



Company/Rig: NOBLE ENERGY/CORETECH
WELL/API#: BAILEY FEDERAL 18-01/05-123-10934
DECLINATION: 8.38
TD AS DRILLED: 7759
COUNTY/STATE: WELD / COLORADO
Latitude: 40.494, Longitude: -104.704
GRID North is 0.510 Degrees East of True North
VS-Azi: 0.000 Degrees



DEPTH REFERENCE : RKB=SURFACE ELEVATION= 4762

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro.ut

Minimum Curvature Method

Report Date/Time: 12/5/2014 / 14:19

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

HENDERSON, COLORADO

303-853-4976

SURVEYOR: BRIAN BUDD

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	0.121	2.357	100.000	0.106	0.004	0.106	0.106	2.357	0.121
200.000	0.237	318.810	199.999	0.367	-0.128	0.367	0.388	340.820	0.171
300.000	0.169	89.498	299.999	0.524	-0.116	0.524	0.537	347.496	0.371
400.000	0.112	131.783	399.999	0.460	0.105	0.460	0.472	12.824	0.115
500.000	0.156	355.195	499.999	0.530	0.166	0.530	0.556	17.421	0.250
600.000	0.225	99.873	599.998	0.633	0.348	0.633	0.722	28.818	0.304
700.000	0.223	73.470	699.998	0.654	0.728	0.654	0.979	48.041	0.102
800.000	0.093	210.740	799.997	0.640	0.873	0.640	1.083	53.757	0.298
900.000	0.171	86.419	899.997	0.580	0.981	0.580	1.139	59.412	0.236
1000.000	0.163	111.844	999.997	0.536	1.261	0.536	1.371	66.980	0.074
1100.000	0.242	203.995	1099.996	0.290	1.308	0.290	1.340	77.480	0.296
1200.000	0.442	250.312	1199.995	-0.032	0.859	-0.032	0.859	92.152	0.326
1300.000	0.379	279.610	1299.992	-0.107	0.169	-0.107	0.200	122.414	0.217
1400.000	0.070	205.132	1399.992	-0.107	-0.184	-0.107	0.212	239.771	0.367
1500.000	0.307	289.985	1499.991	-0.070	-0.461	-0.070	0.467	261.322	0.309
1600.000	0.109	328.101	1599.990	0.102	-0.763	0.102	0.770	277.587	0.232
1700.000	0.292	270.566	1699.990	0.185	-1.068	0.185	1.084	279.809	0.251
1800.000	0.299	264.364	1799.988	0.162	-1.583	0.162	1.591	275.829	0.033
1900.000	0.229	187.176	1899.988	-0.062	-1.867	-0.062	1.868	268.091	0.334

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	0.315	237.852	1999.987	-0.407	-2.125	-0.407	2.164	259.163	0.246
2100.000	0.175	293.699	2099.986	-0.492	-2.498	-0.492	2.546	258.855	0.261
2200.000	0.061	314.318	2199.986	-0.394	-2.676	-0.394	2.704	261.630	0.119
2300.000	0.229	270.986	2299.985	-0.353	-2.914	-0.353	2.935	263.092	0.190
2400.000	0.163	213.893	2399.985	-0.468	-3.194	-0.468	3.228	261.663	0.196
2500.000	0.724	129.111	2499.982	-0.985	-2.783	-0.985	2.952	250.509	0.728
2600.000	0.920	139.898	2599.972	-1.998	-1.776	-1.998	2.673	221.634	0.249
2700.000	0.842	126.692	2699.960	-3.051	-0.669	-3.051	3.123	192.373	0.217
2800.000	0.850	129.928	2799.949	-3.966	0.489	-3.966	3.996	172.969	0.048
2900.000	0.664	143.905	2899.940	-4.910	1.399	-4.910	5.106	164.093	0.261
3000.000	0.640	149.202	2999.934	-5.858	2.026	-5.858	6.198	160.918	0.065
3100.000	0.819	135.333	3099.926	-6.846	2.815	-6.846	7.402	157.650	0.250
3200.000	0.615	144.677	3199.918	-7.792	3.627	-7.792	8.595	155.037	0.234
3300.000	0.882	147.173	3299.909	-8.876	4.355	-8.876	9.887	153.867	0.269
3400.000	0.895	147.333	3399.897	-10.180	5.194	-10.180	11.429	152.972	0.013
3500.000	1.377	168.164	3499.878	-12.014	5.861	-12.014	13.367	153.993	0.627
3600.000	1.158	170.871	3599.853	-14.188	6.268	-14.188	15.511	156.164	0.227
3700.000	1.304	181.206	3699.830	-16.322	6.405	-16.322	17.534	158.576	0.265
3800.000	1.331	183.611	3799.804	-18.618	6.307	-18.618	19.658	161.285	0.062
3900.000	1.215	182.856	3899.779	-20.836	6.182	-20.836	21.734	163.476	0.117
4000.000	1.058	176.822	3999.760	-22.816	6.180	-22.816	23.638	164.845	0.197
4100.000	0.808	184.563	4099.746	-24.441	6.175	-24.441	25.209	165.821	0.279
4200.000	0.665	185.400	4199.738	-25.721	6.064	-25.721	26.426	166.734	0.143
4300.000	0.650	197.016	4299.731	-26.841	5.844	-26.841	27.470	167.718	0.134
4400.000	0.467	170.627	4399.727	-27.786	5.744	-27.786	28.373	168.320	0.311
4500.000	0.574	198.166	4499.723	-28.664	5.654	-28.664	29.216	168.841	0.269
4600.000	0.165	117.826	4599.721	-29.207	5.625	-29.207	29.744	169.099	0.570
4700.000	0.504	125.794	4699.719	-29.532	6.109	-29.532	30.157	168.312	0.342
4800.000	0.190	172.381	4799.717	-29.954	6.488	-29.954	30.648	167.778	0.398
4900.000	0.527	156.267	4899.715	-30.540	6.695	-30.540	31.265	167.634	0.348
5000.000	0.389	226.961	4999.713	-31.193	6.632	-31.193	31.890	167.996	0.542
5100.000	0.519	247.707	5099.710	-31.597	5.965	-31.597	32.155	169.310	0.208
5200.000	0.283	245.571	5199.707	-31.871	5.321	-31.871	32.312	170.522	0.237
5300.000	0.350	245.931	5299.705	-32.098	4.817	-32.098	32.457	171.465	0.067
5400.000	0.484	274.315	5399.703	-32.190	4.116	-32.190	32.452	172.713	0.242
5500.000	0.729	312.261	5499.698	-31.731	3.224	-31.731	31.894	174.199	0.457
5600.000	0.787	354.267	5599.690	-30.620	2.684	-30.620	30.737	174.990	0.546
5700.000	0.678	31.843	5699.682	-29.434	2.928	-29.434	29.579	174.319	0.483
5800.000	0.876	42.461	5799.673	-28.367	3.756	-28.367	28.615	172.457	0.244
5900.000	0.783	47.524	5899.662	-27.342	4.776	-27.342	27.756	170.092	0.119

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	0.885	65.146	5999.652	-26.556	5.981	-26.556	27.221	167.309	0.275
6100.000	1.112	74.084	6099.637	-25.966	7.615	-25.966	27.059	163.656	0.275
6200.000	0.899	98.054	6199.622	-25.809	9.324	-25.809	27.442	160.136	0.467
6300.000	0.088	28.695	6299.617	-25.852	10.138	-25.852	27.769	158.588	0.872
6400.000	0.127	54.045	6399.617	-25.720	10.264	-25.720	27.692	158.245	0.060
6500.000	0.905	163.084	6499.613	-26.410	10.583	-26.410	28.452	158.164	0.953
6600.000	0.490	226.532	6599.607	-27.460	10.502	-27.460	29.400	159.071	0.814
6700.000	0.252	65.911	6699.606	-27.665	10.392	-27.665	29.552	159.412	0.733
6800.000	0.322	214.793	6799.605	-27.806	10.432	-27.806	29.698	159.436	0.553