



**Company:** Noble Energy

**Rig:** Production/Core-Tech

**API #** 05-123-22236

**Date:** 3/4/2014

**Surveyor:** Nick Kula

**VS:** 0.000

**Lat :** 40.299

**Long:** -104.464

**Well:** Gutteresen State CC 20-6

**Location:** Weld County, Colorado

**North Reference:** GRID

**Convergence:** GRID North is 0.670 Degrees East

**Declination:** 8.34

**Depth Reference:** Ground Level

**Elevation:** 4732'

**Total Depth as Drilled:** 7350'

**Lat & Long obtained by handheld GPS at wellhead**

**MS Gyro Survey Calculations**

Depth	Inc	AzG	N/-S	E/-W	TVD	DL	VS	CD	Cbrg
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100.000	0.341	213.893	-0.247	-0.166	99.999	0.341	-0.247	0.297	213.893
200.000	0.231	195.173	-0.688	-0.384	199.998	0.143	-0.688	0.788	209.193
300.000	0.926	171.918	-1.683	-0.323	299.993	0.720	-1.683	1.713	190.879
400.000	0.940	173.375	-3.298	-0.115	399.979	0.027	-3.298	3.300	181.999
500.000	0.563	183.888	-4.603	-0.054	499.971	0.400	-4.603	4.603	180.670
600.000	0.300	102.762	-5.151	0.168	599.968	0.596	-5.151	5.154	178.126
700.000	0.302	152.276	-5.442	0.547	699.967	0.252	-5.442	5.469	174.265
800.000	0.326	144.022	-5.905	0.836	799.966	0.051	-5.905	5.964	171.940
900.000	0.315	123.473	-6.287	1.233	899.964	0.115	-6.287	6.407	168.907
1000.000	0.239	107.042	-6.499	1.661	999.963	0.109	-6.499	6.708	165.664
1100.000	0.205	75.589	-6.516	2.034	1099.962	0.125	-6.516	6.826	162.665
1200.000	0.240	45.908	-6.326	2.358	1199.962	0.119	-6.326	6.751	159.558
1300.000	0.298	189.851	-6.436	2.464	1299.961	0.512	-6.436	6.892	159.055
1400.000	0.095	111.932	-6.723	2.496	1399.961	0.293	-6.723	7.172	159.632
1500.000	0.133	152.529	-6.857	2.627	1499.960	0.086	-6.857	7.343	159.041
1600.000	0.131	181.255	-7.074	2.677	1599.960	0.065	-7.074	7.564	159.269
1700.000	0.117	87.511	-7.184	2.777	1699.960	0.182	-7.184	7.702	158.865
1800.000	0.257	233.984	-7.311	2.698	1799.960	0.360	-7.311	7.793	159.744
1900.000	0.092	311.473	-7.390	2.456	1899.959	0.253	-7.390	7.787	161.612
2000.000	0.180	51.556	-7.239	2.519	1999.959	0.216	-7.239	7.664	160.812
2100.000	0.023	307.610	-7.129	2.626	2099.959	0.187	-7.129	7.597	159.776
2200.000	0.058	207.331	-7.162	2.588	2199.959	0.065	-7.162	7.615	160.134
2300.000	0.087	200.301	-7.277	2.538	2299.959	0.031	-7.277	7.707	160.772
2400.000	0.101	39.744	-7.281	2.569	2399.959	0.186	-7.281	7.720	160.567
2500.000	0.225	48.801	-7.083	2.773	2499.958	0.126	-7.083	7.607	158.622
2600.000	0.196	65.541	-6.883	3.076	2599.958	0.068	-6.883	7.539	155.921
2700.000	0.145	154.377	-6.927	3.287	2699.957	0.242	-6.927	7.667	154.617
2800.000	0.253	193.389	-7.256	3.290	2799.957	0.167	-7.256	7.967	155.607
2900.000	0.317	243.911	-7.592	2.991	2899.956	0.250	-7.592	8.160	158.500
3000.000	0.434	263.829	-7.755	2.366	2999.954	0.174	-7.755	8.107	163.036
3100.000	0.549	279.364	-7.717	1.516	3099.950	0.175	-7.717	7.865	168.888
3200.000	0.583	318.619	-7.258	0.707	3199.945	0.382	-7.258	7.292	174.439
3300.000	0.649	29.898	-6.386	0.653	3299.941	0.719	-6.386	6.419	174.165
3400.000	0.703	40.335	-5.427	1.332	3399.934	0.134	-5.427	5.588	166.214
3500.000	0.939	51.987	-4.455	2.374	3499.924	0.288	-4.455	5.048	151.949

3600.000	0.912	53.037	-3.473	3.655	3599.911	0.032	-3.473	5.042	133.534
3700.000	0.798	42.602	-2.481	4.762	3699.900	0.192	-2.481	5.370	117.523
3800.000	0.669	48.415	-1.581	5.671	3799.891	0.149	-1.581	5.887	105.579
3900.000	0.477	49.525	-0.923	6.424	3899.886	0.193	-0.923	6.490	98.179
4000.000	0.370	18.949	-0.348	6.846	3999.884	0.246	-0.348	6.854	92.906
4100.000	0.368	32.280	0.230	7.122	4099.882	0.086	0.230	7.126	88.151
4200.000	0.379	353.977	0.831	7.259	4199.880	0.245	0.831	7.307	83.473
4300.000	0.369	343.176	1.468	7.131	4299.878	0.071	1.468	7.281	78.371
4400.000	0.457	333.762	2.133	6.862	4399.875	0.111	2.133	7.186	72.729
4500.000	0.444	331.189	2.831	6.499	4499.872	0.024	2.831	7.088	66.464
4600.000	0.417	338.964	3.510	6.181	4599.869	0.064	3.510	7.108	60.408
4700.000	0.472	314.102	4.137	5.755	4699.866	0.199	4.137	7.087	54.291
4800.000	0.548	348.278	4.891	5.362	4799.862	0.308	4.891	7.258	47.628
4900.000	0.461	315.307	5.646	4.982	4899.859	0.298	5.646	7.530	41.424
5000.000	0.597	330.556	6.386	4.443	4999.855	0.194	6.386	7.779	34.827
5100.000	0.620	292.678	7.048	3.688	5099.849	0.395	7.048	7.954	27.620
5200.000	0.602	262.634	7.189	2.668	5199.844	0.317	7.189	7.668	20.360
5300.000	0.669	292.783	7.347	1.609	5299.838	0.337	7.347	7.522	12.351
5400.000	0.922	327.371	8.251	0.637	5399.829	0.531	8.251	8.276	4.413
5500.000	1.077	337.745	9.799	-0.153	5499.814	0.238	9.799	9.800	359.106
5600.000	1.134	319.632	11.422	-1.150	5599.795	0.352	11.422	11.480	354.253
5700.000	1.195	333.571	13.110	-2.254	5699.775	0.289	13.110	13.302	350.242
5800.000	0.815	349.174	14.742	-2.852	5799.759	0.465	14.742	15.016	349.050
5900.000	0.588	30.978	15.880	-2.722	5899.753	0.544	15.880	16.112	350.274
6000.000	0.203	358.814	16.497	-2.461	5999.750	0.430	16.497	16.680	351.514
6100.000	0.049	137.169	16.643	-2.436	6099.750	0.242	16.643	16.820	351.673
6200.000	0.227	45.647	16.749	-2.265	6199.750	0.233	16.749	16.902	352.299
6300.000	0.207	82.832	16.910	-1.945	6299.749	0.139	16.910	17.022	353.440
6400.000	0.460	78.939	17.010	-1.372	6399.747	0.254	17.010	17.065	355.389
6500.000	0.719	150.723	16.539	-0.671	6499.743	0.722	16.539	16.553	357.677
6600.000	0.732	199.047	15.388	-0.573	6599.736	0.594	15.388	15.399	357.869

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