



Company: Exxon
Lease/Well: PCU/296-6A1

Rig Name: Production
State/County: Colorado/Rio Blanco

Latitude: 39.90
GRID North is 1.74 Degrees West of True North
VS-Azi: 0.00 Degrees



Depth Reference : GL

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: run1-01_ed.ut
Minimum Curvature Method
Report Date/Time: 2/4/2011 / 16:40

Vaughn Energy Services
Rifle, Colorado / 970-456-2071
North Seeking Rate Gyro
Surveyor: Garry Fowler
PCU 296-6A1 / API #05-103-11475

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	****
200.00	0.62	338.96	200.00	1.01	-0.39	1.01	1.08	338.96	0.31
400.00	1.34	114.07	399.98	1.07	1.36	1.07	1.73	51.87	0.92
600.00	5.89	134.20	599.53	-7.05	10.86	-7.05	12.94	122.99	2.33
800.00	10.99	126.96	797.31	-25.68	33.46	-25.68	42.18	127.50	2.60
1000.00	14.26	125.71	992.45	-51.52	68.70	-51.52	85.88	126.87	1.64
1200.00	15.15	127.87	1185.90	-81.94	109.33	-81.94	136.63	126.85	0.52
1400.00	15.03	130.87	1379.00	-114.95	149.58	-114.95	188.64	127.54	0.39
1600.00	14.64	130.59	1572.34	-148.36	188.38	-148.36	239.78	128.22	0.20
1800.00	15.29	132.93	1765.56	-182.76	226.87	-182.76	291.33	128.85	0.44
2000.00	15.48	132.71	1958.39	-218.81	265.79	-218.81	344.27	129.46	0.10
2200.00	15.64	132.76	2151.07	-255.22	305.19	-255.22	397.84	129.90	0.08
2400.00	15.25	131.45	2343.84	-290.93	344.70	-290.93	451.06	130.16	0.26
2600.00	14.36	131.78	2537.20	-324.87	382.91	-324.87	502.15	130.31	0.45
2800.00	13.81	134.99	2731.19	-358.27	418.29	-358.27	550.75	130.58	0.48
3000.00	14.88	134.68	2924.95	-393.22	453.44	-393.22	600.19	130.93	0.54
3200.00	15.71	134.86	3117.86	-430.38	490.90	-430.38	652.85	131.24	0.41
3400.00	15.75	134.22	3310.37	-468.40	529.55	-468.40	706.99	131.49	0.09
3600.00	15.91	133.16	3502.78	-506.09	569.01	-506.09	761.51	131.65	0.17

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
3800.00	15.56	132.48	3695.29	-542.96	608.79	-542.96	815.74	131.73	0.20
4000.00	14.98	131.53	3888.22	-578.22	647.93	-578.22	868.42	131.75	0.32
4200.00	15.11	131.01	4081.37	-612.46	686.95	-612.46	920.33	131.72	0.09
4400.00	15.07	131.19	4274.47	-646.69	726.18	-646.69	972.39	131.69	0.03
4600.00	14.50	130.07	4467.85	-679.93	764.91	-679.93	1023.42	131.63	0.32
4800.00	12.90	134.42	4662.16	-711.68	800.02	-711.68	1070.75	131.66	0.95
5000.00	9.33	136.92	4858.38	-739.16	827.05	-739.16	1109.21	131.79	1.80
5200.00	6.57	133.58	5056.44	-758.89	846.41	-758.89	1136.80	131.88	1.40
5400.00	3.36	134.59	5255.66	-770.89	858.87	-770.89	1154.09	131.91	1.60
5600.00	0.32	18.75	5455.55	-774.47	863.22	-774.47	1159.72	131.90	1.76
5800.00	0.12	196.87	5655.55	-774.15	863.34	-774.15	1159.60	131.88	0.22
6000.00	0.79	195.15	5855.54	-775.69	862.91	-775.69	1160.31	131.95	0.33
6200.00	0.97	196.51	6055.52	-778.64	862.07	-778.64	1161.66	132.09	0.09
6400.00	1.15	195.20	6255.48	-782.21	861.06	-782.21	1163.31	132.25	0.09
6600.00	1.49	191.97	6455.43	-786.69	860.00	-786.69	1165.54	132.45	0.17
6800.00	2.16	131.66	6655.34	-791.73	862.28	-791.73	1170.62	132.56	0.96
7000.00	3.10	131.46	6855.13	-797.81	869.14	-797.81	1179.79	132.55	0.47
7200.00	4.03	136.57	7054.74	-806.49	878.02	-806.49	1192.20	132.57	0.49
7400.00	4.02	135.89	7254.25	-816.62	887.72	-816.62	1206.20	132.61	0.02
7600.00	4.01	132.02	7453.76	-826.33	897.80	-826.33	1220.19	132.63	0.14
7800.00	3.36	133.98	7653.35	-835.08	907.21	-835.08	1233.04	132.63	0.33
8000.00	3.35	137.92	7853.00	-843.49	915.34	-843.49	1244.72	132.66	0.12
8200.00	3.34	156.52	8052.67	-853.17	921.58	-853.17	1255.87	132.79	0.54
8400.00	3.43	180.23	8252.33	-864.51	923.88	-864.51	1265.28	133.10	0.70
8600.00	3.50	195.96	8451.97	-876.35	922.18	-876.35	1272.17	133.54	0.47
8800.00	3.50	196.36	8651.60	-888.07	918.78	-888.07	1277.82	134.03	0.01
9000.00	3.05	197.02	8851.27	-899.01	915.51	-899.01	1283.11	134.48	0.22
9200.00	3.03	198.62	9050.99	-909.11	912.26	-909.11	1287.91	134.90	0.04
9400.00	3.11	211.99	9250.70	-918.73	907.69	-918.73	1291.50	135.35	0.36
9600.00	3.56	210.83	9450.36	-928.66	901.64	-928.66	1294.36	135.85	0.22
9800.00	4.29	211.49	9649.89	-940.37	894.55	-940.37	1297.89	136.43	0.37
10000.00	5.17	212.95	9849.21	-954.31	885.74	-954.31	1302.02	137.13	0.44
10200.00	4.91	210.17	10048.44	-969.27	876.54	-969.27	1306.83	137.88	0.18
10400.00	3.90	218.96	10247.84	-981.96	867.96	-981.96	1310.57	138.53	0.61
10600.00	3.70	219.89	10447.40	-992.21	859.54	-992.21	1312.74	139.10	0.10
10800.00	3.64	220.48	10646.99	-1001.99	851.27	-1001.99	1314.78	139.65	0.04
11000.00	3.42	220.44	10846.61	-1011.36	843.29	-1011.36	1316.81	140.18	0.11
11200.00	3.30	222.27	11046.27	-1020.16	835.55	-1020.16	1318.66	140.68	0.08
11400.00	3.25	235.52	11245.95	-1027.62	827.01	-1027.62	1319.07	141.17	0.38

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
11600.00	3.15	238.14	11445.64	-1033.73	817.67	-1033.73	1318.02	141.66	0.09
11800.00	3.51	245.54	11645.30	-1039.16	807.43	-1039.16	1315.98	142.15	0.28
12000.00	4.26	231.68	11844.84	-1046.30	796.04	-1046.30	1314.69	142.74	0.60
12200.00	3.95	222.48	12044.33	-1055.99	785.56	-1055.99	1316.13	143.35	0.36
12400.00	3.48	217.59	12243.91	-1065.89	777.19	-1065.89	1319.15	143.90	0.28
12600.00	3.43	212.62	12443.55	-1075.74	770.26	-1075.74	1323.07	144.40	0.15
12800.00	3.33	214.63	12643.20	-1085.55	763.74	-1085.55	1327.30	144.87	0.08
13000.00	2.57	224.38	12842.94	-1093.53	757.31	-1093.53	1330.16	145.30	0.45
13200.00	3.01	232.81	13042.70	-1099.91	749.99	-1099.91	1331.27	145.71	0.30
13400.00	4.15	237.80	13242.31	-1106.94	739.68	-1106.94	1331.33	146.25	0.59
13600.00	3.80	239.01	13441.82	-1114.22	727.86	-1114.22	1330.89	146.85	0.18
13642.00	3.79	245.29	13483.73	-1115.52	725.41	-1115.52	1330.63	146.96	0.99