

PATRIOT DRILLING, LLC

NM OIL CONSERVATION
ARTESIA DISTRICT

MAR 07 2016

RECEIVED

OPERATOR: COG Operating, LLC
WELL/LEASE: C Cap St Com 6H
COUNTY: Eddy Co., New Mexico
Sec. 16, T 22S, R 27E

15-42880

**STATE OF NEW MEXICO
DEVIATION REPORT**

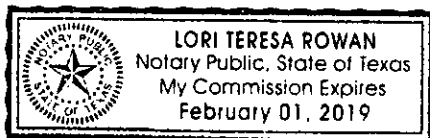
<u>Depth</u>	<u>Deviation</u>	<u>Depth</u>	<u>Deviation</u>
751	2	5,406	1 1/4
1,098	3	5,877	1
1,478	2 1/4	6,223	1
2,064	3 1/2	6,413	1 1/2
2,348	1	6,571	1 1/2
2,789	1	6,907	1 1/2
3,201	1/2	7,381	1 3/4
3,665	3/4	7,539	1/2
4,146	1/2	7,916	1 1/4
4,619	3/4	8,011	1
4,935	3/4		

Patriot Drilling, LLC

M. Leroy Peterson, Executive Vice-President

The foregoing instrument was acknowledged before me on this 13th day of May, 2015 by
M. Leroy Peterson, Executive Vice-President of Patriot Drilling, LLC.

My Commission Expires: 02/01/2019

Lori T. Rowan
Notary Public for Ector Co., Texas



April 29, 2015

Concho Resources, Inc.
One Concho Center
600 W. Illinois Avenue
Midland, Texas 79701

NM OIL CONSERVATION
ARTESIA DISTRICT

MAR 07 2016

RECEIVED

Attn: Kanicia Castillo

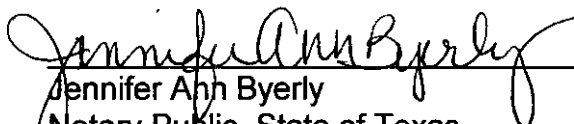
RE: **CCAP State Com 006H**

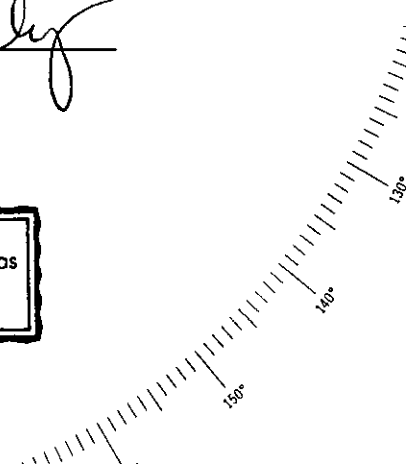
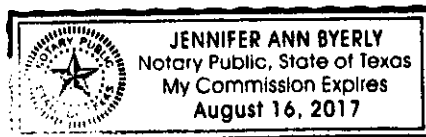
Please find enclosed a copy of the survey from 0' to 7200' ran on the above referenced well.

Sincerely, 
Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 29 day of April, A.D., 2015, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas





Company: Concho

Lease/Well: CCAP State Com/006H

Rig Name: Patriot 6

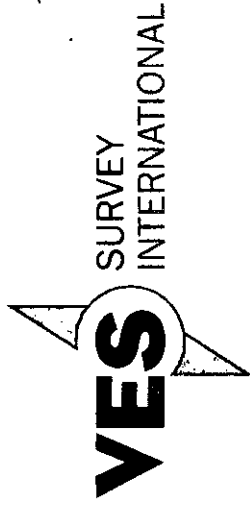
State/County: New Mexico/Eddy

VS-Azi: 0.00 Degrees

Latitude: 32.39551, Longitude: -104.18652

Grid Convergence Applied = -0.08 degs

Grid North = True North -0.08 degs



Depth Reference : RKB= 17

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyrosurvey-de_01.ut

Minimum Curvature Method

Report Date/Time: 4/29/2015 / 15:10

VES Survey International

Ft. Worth, Texas

817-741-3610

Surveyor: Gregg Wilson

CCAP State Com 006H / API 30-015-42880

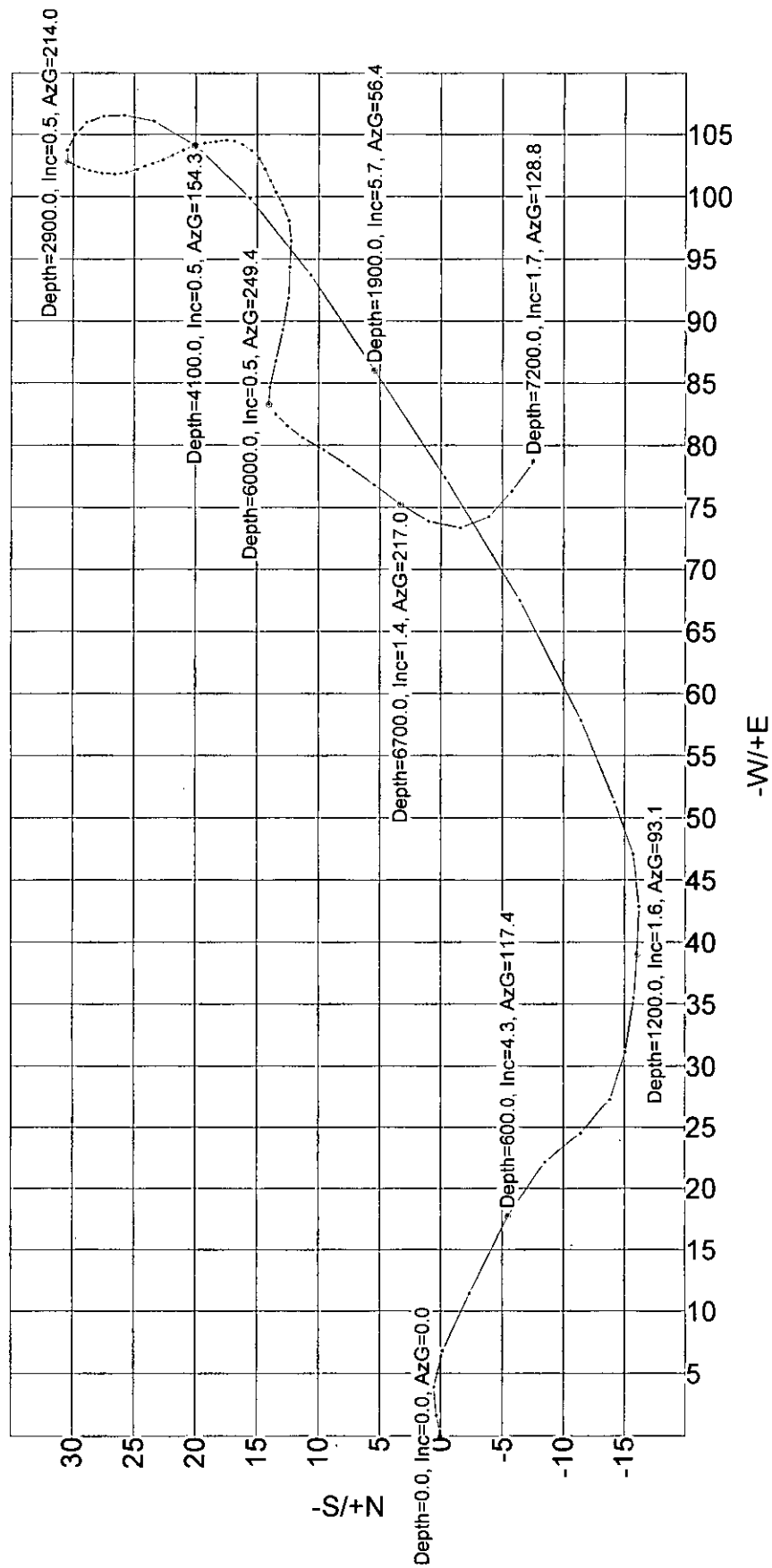
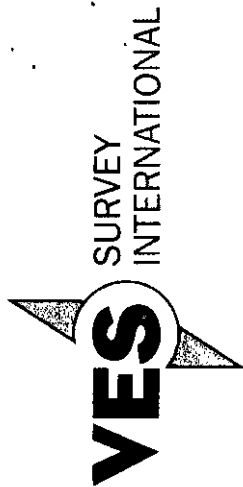
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.42	77.48	100.00	0.08	0.36	0.08	0.37	77.48	0.42
200.00	1.10	77.01	199.99	0.38	1.66	0.38	1.70	77.22	0.67
300.00	1.50	90.51	299.96	0.58	3.89	0.58	3.94	81.55	0.50
400.00	2.01	114.23	399.92	-0.15	6.80	-0.15	6.80	91.28	0.88
500.00	3.83	115.46	499.78	-2.31	11.42	-2.31	11.65	101.43	1.83
600.00	4.26	117.36	599.53	-5.45	17.73	-5.45	18.55	107.09	0.45
700.00	2.01	139.73	699.38	-8.50	22.17	-8.50	23.74	110.98	2.52
800.00	2.25	142.55	799.31	-11.40	24.50	-11.40	27.02	114.95	0.26
900.00	2.09	117.51	899.24	-13.79	27.30	-13.79	30.59	116.80	0.95
1000.00	2.60	101.00	999.16	-15.07	31.14	-15.07	34.60	115.82	0.84
1100.00	2.45	96.25	1099.06	-15.73	35.49	-15.73	38.82	113.91	0.26
1200.00	1.63	93.11	1199.00	-16.04	39.03	-16.04	42.20	112.34	0.83
1300.00	2.75	92.08	1298.92	-16.21	42.85	-16.21	45.81	110.72	1.12
1400.00	2.24	71.79	1398.83	-15.68	47.11	-15.68	49.65	108.41	1.01
1500.00	2.83	68.86	1498.73	-14.18	51.27	-14.18	53.19	105.46	0.61
1600.00	5.36	66.32	1598.47	-11.41	57.85	-11.41	58.97	101.16	2.53

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/S FT	+E/W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1700.00	7.15	59.93	1697.87	-6.42	67.51	-6.42	67.82	95.43	1.92
1800.00	6.19	56.38	1797.19	-0.32	77.39	-0.32	77.39	90.23	1.05
1900.00	5.73	56.40	1896.65	5.43	86.03	5.43	86.20	86.39	0.46
2000.00	4.92	54.98	1996.22	10.65	93.70	10.65	94.30	83.51	0.82
2100.00	4.17	46.94	2095.91	15.60	99.87	15.60	101.08	81.12	0.98
2200.00	2.79	38.76	2195.72	19.98	104.05	19.98	105.95	79.13	1.46
2300.00	1.85	17.38	2295.64	23.42	106.06	23.42	108.61	77.55	1.26
2400.00	1.00	1.20	2395.61	25.83	106.56	25.83	109.64	76.37	0.93
2500.00	0.94	352.20	2495.59	27.52	106.47	27.52	109.96	75.51	0.16
2600.00	0.82	325.60	2595.58	28.93	105.95	28.93	109.83	74.73	0.42
2700.00	0.75	301.04	2695.57	29.86	104.98	29.86	109.14	74.12	0.34
2800.00	0.86	293.46	2795.56	30.49	103.73	30.49	108.12	73.62	0.15
2900.00	0.50	213.95	2895.56	30.43	102.80	30.43	107.21	73.51	0.91
3000.00	0.60	200.04	2995.55	29.57	102.38	29.57	106.56	73.89	0.17
3100.00	0.49	194.94	3095.55	28.66	102.08	28.66	106.03	74.32	0.12
3200.00	0.67	190.36	3195.54	27.67	101.87	27.67	105.56	74.80	0.18
3300.00	0.55	176.29	3295.54	26.62	101.79	26.62	105.22	75.35	0.19
3400.00	0.58	167.27	3395.53	25.65	101.94	25.65	105.11	75.88	0.09
3500.00	0.47	159.71	3495.53	24.77	102.19	24.77	105.15	76.37	0.13
3600.00	0.27	152.27	3595.53	24.18	102.44	24.18	105.26	76.72	0.20
3700.00	0.53	165.91	3695.52	23.52	102.66	23.52	105.32	77.09	0.27
3800.00	0.50	156.12	3795.52	22.68	102.95	22.68	105.42	77.58	0.09
3900.00	0.46	152.91	3895.52	21.91	103.32	21.91	105.61	78.02	0.05
4000.00	0.64	157.42	3995.51	21.04	103.72	21.04	105.83	78.53	0.18
4100.00	0.54	154.25	4095.51	20.09	104.14	20.09	106.06	79.08	0.11
4200.00	0.43	185.04	4195.50	19.30	104.31	19.30	106.08	79.52	0.28
4300.00	0.64	165.94	4295.50	18.39	104.41	18.39	106.02	80.01	0.28
4400.00	0.40	181.17	4395.49	17.50	104.54	17.50	105.99	80.50	0.28
4500.00	0.33	193.51	4495.49	16.88	104.47	16.88	105.82	80.82	0.10
4600.00	0.49	208.98	4595.49	16.22	104.19	16.22	105.44	81.15	0.20
4700.00	0.52	215.61	4695.49	15.47	103.72	15.47	104.86	81.51	0.07
4800.00	0.51	234.50	4795.48	14.85	103.09	14.85	104.15	81.81	0.17
4900.00	0.64	246.79	4895.48	14.37	102.22	14.37	103.22	82.00	0.18
5000.00	0.54	243.79	4995.47	13.94	101.28	13.94	102.23	82.16	0.11
5100.00	0.64	243.43	5095.47	13.48	100.36	13.48	101.26	82.35	0.10
5200.00	0.73	242.34	5195.46	12.94	99.29	12.94	100.13	82.58	0.09
5300.00	0.81	251.52	5295.45	12.42	98.06	12.42	98.84	82.78	0.14
5400.00	1.06	273.42	5395.44	12.25	96.47	12.25	97.24	82.76	0.43
5500.00	1.38	271.51	5495.41	12.34	94.35	12.34	95.15	82.55	0.32

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5600.00	1.47	274.60	5595.38	12.47	91.86	12.47	92.71	82.27	0.12
5700.00	1.52	285.05	5695.35	12.92	89.31	12.92	90.23	81.77	0.28
5800.00	1.42	280.21	5795.32	13.48	86.80	13.48	87.84	81.17	0.15
5900.00	1.11	284.42	5895.29	13.94	84.64	13.94	85.78	80.65	0.32
6000.00	0.47	249.38	5995.28	14.04	83.31	14.04	84.49	80.43	0.78
6100.00	0.68	225.11	6095.28	13.48	82.50	13.48	83.60	80.72	0.32
6200.00	0.84	225.53	6195.27	12.54	81.56	12.54	82.52	81.26	0.16
6300.00	0.97	209.07	6295.26	11.29	80.62	11.29	81.41	82.03	0.29
6400.00	1.31	210.96	6395.24	9.57	79.62	9.57	80.20	83.15	0.34
6500.00	1.43	214.81	6495.21	7.56	78.32	7.56	78.69	84.49	0.15
6600.00	1.56	216.23	6595.17	5.44	76.81	5.44	77.00	85.95	0.13
6700.00	1.45	217.05	6695.14	3.33	75.24	3.33	75.32	87.46	0.12
6800.00	1.65	205.42	6795.10	1.03	73.86	1.03	73.87	89.20	0.37
6900.00	1.47	175.59	6895.07	-1.55	73.35	-1.55	73.36	91.21	0.82
7000.00	1.51	142.89	6995.04	-3.88	74.24	-3.88	74.34	92.99	0.84
7100.00	1.72	123.92	7095.00	-5.77	76.28	-5.77	76.50	94.33	0.57
7200.00	1.68	128.76	7194.95	-7.52	78.66	-7.52	79.02	95.46	0.15



VES Survey International
Ft. Worth, Texas
817-741-3610
Surveyor: Gregg Wilson
CCAP State Com 006H / API 30-015-42880





COG Operating LLC

**Eddy County, NM
CCAP 16 State Com
#6H**

OH

Survey: MWD OH

Survey Report - Geographic

04 May, 2015

**NM OIL CONSERVATION
ARTESIA DISTRICT**

MAR 07 2016

RECEIVED



Wellplanning

Survey Report - Geographic

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #6H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3120.0usft (Original Well Elev)
Site:	CCAP 16 State Com	MD Reference:	WELL @ 3120.0usft (Original Well Elev)
Well:	#6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

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	CCAP 16 State Com		
Site Position:		Northing:	507,631.30 usft
From:	Map	Easting:	545,315.40 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 23' 43.827 N
		Longitude:	104° 11' 11.467 W
		Grid Convergence:	0.08 °

Well	#6H		
Well Position	+N/-S	0.0 usft	Northing: 507,631.30 usft
	+E/-W	0.0 usft	Easting: 545,315.40 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 23' 43.827 N
		Longitude:	104° 11' 11.467 W
		Ground Level:	3,102.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	4/9/2015	7.41
			Dip Angle (°)
			60.15
			Field Strength (nT)
			48,274

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction (°)
			265.57

Survey Program	Date 5/4/2015		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
100.0	13,200.0	MWD OH (OH)	MWD
			Description
			MWD - Standard

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	507,631.30	545,315.40	32° 23' 43.827 N	104° 11' 11.467 W
100.0	0.42	77.48	100.0	0.1	0.4	507,631.38	545,315.76	32° 23' 43.827 N	104° 11' 11.462 W
200.0	1.10	77.01	200.0	0.4	1.7	507,631.68	545,317.05	32° 23' 43.830 N	104° 11' 11.447 W
300.0	1.50	90.51	300.0	0.6	3.9	507,631.88	545,319.30	32° 23' 43.832 N	104° 11' 11.421 W
400.0	2.01	114.23	399.9	-0.2	6.8	507,631.15	545,322.21	32° 23' 43.825 N	104° 11' 11.387 W
500.0	3.83	115.46	499.8	-2.3	11.4	507,628.99	545,326.82	32° 23' 43.804 N	104° 11' 11.333 W
600.0	4.26	117.36	599.5	-5.5	17.7	507,625.85	545,333.13	32° 23' 43.772 N	104° 11' 11.260 W
700.0	2.01	139.73	699.4	-8.5	22.2	507,622.80	545,337.57	32° 23' 43.742 N	104° 11' 11.208 W
800.0	2.25	142.55	799.3	-11.4	24.5	507,619.91	545,339.89	32° 23' 43.713 N	104° 11' 11.181 W
900.0	2.09	117.51	899.2	-13.8	27.3	507,617.51	545,342.71	32° 23' 43.690 N	104° 11' 11.148 W
1,000.0	2.60	101.00	999.2	-15.1	31.1	507,616.23	545,346.55	32° 23' 43.677 N	104° 11' 11.104 W
1,100.0	2.45	96.25	1,099.1	-15.7	35.5	507,615.57	545,350.90	32° 23' 43.670 N	104° 11' 11.053 W



Wellplanning
Survey Report - Geographic

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #6H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3120.0usft (Original Well Elev)
Site:	CCAP 16 State Corn	MD Reference:	WELL @ 3120.0usft (Original Well Elev)
Well:	#6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

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	1.63	93.11	1,199.0	-16.0	39.0	507,615.26	545,354.45	32° 23' 43.667 N	104° 11' 11.011 W
1,300.0	2.75	92.08	1,298.9	-16.2	42.9	507,615.09	545,358.26	32° 23' 43.666 N	104° 11' 10.967 W
1,400.0	2.24	71.79	1,398.8	-15.7	47.1	507,615.62	545,362.52	32° 23' 43.671 N	104° 11' 10.917 W
1,500.0	2.83	68.86	1,498.7	-14.2	51.3	507,617.12	545,366.68	32° 23' 43.686 N	104° 11' 10.869 W
1,600.0	5.36	66.32	1,598.5	-11.4	57.9	507,619.88	545,373.26	32° 23' 43.713 N	104° 11' 10.792 W
1,700.0	7.15	59.93	1,697.9	-6.4	67.5	507,624.88	545,382.92	32° 23' 43.762 N	104° 11' 10.679 W
1,800.0	6.19	56.38	1,797.2	-0.3	77.4	507,630.98	545,392.80	32° 23' 43.822 N	104° 11' 10.564 W
1,900.0	5.73	56.40	1,896.7	5.4	86.0	507,636.73	545,401.44	32° 23' 43.879 N	104° 11' 10.463 W
2,000.0	4.92	54.98	1,996.2	10.7	93.7	507,641.95	545,409.11	32° 23' 43.931 N	104° 11' 10.373 W
2,100.0	4.17	46.94	2,095.9	15.6	99.9	507,646.90	545,415.28	32° 23' 43.980 N	104° 11' 10.301 W
2,200.0	2.79	38.76	2,195.7	20.0	104.1	507,651.28	545,419.46	32° 23' 44.023 N	104° 11' 10.253 W
2,300.0	1.85	17.38	2,295.6	23.4	106.1	507,654.72	545,421.47	32° 23' 44.057 N	104° 11' 10.229 W
2,400.0	1.00	1.20	2,395.6	25.8	106.6	507,657.13	545,421.97	32° 23' 44.081 N	104° 11' 10.223 W
2,500.0	0.94	352.20	2,495.6	27.5	106.5	507,658.81	545,421.88	32° 23' 44.097 N	104° 11' 10.224 W
2,600.0	0.82	325.60	2,595.6	28.9	106.0	507,660.22	545,421.36	32° 23' 44.111 N	104° 11' 10.230 W
2,700.0	0.75	301.04	2,695.6	29.8	105.0	507,661.14	545,420.40	32° 23' 44.120 N	104° 11' 10.242 W
2,800.0	0.86	293.46	2,795.6	30.5	103.7	507,661.78	545,419.15	32° 23' 44.127 N	104° 11' 10.256 W
2,900.0	0.50	213.95	2,895.6	30.4	102.8	507,661.72	545,418.21	32° 23' 44.126 N	104° 11' 10.267 W
3,000.0	0.60	200.04	2,995.6	29.6	102.4	507,660.86	545,417.79	32° 23' 44.118 N	104° 11' 10.272 W
3,100.0	0.49	194.94	3,095.5	28.7	102.1	507,659.96	545,417.50	32° 23' 44.109 N	104° 11' 10.275 W
3,200.0	0.67	190.36	3,195.5	27.7	101.9	507,658.97	545,417.29	32° 23' 44.099 N	104° 11' 10.278 W
3,300.0	0.55	176.29	3,295.5	26.6	101.8	507,657.92	545,417.21	32° 23' 44.089 N	104° 11' 10.279 W
3,400.0	0.58	167.27	3,395.5	25.6	102.0	507,656.94	545,417.35	32° 23' 44.079 N	104° 11' 10.277 W
3,500.0	0.47	159.71	3,495.5	24.8	102.2	507,656.07	545,417.61	32° 23' 44.070 N	104° 11' 10.274 W
3,600.0	0.27	152.27	3,595.5	24.2	102.5	507,655.47	545,417.86	32° 23' 44.064 N	104° 11' 10.271 W
3,700.0	0.53	165.91	3,695.5	23.5	102.7	507,654.82	545,418.08	32° 23' 44.058 N	104° 11' 10.269 W
3,800.0	0.50	156.12	3,795.5	22.7	103.0	507,653.97	545,418.37	32° 23' 44.049 N	104° 11' 10.265 W
3,900.0	0.46	152.91	3,895.5	21.9	103.3	507,653.21	545,418.73	32° 23' 44.042 N	104° 11' 10.261 W
4,000.0	0.64	157.42	3,995.5	21.0	103.7	507,652.34	545,419.13	32° 23' 44.033 N	104° 11' 10.256 W
4,100.0	0.54	154.25	4,095.5	20.1	104.1	507,651.40	545,419.55	32° 23' 44.024 N	104° 11' 10.252 W
4,200.0	0.43	185.04	4,195.5	19.3	104.3	507,650.60	545,419.72	32° 23' 44.016 N	104° 11' 10.250 W
4,300.0	0.64	165.94	4,295.5	18.4	104.4	507,649.68	545,419.82	32° 23' 44.007 N	104° 11' 10.248 W
4,400.0	0.40	181.17	4,395.5	17.5	104.5	507,648.79	545,419.95	32° 23' 43.998 N	104° 11' 10.247 W
4,500.0	0.33	193.51	4,495.5	16.9	104.5	507,648.16	545,419.88	32° 23' 43.992 N	104° 11' 10.248 W
4,600.0	0.49	208.98	4,595.5	16.2	104.2	507,647.51	545,419.60	32° 23' 43.986 N	104° 11' 10.251 W
4,700.0	0.52	215.61	4,695.5	15.5	103.7	507,646.77	545,419.13	32° 23' 43.978 N	104° 11' 10.257 W
4,800.0	0.51	234.50	4,795.5	14.8	103.1	507,646.14	545,418.50	32° 23' 43.972 N	104° 11' 10.264 W
4,900.0	0.64	246.79	4,895.5	14.4	102.2	507,645.66	545,417.63	32° 23' 43.967 N	104° 11' 10.274 W
5,000.0	0.54	243.79	4,995.5	13.9	101.3	507,645.23	545,416.69	32° 23' 43.963 N	104° 11' 10.285 W
5,100.0	0.64	243.43	5,095.5	13.5	100.4	507,644.78	545,415.77	32° 23' 43.959 N	104° 11' 10.296 W
5,200.0	0.73	242.34	5,195.5	12.9	99.3	507,644.23	545,414.71	32° 23' 43.953 N	104° 11' 10.308 W
5,300.0	0.81	251.52	5,295.5	12.4	98.1	507,643.71	545,413.47	32° 23' 43.948 N	104° 11' 10.323 W
5,400.0	1.06	273.42	5,395.4	12.2	96.5	507,643.54	545,411.88	32° 23' 43.946 N	104° 11' 10.341 W
5,500.0	1.38	271.51	5,495.4	12.3	94.3	507,643.63	545,409.75	32° 23' 43.947 N	104° 11' 10.366 W
5,600.0	1.47	274.60	5,595.4	12.5	91.9	507,643.76	545,407.27	32° 23' 43.949 N	104° 11' 10.395 W
5,700.0	1.52	285.05	5,695.3	12.9	89.3	507,644.21	545,404.71	32° 23' 43.953 N	104° 11' 10.425 W
5,800.0	1.42	280.21	5,795.3	13.5	86.8	507,644.77	545,402.21	32° 23' 43.959 N	104° 11' 10.454 W
5,900.0	1.11	284.42	5,895.3	13.9	84.6	507,645.23	545,400.05	32° 23' 43.963 N	104° 11' 10.479 W
6,000.0	0.47	249.38	5,995.3	14.0	83.3	507,645.33	545,398.73	32° 23' 43.964 N	104° 11' 10.495 W
6,100.0	0.68	225.11	6,095.3	13.5	82.5	507,644.77	545,397.92	32° 23' 43.959 N	104° 11' 10.504 W
6,200.0	0.84	225.53	6,195.3	12.5	81.6	507,643.84	545,396.98	32° 23' 43.949 N	104° 11' 10.515 W
6,300.0	0.97	209.07	6,295.3	11.3	80.6	507,642.58	545,396.05	32° 23' 43.937 N	104° 11' 10.526 W
6,400.0	1.31	210.96	6,395.2	9.6	79.6	507,640.86	545,395.05	32° 23' 43.920 N	104° 11' 10.538 W
6,500.0	1.43	214.81	6,495.2	7.6	78.3	507,638.86	545,393.75	32° 23' 43.900 N	104° 11' 10.553 W
6,600.0	1.56	216.23	6,595.2	5.4	76.8	507,636.74	545,392.23	32° 23' 43.879 N	104° 11' 10.570 W



Wellplanning
Survey Report - Geographic

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #6H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3120.0usft (Original Well Elev)
Site:	CCAP 16 State Com	MD Reference:	WELL @ 3120.0usft (Original Well Elev)
Well:	#6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey									
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	1.45	217.05	6,695.1	3.3	75.3	507,634.63	545,390.66	32° 23' 43.858 N	104° 11' 10.589 W
6,800.0	1.65	205.42	6,795.1	1.0	73.9	507,632.32	545,389.28	32° 23' 43.836 N	104° 11' 10.605 W
6,900.0	1.47	175.59	6,895.1	-1.6	73.4	507,629.74	545,388.76	32° 23' 43.810 N	104° 11' 10.611 W
7,000.0	1.51	142.89	6,995.0	-3.9	74.3	507,627.41	545,389.66	32° 23' 43.787 N	104° 11' 10.601 W
7,100.0	1.72	123.92	7,095.0	-5.8	76.3	507,625.52	545,391.70	32° 23' 43.768 N	104° 11' 10.577 W
7,200.0	1.68	128.76	7,195.0	-7.5	78.7	507,623.77	545,394.09	32° 23' 43.751 N	104° 11' 10.549 W
7,223.0	1.60	125.50	7,217.9	-7.9	79.2	507,623.37	545,394.61	32° 23' 43.747 N	104° 11' 10.543 W
7,381.0	1.70	123.10	7,375.9	-10.5	83.0	507,620.81	545,398.37	32° 23' 43.722 N	104° 11' 10.499 W
7,479.0	0.60	172.60	7,473.9	-11.8	84.3	507,619.50	545,399.65	32° 23' 43.709 N	104° 11' 10.484 W
7,536.0	1.80	262.30	7,530.8	-12.2	83.4	507,619.09	545,398.80	32° 23' 43.705 N	104° 11' 10.494 W
7,568.0	3.30	275.20	7,562.8	-12.2	82.0	507,619.10	545,397.39	32° 23' 43.705 N	104° 11' 10.511 W
7,599.0	3.50	271.00	7,593.8	-12.1	80.2	507,619.20	545,395.55	32° 23' 43.706 N	104° 11' 10.532 W
7,631.0	3.20	274.30	7,625.7	-12.0	78.3	507,619.29	545,393.69	32° 23' 43.707 N	104° 11' 10.554 W
7,663.0	2.90	273.20	7,657.7	-11.9	76.6	507,619.40	545,391.99	32° 23' 43.708 N	104° 11' 10.574 W
7,694.0	2.70	279.20	7,688.6	-11.7	75.1	507,619.56	545,390.49	32° 23' 43.709 N	104° 11' 10.591 W
7,726.0	2.20	284.10	7,720.6	-11.5	73.7	507,619.83	545,389.15	32° 23' 43.712 N	104° 11' 10.607 W
7,758.0	1.50	283.50	7,752.6	-11.2	72.7	507,620.08	545,388.14	32° 23' 43.714 N	104° 11' 10.618 W
7,789.0	1.40	286.20	7,783.6	-11.0	72.0	507,620.28	545,387.38	32° 23' 43.716 N	104° 11' 10.627 W
7,916.0	1.20	258.40	7,910.5	-10.9	69.2	507,620.44	545,384.59	32° 23' 43.718 N	104° 11' 10.660 W
8,011.0	1.00	257.60	8,005.5	-11.2	67.4	507,620.06	545,382.81	32° 23' 43.714 N	104° 11' 10.681 W
8,152.0	1.10	218.40	8,146.5	-12.6	65.4	507,618.74	545,380.77	32° 23' 43.701 N	104° 11' 10.704 W
8,190.0	1.20	218.50	8,184.5	-13.2	64.9	507,618.14	545,380.29	32° 23' 43.695 N	104° 11' 10.710 W
8,222.0	1.60	271.30	8,216.5	-13.4	64.2	507,617.89	545,379.64	32° 23' 43.693 N	104° 11' 10.718 W
8,254.0	4.00	273.50	8,248.4	-13.3	62.7	507,617.97	545,378.07	32° 23' 43.694 N	104° 11' 10.736 W
8,285.0	7.60	268.10	8,279.3	-13.3	59.5	507,617.97	545,374.95	32° 23' 43.694 N	104° 11' 10.772 W
8,317.0	10.50	266.90	8,310.9	-13.6	54.5	507,617.74	545,369.92	32° 23' 43.692 N	104° 11' 10.831 W
8,348.0	12.40	268.30	8,341.3	-13.8	48.4	507,617.49	545,363.77	32° 23' 43.689 N	104° 11' 10.903 W
8,380.0	14.50	267.00	8,372.4	-14.1	40.9	507,617.17	545,356.33	32° 23' 43.686 N	104° 11' 10.989 W
8,412.0	17.00	264.70	8,403.2	-14.8	32.3	507,616.53	545,347.67	32° 23' 43.680 N	104° 11' 11.090 W
8,443.0	19.60	263.70	8,432.6	-15.8	22.6	507,615.54	545,337.99	32° 23' 43.670 N	104° 11' 11.203 W
8,475.0	21.90	263.40	8,462.5	-17.0	11.3	507,614.27	545,326.73	32° 23' 43.658 N	104° 11' 11.335 W
8,506.0	24.30	261.90	8,491.0	-18.6	-0.7	507,612.71	545,314.67	32° 23' 43.643 N	104° 11' 11.475 W
8,538.0	27.20	264.00	8,519.9	-20.3	-14.5	507,611.01	545,300.87	32° 23' 43.626 N	104° 11' 11.636 W
8,570.0	31.60	267.00	8,547.7	-21.5	-30.2	507,609.81	545,285.22	32° 23' 43.614 N	104° 11' 11.819 W
8,602.0	36.50	269.10	8,574.2	-22.1	-48.1	507,609.22	545,267.32	32° 23' 43.609 N	104° 11' 12.028 W
8,633.0	41.80	269.40	8,598.3	-22.3	-67.6	507,608.97	545,247.76	32° 23' 43.606 N	104° 11' 12.256 W
8,665.0	47.10	268.80	8,621.1	-22.7	-90.0	507,608.61	545,225.36	32° 23' 43.603 N	104° 11' 12.517 W
8,697.0	51.80	268.00	8,641.9	-23.4	-114.3	507,607.92	545,201.06	32° 23' 43.597 N	104° 11' 12.801 W
8,728.0	55.90	267.70	8,660.2	-24.3	-139.4	507,606.98	545,176.05	32° 23' 43.588 N	104° 11' 13.092 W
8,760.0	60.00	268.10	8,677.2	-25.3	-166.5	507,605.99	545,148.95	32° 23' 43.578 N	104° 11' 13.408 W
8,792.0	64.20	267.60	8,692.1	-26.4	-194.7	507,604.93	545,120.70	32° 23' 43.568 N	104° 11' 13.738 W
8,823.0	68.60	267.00	8,704.5	-27.7	-223.1	507,603.59	545,092.33	32° 23' 43.555 N	104° 11' 14.069 W
8,855.0	77.00	266.00	8,722.9	-31.3	-282.1	507,599.97	545,033.27	32° 23' 43.520 N	104° 11' 14.758 W
8,886.0	76.50	267.00	8,723.1	-31.4	-283.1	507,599.91	545,032.30	32° 23' 43.520 N	104° 11' 14.769 W
8,918.0	79.40	268.40	8,729.8	-32.6	-314.4	507,598.65	545,001.03	32° 23' 43.508 N	104° 11' 15.134 W
8,949.0	81.30	270.70	8,735.0	-32.9	-344.9	507,598.41	544,970.47	32° 23' 43.506 N	104° 11' 15.490 W
8,981.0	83.60	270.70	8,739.2	-32.5	-376.6	507,598.80	544,938.75	32° 23' 43.510 N	104° 11' 15.860 W
9,012.0	85.00	270.30	8,742.2	-32.2	-407.5	507,599.07	544,907.91	32° 23' 43.513 N	104° 11' 16.220 W
9,044.0	86.60	270.70	8,744.6	-32.0	-439.4	507,599.35	544,876.00	32° 23' 43.516 N	104° 11' 16.592 W
9,076.0	88.00	270.00	8,746.1	-31.8	-471.4	507,599.54	544,844.04	32° 23' 43.519 N	104° 11' 16.965 W
9,107.0	89.00	268.80	8,746.9	-32.1	-502.4	507,599.22	544,813.05	32° 23' 43.516 N	104° 11' 17.326 W
9,139.0	89.10	266.60	8,747.4	-33.4	-534.3	507,597.94	544,781.08	32° 23' 43.504 N	104° 11' 17.699 W
9,202.0	90.20	265.60	8,747.8	-37.7	-597.2	507,593.65	544,718.23	32° 23' 43.462 N	104° 11' 18.432 W
9,266.0	91.30	265.30	8,747.0	-42.7	-661.0	507,588.57	544,654.44	32° 23' 43.413 N	104° 11' 19.176 W
9,361.0	89.40	265.00	8,746.4	-50.8	-755.6	507,580.54	544,559.78	32° 23' 43.334 N	104° 11' 20.280 W



Wellplanning
Survey Report - Geographic

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #6H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3120.0usft (Original Well Elev)
Site:	CCAP 16 State Com	MD Reference:	WELL @ 3120.0usft (Original Well Elev)
Well:	#6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,456.0	91.40	264.20	8,745.7	-59.7	-850.2	507,571.60	544,465.21	32° 23' 43.247 N	104° 11' 21.384 W
9,551.0	91.30	264.80	8,743.5	-68.8	-944.7	507,562.50	544,370.68	32° 23' 43.158 N	104° 11' 22.486 W
9,646.0	89.20	265.00	8,743.1	-77.2	-1,039.3	507,554.06	544,276.06	32° 23' 43.076 N	104° 11' 23.590 W
9,741.0	90.90	266.90	8,743.0	-84.0	-1,134.1	507,547.35	544,181.31	32° 23' 43.011 N	104° 11' 24.695 W
9,836.0	90.10	266.90	8,742.2	-89.1	-1,229.0	507,542.21	544,086.45	32° 23' 42.961 N	104° 11' 25.802 W
9,962.0	89.60	266.60	8,742.5	-96.2	-1,354.7	507,535.07	543,960.65	32° 23' 42.892 N	104° 11' 27.269 W
10,057.0	90.90	266.90	8,742.1	-101.6	-1,449.6	507,529.68	543,865.81	32° 23' 42.840 N	104° 11' 28.375 W
10,152.0	92.40	267.00	8,739.4	-106.7	-1,544.4	507,524.63	543,770.98	32° 23' 42.792 N	104° 11' 29.481 W
10,279.0	89.40	265.70	8,737.4	-114.8	-1,671.1	507,516.54	543,644.28	32° 23' 42.713 N	104° 11' 30.959 W
10,374.0	90.20	265.30	8,737.7	-122.2	-1,765.8	507,509.09	543,549.57	32° 23' 42.641 N	104° 11' 32.064 W
10,469.0	90.40	264.30	8,737.2	-130.8	-1,860.4	507,500.48	543,454.96	32° 23' 42.557 N	104° 11' 33.168 W
10,564.0	91.70	263.80	8,735.5	-140.7	-1,954.9	507,490.64	543,360.49	32° 23' 42.461 N	104° 11' 34.270 W
10,659.0	90.90	263.80	8,733.3	-150.9	-2,049.3	507,480.38	543,266.07	32° 23' 42.360 N	104° 11' 35.371 W
10,754.0	90.50	265.10	8,732.1	-160.1	-2,143.9	507,471.19	543,171.53	32° 23' 42.271 N	104° 11' 36.474 W
10,849.0	91.80	264.80	8,730.2	-168.5	-2,238.5	507,462.83	543,076.92	32° 23' 42.189 N	104° 11' 37.578 W
10,944.0	90.70	266.10	8,728.2	-176.0	-2,333.2	507,455.30	542,982.24	32° 23' 42.116 N	104° 11' 38.682 W
11,039.0	92.00	265.80	8,725.9	-182.7	-2,427.9	507,448.59	542,887.51	32° 23' 42.051 N	104° 11' 39.787 W
11,134.0	90.70	266.10	8,723.7	-189.4	-2,522.6	507,441.88	542,792.78	32° 23' 41.985 N	104° 11' 40.892 W
11,229.0	92.40	266.50	8,721.1	-195.5	-2,617.4	507,435.75	542,698.01	32° 23' 41.926 N	104° 11' 41.997 W
11,355.0	90.70	266.10	8,717.7	-203.7	-2,743.1	507,427.63	542,572.33	32° 23' 41.847 N	104° 11' 43.463 W
11,450.0	90.10	265.30	8,717.0	-210.8	-2,837.8	507,420.50	542,477.60	32° 23' 41.778 N	104° 11' 44.568 W
11,513.0	90.60	264.80	8,716.7	-216.2	-2,900.6	507,415.07	542,414.83	32° 23' 41.725 N	104° 11' 45.300 W
11,608.0	90.80	265.60	8,715.5	-224.2	-2,995.2	507,407.12	542,320.17	32° 23' 41.647 N	104° 11' 46.405 W
11,703.0	89.80	265.70	8,715.0	-231.4	-3,090.0	507,399.91	542,225.45	32° 23' 41.577 N	104° 11' 47.509 W
11,766.0	90.30	265.70	8,715.0	-236.1	-3,152.8	507,395.19	542,162.63	32° 23' 41.531 N	104° 11' 48.242 W
11,861.0	90.00	265.40	8,714.7	-243.5	-3,247.5	507,387.82	542,067.91	32° 23' 41.460 N	104° 11' 49.347 W
11,955.0	89.10	265.40	8,715.4	-251.0	-3,341.2	507,380.28	541,974.22	32° 23' 41.386 N	104° 11' 50.440 W
12,050.0	91.30	265.20	8,715.1	-258.8	-3,435.9	507,372.50	541,879.55	32° 23' 41.310 N	104° 11' 51.544 W
12,145.0	89.60	265.00	8,714.4	-266.9	-3,530.5	507,364.38	541,784.90	32° 23' 41.231 N	104° 11' 52.648 W
12,240.0	90.30	264.70	8,714.4	-275.4	-3,625.1	507,355.86	541,690.28	32° 23' 41.148 N	104° 11' 53.752 W
12,335.0	91.30	264.10	8,713.1	-284.7	-3,719.7	507,346.59	541,595.75	32° 23' 41.057 N	104° 11' 54.855 W
12,430.0	89.70	264.60	8,712.3	-294.1	-3,814.2	507,337.23	541,501.22	32° 23' 40.966 N	104° 11' 55.957 W
12,525.0	88.60	262.70	8,713.7	-304.6	-3,908.6	507,326.73	541,406.82	32° 23' 40.863 N	104° 11' 57.058 W
12,620.0	90.00	264.00	8,714.9	-315.6	-4,002.9	507,315.73	541,312.47	32° 23' 40.756 N	104° 11' 58.159 W
12,683.0	90.80	264.10	8,714.4	-322.1	-4,065.6	507,309.20	541,249.81	32° 23' 40.692 N	104° 11' 58.890 W
12,747.0	89.50	262.10	8,714.3	-329.8	-4,129.1	507,301.51	541,186.28	32° 23' 40.616 N	104° 11' 59.631 W
12,842.0	89.40	262.50	8,715.2	-342.5	-4,223.3	507,288.78	541,092.14	32° 23' 40.492 N	104° 12' 0.729 W
12,937.0	90.50	261.90	8,715.2	-355.4	-4,317.4	507,275.89	540,998.02	32° 23' 40.365 N	104° 12' 1.827 W
13,010.0	92.00	262.20	8,713.7	-365.5	-4,389.7	507,265.80	540,925.74	32° 23' 40.266 N	104° 12' 2.670 W
13,200.0	92.00	262.20	8,707.0	-391.3	-4,577.8	507,240.03	540,737.61	32° 23' 40.014 N	104° 12' 4.865 W
PBHL(CCAP#6H)									

Checked By: _____ Approved By: _____ Date: _____