

PATRIOT DRILLING, LLC

OPERATOR: COG Operating, LLC
WELL/LEASE: Way South State Com # 4 H
COUNTY: Eddy Co., New Mexico
Sec. 30, T26S, R28E

RECEIVED

SEP 12 2012

NMOCD ARTESIA

30-015-40031 40370

**STATE OF NEW MEXICO
DEVIATION REPORT**

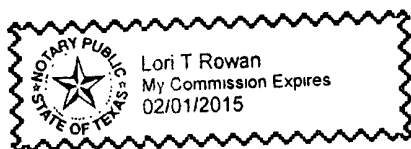
<u>Depth</u>	<u>Deviation</u>	<u>Depth</u>	<u>Deviation</u>
192	1 1/4	2,815	1/2
503	3 1/4	3,290	1/2
612	2 1/2	3,769	1/4
854	1 1/4	4,180	1/2
1,011	2 1/2	4,599	1
1,143	2 1/4	5,040	1 1/4
1,208	1 3/4	5,515	1 1/2
1,526	1	5,737	2
1,707	3	5,925	2 1/4
1,807	2 3/4	6,118	1
2,093	2 3/4	6,316	1 1/4
2,230	1 1/2	6,909	2 3/4
2,329	1 1/2	7,164	1 3/4

Patriot Drilling, LLC

M. Leroy Peterson, Executive Vice-President

The foregoing instrument was acknowledged before me on this 6th day of July, 2012 by M. Leroy Peterson, Executive Vice-President of Patriot Drilling, LLC.

My Commission Expires: 02/01/2015



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



Company: COG Operating LLC (Concho)
Lease/Well: Way South State Com/ No. 004H
Location: S30 26s 28e
Rig Name: Patriot 6
State/County: New Mexico/Eddy
Latitude: 32.02
GRID North is 0.11 Degrees East of True North
VS-Azi: 180.07 Degrees



Depth Reference : RKB= 17'

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: ...uth st com #4h_gyro survey.ut

Minimum Curvature Method

Report Date/Time: 7/3/2012 / 16:22

Vaughn Energy Services

Midland, Texas

432-563-4444

Surveyor: Colby Ware

Way South State Com No. 004H / API 30-015-40370

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	0.53	148.31	100.00	-0.40	0.24	0.40	0.46	148.31	0.53
200.00	2.37	138.53	199.96	-2.34	1.86	2.34	2.99	141.56	1.84
300.00	1.62	138.09	299.90	-4.94	4.17	4.94	6.47	139.83	0.74
400.00	3.99	139.31	399.77	-8.64	7.39	8.63	11.37	139.46	2.37
500.00	3.56	132.15	499.56	-13.37	11.96	13.35	17.94	138.17	0.64
600.00	2.69	123.19	599.41	-16.74	16.24	16.72	23.32	135.87	0.99
700.00	2.22	119.44	699.31	-18.98	19.89	18.95	27.49	133.65	0.50
800.00	2.08	114.96	799.24	-20.69	23.22	20.67	31.10	131.71	0.22
900.00	1.64	108.72	899.19	-21.92	26.22	21.89	34.17	129.90	0.48
1000.00	2.06	80.44	999.14	-22.08	29.34	22.04	36.72	126.96	0.99
1100.00	2.16	75.57	1099.07	-21.31	32.94	21.27	39.23	122.90	0.21
1200.00	2.22	74.15	1199.00	-20.31	36.63	20.27	41.88	119.01	0.08
1300.00	1.44	68.41	1298.95	-19.32	39.66	19.27	44.11	115.97	0.79
1400.00	1.11	63.41	1398.92	-18.42	41.69	18.37	45.58	113.84	0.35
1500.00	1.00	62.01	1498.91	-17.58	43.33	17.53	46.76	112.09	0.11
1600.00	0.94	56.92	1598.89	-16.72	44.79	16.67	47.81	110.48	0.11
1700.00	2.60	66.77	1698.84	-15.38	47.56	15.33	49.98	107.93	1.68
1800.00	2.50	71.27	1798.74	-13.79	51.70	13.73	53.51	104.93	0.22

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
1900.00	2.60	82.04	1898.64	-12.78	56.02	12.71	57.46	102.85	0.49
2000.00	3.80	84.20	1998.49	-12.13	61.56	12.05	62.74	101.14	1.21
2100.00	2.99	85.61	2098.31	-11.59	67.46	11.51	68.45	99.75	0.81
2200.00	1.98	86.07	2198.21	-11.27	71.79	11.19	72.67	98.92	1.01
2300.00	1.43	93.37	2298.17	-11.23	74.76	11.14	75.60	98.54	0.60
2400.00	0.95	99.84	2398.15	-11.44	76.82	11.35	77.67	98.47	0.49
2500.00	0.95	98.37	2498.13	-11.71	78.47	11.61	79.34	98.49	0.02
2600.00	0.63	100.87	2598.13	-11.93	79.83	11.83	80.72	98.50	0.32
2700.00	0.77	106.90	2698.12	-12.23	81.01	12.13	81.93	98.58	0.15
2800.00	0.50	116.16	2798.11	-12.61	82.04	12.51	83.00	98.74	0.29
2900.00	0.50	133.69	2898.11	-13.11	82.74	13.00	83.77	99.00	0.15
3000.00	0.39	160.22	2998.10	-13.73	83.17	13.63	84.30	99.37	0.23
3100.00	0.30	188.59	3098.10	-14.31	83.25	14.21	84.47	99.76	0.19
3200.00	0.25	203.57	3198.10	-14.77	83.12	14.67	84.42	100.08	0.09
3300.00	0.43	243.75	3298.10	-15.13	82.70	15.03	84.07	100.37	0.29
3400.00	0.26	265.71	3398.10	-15.32	82.14	15.22	83.56	100.56	0.21
3500.00	0.32	262.65	3498.10	-15.37	81.63	15.27	83.07	100.66	0.07
3600.00	0.25	246.92	3598.10	-15.49	81.15	15.39	82.62	100.81	0.11
3700.00	0.23	240.44	3698.10	-15.67	80.78	15.58	82.29	100.98	0.03
3800.00	0.25	238.92	3798.09	-15.89	80.42	15.79	81.97	101.18	0.02
3900.00	0.42	239.43	3898.09	-16.19	79.92	16.09	81.54	101.45	0.16
4000.00	0.40	234.07	3998.09	-16.57	79.32	16.48	81.04	101.80	0.04
4100.00	0.52	230.25	4098.09	-17.06	78.70	16.97	80.53	102.23	0.12
4200.00	0.44	238.62	4198.08	-17.55	78.02	17.46	79.97	102.68	0.11
4300.00	0.37	239.94	4298.08	-17.91	77.42	17.82	79.46	103.03	0.07
4400.00	0.70	253.78	4398.08	-18.25	76.55	18.15	78.69	103.41	0.35
4500.00	0.90	257.76	4498.07	-18.58	75.19	18.49	77.45	103.88	0.21
4600.00	0.76	256.03	4598.06	-18.91	73.77	18.82	76.16	104.38	0.14
4700.00	0.90	243.81	4698.05	-19.42	72.42	19.33	74.98	105.01	0.23
4800.00	1.03	240.09	4798.03	-20.22	70.93	20.13	73.76	105.91	0.14
4900.00	0.91	224.51	4898.02	-21.23	69.60	21.15	72.76	106.97	0.29
5000.00	1.02	218.26	4998.00	-22.49	68.49	22.41	72.09	108.18	0.15
5100.00	1.15	210.90	5097.98	-24.05	67.43	23.97	71.59	109.63	0.20
5200.00	1.28	204.76	5197.96	-25.93	66.44	25.85	71.32	111.32	0.19
5300.00	1.46	207.37	5297.93	-28.08	65.38	28.00	71.16	113.25	0.19
5400.00	1.47	204.41	5397.90	-30.39	64.27	30.31	71.09	115.31	0.08
5500.00	1.54	195.98	5497.87	-32.85	63.37	32.77	71.37	117.40	0.23
5600.00	1.77	193.21	5597.82	-35.65	62.64	35.57	72.07	119.64	0.25
5700.00	2.05	194.22	5697.77	-38.89	61.85	38.81	73.06	122.16	0.28

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
5800.00	1.79	193.41	5797.71	-42.14	61.05	42.07	74.18	124.62	0.26
5900.00	1.94	196.97	5897.66	-45.28	60.19	45.21	75.32	126.96	0.19
6000.00	1.65	220.61	5997.61	-48.00	58.76	47.93	75.87	129.24	0.79
6100.00	0.68	246.79	6097.59	-49.32	57.28	49.25	75.59	130.73	1.08
6200.00	1.23	272.12	6197.58	-49.51	55.66	49.45	74.50	131.66	0.68
6300.00	1.04	285.74	6297.56	-49.23	53.72	49.16	72.86	132.50	0.33
6400.00	1.16	307.12	6397.54	-48.37	52.03	48.31	71.04	132.91	0.43
6500.00	1.48	306.01	6497.51	-47.00	50.18	46.93	68.75	133.13	0.32
6600.00	2.20	303.70	6597.46	-45.17	47.53	45.11	65.57	133.54	0.72
6700.00	2.40	292.77	6697.38	-43.29	44.00	43.24	61.73	134.53	0.48
6800.00	2.30	272.26	6797.30	-42.40	40.06	42.36	58.34	136.63	0.84
6900.00	2.31	258.93	6897.22	-42.71	36.09	42.67	55.91	139.81	0.53
7000.00	1.92	244.69	6997.15	-43.81	32.60	43.77	54.61	143.35	0.65
7100.00	1.53	243.10	7097.10	-45.13	29.89	45.10	54.14	146.48	0.39
7116.00	1.63	241.64	7113.10	-45.34	29.50	45.30	54.09	146.95	0.68



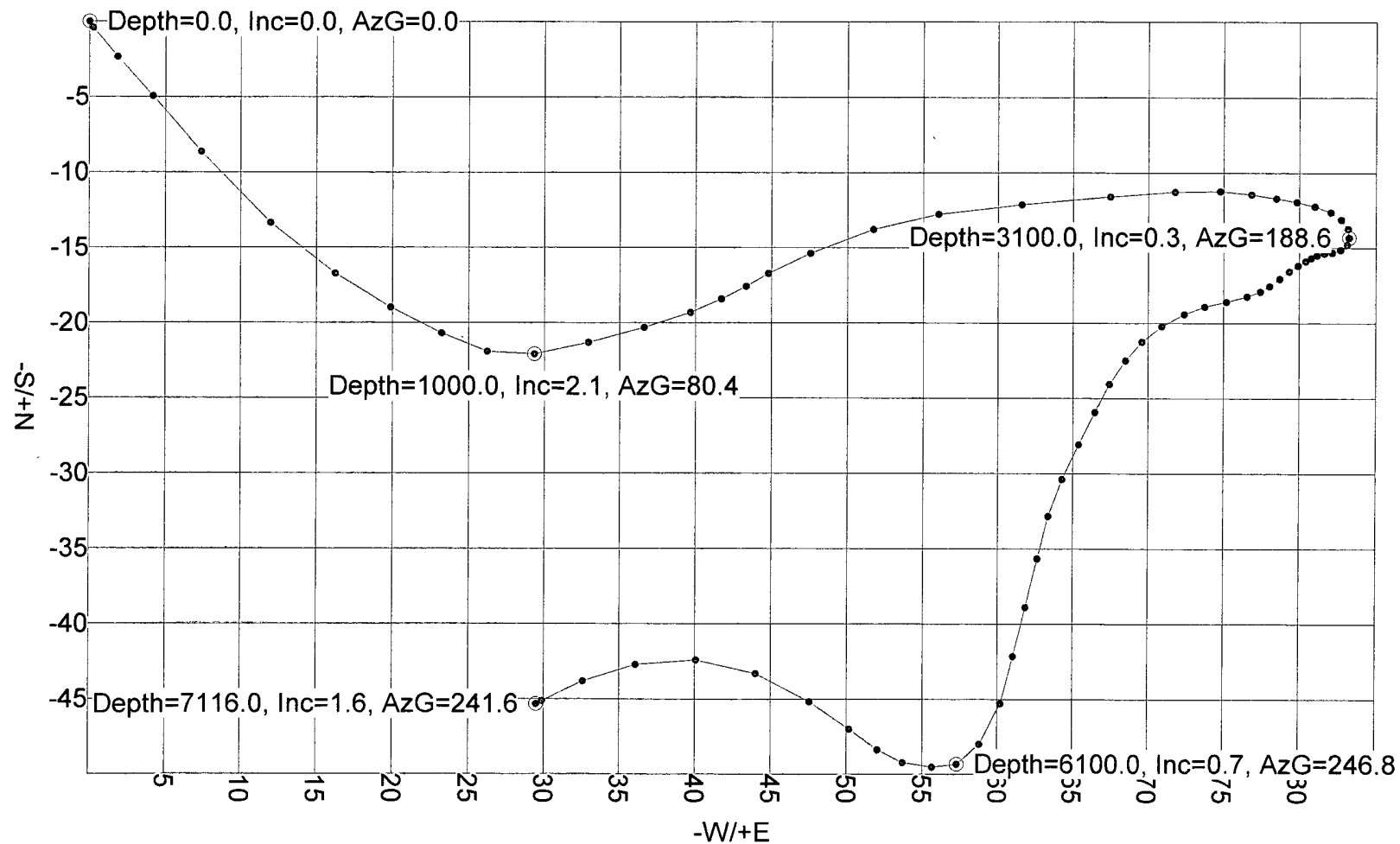
Vaughn Energy Services

Midland, Texas

432-563-4444

Surveyor: Colby Ware

Way South State Com No. 004H / API 30-015-40370



VES Survey Date: 06/26/2012

PathFinder Energy Services, Inc.

Survey Report

COG OPERATING LLC
WAY SOUTH STATE COM 4H / API# 30-015-40370
EDDY COUNTY, NM
Rig: PATRIOT 6
PathFinder Office Supervisor: JUAN ALCOCER
PathFinder Field Engineers: A. FOURNIER
J. ESPARZA

Survey Horiz. Reference: WELLHEAD
Ref Coordinates: LAT: 32.1.4.3644 N LON: 104.7.25.2976 W
GRID Reference: NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 564974.6000 Y: 370294.0000
North Aligned To: GRID NORTH
Total Magnetic Correction: 7.58° EAST TO GRID
Vertical Section Plane: 180.07
Survey Vert. Reference: 17.50' Kelly Bushing To Ground
Altitude: 3029.00' Ground To MSL

Survey Calculations by RX5 V6.04A using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist (ft)	Dir (deg)	DLS (dg/100ft)
THE FOLLOWING ARE VAUGHN ENERGY SERVICES GYRO SURVEYS.										
100.00	0.53	148.31	100.00	0.00	0.42	0.42 S	0.24 E	0.49@	149.78	0.00
200.00	2.37	138.53	199.96	100.00	2.36	2.36 S	1.86 E	3.00@	141.84	1.85
300.00	1.62	138.09	299.90	100.00	4.96	4.96 S	4.17 E	6.48@	139.97	0.75
400.00	3.99	139.31	399.77	100.00	8.65	8.65 S	7.38 E	11.38@	139.53	2.37
500.00	3.56	132.19	499.56	100.00	13.36	13.38 S	11.95 E	17.94@	138.22	0.64
600.00	2.69	123.19	599.41	100.00	16.73	16.75 S	16.22 E	23.31@	135.92	1.00
700.00	2.22	119.44	699.32	100.00	18.96	18.98 S	19.87 E	27.48@	133.70	0.50
800.00	2.08	114.96	799.25	100.00	20.67	20.70 S	23.20 E	31.09@	131.74	0.22
900.00	1.64	108.72	899.19	100.00	21.89	21.93 S	26.20 E	34.16@	129.93	0.48
1000.00	2.06	80.44	999.14	100.00	22.05	22.09 S	29.33 E	36.71@	126.99	0.99
1100.00	2.16	75.57	1099.07	100.00	21.28	21.32 S	32.92 E	39.22@	122.92	0.21
1200.00	2.22	74.15	1199.00	100.00	20.28	20.32 S	36.61 E	41.87@	119.03	0.08
1300.00	1.44	68.41	1298.95	100.00	19.28	19.33 S	39.64 E	44.11@	115.99	0.80
1400.00	1.11	63.41	1398.93	100.00	18.38	18.43 S	41.68 E	45.57@	113.86	0.35
1500.00	1.00	62.01	1498.91	100.00	17.54	17.59 S	43.32 E	46.75@	112.10	0.11
1600.00	0.94	56.92	1598.89	100.00	16.68	16.73 S	44.77 E	47.80@	110.49	0.10
1700.00	2.60	66.77	1698.84	100.00	15.33	15.39 S	47.54 E	49.97@	107.94	1.68
1800.00	2.50	71.27	1798.74	100.00	13.73	13.80 S	51.69 E	53.50@	104.94	0.22
1900.00	2.60	82.04	1898.65	100.00	12.71	12.78 S	56.01 E	57.45@	102.86	0.49
2000.00	3.80	84.20	1998.49	100.00	12.06	12.13 S	61.55 E	62.73@	101.15	1.20
2100.00	2.99	85.61	2098.31	100.00	11.52	11.60 S	67.45 E	68.44@	99.76	0.81
2200.00	1.98	86.07	2198.22	100.00	11.19	11.28 S	71.77 E	72.65@	98.93	1.01
2300.00	1.43	93.37	2298.17	100.00	11.14	11.23 S	74.74 E	75.58@	98.55	0.59
2400.00	0.95	99.84	2398.15	100.00	11.36	11.45 S	76.80 E	77.65@	98.48	0.50
2500.00	0.95	98.37	2498.14	100.00	11.62	11.71 S	78.44 E	79.31@	98.49	0.02

PathFinder Energy Services, Inc.

Survey Report

COG OPERATING LLC
WAY SOUTH STATE COM 4H / API# 30-015-40370
EDDY COUNTY, NM
RIG: PATRIOT 6

Page 02/06

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
2600.00	0.63	100.87	2598.13	100.00	11.84	11.94 S	79.80 E	80.69@	98.51	0.32
2700.00	0.77	106.90	2698.12	100.00	12.14	12.24 S	80.98 E	81.90@	98.59	0.16
2800.00	0.50	116.16	2798.11	100.00	12.52	12.62 S	82.02 E	82.98@	98.75	0.29
2900.00	0.50	133.69	2898.11	100.00	13.02	13.12 S	82.72 E	83.76@	99.01	0.15
3000.00	0.39	160.22	2998.11	100.00	13.64	13.74 S	83.15 E	84.28@	99.38	0.23
3100.00	0.30	188.59	3098.10	100.00	14.22	14.32 S	83.23 E	84.45@	99.76	0.19
3200.00	0.25	203.57	3198.10	100.00	14.67	14.78 S	83.10 E	84.41@	100.08	0.09
3300.00	0.43	243.75	3298.10	100.00	15.04	15.14 S	82.68 E	84.06@	100.38	0.29
3400.00	0.26	265.71	3398.10	100.00	15.22	15.33 S	82.12 E	83.54@	100.57	0.21
3500.00	0.32	262.65	3498.10	100.00	15.28	15.38 S	81.61 E	83.05@	100.67	0.06
3600.00	0.25	246.92	3598.10	100.00	15.40	15.50 S	81.14 E	82.60@	100.81	0.10
3700.00	0.23	240.44	3698.10	100.00	15.59	15.68 S	80.76 E	82.27@	100.99	0.03
3800.00	0.25	238.92	3798.10	100.00	15.80	15.90 S	80.40 E	81.96@	101.18	0.02
3900.00	0.42	239.43	3898.09	100.00	16.10	16.19 S	79.90 E	81.52@	101.46	0.17
4000.00	0.40	234.07	3998.09	100.00	16.49	16.59 S	79.30 E	81.02@	101.81	0.04
4100.00	0.52	230.25	4098.09	100.00	16.98	17.08 S	78.67 E	80.50@	102.25	0.12
4200.00	0.44	238.62	4198.08	100.00	17.48	17.57 S	77.99 E	79.95@	102.70	0.11
4300.00	0.37	239.94	4298.08	100.00	17.84	17.93 S	77.38 E	79.43@	103.05	0.07
4400.00	0.70	253.78	4398.08	100.00	18.17	18.26 S	76.52 E	78.67@	103.43	0.35
4500.00	0.90	257.76	4498.07	100.00	18.51	18.60 S	75.16 E	77.43@	103.90	0.21
4600.00	0.76	256.03	4598.06	100.00	18.84	18.93 S	73.75 E	76.14@	104.39	0.14
4700.00	0.90	243.81	4698.05	100.00	19.35	19.44 S	72.40 E	74.97@	105.03	0.23
4800.00	1.03	240.09	4798.03	100.00	20.14	20.23 S	70.92 E	73.75@	105.92	0.14
4900.00	0.91	224.51	4898.02	100.00	21.16	21.24 S	69.59 E	72.76@	106.98	0.29
5000.00	1.02	218.26	4998.00	100.00	22.43	22.51 S	68.48 E	72.08@	108.20	0.15
5100.00	1.15	210.90	5097.99	100.00	23.99	24.07 S	67.41 E	71.58@	109.65	0.19
5200.00	1.28	204.76	5197.96	100.00	25.86	25.94 S	66.43 E	71.31@	111.33	0.18
5300.00	1.46	207.37	5297.94	100.00	28.01	28.09 S	65.37 E	71.15@	113.25	0.19

PathFinder Energy Services, Inc.

Survey Report

COG OPERATING LLC
WAY SOUTH STATE COM 4H / API# 30-015-40370
EDDY COUNTY, NM
RIG: PATRIOT 6

Page 03/06

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
5400.00	1.47	204.41	5397.90	100.00	30.31	30.39 S	64.26 E	71.08@	115.31	0.08
5500.00	1.54	195.98	5497.87	100.00	32.77	32.85 S	63.36 E	71.37@	117.41	0.23
5600.00	1.77	193.21	5597.83	100.00	35.57	35.64 S	62.64 E	72.07@	119.64	0.24
5700.00	2.05	194.22	5697.77	100.00	38.81	38.88 S	61.84 E	73.05@	122.16	0.28
5800.00	1.79	193.41	5797.71	100.00	42.06	42.14 S	61.04 E	74.17@	124.62	0.26
5900.00	1.94	196.97	5897.66	100.00	45.20	45.27 S	60.19 E	75.31@	126.95	0.19
6000.00	1.65	220.61	5997.61	100.00	47.91	47.99 S	58.75 E	75.86@	129.24	0.79
6100.00	0.68	246.79	6097.59	100.00	49.24	49.31 S	57.27 E	75.58@	130.73	1.08
6200.00	1.23	272.12	6197.58	100.00	49.44	49.51 S	55.65 E	74.49@	131.65	0.68
6300.00	1.04	285.74	6297.56	100.00	49.15	49.22 S	53.71 E	72.85@	132.50	0.33
6400.00	1.16	307.12	6397.54	100.00	48.30	48.36 S	52.03 E	71.03@	132.91	0.42
6500.00	1.48	306.01	6497.51	100.00	46.93	46.99 S	50.18 E	68.75@	133.12	0.32
6600.00	2.20	303.70	6597.46	100.00	45.11	45.17 S	47.53 E	65.57@	133.54	0.72
6700.00	2.40	292.77	6697.38	100.00	43.24	43.29 S	44.01 E	61.73@	134.53	0.48
6800.00	2.30	272.26	6797.30	100.00	42.36	42.40 S	40.07 E	58.34@	136.62	0.84
6900.00	2.31	258.93	6897.22	100.00	42.67	42.71 S	36.09 E	55.92@	139.81	0.53
7000.00	1.92	244.69	6997.15	100.00	43.78	43.82 S	32.60 E	54.61@	143.35	0.65
7100.00	1.53	243.10	7097.11	100.00	45.10	45.14 S	29.89 E	54.14@	146.49	0.39
** TIED INTO VAUGHN ENERGY SERVICES GYRO SURVEY AT 7116'MD.										
7116.00	1.63	241.64	7113.10	16.00	45.30	45.34 S	29.50 E	54.09@	146.95	0.67
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
7164.00	1.67	241.37	7161.08	48.00	45.96	46.00 S	28.29 E	54.00@	148.41	0.09
7195.00	1.93	224.23	7192.07	31.00	46.56	46.59 S	27.52 E	54.11@	149.43	1.92
7227.00	3.78	191.89	7224.03	32.00	47.98	48.01 S	26.93 E	55.05@	150.71	7.45
7259.00	6.33	192.85	7255.90	32.00	50.73	50.76 S	26.32 E	57.18@	152.59	7.97
7291.00	6.51	201.91	7287.70	32.00	54.13	54.16 S	25.25 E	59.76@	155.00	3.21
7323.00	5.54	201.56	7319.52	32.00	57.25	57.28 S	24.01 E	62.11@	157.26	3.03
7355.00	7.39	204.63	7351.32	32.00	60.56	60.59 S	22.58 E	64.66@	159.56	5.88

PathFinder Energy Services, Inc.

Survey Report

COG OPERATING LLC
WAY SOUTH STATE COM 4H / API# 30-015-40370
EDDY COUNTY, NM
RIG: PATRIOT 6

Page 04/06

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
7387.00	8.62	210.17	7383.01	32.00	64.51	64.54 S	20.52 E	67.72@	162.36	4.53
7419.00	11.96	206.83	7414.49	32.00	69.55	69.57 S	17.82 E	71.81@	165.64	10.60
7451.00	17.32	205.86	7445.44	32.00	76.80	76.82 S	14.24 E	78.13@	169.50	16.77
7482.00	22.95	206.83	7474.53	31.00	86.36	86.37 S	9.50 E	86.89@	173.73	18.19
7514.00	27.87	209.20	7503.43	32.00	98.47	98.48 S	3.03 E	98.52@	178.24	15.70
7546.00	31.66	213.51	7531.20	32.00	112.02	112.01 S	5.26 W	112.14@	182.69	13.59
7578.00	36.76	211.13	7557.66	32.00	127.24	127.22 S	14.86 W	128.09@	186.66	16.47
7609.00	41.50	207.18	7581.70	31.00	144.34	144.31 S	24.35 W	146.35@	189.58	17.27
7641.00	45.46	201.38	7604.93	32.00	164.42	164.38 S	33.36 W	167.73@	191.47	17.56
7673.00	48.80	195.67	7626.71	32.00	186.66	186.61 S	40.77 W	191.01@	192.32	16.73
7704.00	52.85	190.83	7646.29	31.00	210.04	209.99 S	46.25 W	215.02@	192.42	17.80
7736.00	58.12	186.79	7664.42	32.00	236.09	236.03 S	50.25 W	241.32@	192.02	19.47
7768.00	62.26	184.15	7680.33	32.00	263.73	263.66 S	52.89 W	268.91@	191.34	14.78
7800.00	65.33	182.22	7694.46	32.00	292.39	292.32 S	54.48 W	297.36@	190.56	11.01
7832.00	67.97	181.08	7707.14	32.00	321.75	321.69 S	55.32 W	326.41@	189.76	8.88
7864.00	69.12	179.58	7718.84	32.00	351.54	351.47 S	55.49 W	355.82@	188.97	5.65
7895.00	69.47	177.91	7729.81	31.00	380.52	380.46 S	54.85 W	384.39@	188.20	5.16
7927.00	70.87	176.42	7740.66	32.00	410.59	410.52 S	53.36 W	413.97@	187.41	6.19
7959.00	74.39	176.33	7750.21	32.00	441.06	441.00 S	51.43 W	443.98@	186.65	11.00
7991.00	77.73	176.68	7757.92	32.00	472.05	471.99 S	49.54 W	474.58@	185.99	10.49
8023.00	81.69	177.56	7763.64	32.00	503.49	503.43 S	47.96 W	505.71@	185.44	12.67
8055.00	86.00	178.70	7767.07	32.00	535.28	535.22 S	46.92 W	537.27@	185.01	13.93
8086.00	88.90	179.41	7768.45	31.00	566.24	566.18 S	46.41 W	568.08@	184.69	9.63
8118.00	89.43	179.32	7768.91	32.00	598.23	598.18 S	46.06 W	599.95@	184.40	1.68
8150.00	90.75	178.88	7768.86	32.00	630.23	630.17 S	45.55 W	631.82@	184.13	4.35
8182.00	91.19	178.00	7768.32	32.00	662.21	662.15 S	44.68 W	663.66@	183.86	3.07
8277.00	90.66	178.00	7766.79	95.00	757.13	757.08 S	41.37 W	758.21@	183.13	0.56
8373.00	90.31	176.51	7765.97	96.00	853.01	852.97 S	36.77 W	853.76@	182.47	1.59

PathFinder Energy Services, Inc.

Survey Report

COG OPERATING LLC
WAY SOUTH STATE COM 4H / API# 30-015-40370
EDDY COUNTY, NM
RIG: PATRIOT 6

Page 05/06

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
8468.00	90.57	177.91	7765.24	95.00	947.89	947.85 S	32.15 W	948.40@	181.94	1.50
8564.00	90.75	177.65	7764.14	96.00	1043.81	1043.77 S	28.43 W	1044.16@	181.56	0.33
8659.00	91.19	177.12	7762.53	95.00	1138.69	1138.66 S	24.09 W	1138.91@	181.21	0.72
8754.00	91.45	177.74	7760.34	95.00	1233.56	1233.54 S	19.84 W	1233.70@	180.92	0.71
8849.00	91.98	177.56	7757.50	95.00	1328.43	1328.41 S	15.94 W	1328.51@	180.69	0.59
8945.00	89.69	177.56	7756.10	96.00	1424.32	1424.31 S	11.86 W	1424.36@	180.48	2.39
9040.00	89.60	177.30	7756.69	95.00	1519.22	1519.21 S	7.60 W	1519.23@	180.29	0.29
9135.00	88.55	175.98	7758.22	95.00	1614.04	1614.03 S	2.03 W	1614.04@	180.07	1.78
9230.00	88.20	175.54	7760.92	95.00	1708.73	1708.74 S	4.99 E	1708.74@	179.83	0.59
9326.00	88.02	175.80	7764.08	96.00	1804.39	1804.41 S	12.24 E	1804.45@	179.61	0.33
9420.00	88.02	175.28	7767.33	94.00	1898.04	1898.07 S	19.54 E	1898.17@	179.41	0.55
9515.00	87.85	174.31	7770.75	95.00	1992.58	1992.61 S	28.15 E	1992.81@	179.19	1.04
9610.00	89.60	177.30	7772.87	95.00	2087.28	2087.32 S	35.10 E	2087.62@	179.04	3.65
9705.00	90.75	180.02	7772.58	95.00	2182.24	2182.29 S	37.32 E	2182.60@	179.02	3.11
9800.00	91.28	179.93	7770.89	95.00	2277.22	2277.27 S	37.36 E	2277.58@	179.06	0.57
9895.00	91.63	179.32	7768.48	95.00	2372.19	2372.24 S	37.98 E	2372.54@	179.08	0.74
9990.00	91.71	179.23	7765.71	95.00	2467.14	2467.19 S	39.18 E	2467.50@	179.09	0.13
10085.00	91.54	180.11	7763.02	95.00	2562.10	2562.15 S	39.73 E	2562.46@	179.11	0.94
10180.00	92.07	180.02	7760.03	95.00	2657.05	2657.10 S	39.62 E	2657.40@	179.15	0.57
10275.00	89.78	179.93	7758.49	95.00	2752.03	2752.08 S	39.67 E	2752.37@	179.17	2.41
10369.00	89.52	179.05	7759.07	94.00	2846.02	2846.08 S	40.50 E	2846.36@	179.18	0.98
10464.00	87.93	179.58	7761.18	95.00	2940.99	2941.04 S	41.64 E	2941.34@	179.19	1.76
10559.00	88.11	179.58	7764.46	95.00	3035.93	3035.98 S	42.33 E	3036.28@	179.20	0.19
10654.00	86.79	180.99	7768.69	95.00	3130.83	3130.88 S	41.86 E	3131.16@	179.23	2.03
10749.00	87.85	182.83	7773.13	95.00	3225.67	3225.72 S	38.70 E	3225.95@	179.31	2.23
10844.00	88.29	182.92	7776.33	95.00	3320.50	3320.55 S	33.94 E	3320.72@	179.41	0.47
10939.00	90.22	182.66	7777.57	95.00	3415.38	3415.42 S	29.31 E	3415.55@	179.51	2.05
11034.00	91.10	182.83	7776.47	95.00	3510.27	3510.30 S	24.76 E	3510.39@	179.60	0.94

PathFinder Energy Services, Inc.

Survey Report

COG OPERATING LLC
WAY SOUTH STATE COM 4H / API# 30-015-40370
EDDY COUNTY, NM
RIG: PATRIOT 6

Page 06/06

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
11129.00	91.89	182.57	7773.99	95.00	3605.14	3605.17 S	20.29 E	3605.22@	179.68	0.87
11224.00	92.51	182.39	7770.35	95.00	3699.98	3700.01 S	16.18 E	3700.04@	179.75	0.68
11319.00	93.03	182.13	7765.76	95.00	3794.80	3794.82 S	12.44 E	3794.84@	179.81	0.61
11414.00	90.66	182.48	7762.70	95.00	3889.68	3889.69 S	8.62 E	3889.70@	179.87	2.52
11509.00	90.75	182.57	7761.53	95.00	3984.58	3984.59 S	4.44 E	3984.59@	179.94	0.13
11604.00	90.75	182.31	7760.29	95.00	4079.49	4079.50 S	0.39 E	4079.50@	179.99	0.27
11699.00	90.84	182.13	7758.97	95.00	4174.42	4174.41 S	3.29 W	4174.42@	180.05	0.21
11794.00	90.75	181.69	7757.65	95.00	4269.36	4269.35 S	6.45 W	4269.36@	180.09	0.47
11889.00	90.40	180.55	7756.70	95.00	4364.33	4364.33 S	8.31 W	4364.34@	180.11	1.26
11984.00	90.57	180.29	7755.89	95.00	4459.33	4459.32 S	9.01 W	4459.33@	180.12	0.33
12078.00	91.36	180.64	7754.31	94.00	4553.31	4553.30 S	9.77 W	4553.31@	180.12	0.92
12173.00	91.63	179.49	7751.83	95.00	4648.28	4648.27 S	9.88 W	4648.28@	180.12	1.24
12269.00	92.33	179.23	7748.51	96.00	4744.21	4744.21 S	8.80 W	4744.21@	180.11	0.78
12363.00	91.63	178.79	7745.27	94.00	4838.14	4838.14 S	7.18 W	4838.14@	180.09	0.88
12458.00	89.52	177.65	7744.31	95.00	4933.08	4933.08 S	4.23 W	4933.08@	180.05	2.53
12553.00	89.87	178.00	7744.82	95.00	5028.00	5028.01 S	0.63 W	5028.01@	180.01	0.52
12648.00	90.92	178.88	7744.16	95.00	5122.96	5122.97 S	1.96 E	5122.97@	179.98	1.44
12743.00	88.64	178.88	7744.53	95.00	5217.93	5217.94 S	3.82 E	5217.94@	179.96	2.40
12837.00	89.60	179.76	7745.97	94.00	5311.91	5311.92 S	4.93 E	5311.93@	179.95	1.38
12933.00	90.57	180.20	7745.83	96.00	5407.91	5407.92 S	4.97 E	5407.92@	179.95	1.11
13027.00	88.64	179.32	7746.48	94.00	5501.90	5501.91 S	5.36 E	5501.92@	179.94	2.26
13122.00	87.76	179.32	7749.46	95.00	5596.85	5596.86 S	6.49 E	5596.86@	179.93	0.93
13217.00	88.46	179.23	7752.59	95.00	5691.79	5691.80 S	7.69 E	5691.80@	179.92	0.74
13313.00	89.16	178.62	7754.59	96.00	5787.74	5787.76 S	9.49 E	5787.77@	179.91	0.97
13407.00	90.22	178.09	7755.10	94.00	5881.70	5881.72 S	12.19 E	5881.73@	179.88	1.26
13502.00	91.45	177.91	7753.71	95.00	5976.63	5976.65 S	15.50 E	5976.67@	179.85	1.31
13597.00	92.15	177.12	7750.73	95.00	6071.48	6071.51 S	19.62 E	6071.54@	179.81	1.11
13692.00	93.12	177.03	7746.36	95.00	6166.25	6166.29 S	24.46 E	6166.34@	179.77	1.03

PathFinder Energy Services, Inc.

Survey Report

COG OPERATING LLC
WAY SOUTH STATE COM 4H / API# 30-015-40370
EDDY COUNTY, NM
RIG:PATRIOT 6

Page 07/06

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
STRAIGHT LINE PROJECTION TO BIT AT 13740'MD.								
13740.00	93.12	177.03	7743.75	48.00	6214.11	6214.15 S 26.95 E	6214.21@ 179.75	0.00

** The survey data at tie-in point was furnished by a recognized survey company and entered as submitted. Survey stations above the tie-in point represent recalculated data by PathFinder Energy Services, Inc. and may reflect minor changes due to rounding differences between survey programs. Only survey stations taken by qualified PathFinder personnel are subject to certification.