



Company/Rig: NOBLE ENERGY/ CORETECH
WELL/API#: KOHLER 8-21/05-123-12293
DECLINATION: 8.28
TD AS DRILLED: 6,924 FEET
COUNTY/STATE: WELD/COLORADO
VS-Azi: 0.000 Degrees
Latitude: 40.38670, Longitude: -104.54780
Grid North = True North -0.62 degs (NAD 27)
Grid Convergence Applied = -0.62 degs



DEPTH REFERENCE : RKB=SURFACE ELEVATION=4,607 FEET

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01-de_01.ut

Minimum Curvature Method

Report Date/Time: 8/24/2015 / 09:51

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

HENDERSON, COLORADO

303-853-4976

Surveyor: LEVI SHELDON

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	0.352	206.175	99.999	-0.276	-0.136	-0.276	0.307	206.175	0.352
200.000	0.418	189.061	199.997	-0.912	-0.329	-0.912	0.969	199.818	0.132
300.000	0.342	164.484	299.995	-1.560	-0.306	-1.560	1.589	191.101	0.178
400.000	0.388	156.360	399.993	-2.157	-0.090	-2.157	2.159	182.401	0.069
500.000	0.401	156.868	499.991	-2.789	0.183	-2.789	2.795	176.252	0.014
600.000	0.453	152.721	599.988	-3.463	0.502	-3.463	3.499	171.758	0.060
700.000	0.334	159.205	699.985	-4.087	0.786	-4.087	4.161	169.109	0.127
800.000	0.286	157.654	799.984	-4.589	0.984	-4.589	4.694	167.894	0.049
900.000	0.354	150.124	899.982	-5.088	1.233	-5.088	5.235	166.377	0.080
1000.000	0.195	182.367	999.981	-5.525	1.380	-5.525	5.695	165.978	0.216
1100.000	0.164	220.086	1099.981	-5.805	1.281	-5.805	5.944	167.558	0.120
1200.000	0.258	216.473	1199.980	-6.095	1.055	-6.095	6.186	170.183	0.095
1300.000	0.176	229.832	1299.979	-6.375	0.804	-6.375	6.426	172.816	0.096
1400.000	0.276	241.553	1399.979	-6.589	0.475	-6.589	6.606	175.879	0.110
1500.000	0.324	212.563	1499.977	-6.942	0.111	-6.942	6.943	179.085	0.157
1600.000	0.402	239.965	1599.975	-7.356	-0.345	-7.356	7.364	182.684	0.188
1700.000	0.395	242.756	1699.973	-7.689	-0.954	-7.689	7.748	187.076	0.021
1800.000	0.436	272.354	1799.970	-7.831	-1.640	-7.831	8.001	191.831	0.216

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	0.426	288.911	1899.968	-7.695	-2.372	-7.695	8.052	197.132	0.124
2000.000	0.431	301.230	1999.965	-7.379	-3.046	-7.379	7.983	202.427	0.092
2100.000	0.495	296.996	2099.962	-6.988	-3.753	-6.988	7.932	208.238	0.073
2200.000	0.495	269.379	2199.958	-6.796	-4.570	-6.796	8.190	213.916	0.236
2300.000	0.585	273.672	2299.954	-6.768	-5.510	-6.768	8.728	219.152	0.099
2400.000	0.448	273.369	2399.950	-6.713	-6.410	-6.713	9.282	223.681	0.137
2500.000	0.603	271.882	2499.945	-6.672	-7.327	-6.672	9.910	227.678	0.156
2600.000	0.410	266.120	2599.941	-6.679	-8.211	-6.679	10.584	230.872	0.199
2700.000	0.411	263.154	2699.939	-6.746	-8.924	-6.746	11.187	232.913	0.021
2800.000	0.499	266.779	2799.936	-6.813	-9.716	-6.813	11.867	234.959	0.092
2900.000	0.557	279.048	2899.931	-6.762	-10.631	-6.762	12.599	237.542	0.127
3000.000	0.620	304.715	2999.926	-6.377	-11.556	-6.377	13.198	241.109	0.269
3100.000	0.589	316.103	3099.921	-5.698	-12.357	-5.698	13.608	245.244	0.124
3200.000	0.658	315.999	3199.915	-4.914	-13.113	-4.914	14.003	249.455	0.069
3300.000	0.764	318.280	3299.907	-4.004	-13.955	-4.004	14.518	253.992	0.109
3400.000	0.871	316.026	3399.897	-2.959	-14.926	-2.959	15.217	258.785	0.112
3500.000	0.850	322.434	3499.886	-1.824	-15.906	-1.824	16.011	263.457	0.098
3600.000	0.975	317.454	3599.873	-0.610	-16.934	-0.610	16.945	267.938	0.148
3700.000	0.944	322.556	3699.859	0.671	-18.010	0.671	18.023	272.135	0.091
3800.000	0.847	325.193	3799.847	1.933	-18.933	1.933	19.032	275.829	0.106
3900.000	0.930	323.344	3899.835	3.191	-19.840	3.191	20.095	279.136	0.088
4000.000	0.897	316.667	3999.822	4.411	-20.861	4.411	21.323	281.939	0.111
4100.000	1.000	317.006	4099.808	5.619	-21.994	5.619	22.700	284.331	0.103
4200.000	1.062	317.838	4199.792	6.944	-23.210	6.944	24.227	286.655	0.064
4300.000	1.001	318.888	4299.776	8.289	-24.407	8.289	25.776	288.757	0.064
4400.000	0.718	324.162	4399.765	9.455	-25.348	9.455	27.054	290.455	0.293
4500.000	0.808	352.819	4499.756	10.662	-25.803	10.662	27.919	292.451	0.388
4600.000	0.677	51.077	4599.749	11.733	-25.431	11.733	28.008	294.767	0.732
4700.000	0.858	60.220	4699.740	12.476	-24.322	12.476	27.335	297.156	0.218
4800.000	1.011	69.979	4799.727	13.150	-22.844	13.150	26.358	299.927	0.220
4900.000	0.850	82.595	4899.714	13.548	-21.279	13.548	25.226	302.483	0.259
5000.000	1.025	85.017	4999.700	13.721	-19.652	13.721	23.968	304.922	0.179
5100.000	1.026	113.230	5099.685	13.445	-17.939	13.445	22.419	306.852	0.500
5200.000	0.571	110.667	5199.675	12.916	-16.650	12.916	21.073	307.803	0.456
5300.000	0.503	102.247	5299.670	12.647	-15.755	12.647	20.203	308.757	0.104
5400.000	0.639	113.221	5399.665	12.335	-14.813	12.335	19.276	309.783	0.174
5500.000	0.511	74.611	5499.661	12.233	-13.871	12.233	18.495	311.409	0.399
5600.000	0.162	70.184	5599.659	12.399	-13.309	12.399	18.190	312.973	0.350
5700.000	0.381	59.588	5699.658	12.615	-12.889	12.615	18.036	314.384	0.225
5800.000	0.389	38.915	5799.656	13.048	-12.389	13.048	17.993	316.484	0.139

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	0.429	24.255	5899.653	13.654	-12.022	13.654	18.192	318.638	0.112
6000.000	0.459	357.414	5999.650	14.395	-11.886	14.395	18.668	320.454	0.208
6100.000	0.831	342.116	6099.644	15.485	-12.127	15.485	19.668	321.935	0.407
6200.000	1.051	330.399	6199.630	16.972	-12.802	16.972	21.259	322.973	0.291
6300.000	1.318	0.036	6299.610	18.920	-13.255	18.920	23.100	324.986	0.659
6400.000	1.690	35.573	6399.577	21.269	-12.396	21.269	24.618	329.766	0.984
6500.000	2.272	58.703	6499.518	23.499	-9.844	23.499	25.477	337.271	0.978
6600.000	2.006	83.826	6599.451	24.717	-6.410	24.717	25.534	345.462	0.966
6650.000	1.933	90.138	6649.421	24.809	-4.697	24.809	25.249	349.280	0.458