



Company/Rig: NOBLE ENERGY/ CORETECH
WELL/API#: MONFORT 4-10/05-123-20250
DECLINATION: 8.41
TD AS DRILLED: 7,428 FEET
COUNTY/STATE: WELD/COLORADO
Latitude: 40.332, Longitude: -104.770
GRID North is 0.470 Degrees East of True North
VS-Azi: 0.000 Degrees



DEPTH REFERENCE : RKB=SURFACE ELEVATION=4,718 FEET

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run02-01-de_01.ut

Minimum Curvature Method

Report Date/Time: 11/17/2014 / 10:52

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	0.314	314.075	100.000	0.190	-0.197	0.190	0.274	314.075	0.314
200.000	0.229	296.009	199.998	0.468	-0.573	0.468	0.740	309.276	0.120
300.000	0.075	330.472	299.998	0.613	-0.784	0.613	0.996	308.008	0.172
400.000	0.134	330.791	399.998	0.772	-0.874	0.772	1.166	311.471	0.059
500.000	0.151	200.523	499.998	0.752	-0.977	0.752	1.233	307.564	0.258
600.000	0.035	323.002	599.998	0.653	-1.041	0.653	1.229	302.074	0.172
700.000	0.192	127.500	699.997	0.575	-0.927	0.575	1.091	301.811	0.225
800.000	0.111	206.233	799.997	0.386	-0.837	0.386	0.922	294.758	0.202
900.000	0.020	12.298	899.997	0.316	-0.876	0.316	0.932	289.813	0.130
1000.000	0.320	258.805	999.997	0.278	-1.147	0.278	1.180	283.642	0.328
1100.000	0.330	272.676	1099.995	0.238	-1.708	0.238	1.724	277.917	0.079
1200.000	0.233	261.316	1199.994	0.220	-2.197	0.220	2.208	275.724	0.111
1300.000	0.276	315.130	1299.993	0.360	-2.568	0.360	2.593	277.981	0.234
1400.000	0.293	281.393	1399.992	0.581	-2.989	0.581	3.045	281.005	0.166
1500.000	0.310	278.720	1499.990	0.673	-3.507	0.673	3.571	280.860	0.022
1600.000	0.429	277.139	1599.988	0.760	-4.147	0.760	4.216	280.392	0.119
1700.000	0.601	283.708	1699.984	0.931	-5.028	0.931	5.114	280.494	0.181
1800.000	0.625	271.199	1799.979	1.067	-6.083	1.067	6.176	279.949	0.136
1900.000	0.703	249.685	1899.972	0.866	-7.204	0.866	7.256	276.852	0.259

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
2000.000	0.853	215.631	1999.963	0.048	-8.213	0.048	8.213	270.333	0.478
2100.000	0.954	206.311	2099.951	-1.303	-9.015	-1.303	9.109	261.773	0.178
2200.000	0.960	190.446	2199.937	-2.873	-9.536	-2.873	9.960	253.232	0.264
2300.000	0.592	186.882	2299.928	-4.210	-9.750	-4.210	10.620	246.646	0.371
2400.000	0.563	215.442	2399.923	-5.123	-10.097	-5.123	11.322	243.097	0.286
2500.000	0.651	214.786	2499.917	-5.990	-10.706	-5.990	12.267	240.773	0.088
2600.000	0.671	206.946	2599.911	-6.978	-11.295	-6.978	13.277	238.291	0.093
2700.000	0.800	216.292	2699.902	-8.063	-11.974	-8.063	14.435	236.044	0.176
2800.000	0.846	212.977	2799.892	-9.245	-12.788	-9.245	15.780	234.137	0.066
2900.000	0.903	220.127	2899.880	-10.466	-13.698	-10.466	17.238	232.618	0.123
3000.000	0.833	213.691	2999.869	-11.673	-14.608	-11.673	18.699	231.373	0.120
3100.000	1.089	214.655	3099.855	-13.060	-15.552	-13.060	20.308	229.979	0.257
3200.000	1.149	216.994	3199.836	-14.642	-16.696	-14.642	22.207	228.749	0.075
3300.000	1.151	206.862	3299.816	-16.340	-17.753	-16.340	24.128	227.375	0.203
3400.000	1.282	192.855	3399.793	-18.327	-18.456	-18.327	26.010	225.202	0.324
3500.000	1.506	192.913	3499.764	-20.699	-18.999	-20.699	28.096	222.548	0.223
3600.000	1.584	189.243	3599.727	-23.343	-19.515	-23.343	30.426	219.895	0.126
3700.000	1.520	194.435	3699.691	-25.992	-20.067	-25.992	32.837	217.670	0.155
3800.000	1.310	199.346	3799.660	-28.355	-20.777	-28.355	35.152	216.231	0.242
3900.000	1.094	208.165	3899.638	-30.275	-21.606	-30.275	37.194	215.514	0.284
4000.000	0.508	272.974	3999.630	-31.093	-22.499	-31.093	38.379	215.889	0.990
4100.000	1.236	322.026	4099.619	-30.220	-23.605	-30.220	38.346	217.993	0.982
4200.000	1.960	342.542	4199.580	-27.738	-24.782	-27.738	37.196	221.778	0.911
4300.000	2.137	0.659	4299.517	-24.243	-25.273	-24.243	35.020	226.192	0.668
4400.000	2.093	24.321	4399.451	-20.714	-24.500	-20.714	32.083	229.786	0.868
4500.000	2.062	26.546	4499.385	-17.441	-22.944	-17.441	28.820	232.759	0.086
4600.000	1.634	39.153	4599.333	-14.726	-21.240	-14.726	25.845	235.265	0.588
4700.000	1.847	61.328	4699.288	-12.847	-18.925	-12.847	22.874	235.830	0.701
4800.000	1.898	62.619	4799.235	-11.313	-16.041	-11.313	19.629	234.808	0.066
4900.000	1.217	72.597	4899.197	-10.233	-13.557	-10.233	16.986	232.954	0.730
5000.000	1.150	79.359	4999.176	-9.730	-11.557	-9.730	15.108	229.905	0.155
5100.000	0.759	107.424	5099.162	-9.743	-9.939	-9.743	13.918	225.568	0.599
5200.000	0.757	108.345	5199.154	-10.149	-8.680	-10.149	13.355	220.537	0.012
5300.000	0.779	123.244	5299.145	-10.730	-7.485	-10.730	13.082	214.898	0.200
5400.000	0.853	132.572	5399.135	-11.606	-6.368	-11.606	13.238	208.753	0.152
5500.000	1.281	127.938	5499.117	-12.797	-4.938	-12.797	13.717	201.100	0.437
5600.000	1.358	141.575	5599.091	-14.413	-3.320	-14.413	14.790	192.971	0.323
5700.000	1.609	131.185	5699.057	-16.266	-1.527	-16.266	16.337	185.362	0.367
5800.000	1.370	145.792	5799.024	-18.179	0.202	-18.179	18.180	179.364	0.446
5900.000	0.746	145.790	5899.006	-19.706	1.240	-19.706	19.745	176.398	0.624

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
6000.000	0.671	117.398	5998.999	-20.514	2.126	-20.514	20.624	174.083	0.355
6100.000	0.864	128.770	6098.990	-21.256	3.234	-21.256	21.500	171.350	0.245
6200.000	0.555	138.384	6198.982	-22.090	4.143	-22.090	22.475	169.378	0.330
6300.000	0.512	152.769	6298.978	-22.850	4.669	-22.850	23.322	168.451	0.140
6400.000	0.192	157.791	6398.976	-23.402	4.937	-23.402	23.917	168.087	0.322
6500.000	0.491	20.815	6498.975	-23.156	5.153	-23.156	23.723	167.455	0.645
6600.000	0.254	89.030	6598.973	-22.752	5.527	-22.752	23.413	166.347	0.462
6700.000	0.287	44.533	6698.972	-22.570	5.924	-22.570	23.334	165.293	0.207
6800.000	0.297	94.693	6798.971	-22.412	6.358	-22.412	23.297	164.163	0.248
6900.000	0.532	94.768	6898.968	-22.472	7.079	-22.472	23.560	162.516	0.234
7000.000	0.233	85.880	6998.966	-22.496	7.743	-22.496	23.791	161.006	0.304
7100.000	0.719	71.349	7098.962	-22.281	8.541	-22.281	23.862	159.026	0.497