°/100usft)	Turn Rate (°/100usft)
17,700.00	90.12	179.32	7,784.67	-9,948.21	200.62	9,950.23	0.00	0.00	0.00
17,800.00	90.12	179.32	7,784.47	-10,048.20	201.81	10,050.23	0.00	0.00	0.00
17,900.00	90.12	179.32	7,784.27	-10,148.19	203.01	10,150.22	0.00	0.00	0.00
18,000.00	90.12	179.32	7,784.07	-10,248.19	204.20	10,250.22	0.00	0.00	0.00
18,033.52	90.12	179.32	7,784.00	-10,281.70	204.60	10,283.74	0.00	0.00	0.00

TD at 18033.52

**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
Daisy State Com #50 - plan misses target center by 192.84usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	175.60	79.70	408,260.60	558,247.30	32.12229	-104.14519
Daisy State Com #50 - plan hits target center - Point	0.00	0.00	7,784.00	-10,281.70	204.60	397,803.30	558,372.20	32.09354	-104.14484
Daisy State Com #50 - plan hits target center - Point	0.00	0.00	7,784.10	-10,231.70	204.00	397,853.30	558,371.60	32.09368	-104.14485

**Formations**

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
580.20	580.20	TOS		0.00	
2,022.20	2,022.20	BOS (Fletcher)		0.00	
2,216.20	2,216.20	LMAR (Top Delaware)		0.00	
2,252.20	2,252.20	BLCN		0.00	
3,069.20	3,069.20	CYCN		0.00	
4,265.20	4,265.20	BYCN			
5,883.66	5,883.20	Bone Sprg (BSGL)			
6,182.11	6,179.20	U Avalon Sh			
6,420.23	6,415.20	L Avalon Sh			
6,755.20	6,747.20	B Avalon Sh			
6,809.69	6,801.20	FBSG_sand			
7,380.57	7,367.20	SBSG_sand			

**Company:** COG Operating L L C  
**Project:** Eddy County, NM (NAD 27 NME)  
**Site:** Sec. 24, T 25S. , R 27 E  
**Well:** Daisy State Com #504H  
**Wellbore:** Wellbore #1  
**Design:** Plan #1

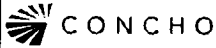
**Local Co-ordinate Reference:** Well Daisy State Com #504H  
**TVD Reference:** KB=26' @ 3083.20usft (Scandriil Freedom)  
**MD Reference:** KB=26' @ 3083.20usft (Scandriil Freedom)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.1

**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
5982	5981	24	7	Start 1188.35 hold at 5982.27 MD
7171	7159	176	53	Start DLS 10.00 TFO 162.22
8145	7804	-394	87	Start 9888.89 hold at 8144.63 MD
18,034	7784	-10,282	205	TD at 18033.52

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_





COG Operating L L C  
 Project: Eddy County, NM (NAD 27 NME)  
 Site: Sec. 24, T 25S., R 27 E  
 Well: Daisy State Com #504H  
 Wellbore: Wellbore #1  
 Plan: Plan #1 (Daisy State Com #504H/Wellbore #1)  
 Scandriil Freedom

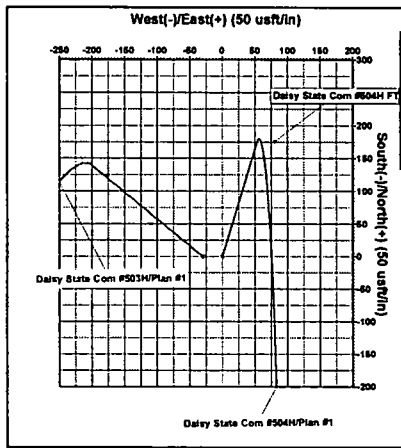
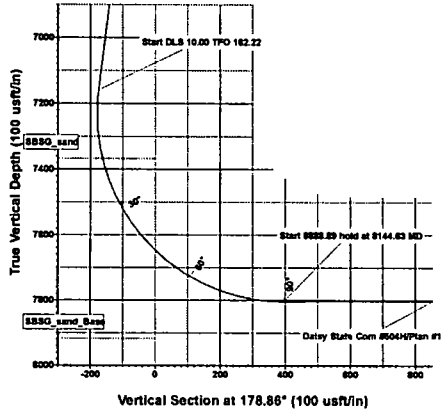
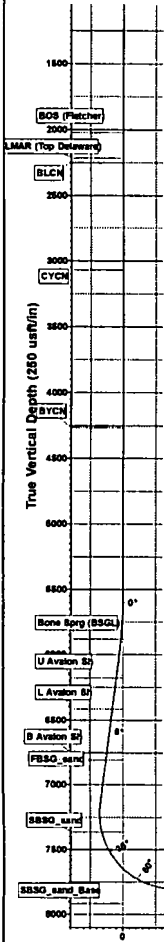
WELL DETAILS: Daisy State Com #504H  
 Ground Elevation:: 3057.20  
 RKB Elevation: KB=28' @ 3083.20usft (Scandriil Freedom)  
 Rig Name: Scandriil Freedom

Northing 408085.00      Easting 558187.60      Latitude 32.12180      Longitude -104.14544

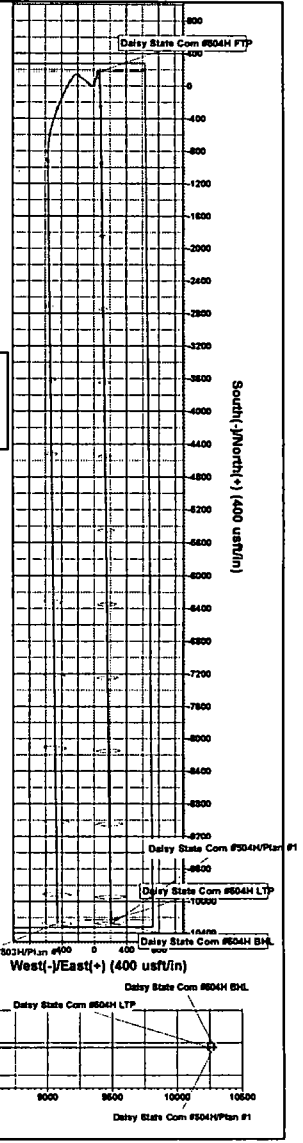
Planned Section Details

Sec	MD	Inc	Azl	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	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 1188.35 hold at 5982.27 MD
3	5982.27	7.65	16.94	5981.14	24.38	7.42	2.00	16.94	-24.21	Start DLS 10.00 TFO 162.22
4	7170.63	7.65	16.94	7158.93	175.60	53.50	0.00	0.00	-174.50	Start 9888.89 hold at 8144.63 MD
5	8144.63	90.12	179.32	7804.00	-393.54	86.57	10.00	162.22	395.18	TD at 18033.52
6	18033.52	90.12	179.32	7784.00	-10281.70	204.60	0.00	0.0010283.74		

PROJECT DETAILS: Eddy County, NM (NAD 27 NME)  
 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  
 Local North: Grid



Azimuths to Grid North  
 True North: -0.10°  
 Magnetic North: 7.13°  
 Magnetic Field  
 Strength: 47879.7anT  
 Dip Angle: 59.83°  
 Date: 12/31/2016  
 Model: HDGM



Vertical Section at 178.86° (250 usft/in)