



PO Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

30-015-4059

July 25, 2013

Devon Energy Production Co., LP
333 West Sheridan Ave
Oklahoma City, Oklahoma 73102-5010

Attn: Patti Riechers

Re: **Cerf 10 Federal Com No 004H**

Please find enclosed a copy of the survey from 0' to 5,813' ran on the above referenced well.

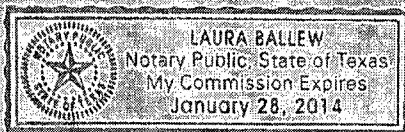
If I can be of any further service, please do not hesitate to call me at 800-606-4976.

Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 25th day of July, A.D., 2013, by Keith Havelka




Laura Ballew
Notary Public, State of Texas



Company: Devon Energy Production
Lease/Well: Cerf 10 Federal Com/No 004H
Location: Sec 9 T21S R27E
Rig Name: Cactus 126
State/County: New Mexico/Eddy
Latitude: 32.50; Longitude: -104.19
GRID: North is 0.08 Degrees East of True North
VS Azi: 0.00 Degrees



Depth Reference: RKB 25 Feet

DRILLOG.MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01-de_01.ut

Minimum Curvature Method

Report Date/Time: 7/25/2013 / 13:48

Vaughn Energy Services

West Texas

Surveyor: Chris Bankson

432-563-5444

Cerf 10 Federal Com No 004H / API 30-015-41059

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	***
109.38	0.21	306.03	109.38	0.12	-0.17	0.12	0.20	306.03	0.20
204.01	0.28	308.04	204.01	0.37	-0.49	0.37	0.62	306.79	0.07
298.64	0.17	313.25	298.64	0.61	-0.78	0.61	0.99	308.00	0.12
393.27	0.41	305.31	393.27	0.90	-1.16	0.90	1.47	307.88	0.26
487.90	0.76	310.02	487.89	1.50	-1.92	1.50	2.44	308.08	0.38
582.53	0.78	316.12	582.51	2.37	-2.85	2.37	3.71	309.80	0.09
677.16	0.64	318.05	677.14	3.17	-3.59	3.17	4.79	311.41	0.25
771.79	0.57	335.29	771.76	3.93	-4.09	3.93	5.67	313.87	0.18
866.42	0.79	341.68	866.39	4.98	-4.49	4.98	6.71	317.95	0.24
961.05	0.68	356.24	961.01	6.15	-4.73	6.15	7.76	322.44	0.23
1055.68	0.65	343.56	1055.63	7.23	-4.92	7.23	8.74	325.75	0.16
1150.31	0.71	332.75	1150.26	8.27	-5.34	8.27	9.84	327.12	0.15
1244.94	0.64	330.03	1244.88	9.25	-5.88	9.25	10.96	327.56	0.08
1339.57	0.73	323.58	1339.50	10.19	-6.50	10.19	12.09	327.48	0.12
1434.20	0.60	261.40	1434.13	10.60	-7.35	10.60	12.90	325.27	0.73
1528.83	0.75	260.57	1528.75	10.42	-8.45	10.42	13.42	320.97	0.16
1623.46	0.80	262.59	1623.37	10.24	-9.72	10.24	14.11	316.49	0.06
1718.09	0.73	275.27	1717.99	10.21	-10.98	10.21	14.99	312.92	0.19

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
1812.72	1.03	326.70	1812.61	10.97	-12.05	10.97	16.29	312.33	0.85
1907.35	1.08	328.86	1907.23	12.45	-12.97	12.45	17.98	313.81	0.08
2001.98	1.08	326.15	2001.84	13.95	-13.93	13.95	19.72	315.04	0.05
2096.61	0.77	298.97	2096.46	15.00	-14.99	15.00	21.21	315.03	0.56
2191.24	0.81	299.89	2191.08	15.64	-16.12	15.64	22.46	314.13	0.04
2285.87	0.85	306.22	2285.70	16.39	-17.27	16.39	23.81	313.51	0.11
2380.50	0.84	313.66	2380.32	17.29	-18.34	17.29	25.20	313.31	0.12
2475.13	0.88	322.99	2474.94	18.35	-19.28	18.35	26.61	313.58	0.15
2569.76	0.97	330.13	2569.56	19.62	-20.12	19.62	28.10	314.29	0.15
2664.39	0.99	323.28	2664.17	20.97	-21.00	20.97	29.68	314.96	0.13
2759.02	0.90	309.63	2758.79	22.10	-22.07	22.10	31.23	315.05	0.26
2853.65	1.00	298.25	2853.41	22.96	-23.36	22.96	32.76	314.51	0.23
2948.28	0.94	303.16	2948.02	23.78	-24.74	23.78	34.31	313.87	0.11
3042.91	1.00	323.45	3042.64	24.87	-25.88	24.87	35.89	313.86	0.37
3137.54	1.03	335.01	3137.25	26.31	-26.73	26.31	37.51	314.54	0.22
3232.17	1.01	329.95	3231.87	27.80	-27.51	27.80	39.12	315.30	0.10
3326.80	1.25	303.64	3326.48	29.10	-28.79	29.10	40.94	315.31	0.60
3421.43	1.29	302.47	3421.09	30.24	-30.55	30.24	42.99	314.71	0.05
3516.06	0.92	304.90	3515.70	31.25	-32.07	31.25	44.78	314.26	0.39
3610.69	0.89	305.24	3610.32	32.11	-33.30	32.11	46.26	313.96	0.03
3705.32	0.79	307.14	3704.94	32.93	-34.42	32.93	47.63	313.73	0.11
3799.95	0.82	300.76	3799.56	33.67	-35.52	33.67	48.94	313.47	0.10
3894.58	0.97	298.05	3894.18	34.39	-36.81	34.39	50.38	313.06	0.16
3989.21	0.99	286.58	3988.79	35.00	-38.30	35.00	51.88	312.42	0.21
4083.84	1.58	280.76	4083.40	35.48	-40.37	35.48	53.74	311.31	0.64
4178.47	1.59	275.21	4177.99	35.84	-42.96	35.84	55.94	309.84	0.16
4273.10	1.66	275.87	4272.59	36.10	-45.63	36.10	58.18	308.35	0.08
4367.73	1.63	283.52	4367.18	36.56	-48.30	36.56	60.58	307.12	0.23
4462.36	1.28	285.01	4461.78	37.15	-50.64	37.15	62.80	306.26	0.37
4556.99	1.29	285.89	4556.38	37.71	-52.68	37.71	64.79	305.60	0.02
4651.62	1.38	291.75	4650.99	38.43	-54.77	38.43	66.90	305.06	0.17
4746.25	1.35	287.41	4745.59	39.18	-56.89	39.18	69.08	304.56	0.11
4840.88	1.70	276.76	4840.19	39.68	-59.35	39.68	71.39	303.77	0.47
4935.51	1.64	277.03	4934.78	40.01	-62.09	40.01	73.86	302.80	0.07
5030.14	1.49	292.32	5029.37	40.64	-64.57	40.64	76.29	302.19	0.47
5124.77	1.41	296.22	5123.97	41.63	-66.75	41.63	78.67	301.95	0.13
5219.40	1.56	304.18	5218.57	42.86	-68.86	42.86	81.11	301.90	0.26
5314.03	1.52	296.80	5313.16	44.15	-71.05	44.15	83.65	301.86	0.21
5408.66	1.49	293.46	5407.76	45.21	-73.30	45.21	86.12	301.67	0.10

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
5503.29	1.86	288.16	5502.35	46.18	-75.88	46.18	88.83	301.32	0.42
5597.92	1.52	293.65	5596.94	47.16	-78.49	47.16	91.57	301.00	0.40
5692.55	0.90	324.96	5691.55	48.27	-80.06	48.27	93.49	301.09	0.93
5787.00	0.37	23.29	5785.99	49.16	-80.37	49.16	94.21	301.46	0.82
5813.00	0.46	49.94	5811.99	49.31	-80.26	49.31	94.19	301.57	0.80



CERF 10 FED COM 4H

WEST UNRESTRICTED

Directional Survey

District	County	Field Name	Project Group	State/Province			
PERMIAN BASIN	EDDY	BURTON FLAT	DELAWARE BASIN	NM			
Surface Legal Location	API/UWI	Latitude (")	Longitude (")	Ground Elev...	KB - GL (ft)	Orig KB Elev (ft)	Tubing Head Elevation (ft)
SEC9 T21S R27E	3001541059	32° 29' 53.842" N	104° 11' 14.124" W	3,211.20	25.00	3,236.20	

Wellbores

Wellbore Name OH	Parent Wellbore OH	Property Number 065327-030	Kick Off Depth (ftKB)	Vertical Section Direction (")
Actual Deviation Survey GYRO & MWD, Proposed? No	Definitive? Yes	Proposed? No	Proposed Deviation Survey	

Deviation Survey

Date 7/17/2013		Description GYRO & MWD			
MD Tie In (ftKB)	TVD Tie In (ftKB)	Inclination Tie In (°)	Azimuth Tie In (°)	NSTie In (ft)	EW Tie In (ft)

Survey Data

Date	MD (ftKB)	Incl (")	Azm (")	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS ("/100ft)	Survey Tool	Survey Company
7/17/2013	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	109.38	0.21	306.03	109.38	-0.18	0.12	-0.16	0.19	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	204.01	0.28	308.04	204.01	-0.53	0.36	-0.48	0.07	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	298.64	0.17	313.25	298.64	-0.85	0.60	-0.77	0.12	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	393.27	0.41	305.31	393.27	-1.26	0.89	-1.15	0.26	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	487.90	0.76	310.02	487.89	-2.10	1.49	-1.90	0.37	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	582.53	0.78	316.12	582.51	-3.14	2.36	-2.83	0.09	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	677.16	0.54	318.05	677.14	-4.00	3.16	-3.58	0.25	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	771.79	0.57	335.29	771.76	-4.60	3.92	-4.07	0.18	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	866.42	0.79	341.68	866.39	-5.15	4.96	-4.47	0.25	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	961.05	0.68	356.24	961.01	-5.56	6.14	-4.71	0.23	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	1,055.68	0.65	343.56	1,055.63	-5.90	7.22	-4.90	0.16	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	1,150.31	0.71	332.75	1,150.26	-6.47	8.25	-5.32	0.15	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	1,244.94	0.64	330.03	1,244.88	-7.13	9.23	-5.86	0.08	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	1,339.57	0.73	323.58	1,339.50	-7.89	10.17	-6.48	0.13	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	1,434.20	0.60	261.40	1,434.13	-8.78	10.59	-7.33	0.74	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	1,528.83	0.75	260.57	1,528.75	-9.85	10.41	-8.43	0.16	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	1,623.46	0.80	262.59	1,623.37	-11.07	10.22	-9.69	0.06	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	1,718.09	0.73	275.27	1,717.99	-12.31	10.19	-10.95	0.19	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	1,812.72	1.03	326.70	1,812.61	-13.48	10.96	-12.02	0.86	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	1,907.35	1.08	328.86	1,907.23	-14.61	12.43	-12.94	0.07	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	2,001.98	1.08	326.15	2,001.84	-15.78	13.94	-13.90	0.05	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	2,096.61	0.77	298.97	2,096.46	-16.97	14.99	-14.95	0.56	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	2,191.24	0.81	299.89	2,191.08	-18.19	15.63	-16.09	0.04	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	2,285.87	0.85	306.22	2,285.70	-19.43	16.38	-17.24	0.11	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	2,380.50	0.84	313.66	2,380.32	-20.62	17.27	-18.30	0.12	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	2,475.13	0.88	322.99	2,474.94	-21.70	18.33	-19.24	0.15	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	2,569.76	0.97	330.13	2,569.56	-22.71	19.60	-20.08	0.15	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	2,664.39	0.99	323.28	2,664.17	-23.79	20.95	-20.97	0.13	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	2,759.02	0.90	309.63	2,758.79	-25.00	22.08	-22.03	0.26	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	2,853.65	1.00	298.25	2,853.41	-26.41	22.95	-23.33	0.23	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	2,948.28	0.94	303.16	2,948.02	-27.89	23.76	-24.71	0.11	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	3,042.91	1.00	323.45	3,042.64	-29.18	24.85	-25.85	0.37	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	3,137.54	1.03	335.01	3,137.25	-30.23	26.29	-26.70	0.22	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	3,232.17	1.01	329.95	3,231.87	-31.22	27.78	-27.48	0.10	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	3,326.80	1.25	303.64	3,326.48	-32.67	29.07	-28.75	0.60	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	3,421.43	1.29	302.47	3,421.09	-34.57	30.22	-30.51	0.05	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	3,516.06	0.92	304.90	3,515.70	-36.23	31.22	-32.03	0.39	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	3,610.69	0.89	305.24	3,610.32	-37.56	32.08	-33.26	0.03	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	3,705.32	0.79	307.14	3,704.94	-38.79	32.90	-34.38	0.11	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	3,799.95	0.82	300.76	3,799.56	-39.99	33.64	-35.48	0.10	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	3,894.58	0.97	298.05	3,894.18	-41.37	34.36	-36.77	0.16	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	3,989.21	0.99	286.58	3,988.79	-42.93	34.97	-38.26	0.21	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	4,083.84	1.58	280.76	4,083.40	-45.04	35.45	-40.32	0.64	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	4,178.47	1.59	275.21	4,177.99	-47.66	35.81	-42.91	0.16	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	4,273.10	1.66	275.87	4,272.59	-50.34	36.07	-45.58	0.08	GYRO	VAUHGN ENERGY SERVICES
7/17/2013	4,367.73	1.63	283.52	4,367.18	-53.05	36.53	-48.25	0.23	GYRO	VAUHGN ENERGY SERVICES



CERF 10 FED COM 4H

WEST UNRESTRICTED

Directional Survey

District PERMIAN BASIN	County EDDY	Field Name BURTON FLAT	Project Group DELAWARE BASIN	State/Province NM
Surface Legal Location SEC9 T21S R27E	API/UWI 3001541059	Latitude (°) 32° 29' 53.842" N	Longitude (°) 104° 11' 14.124" W	Ground Elev... 3,211.20
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,236.20
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	EW (ft)	DLS (°/100ft)	Survey Tool	Survey Company
7/17/2013	4,462.36	1.28	285.01	4,461.78	-55.44	37.11	-50.58	0.37	GYRO	VAUHG N ENERGY SERVICES
7/17/2013	4,556.99	1.29	285.89	4,556.38	-57.54	37.68	-52.63	0.02	GYRO	VAUHG N ENERGY SERVICES
7/17/2013	4,651.62	1.38	291.75	4,650.99	-59.71	38.39	-54.71	0.17	GYRO	VAUHG N ENERGY SERVICES
7/17/2013	4,746.25	1.35	287.41	4,745.59	-61.91	39.15	-56.83	0.11	GYRO	VAUHG N ENERGY SERVICES
7/17/2013	4,840.88	1.70	276.76	4,840.19	-64.42	39.65	-59.29	0.47	GYRO	VAUHG N ENERGY SERVICES
7/17/2013	4,935.51	1.64	277.03	4,934.78	-67.18	39.98	-62.03	0.06	GYRO	VAUHG N ENERGY SERVICES
7/17/2013	5,030.14	1.49	292.32	5,029.37	-69.72	40.61	-64.51	0.47	GYRO	VAUHG N ENERGY SERVICES
7/17/2013	5,124.77	1.41	296.22	5,123.97	-72.03	41.59	-66.69	0.13	GYRO	VAUHG N ENERGY SERVICES
7/17/2013	5,219.40	1.56	304.18	5,218.57	-74.29	42.83	-68.80	0.27	GYRO	VAUHG N ENERGY SERVICES
7/17/2013	5,314.03	1.52	296.80	5,313.17	-76.64	44.12	-70.99	0.21	GYRO	VAUHG N ENERGY SERVICES
7/17/2013	5,408.66	1.49	293.46	5,407.76	-79.02	45.18	-73.24	0.10	GYRO	VAUHG N ENERGY SERVICES
7/17/2013	5,503.29	1.86	288.16	5,502.35	-81.72	46.15	-75.83	0.42	GYRO	VAUHG N ENERGY SERVICES
7/17/2013	5,597.92	1.52	293.65	5,596.94	-84.45	47.13	-78.44	0.40	GYRO	VAUHG N ENERGY SERVICES
7/17/2013	5,692.55	0.90	324.96	5,691.55	-86.17	48.24	-80.01	0.93	GYRO	VAUHG N ENERGY SERVICES
7/17/2013	5,787.00	0.37	23.29	5,786.00	-86.60	49.13	-80.32	0.82	GYRO	VAUHG N ENERGY SERVICES
7/17/2013	5,813.00	0.46	49.94	5,811.99	-86.51	49.27	-80.20	0.81	GYRO	VAUHG N ENERGY SERVICES
7/17/2013	5,873.00	0.79	80.16	5,871.99	-85.95	49.50	-79.61	0.76	MWD	VAUHG N ENERGY SERVICES
7/17/2013	5,936.00	3.61	117.25	5,934.94	-83.66	48.66	-77.42	4.79	MWD	VAUHG N ENERGY SERVICES
7/17/2013	5,967.00	7.91	119.36	5,965.78	-80.75	47.17	-74.69	13.89	MWD	VAUHG N ENERGY SERVICES
7/17/2013	5,998.00	12.05	119.71	5,996.30	-75.74	44.52	-70.02	13.36	MWD	VAUHG N ENERGY SERVICES
7/18/2013	6,030.00	16.71	120.76	6,027.29	-68.37	40.51	-63.16	14.58	MWD	VAUHG N ENERGY SERVICES
7/18/2013	6,062.00	21.37	123.05	6,057.53	-58.82	34.97	-54.32	14.75	MWD	VAUHG N ENERGY SERVICES
7/18/2013	6,093.00	25.06	124.10	6,086.02	-47.77	28.21	-44.14	11.98	MWD	VAUHG N ENERGY SERVICES
7/18/2013	6,125.00	27.87	125.16	6,114.66	-34.99	20.10	-32.42	8.90	MWD	VAUHG N ENERGY SERVICES
7/18/2013	6,156.00	30.60	126.39	6,141.71	-21.56	11.25	-20.14	9.02	MWD	VAUHG N ENERGY SERVICES
7/18/2013	6,188.00	33.33	128.32	6,168.86	-6.75	0.96	-6.68	9.11	MWD	VAUHG N ENERGY SERVICES
7/18/2013	6,220.00	36.32	130.96	6,195.12	8.85	-10.71	7.38	10.46	MWD	VAUHG N ENERGY SERVICES
7/18/2013	6,251.00	39.57	133.50	6,219.57	24.66	-23.53	21.48	11.63	MWD	VAUHG N ENERGY SERVICES
7/18/2013	6,281.00	42.74	134.13	6,242.15	40.74	-37.19	35.72	10.66	MWD	VAUHG N ENERGY SERVICES
7/18/2013	6,313.00	45.37	134.83	6,265.15	58.71	-52.79	51.59	8.36	MWD	VAUHG N ENERGY SERVICES
7/18/2013	6,344.00	48.72	135.35	6,286.27	76.88	-68.85	67.60	10.88	MWD	VAUHG N ENERGY SERVICES
7/18/2013	6,376.00	53.02	135.35	6,306.46	96.70	-86.51	85.05	13.44	MWD	VAUHG N ENERGY SERVICES
7/18/2013	6,408.00	57.51	135.00	6,324.69	117.75	-105.15	103.58	14.06	MWD	VAUHG N ENERGY SERVICES
7/18/2013	6,439.00	61.47	134.47	6,340.42	139.24	-123.95	122.55	12.86	MWD	VAUHG N ENERGY SERVICES
7/18/2013	6,470.00	65.16	134.12	6,354.34	161.66	-143.29	142.37	11.95	MWD	VAUHG N ENERGY SERVICES
7/18/2013	6,502.00	68.76	133.77	6,366.86	185.60	-163.72	163.57	11.29	MWD	VAUHG N ENERGY SERVICES
7/18/2013	6,533.00	72.19	133.77	6,377.22	209.41	-183.93	184.67	11.06	MWD	VAUHG N ENERGY SERVICES
7/18/2013	6,565.00	75.45	133.77	6,386.14	234.45	-205.18	206.86	10.19	MWD	VAUHG N ENERGY SERVICES
7/18/2013	6,597.00	78.61	133.42	6,393.32	259.91	-226.68	229.44	9.93	MWD	VAUHG N ENERGY SERVICES
7/18/2013	6,628.00	81.95	132.72	6,398.55	285.02	-247.54	251.76	11.00	MWD	VAUHG N ENERGY SERVICES
7/19/2013	6,655.00	85.21	132.72	6,401.57	307.16	-265.74	271.47	12.07	MWD	VAUHG N ENERGY SERVICES
7/19/2013	6,686.00	87.49	131.66	6,403.55	332.86	-286.52	294.39	8.11	MWD	VAUHG N ENERGY SERVICES
7/19/2013	6,778.00	89.25	130.96	6,406.16	410.01	-347.22	363.46	2.06	MWD	VAUHG N ENERGY SERVICES
7/19/2013	6,869.00	89.60	128.85	6,407.08	487.54	-405.60	433.26	2.35	MWD	VAUHG N ENERGY SERVICES
7/19/2013	6,930.00	89.16	126.92	6,407.74	540.61	-443.05	481.40	3.24	MWD	VAUHG N ENERGY SERVICES
7/19/2013	7,021.00	90.13	124.45	6,408.30	621.44	-496.13	555.31	2.92	MWD	VAUHG N ENERGY SERVICES
7/19/2013	7,111.00	89.87	121.47	6,408.30	703.25	-545.09	630.81	3.32	MWD	VAUHG N ENERGY SERVICES
7/19/2013	7,201.00	89.69	117.60	6,408.65	787.15	-589.44	709.10	4.30	MWD	VAUHG N ENERGY SERVICES
7/19/2013	7,292.00	90.57	114.61	6,408.44	873.80	-629.48	790.81	3.43	MWD	VAUHG N ENERGY SERVICES
7/19/2013	7,386.00	90.75	111.97	6,407.36	964.61	-666.64	877.14	2.81	MWD	VAUHG N ENERGY SERVICES
7/19/2013	7,481.00	91.45	108.46	6,405.53	1,057.54	-699.46	966.25	3.77	MWD	VAUHG N ENERGY SERVICES
7/20/2013	7,575.00	91.10	105.82	6,403.44	1,150.41	-727.15	1,056.05	2.83	MWD	VAUHG N ENERGY SERVICES
7/20/2013	7,669.00	90.66	103.01	6,402.00	1,243.86	-750.54	1,147.07	3.03	MWD	VAUHG N ENERGY SERVICES
7/20/2013	7,764.00	89.96	100.37	6,401.48	1,338.69	-769.79	1,240.09	2.87	MWD	VAUHG N ENERGY SERVICES
7/20/2013	7,859.00	89.16	97.56	6,402.21	1,433.67	-784.59	1,333.91	3.08	MWD	VAUHG N ENERGY SERVICES



CERF 10 FED COM 4H

WEST UNRESTRICTED

Directional Survey

District :	County	Field Name	Project Group	State/Province
PERMIAN BASIN	EDDY	BURTON FLAT	DELAWARE BASIN	NM
Surface Legal Location	API/UWI	Latitude (°)	Longitude (°)	Ground Elev...
SEC9 T21S R27E	3001541059	32° 29' 53.842" N	104° 11' 14.124" W	3,211.20
				KB - GL (ft)
				25.00
				Orig KB Elev (ft)
				3,236.20
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Survey Tool	Survey Company
7/20/2013	7,953.00	89.16	94.57	6,403.59	1,527.57	-794.52	1,427.37	3.18	MWD	VAUHGN ENERGY SERVICES
7/20/2013	8,048.00	89.52	91.06	6,404.68	1,622.11	-799.19	1,522.23	3.71	MWD	VAUHGN ENERGY SERVICES
7/20/2013	8,142.00	90.57	89.47	6,404.61	1,715.17	-799.62	1,616.23	2.03	MWD	VAUHGN ENERGY SERVICES
7/20/2013	8,237.00	91.54	90.00	6,402.86	1,809.08	-799.18	1,711.21	1.16	MWD	VAUHGN ENERGY SERVICES
7/20/2013	8,332.00	90.13	89.47	6,401.48	1,903.00	-798.74	1,806.19	1.59	MWD	VAUHGN ENERGY SERVICES
7/20/2013	8,427.00	88.64	89.47	6,402.50	1,996.86	-797.86	1,901.18	1.57	MWD	VAUHGN ENERGY SERVICES
7/20/2013	8,522.00	89.43	89.83	6,404.10	2,090.75	-797.28	1,996.16	0.91	MWD	VAUHGN ENERGY SERVICES
7/20/2013	8,616.00	90.40	90.53	6,404.24	2,183.79	-797.58	2,090.16	1.27	MWD	VAUHGN ENERGY SERVICES
7/20/2013	8,711.00	88.90	89.12	6,404.82	2,277.74	-797.29	2,185.16	2.17	MWD	VAUHGN ENERGY SERVICES
7/20/2013	8,806.00	89.96	89.83	6,405.76	2,371.60	-796.42	2,280.14	1.34	MWD	VAUHGN ENERGY SERVICES
7/20/2013	8,901.00	88.20	89.65	6,407.29	2,465.51	-795.99	2,375.13	1.86	MWD	VAUHGN ENERGY SERVICES
7/20/2013	8,996.00	86.70	89.65	6,411.51	2,559.32	-795.41	2,470.03	1.58	MWD	VAUHGN ENERGY SERVICES
7/21/2013	9,090.00	86.61	89.47	6,417.00	2,652.06	-794.69	2,563.87	0.21	MWD	VAUHGN ENERGY SERVICES
7/21/2013	9,185.00	87.41	90.18	6,421.95	2,745.88	-794.40	2,658.73	1.13	MWD	VAUHGN ENERGY SERVICES
7/21/2013	9,280.00	87.05	88.77	6,426.54	2,839.64	-793.53	2,753.62	1.53	MWD	VAUHGN ENERGY SERVICES
7/21/2013	9,373.00	87.85	88.95	6,430.68	2,931.27	-791.68	2,846.51	0.88	MWD	VAUHGN ENERGY SERVICES
7/21/2013	9,467.00	89.08	88.95	6,433.20	3,023.98	-789.96	2,940.45	1.31	MWD	VAUHGN ENERGY SERVICES
7/21/2013	9,560.00	89.16	89.30	6,434.63	3,115.76	-788.54	3,033.43	0.39	MWD	VAUHGN ENERGY SERVICES
7/21/2013	9,655.00	86.61	87.72	6,438.13	3,209.29	-786.07	3,128.33	3.16	MWD	VAUHGN ENERGY SERVICES
7/21/2013	9,749.00	87.05	87.89	6,443.33	3,301.56	-782.48	3,222.11	0.50	MWD	VAUHGN ENERGY SERVICES
7/21/2013	9,844.00	87.93	88.24	6,447.49	3,394.95	-779.27	3,316.97	1.00	MWD	VAUHGN ENERGY SERVICES
7/21/2013	9,938.00	85.82	87.72	6,452.62	3,487.27	-775.96	3,410.76	2.31	MWD	VAUHGN ENERGY SERVICES
7/21/2013	10,034.00	86.70	88.24	6,458.88	3,581.50	-772.59	3,506.50	1.06	MWD	VAUHGN ENERGY SERVICES
7/21/2013	10,129.00	87.23	88.60	6,463.91	3,674.95	-769.97	3,601.33	0.67	MWD	VAUHGN ENERGY SERVICES
7/21/2013	10,223.00	86.88	88.42	6,468.74	3,767.44	-767.53	3,695.17	0.42	MWD	VAUHGN ENERGY SERVICES
7/21/2013	10,318.00	87.67	88.77	6,473.26	3,860.97	-765.20	3,790.03	0.91	MWD	VAUHGN ENERGY SERVICES
7/21/2013	10,411.00	88.20	89.30	6,476.61	3,952.68	-763.64	3,882.96	0.81	MWD	VAUHGN ENERGY SERVICES
7/21/2013	10,505.00	87.23	88.42	6,480.35	4,045.32	-761.77	3,976.86	1.39	MWD	VAUHGN ENERGY SERVICES
7/21/2013	10,601.00	87.58	88.60	6,484.70	4,139.81	-759.28	4,072.73	0.41	MWD	VAUHGN ENERGY SERVICES
7/22/2013	10,696.00	87.85	89.12	6,488.49	4,233.44	-757.39	4,167.64	0.62	MWD	VAUHGN ENERGY SERVICES
7/22/2013	10,790.00	84.50	89.12	6,494.76	4,326.00	-755.95	4,261.40	3.56	MWD	VAUHGN ENERGY SERVICES
7/22/2013	10,885.00	85.12	89.65	6,503.35	4,419.46	-754.93	4,356.01	0.86	MWD	VAUHGN ENERGY SERVICES
7/22/2013	10,980.00	86.17	90.53	6,510.57	4,513.20	-755.08	4,450.73	1.44	MWD	VAUHGN ENERGY SERVICES
7/22/2013	11,074.00	87.58	91.41	6,515.69	4,606.28	-756.67	4,544.58	1.77	MWD	VAUHGN ENERGY SERVICES
7/22/2013	11,168.00	86.79	91.76	6,520.31	4,699.51	-759.27	4,638.43	0.92	MWD	VAUHGN ENERGY SERVICES
7/22/2013	11,263.00	88.64	92.46	6,524.09	4,793.87	-762.76	4,733.28	2.08	MWD	VAUHGN ENERGY SERVICES
7/22/2013	11,358.00	87.05	92.11	6,527.67	4,888.27	-766.55	4,828.14	1.71	MWD	VAUHGN ENERGY SERVICES
7/23/2013	11,453.00	86.53	91.58	6,532.99	4,982.51	-769.60	4,922.94	0.78	MWD	VAUHGN ENERGY SERVICES
7/23/2013	11,548.00	86.70	91.06	6,538.59	5,076.63	-771.79	5,017.75	0.57	MWD	VAUHGN ENERGY SERVICES
7/23/2013	11,643.00	87.49	90.88	6,543.41	5,170.72	-773.39	5,112.61	0.85	MWD	VAUHGN ENERGY SERVICES
7/23/2013	11,743.00	86.00	89.12	6,549.09	5,269.50	-773.39	5,212.44	2.30	MWD	VAUHGN ENERGY SERVICES
7/23/2013	11,797.00	86.00	89.12	6,552.85	5,322.67	-772.57	5,266.30	0.00	BIT	VAUHGN ENERGY SERVICES