



Company: Noble Energy
 Rig: Production/ VES
 API # 05-123-17284
 Date: 6/15/2013
 Surveyor: Sean Bratt
 VS: 0.000
 Lat : 40.2235
 Long: -104.59955

Well: Mick D 18-12
 Location: Weld County, Colorado
 North Reference: GRID
 Convergence: Grid North is .58 Degree
 Declination: 8.49 Degrees
 Depth Reference: Ground Level
 Elevation: 4809
 Total Depth as Drilled: 7237

Lat & Long obtained by handheld GPS at wellhead

Gyro Survey Calculations

Depth	Inc	AzG	N/-S	E/-W	TVD	DL	VS	CD
0.000	0.000	0.000	0.000	0.000	0.000	****	0.000	0.000
100.000	0.584	38.806	0.397	0.320	99.998	0.584	0.397	0.510
200.000	0.399	15.338	1.131	0.731	199.995	0.270	1.131	1.346
300.000	0.322	350.077	1.744	0.775	299.993	0.175	1.744	1.908
400.000	0.637	59.277	2.305	1.204	399.990	0.603	2.305	2.600
500.000	0.222	216.877	2.434	1.566	499.988	0.847	2.434	2.894
600.000	0.860	154.210	1.602	1.776	599.984	0.784	1.602	2.392
700.000	1.099	181.283	-0.033	2.081	699.969	0.514	-0.033	2.082
800.000	0.900	161.201	-1.736	2.313	799.955	0.400	-1.736	2.892
900.000	1.043	190.058	-3.375	2.407	899.941	0.503	-3.375	4.146
1000.000	0.994	206.354	-5.048	1.863	999.925	0.293	-5.048	5.381
1100.000	0.924	181.439	-6.632	1.458	1099.912	0.419	-6.632	6.791
1200.000	1.132	219.808	-8.198	0.805	1199.897	0.704	-8.198	8.237
1300.000	0.992	212.882	-9.683	-0.297	1299.879	0.190	-9.683	9.688
1400.000	0.891	209.829	-11.085	-1.154	1399.866	0.113	-11.085	11.145
1500.000	1.021	222.987	-12.411	-2.148	1499.852	0.254	-12.411	12.596
1600.000	1.481	245.686	-13.595	-3.933	1599.829	0.668	-13.595	14.152
1700.000	1.191	252.546	-14.439	-6.102	1699.801	0.330	-14.439	15.675
1800.000	1.269	259.847	-14.946	-8.184	1799.778	0.175	-14.946	17.040
1900.000	1.696	288.240	-14.678	-10.679	1899.746	0.837	-14.678	18.151
2000.000	1.302	285.523	-13.910	-13.179	1999.711	0.400	-13.910	19.162
2100.000	1.345	295.046	-13.109	-15.338	2099.685	0.224	-13.109	20.177
2200.000	1.515	308.742	-11.785	-17.432	2199.654	0.380	-11.785	21.042
2300.000	1.122	324.695	-10.159	-19.029	2299.628	0.534	-10.159	21.571
2400.000	0.924	4.505	-8.556	-19.531	2399.613	0.721	-8.556	21.323
2500.000	0.670	72.984	-7.581	-18.909	2499.605	0.921	-7.581	20.372
2600.000	0.667	41.441	-6.974	-17.964	2599.599	0.363	-6.974	19.270
2700.000	1.153	66.006	-6.129	-16.660	2699.586	0.613	-6.129	17.752
2800.000	1.180	65.462	-5.292	-14.805	2799.565	0.030	-5.292	15.722
2900.000	0.871	25.851	-4.180	-13.537	2899.550	0.753	-4.180	14.167
3000.000	1.078	85.533	-3.423	-12.267	2999.538	0.986	-3.423	12.736
3100.000	0.362	41.120	-3.112	-11.121	3099.530	0.858	-3.112	11.548
3200.000	0.855	125.248	-3.304	-10.304	3199.526	0.894	-3.304	10.821
3300.000	1.238	96.040	-3.848	-8.620	3299.510	0.645	-3.848	9.440
3400.000	0.697	145.410	-4.463	-7.201	3399.497	0.946	-4.463	8.472

3500.000	1.242	158.339	-5.971	-6.456	3499.482	0.584	-5.971	8.794
3600.000	0.828	112.276	-7.252	-5.387	3599.467	0.895	-7.252	9.034
3700.000	1.146	138.650	-8.277	-4.057	3699.453	0.546	-8.277	9.218
3800.000	0.875	147.113	-9.669	-2.982	3799.437	0.309	-9.669	10.118
3900.000	0.582	186.732	-10.815	-2.627	3899.429	0.565	-10.815	11.129
4000.000	1.258	222.738	-12.125	-3.432	3999.417	0.858	-12.125	12.602
4100.000	1.341	223.709	-13.777	-4.985	4099.391	0.086	-13.777	14.651
4200.000	0.929	230.778	-15.135	-6.421	4199.371	0.434	-15.135	16.441
4300.000	1.831	232.991	-16.609	-8.325	4299.341	0.904	-16.609	18.579
4400.000	1.869	237.354	-18.451	-10.974	4399.289	0.146	-18.451	21.468
4500.000	1.761	248.188	-19.901	-13.773	4499.239	0.359	-19.901	24.202
4600.000	2.090	242.306	-21.320	-16.814	4599.183	0.384	-21.320	27.152
4700.000	1.382	237.851	-22.809	-19.450	4699.136	0.720	-22.809	29.976
4800.000	2.254	238.770	-24.470	-22.152	4799.085	0.872	-24.470	33.008
4900.000	2.077	226.507	-26.737	-25.148	4899.014	0.495	-26.737	36.705
5000.000	2.419	236.985	-29.134	-28.232	4998.937	0.533	-29.134	40.569
5100.000	2.064	249.454	-30.915	-31.688	5098.861	0.601	-30.915	44.270
5200.000	2.082	263.563	-31.751	-35.178	5198.796	0.509	-31.751	47.388
5300.000	2.181	274.630	-31.801	-38.880	5298.728	0.423	-31.801	50.229
5400.000	2.275	282.156	-31.229	-42.717	5398.652	0.307	-31.229	52.915
5500.000	2.133	305.630	-29.727	-46.170	5498.580	0.907	-29.727	54.912
5600.000	2.097	330.868	-27.045	-48.573	5598.514	0.924	-27.045	55.595
5700.000	1.467	352.536	-24.179	-49.629	5698.467	0.912	-24.179	55.206
5800.000	1.224	327.575	-22.008	-50.369	5798.440	0.628	-22.008	54.967
5900.000	0.743	298.474	-20.797	-51.511	5898.425	0.679	-20.797	55.551
6000.000	0.994	278.489	-20.360	-52.939	5998.414	0.390	-20.360	56.719
6100.000	0.427	202.643	-20.576	-53.940	6098.408	0.981	-20.576	57.731
6200.000	0.345	266.073	-20.940	-54.383	6198.406	0.411	-20.940	58.275
6300.000	0.245	281.652	-20.917	-54.893	6298.404	0.127	-20.917	58.743
6400.000	1.038	242.037	-21.299	-55.902	6398.398	0.864	-21.299	59.822
6500.000	0.650	254.740	-21.873	-57.250	6498.387	0.429	-21.873	61.286
6600.000	1.473	245.801	-22.549	-58.970	6598.369	0.837	-22.549	63.134
6700.000	1.935	265.828	-23.199	-61.826	6698.325	0.747	-23.199	66.035
6800.000	2.684	278.476	-22.977	-65.826	6798.244	0.901	-22.977	69.721
6900.000	3.020	293.082	-21.599	-70.565	6898.121	0.798	-21.599	73.797

as East of True North

Cbrg
0.000
38.806
32.895
23.963
27.591
32.760
47.947
90.904
126.881
144.501
159.741
167.602
174.390
181.758
185.943
189.819
196.135
202.910
208.703
216.038
223.455
229.480
235.939
241.903
246.343
248.153
248.784
249.804
250.330
252.838
254.408
254.369
252.221
245.944
238.212

227.233
216.604
206.115
197.142
193.655
195.802
199.891
202.989
206.620
210.742
214.686
218.261
220.455
222.154
223.246
224.100
225.707
227.932
230.719
233.830
237.224
240.891
244.025
246.398
248.014
248.963
249.120
248.941
249.140
249.143
249.090
249.074
249.432
250.758
252.981