



Company/Rig: Noble Energy/ CoreTech
WELL/API#: Gill Land 22-3/05-123-11359
DECLINATION: 8.24 Degrees
TD AS DRILLED: 7062 Feet
COUNTY/STATE: Weld/Colorado
VS-Azi: 0.000 Degrees
Latitude: 40.47688, Longitude: -104.54334
Grid Convergence Applied = -0.62 degs (NAD 27)
Grid North = True North -0.62 degs



DEPTH REFERENCE : RKB=GL/ ELEVATION= 4744 Feet

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01-de_01.ut

Minimum Curvature Method

Report Date/Time: 4/27/2015 / 13:34

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

HENDERSON, COLORADO

303-853-4976

Surveyor: Sean Bratt

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
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	****
100.000	0.108	358.559	100.000	0.094	-0.002	0.094	0.094	358.559	0.108
200.000	0.230	140.108	200.000	0.035	0.124	0.035	0.129	74.391	0.322
300.000	0.118	123.048	299.999	-0.175	0.339	-0.175	0.381	117.365	0.123
400.000	0.245	167.108	399.999	-0.440	0.472	-0.440	0.645	132.944	0.180
500.000	0.130	124.435	499.998	-0.712	0.614	-0.712	0.940	139.251	0.173
600.000	0.153	194.879	599.998	-0.905	0.673	-0.905	1.128	143.371	0.164
700.000	0.243	160.204	699.997	-1.234	0.711	-1.234	1.424	150.058	0.146
800.000	0.081	201.802	799.997	-1.499	0.756	-1.499	1.679	153.226	0.190
900.000	0.243	196.583	899.997	-1.768	0.670	-1.768	1.890	159.250	0.162
1000.000	0.102	163.529	999.996	-2.056	0.634	-2.056	2.151	162.851	0.167
1100.000	0.261	229.814	1099.996	-2.288	0.485	-2.288	2.339	168.027	0.239
1200.000	0.095	84.647	1199.995	-2.427	0.394	-2.427	2.459	170.786	0.344
1300.000	0.368	264.741	1299.995	-2.449	0.157	-2.449	2.454	176.338	0.463
1400.000	0.396	205.045	1399.993	-2.791	-0.309	-2.791	2.808	186.324	0.381
1500.000	0.137	316.501	1499.992	-3.017	-0.538	-3.017	3.065	190.111	0.464
1600.000	0.447	286.638	1599.991	-2.819	-0.994	-2.819	2.989	199.427	0.335
1700.000	0.068	311.610	1699.990	-2.667	-1.412	-2.667	3.018	207.900	0.386
1800.000	0.356	275.175	1799.989	-2.600	-1.766	-2.600	3.143	214.193	0.303

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
1900.000	0.472	216.284	1899.987	-2.904	-2.319	-2.904	3.716	218.616	0.419
2000.000	0.452	207.565	1999.983	-3.585	-2.746	-3.585	4.516	217.444	0.073
2100.000	0.425	178.379	2099.981	-4.306	-2.917	-4.306	5.201	214.122	0.222
2200.000	0.228	187.085	2199.979	-4.873	-2.931	-4.873	5.687	211.028	0.203
2300.000	0.441	206.988	2299.977	-5.414	-3.131	-5.414	6.254	210.041	0.240
2400.000	0.608	204.809	2399.973	-6.238	-3.528	-6.238	7.166	209.491	0.167
2500.000	0.615	217.993	2499.967	-7.142	-4.081	-7.142	8.225	209.742	0.141
2600.000	0.507	229.029	2599.963	-7.855	-4.745	-7.855	9.177	211.136	0.152
2700.000	0.431	243.838	2699.959	-8.311	-5.417	-8.311	9.921	213.097	0.143
2800.000	0.396	229.911	2799.957	-8.700	-6.020	-8.700	10.579	214.680	0.106
2900.000	0.279	237.740	2899.955	-9.052	-6.490	-9.052	11.138	215.638	0.125
3000.000	0.487	227.583	2999.953	-9.469	-7.010	-9.469	11.781	216.512	0.218
3100.000	0.595	202.688	3099.948	-10.235	-7.524	-10.235	12.703	216.321	0.256
3200.000	0.622	154.065	3199.943	-11.202	-7.487	-11.202	13.473	213.757	0.502
3300.000	0.908	147.164	3299.934	-12.355	-6.820	-12.355	14.112	208.897	0.299
3400.000	0.871	138.701	3399.922	-13.592	-5.889	-13.592	14.813	203.424	0.136
3500.000	0.732	136.271	3499.913	-14.624	-4.945	-14.624	15.438	198.683	0.143
3600.000	1.304	96.768	3599.897	-15.220	-3.374	-15.220	15.590	192.499	0.873
3700.000	1.641	117.817	3699.865	-16.023	-0.978	-16.023	16.052	183.492	0.632
3800.000	1.121	131.432	3799.836	-17.338	1.022	-17.338	17.368	176.626	0.612
3900.000	0.951	178.947	3899.821	-18.815	1.771	-18.815	18.898	174.623	0.849
4000.000	0.469	175.959	3999.813	-20.053	1.815	-20.053	20.135	174.828	0.483
4100.000	0.626	156.986	4099.809	-20.964	2.057	-20.964	21.065	174.395	0.237
4200.000	0.778	158.044	4199.801	-22.097	2.525	-22.097	22.241	173.482	0.153
4300.000	1.009	172.700	4299.789	-23.600	2.890	-23.600	23.776	173.017	0.323
4400.000	1.176	189.015	4399.771	-25.487	2.841	-25.487	25.645	173.639	0.352
4500.000	1.318	188.303	4499.747	-27.639	2.515	-27.639	27.753	174.802	0.143
4600.000	1.243	183.633	4599.722	-29.860	2.280	-29.860	29.946	175.634	0.128
4700.000	1.270	187.106	4699.698	-32.042	2.074	-32.042	32.109	176.297	0.081
4800.000	1.771	196.253	4799.663	-34.625	1.504	-34.625	34.658	177.513	0.556
4900.000	1.560	209.221	4899.621	-37.298	0.407	-37.298	37.300	179.375	0.431
5000.000	1.936	202.202	4999.574	-40.050	-0.896	-40.050	40.060	181.282	0.432
5100.000	2.224	188.686	5099.509	-43.533	-1.828	-43.533	43.571	182.404	0.567
5200.000	1.985	200.952	5199.442	-47.068	-2.740	-47.068	47.148	183.332	0.509
5300.000	1.125	195.631	5299.404	-49.631	-3.624	-49.631	49.763	184.176	0.872
5400.000	0.755	160.963	5399.391	-51.199	-3.673	-51.199	51.330	184.104	0.662
5500.000	0.516	219.638	5499.386	-52.169	-3.746	-52.169	52.303	184.107	0.657
5600.000	0.148	292.094	5599.385	-52.467	-4.153	-52.467	52.631	184.526	0.492
5700.000	0.202	110.976	5699.384	-52.482	-4.108	-52.482	52.642	184.476	0.351
5800.000	0.613	292.016	5799.383	-52.344	-4.439	-52.344	52.532	184.848	0.816

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
5900.000	0.540	189.644	5899.380	-52.608	-5.015	-52.608	52.846	185.445	0.900
6000.000	0.048	131.692	5999.378	-53.100	-5.062	-53.100	53.340	185.446	0.516
6100.000	0.915	245.000	6099.374	-53.465	-5.755	-53.465	53.774	186.144	0.935
6200.000	0.998	292.371	6199.362	-53.471	-7.285	-53.471	53.965	187.758	0.772
6300.000	0.251	274.342	6299.355	-53.123	-8.309	-53.123	53.769	188.890	0.763
6400.000	0.241	289.390	6399.354	-53.036	-8.726	-53.036	53.749	189.344	0.065
6500.000	0.273	274.710	6499.353	-52.947	-9.163	-52.947	53.734	189.818	0.073
6600.000	0.279	264.761	6599.352	-52.949	-9.643	-52.949	53.820	190.321	0.048
6700.000	0.244	302.404	6699.351	-52.857	-10.066	-52.857	53.807	190.782	0.172
6800.000	0.036	303.960	6799.351	-52.725	-10.272	-52.725	53.717	191.024	0.208