



Company/Rig: NOBLE ENERGY/CORETECH
WELL: STAIN D G35-19
DECLINATION: 8.37
TD AS DRILLED: 7,321 FEET
COUNTY/STATE: WELD/COLORADO
Latitude: 40.271, Longitude: -104.638
GRID North is 0.560 Degrees East of True North
VS-Azi: 0.000 Degrees



DEPTH REFERENCE : RKB=SURFACE ELEVATION=4,746 FEET

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01-de_01.ut

Minimum Curvature Method

Report Date/Time: 8/14/2014 / 12:07

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

HENDERSON, COLORADO

303-853-4976

SURVEYOR: LEVI SHELTON

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	0.919	352.684	99.996	0.795	-0.102	0.795	0.802	352.684	0.919
200.000	0.703	351.469	199.986	2.197	-0.295	2.197	2.217	352.348	0.217
300.000	0.840	344.045	299.977	3.509	-0.588	3.509	3.558	350.491	0.170
400.000	0.940	349.894	399.965	5.021	-0.933	5.021	5.107	349.472	0.135
500.000	1.107	0.424	499.949	6.795	-1.070	6.795	6.879	351.052	0.251
600.000	0.663	356.189	599.936	8.339	-1.101	8.339	8.411	352.477	0.449
700.000	0.223	25.347	699.933	9.091	-1.057	9.091	9.153	353.371	0.481
800.000	0.271	6.999	799.932	9.501	-0.945	9.501	9.548	354.322	0.092
900.000	0.341	25.598	899.931	10.004	-0.787	10.004	10.035	355.500	0.121
1000.000	0.285	3.751	999.930	10.520	-0.643	10.520	10.540	356.505	0.131
1100.000	0.334	12.192	1099.928	11.053	-0.565	11.053	11.068	357.076	0.067
1200.000	0.289	353.504	1199.927	11.590	-0.532	11.590	11.602	357.374	0.111
1300.000	0.489	342.145	1299.924	12.247	-0.691	12.247	12.266	356.771	0.213
1400.000	1.652	50.243	1399.908	13.575	0.286	13.575	13.578	1.208	1.538
1500.000	3.794	52.795	1499.789	16.498	4.030	16.498	16.983	13.727	2.145
1600.000	4.644	56.120	1599.517	20.755	10.026	20.755	23.050	25.784	0.884
1700.000	6.255	58.933	1699.062	25.823	18.054	25.823	31.508	34.959	1.632
1800.000	8.245	66.516	1798.260	31.492	29.297	31.492	43.013	42.932	2.204

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	9.637	65.369	1897.043	37.838	43.483	37.838	57.641	48.971	1.403
2000.000	11.000	55.568	1995.431	46.723	58.963	46.723	75.230	51.606	2.218
2100.000	11.555	52.729	2093.500	58.182	74.802	58.182	94.766	52.124	0.784
2200.000	12.628	53.618	2191.280	70.732	91.573	70.732	115.709	52.317	1.090
2300.000	12.799	54.512	2288.828	83.646	109.392	83.646	137.708	52.597	0.260
2400.000	13.040	52.954	2386.297	96.874	127.416	96.874	160.061	52.754	0.424
2500.000	13.090	52.572	2483.708	110.553	145.413	110.553	182.666	52.756	0.100
2600.000	13.345	52.026	2581.059	124.537	163.504	124.537	205.531	52.704	0.284
2700.000	13.940	51.005	2678.238	139.217	181.963	139.217	229.111	52.581	0.641
2800.000	14.236	50.752	2775.230	154.576	200.846	154.576	253.442	52.417	0.303
2900.000	14.598	48.576	2872.081	170.693	219.818	170.693	278.309	52.170	0.651
3000.000	14.228	51.839	2968.936	186.624	238.930	186.624	303.177	52.007	0.892
3100.000	14.250	47.245	3065.866	202.573	257.630	202.573	327.733	51.822	1.130
3200.000	13.849	50.219	3162.876	218.587	275.866	218.587	351.969	51.608	0.826
3300.000	13.784	50.669	3259.982	233.796	294.279	233.796	375.846	51.534	0.126
3400.000	12.942	51.670	3357.274	248.292	312.278	248.292	398.957	51.512	0.874
3500.000	13.289	50.228	3454.666	262.590	329.897	262.590	421.646	51.481	0.477
3600.000	12.976	51.413	3552.050	276.945	347.506	276.945	444.364	51.447	0.413
3700.000	13.015	48.268	3649.490	291.443	364.686	291.443	466.835	51.370	0.708
3800.000	12.625	49.748	3746.998	305.999	381.430	305.999	489.003	51.262	0.510
3900.000	14.018	50.643	3844.305	320.742	399.136	320.742	512.040	51.215	1.408
4000.000	13.862	53.223	3941.361	335.594	418.095	335.594	536.122	51.247	0.641
4100.000	13.306	53.607	4038.563	349.593	436.953	349.593	559.592	51.338	0.563
4200.000	12.897	54.385	4135.960	362.920	455.288	362.920	582.235	51.441	0.445
4300.000	12.782	54.709	4233.460	375.809	473.389	375.809	604.425	51.555	0.136
4400.000	13.090	47.903	4330.928	389.792	490.822	389.792	626.772	51.545	1.554
4500.000	13.200	52.132	4428.310	404.392	508.238	404.392	649.491	51.492	0.968
4600.000	13.120	48.799	4525.685	418.877	525.791	418.877	672.245	51.457	0.763
4700.000	12.232	49.535	4623.247	433.228	542.390	433.228	694.171	51.384	0.902
4800.000	12.113	55.831	4721.003	445.996	559.131	445.996	715.220	51.422	1.332
4900.000	12.969	45.470	4818.629	459.760	575.814	459.760	736.845	51.394	2.403
5000.000	13.326	53.248	4916.015	474.526	593.048	474.526	759.527	51.335	1.803
5100.000	14.011	47.442	5013.187	489.610	611.200	489.610	783.124	51.303	1.533
5200.000	11.267	52.785	5110.758	503.709	627.900	503.709	804.972	51.263	2.980
5300.000	9.443	48.503	5209.127	515.053	641.825	515.053	822.933	51.254	1.979
5400.000	6.935	49.882	5308.099	524.380	652.588	524.380	837.165	51.217	2.515
5500.000	5.724	51.110	5407.488	531.402	661.087	531.402	848.188	51.207	1.219
5600.000	3.574	59.051	5507.154	536.137	667.643	536.137	856.265	51.235	2.239
5700.000	2.149	60.601	5607.027	538.660	671.950	538.660	861.203	51.283	1.427

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
5800.000	0.532	38.896	5706.996	539.942	673.875	539.942	863.507	51.297	1.667
5900.000	0.626	15.773	5806.991	540.828	674.314	540.828	864.404	51.269	0.250
6000.000	0.375	19.523	5906.987	541.662	674.572	541.662	865.127	51.237	0.253
6100.000	0.346	24.435	6006.986	542.246	674.806	542.246	865.676	51.216	0.042
6200.000	0.507	17.611	6106.983	542.943	675.066	542.943	866.314	51.191	0.169
6300.000	0.555	33.303	6206.978	543.770	675.466	543.770	867.144	51.165	0.153
6400.000	0.613	17.631	6306.973	544.685	675.894	544.685	868.052	51.136	0.169
6500.000	0.492	31.993	6406.969	545.559	676.283	545.559	868.903	51.107	0.183
6600.000	0.454	26.863	6506.965	546.276	676.690	546.276	869.670	51.087	0.056
6700.000	0.479	31.388	6606.962	546.987	677.087	546.987	870.426	51.067	0.045
6800.000	0.361	35.148	6706.959	547.602	677.486	547.602	871.123	51.052	0.122
6900.000	0.270	46.694	6806.958	548.021	677.839	548.021	871.660	51.045	0.110
7000.000	0.259	5.088	6906.957	548.408	678.030	548.408	872.053	51.033	0.188
7050.000	0.339	33.309	6956.956	548.644	678.122	548.644	872.272	51.025	0.330