



Company: EXXON MOBIL  
Lease/Well: FRU 197-33/A-8  
Location:  
Rig Name: PRODUCTION  
State/County: COLORADO/RIO BLANCO  
Latitude: 39.90  
GRID North is 1.79 Degrees West of True North  
VS-Azi: 285.75 Degrees



Depth Reference : GROUND LEVEL

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro\_run01-01final.ut

Minimum Curvature Method

Report Date/Time: 5/2/2010 / 14:40

Vaughn Energy Services

Rifle Colorado

970-456-2071

Surveyor Ryan Lewis

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	0.64	198.54	200.00	-1.06	-0.35	0.05	1.11	198.54	0.32
400.00	2.90	254.37	399.90	-3.47	-5.58	4.43	6.57	238.10	1.30
600.00	6.37	281.77	599.23	-2.57	-21.32	19.82	21.48	263.12	2.01
800.00	10.10	284.32	797.14	4.03	-49.19	48.43	49.35	274.68	1.87
1000.00	14.98	287.60	992.31	16.18	-90.83	91.81	92.26	280.10	2.46
1200.00	17.67	287.43	1184.23	33.09	-144.43	147.99	148.17	282.90	1.35
1400.00	18.01	286.79	1374.62	51.11	-202.98	209.23	209.32	284.13	0.20
1600.00	18.41	286.76	1564.60	69.15	-262.82	271.73	271.77	284.74	0.20
1800.00	18.49	285.72	1754.32	86.86	-323.59	335.02	335.05	285.02	0.17
2000.00	18.50	286.06	1943.99	104.23	-384.61	398.47	398.49	285.16	0.05
2200.00	19.38	285.16	2133.16	121.69	-447.14	463.39	463.41	285.22	0.46
2400.00	18.86	286.16	2322.12	139.36	-510.22	528.89	528.91	285.28	0.31
2600.00	19.63	287.27	2510.95	158.33	-573.34	594.79	594.80	285.44	0.43
2800.00	20.65	287.65	2698.72	178.99	-639.02	663.61	663.61	285.65	0.51
3000.00	20.63	287.59	2885.89	200.33	-706.20	734.06	734.07	285.84	0.01
3200.00	20.28	286.82	3073.28	221.00	-772.96	803.92	803.93	285.96	0.22
3400.00	18.33	286.59	3262.03	240.01	-836.27	870.02	870.03	286.01	0.97
3600.00	18.22	287.18	3451.94	258.23	-896.29	932.73	932.74	286.07	0.11
3800.00	18.01	287.73	3642.03	276.87	-955.61	994.89	994.91	286.16	0.14
4000.00	17.91	286.76	3832.28	295.16	-1014.51	1056.54	1056.57	286.22	0.16
4200.00	18.18	283.65	4022.45	311.39	-1074.29	1118.48	1118.51	286.16	0.50
4400.00	15.20	282.08	4214.00	324.25	-1130.27	1175.84	1175.86	286.01	1.51
4600.00	11.86	281.34	4408.42	333.78	-1176.07	1222.52	1222.52	285.84	1.67
4800.00	7.51	285.14	4605.52	341.24	-1208.85	1256.09	1256.09	285.76	2.20
5000.00	3.64	285.89	4804.54	346.39	-1227.57	1275.51	1275.51	285.76	1.93
5200.00	0.02	270.04	5004.40	348.13	-1233.72	1281.89	1281.89	285.76	1.81
5400.00	0.49	74.49	5204.40	348.36	-1232.94	1281.20	1281.20	285.78	0.25
5600.00	0.99	81.41	5404.39	348.84	-1230.41	1278.90	1278.90	285.83	0.26
5800.00	1.76	96.96	5604.33	348.73	-1225.65	1274.29	1274.29	285.88	0.42
6000.00	0.89	88.21	5804.27	348.40	-1221.05	1269.78	1269.78	285.93	0.45
6200.00	1.37	78.19	6004.23	348.94	-1217.16	1266.18	1266.19	286.00	0.26
6400.00	1.10	95.26	6204.19	349.26	-1212.90	1262.16	1262.18	286.06	0.23
6600.00	0.89	113.04	6404.16	348.47	-1209.55	1258.73	1258.75	286.07	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
6800.00	1.05	102.57	6604.13	347.47	-1206.34	1255.37	1255.39	286.07	0.12
7000.00	0.90	78.98	6804.10	347.37	-1203.02	1252.14	1252.17	286.11	0.21
7200.00	0.53	84.88	7004.08	347.75	-1200.56	1249.88	1249.91	286.15	0.19
7400.00	0.75	102.35	7204.07	347.55	-1198.35	1247.70	1247.73	286.17	0.15
7600.00	0.61	150.52	7404.06	346.35	-1196.54	1245.63	1245.66	286.14	0.29
7800.00	0.70	152.77	7604.05	344.33	-1195.46	1244.04	1244.06	286.07	0.05
8000.00	0.60	129.81	7804.03	342.57	-1194.09	1242.25	1242.26	286.01	0.14
8200.00	0.97	133.24	8004.01	340.75	-1192.06	1239.80	1239.81	285.95	0.19
8400.00	1.11	137.06	8203.98	338.17	-1189.52	1236.65	1236.65	285.87	0.08
8600.00	1.32	107.63	8403.94	336.06	-1186.00	1232.69	1232.69	285.82	0.33
8800.00	1.86	111.96	8603.86	334.14	-1180.78	1227.15	1227.15	285.80	0.28
9000.00	1.21	122.28	8803.79	331.79	-1175.97	1221.88	1221.88	285.76	0.35
9200.00	0.42	170.76	9003.77	329.95	-1174.06	1219.54	1219.54	285.70	0.49
9400.00	0.46	263.35	9203.76	329.14	-1174.74	1219.97	1219.97	285.65	0.32
9600.00	0.54	275.93	9403.76	329.14	-1176.47	1221.64	1221.65	285.63	0.07
9800.00	0.86	256.62	9603.74	328.89	-1178.88	1223.89	1223.90	285.59	0.20
10000.00	0.92	222.55	9803.72	327.37	-1181.42	1225.92	1225.94	285.49	0.26
10200.00	1.13	230.55	10003.69	324.94	-1184.02	1227.77	1227.80	285.35	0.13
10400.00	0.48	174.20	10203.67	322.84	-1185.46	1228.59	1228.64	285.23	0.48
10600.00	0.45	171.39	10403.66	321.23	-1185.26	1227.96	1228.02	285.16	0.02
10800.00	1.38	169.25	10603.63	318.08	-1184.69	1226.56	1226.65	285.03	0.47
11000.00	2.34	173.79	10803.53	311.66	-1183.80	1223.95	1224.14	284.75	0.48
11200.00	1.53	196.70	11003.41	305.06	-1184.13	1222.47	1222.79	284.45	0.55
11400.00	0.62	241.26	11203.38	301.98	-1185.85	1223.30	1223.69	284.29	0.58
11600.00	0.55	310.60	11403.37	302.08	-1187.53	1224.94	1225.35	284.27	0.34
11800.00	0.77	14.80	11603.36	304.00	-1187.91	1225.83	1226.20	284.35	0.36
12000.00	0.88	29.73	11803.34	306.63	-1186.81	1225.48	1225.78	284.49	0.12
12100.00	1.33	36.64	11903.32	308.23	-1185.73	1224.88	1225.14	284.57	0.47
HORIZONTAL DISPLACEMENT IS 1225.14 FEET AT 284.57 DEGREES									