



Company/Rig: Noble Energy Inc/Coretech
WELL/API#: Dietrich RC 7-8/05-123-13184
DECLINATION: 8.21 Degrees
TD AS DRILLED: 7203'
COUNTY/STATE: Weld/Colorado
VS-Azi: 0.000 Degrees
Latitude: 40.32890, Longitude: -104.52448
Grid North = True North -0.59 degs (NAD 27)
Grid Correction Applied = -0.59 degs



DEPTH REFERENCE : RKB=GL/ELEVATION=4819'

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: gyro-01_mrg.ut

Minimum Curvature Method

Report Date/Time: 7/19/2016 / 15:20

Lat/Long Obtained By Handheld GPS at Wellhead

North Reference: Grid

Denver, Colorado

303-853-4976

Surveyor: Jason Kinchelow / Dietrich RC 7-8

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	0.348	286.534	99.999	0.086	-0.291	0.086	0.303	286.534	0.348
200.000	0.262	270.372	199.998	0.174	-0.810	0.174	0.828	282.135	0.121
300.000	0.173	225.090	299.997	0.069	-1.145	0.069	1.147	273.453	0.186
400.000	0.148	241.517	399.997	-0.099	-1.365	-0.099	1.369	265.847	0.052
500.000	0.084	253.798	499.997	-0.181	-1.550	-0.181	1.560	263.323	0.068
600.000	0.086	268.002	599.997	-0.205	-1.695	-0.205	1.707	263.119	0.021
700.000	0.170	219.463	699.996	-0.321	-1.864	-0.321	1.891	260.213	0.130
800.000	0.121	241.893	799.996	-0.485	-2.051	-0.485	2.107	256.683	0.074
900.000	0.041	211.398	899.996	-0.566	-2.162	-0.566	2.235	255.335	0.087
1000.000	0.077	233.580	999.996	-0.637	-2.235	-0.637	2.324	254.104	0.041
1100.000	0.107	254.917	1099.996	-0.701	-2.379	-0.701	2.480	253.592	0.045
1200.000	0.095	237.724	1199.996	-0.769	-2.539	-0.769	2.653	253.147	0.032
1300.000	0.266	256.691	1299.995	-0.867	-2.836	-0.867	2.966	252.997	0.179
1400.000	0.281	260.682	1399.994	-0.960	-3.304	-0.960	3.441	253.792	0.024
1500.000	0.179	287.797	1499.993	-0.952	-3.694	-0.952	3.815	255.544	0.146
1600.000	0.272	271.981	1599.992	-0.897	-4.080	-0.897	4.177	257.606	0.111
1700.000	0.520	312.632	1699.990	-0.581	-4.650	-0.581	4.686	262.876	0.360
1800.000	0.506	344.800	1799.986	0.152	-5.100	0.152	5.102	271.706	0.284

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	0.321	322.846	1899.984	0.801	-5.384	0.801	5.444	278.461	0.240
2000.000	0.354	304.689	1999.982	1.200	-5.807	1.200	5.930	281.672	0.111
2100.000	0.431	324.356	2099.980	1.681	-6.280	1.681	6.501	284.983	0.154
2200.000	0.519	320.239	2199.976	2.334	-6.788	2.334	7.179	288.975	0.094
2300.000	0.471	330.318	2299.973	3.039	-7.282	3.039	7.890	292.656	0.099
2400.000	0.461	330.444	2399.969	3.747	-7.684	3.747	8.549	295.995	0.010
2500.000	0.741	314.575	2499.964	4.551	-8.343	4.551	9.504	298.612	0.323
2600.000	1.289	306.116	2599.948	5.668	-9.713	5.668	11.245	300.267	0.566
2700.000	1.332	303.874	2699.922	6.979	-11.586	6.979	13.526	301.062	0.067
2800.000	1.370	303.432	2799.894	8.285	-13.549	8.285	15.882	301.446	0.039
2900.000	1.173	305.465	2899.869	9.538	-15.380	9.538	18.098	301.804	0.202
3000.000	1.030	303.537	2999.851	10.628	-16.963	10.628	20.018	302.069	0.148
3100.000	0.911	289.432	3099.836	11.389	-18.462	11.389	21.692	301.671	0.266
3200.000	0.999	291.363	3199.822	11.971	-20.023	11.971	23.329	300.874	0.093
3300.000	1.035	272.266	3299.807	12.324	-21.737	12.324	24.988	299.552	0.339
3400.000	1.141	292.980	3399.789	12.749	-23.557	12.749	26.785	298.422	0.405
3500.000	0.755	259.875	3499.776	13.022	-25.122	13.022	28.296	297.400	0.655
3600.000	0.601	223.088	3599.770	12.523	-26.129	12.523	28.975	295.607	0.452
3700.000	0.608	214.815	3699.764	11.704	-26.790	11.704	29.235	293.600	0.087
3800.000	0.659	212.216	3799.758	10.783	-27.399	10.783	29.444	291.482	0.059
3900.000	0.707	206.476	3899.751	9.744	-27.980	9.744	29.629	289.201	0.083
4000.000	0.711	209.747	3999.743	8.654	-28.563	8.654	29.845	286.856	0.041
4100.000	0.916	240.374	4099.734	7.720	-29.565	7.720	30.557	284.635	0.473
4200.000	0.700	227.898	4199.724	6.916	-30.713	6.916	31.482	282.690	0.278
4300.000	0.412	215.582	4299.719	6.214	-31.375	6.214	31.985	281.204	0.310
4400.000	0.941	147.541	4399.713	5.230	-31.144	5.230	31.580	279.532	0.874
4500.000	1.164	149.803	4499.696	3.659	-30.193	3.659	30.414	276.911	0.227
4600.000	1.220	154.336	4599.674	1.822	-29.221	1.822	29.278	273.569	0.110
4700.000	2.177	153.385	4699.629	-0.835	-27.909	-0.835	27.922	268.286	0.957
4800.000	2.698	152.555	4799.538	-4.622	-25.973	-4.622	26.381	259.910	0.523
4900.000	2.389	168.600	4899.441	-8.754	-24.476	-8.754	25.995	250.321	0.773
5000.000	1.901	164.431	4999.371	-12.395	-23.619	-12.395	26.674	242.311	0.511
5100.000	1.756	175.131	5099.320	-15.519	-23.044	-15.519	27.783	236.041	0.370
5200.000	1.719	177.697	5199.274	-18.544	-22.854	-18.544	29.431	230.943	0.086
5300.000	1.416	175.248	5299.236	-21.275	-22.691	-21.275	31.104	226.845	0.310
5400.000	1.252	172.270	5399.209	-23.589	-22.442	-23.589	32.559	223.572	0.178
5500.000	0.902	158.853	5499.192	-25.406	-22.011	-25.406	33.614	220.904	0.429
5600.000	1.125	146.285	5599.176	-26.957	-21.182	-26.957	34.283	218.159	0.313
5700.000	1.517	139.511	5699.149	-28.780	-19.777	-28.780	34.921	214.496	0.422
5800.000	1.720	134.556	5799.109	-30.840	-17.848	-30.840	35.633	210.059	0.246

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	1.658	136.802	5899.066	-32.948	-15.788	-32.948	36.535	205.603	0.091
6000.000	1.727	139.626	5999.022	-35.151	-13.822	-35.151	37.770	201.466	0.108
6100.000	1.856	136.131	6098.974	-37.466	-11.723	-37.466	39.257	197.375	0.169
6200.000	1.999	133.344	6198.917	-39.831	-9.333	-39.831	40.909	193.187	0.171
6300.000	1.899	138.551	6298.859	-42.269	-6.968	-42.269	42.840	189.361	0.203
6400.000	1.956	139.743	6398.803	-44.814	-4.768	-44.814	45.067	186.074	0.069
6500.000	1.884	143.088	6498.746	-47.430	-2.678	-47.430	47.506	183.232	0.133
6600.000	2.535	146.349	6598.672	-50.586	-0.465	-50.586	50.588	180.527	0.663
6700.000	2.965	150.693	6698.556	-54.682	2.026	-54.682	54.720	177.878	0.477
6800.000	3.324	145.292	6798.406	-59.321	4.943	-59.321	59.526	175.237	0.465
6900.000	3.261	150.973	6898.241	-64.191	7.974	-64.191	64.684	172.919	0.332
7000.000	3.001	153.065	6998.092	-69.012	10.540	-69.012	69.812	171.317	0.284