



Company: EXXON MOBIL

Lease/Well: FRU 197-33/A-7

Location:

Rig Name: PRODUCTION

State/County: COLORADO/RIO BLANCO

Latitude: 39.90

GRID North is 1.79 Degrees West of True North

VS-Azi: 240.22 Degrees



Depth Reference : GROUND LEVEL

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run02-01final.ut

Minimum Curvature Method

Report Date/Time: 4/30/2010 / 17:24

Vaughn Energy Services

Rifle Colorado

970-456-2071

Surveyor Lamar Guy

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	1.78	142.30	199.97	-2.46	1.90	-0.43	3.11	142.30	0.89
400.00	3.68	255.93	399.82	-6.48	-2.42	5.32	6.92	200.48	2.34
600.00	6.70	238.71	598.99	-14.10	-18.61	23.16	23.35	232.85	1.68
800.00	10.24	242.86	796.78	-28.27	-44.40	52.58	52.64	237.52	1.79
1000.00	11.63	241.43	993.15	-46.02	-77.92	90.48	90.49	239.44	0.71
1200.00	12.71	240.67	1188.66	-66.43	-114.79	132.63	132.63	239.94	0.55
1400.00	12.61	240.38	1383.79	-88.00	-152.95	176.46	176.46	240.09	0.06
1600.00	12.97	240.83	1578.83	-109.73	-191.53	220.74	220.74	240.19	0.18
1800.00	13.29	241.31	1773.60	-131.69	-231.29	266.15	266.15	240.34	0.17
2000.00	13.35	241.01	1968.22	-153.92	-271.65	312.22	312.23	240.46	0.05
2200.00	12.93	239.57	2162.98	-176.45	-311.15	357.70	357.70	240.44	0.27
2400.00	11.82	237.92	2358.34	-198.66	-347.81	400.54	400.54	240.27	0.59
2600.00	12.39	237.85	2553.89	-220.95	-383.32	442.44	442.44	240.04	0.29
2800.00	13.34	238.30	2748.87	-244.48	-421.10	486.92	486.93	239.86	0.48
3000.00	13.18	239.54	2943.54	-268.16	-460.38	532.77	532.79	239.78	0.16
3200.00	12.85	241.07	3138.40	-290.48	-499.50	577.80	577.82	239.82	0.24
3400.00	12.60	241.98	3333.49	-311.48	-538.21	621.84	621.85	239.94	0.16
3600.00	12.97	241.38	3528.54	-332.48	-577.17	666.08	666.08	240.06	0.20
3800.00	12.92	240.17	3723.45	-354.35	-616.27	710.88	710.88	240.10	0.14
4000.00	12.97	237.74	3918.37	-377.46	-654.65	755.67	755.68	240.03	0.27
4200.00	11.82	234.73	4113.70	-401.28	-690.37	798.50	798.52	239.83	0.66
4400.00	8.60	236.38	4310.51	-421.40	-719.55	833.82	833.87	239.65	1.62
4600.00	4.98	238.62	4509.07	-434.20	-739.42	857.42	857.48	239.58	1.82
4800.00	1.54	260.13	4708.73	-439.18	-749.47	868.62	868.66	239.63	1.80
5000.00	0.10	340.13	4908.70	-439.47	-752.17	871.11	871.14	239.70	0.76
5200.00	0.64	87.92	5108.70	-439.27	-751.11	870.09	870.13	239.68	0.34
5400.00	0.84	88.19	5308.68	-439.19	-748.52	867.80	867.86	239.60	0.10
5600.00	0.97	102.83	5508.66	-439.52	-745.40	865.26	865.33	239.47	0.13
5800.00	1.21	117.83	5708.62	-440.88	-741.88	862.88	863.00	239.28	0.18

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
6000.00	1.83	108.53	5908.55	-442.88	-736.99	859.63	859.82	239.00	0.33
6200.00	3.18	115.02	6108.36	-446.24	-728.94	854.31	854.68	238.53	0.69
6400.00	5.00	125.35	6307.84	-453.63	-716.80	847.45	848.28	237.67	0.98
6600.00	5.69	119.65	6506.97	-463.57	-701.08	838.74	840.49	236.53	0.43
6800.00	4.93	130.19	6706.12	-474.02	-685.90	830.76	833.76	235.35	0.62
7000.00	4.65	125.89	6905.42	-484.31	-672.78	824.48	828.97	234.25	0.23
7200.00	4.28	120.07	7104.81	-492.80	-659.76	817.39	823.49	233.24	0.29
7400.00	3.63	125.49	7304.34	-500.22	-648.15	810.99	818.73	232.34	0.37
7600.00	3.03	122.94	7504.00	-506.77	-638.56	805.92	815.21	231.56	0.31
7800.00	2.90	127.99	7703.73	-512.75	-630.14	801.59	812.40	230.86	0.15
8000.00	2.76	130.39	7903.49	-518.99	-622.48	798.04	810.45	230.18	0.09
8200.00	2.57	131.32	8103.27	-525.07	-615.45	794.96	808.99	229.53	0.10
8400.00	2.11	141.63	8303.10	-530.91	-609.80	792.96	808.53	228.96	0.31
8600.00	2.21	142.09	8502.96	-536.85	-605.14	791.86	808.95	228.42	0.05
8800.00	2.31	131.42	8702.81	-542.55	-599.75	790.02	808.74	227.87	0.22
9000.00	2.49	136.02	8902.63	-548.35	-593.71	787.65	808.19	227.27	0.13
9200.00	2.59	134.50	9102.44	-554.64	-587.47	785.36	807.93	226.65	0.06
9400.00	1.66	136.66	9302.30	-559.92	-582.26	783.46	807.79	226.12	0.47
9600.00	1.67	135.89	9502.21	-564.12	-578.24	782.06	807.83	225.71	0.01
9800.00	2.00	142.05	9702.11	-568.97	-574.05	780.84	808.25	225.25	0.19
10000.00	1.95	136.49	9901.99	-574.19	-569.57	779.53	808.77	224.77	0.10
10200.00	1.59	121.93	10101.90	-578.13	-564.87	777.41	808.27	224.34	0.28
10400.00	1.42	115.95	10301.83	-580.68	-560.28	774.70	806.91	223.98	0.12
10600.00	1.06	128.69	10501.78	-582.92	-556.60	772.62	805.98	223.68	0.23
10800.00	1.02	117.22	10701.75	-584.90	-553.58	770.97	805.33	223.42	0.11
11000.00	0.84	123.11	10901.72	-586.51	-550.77	769.34	804.57	223.20	0.10
11200.00	0.93	133.33	11101.70	-588.42	-548.37	768.20	804.33	222.98	0.09
11400.00	0.57	137.29	11301.68	-590.26	-546.52	767.51	804.42	222.80	0.18
11600.00	0.59	124.16	11501.67	-591.57	-544.99	766.83	804.34	222.65	0.07
11800.00	0.40	136.13	11701.66	-592.65	-543.66	766.21	804.23	222.53	0.11
12000.00	0.71	119.16	11901.65	-593.75	-542.09	765.40	803.99	222.40	0.18
12200.00	1.06	125.49	12101.63	-595.43	-539.50	763.98	803.49	222.18	0.18
HORIZONTAL DISPLACEMENT IS 803.49 FEET AT 222.18 DEGREES									