



Company: Noble Energy
 Rig: Production / V.E.S.
 API # 05-123-13813
 Date: 4-20-13
 Surveyor: Norman Cowan
 VS: 0.000
 Lat : 40.419
 Long: -104.510

Well: Trebor B 11-1
 Location: Weld County, Colorado
 North Reference: GRID
 Convergence: Grid north is -0.64 of True North
 Declination: 8.48 Degrees
 Depth Reference: Ground Level
 Elevation: 4593 Feet
 Total Depth as Drilled: 6851 Feet

Lat & Long obtained by handheld GPS at wellhead

HA 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
100.000	0.203	276.228	0.019	-0.176	100.000	0.203	0.019	0.177	276.228
200.000	0.248	247.192	-0.045	-0.551	199.999	0.121	-0.045	0.553	265.297
300.000	0.044	200.567	-0.165	-0.764	299.999	0.220	-0.165	0.782	257.802
400.000	0.261	187.601	-0.427	-0.808	399.998	0.219	-0.427	0.914	242.125
500.000	0.197	148.253	-0.800	-0.747	499.998	0.166	-0.800	1.095	223.061
600.000	0.215	153.331	-1.114	-0.572	599.997	0.026	-1.114	1.253	207.193
700.000	0.424	162.656	-1.636	-0.378	699.995	0.215	-1.636	1.679	193.000
800.000	0.399	174.397	-2.336	-0.233	799.993	0.088	-2.336	2.347	185.704
900.000	0.409	196.375	-3.024	-0.300	899.990	0.154	-3.024	3.039	185.665
1000.000	0.417	208.426	-3.687	-0.574	999.988	0.087	-3.687	3.731	188.847
1100.000	0.409	195.399	-4.351	-0.842	1099.985	0.094	-4.351	4.432	190.950
1200.000	0.420	207.908	-5.019	-1.108	1199.983	0.091	-5.019	5.140	192.451
1300.000	0.341	172.468	-5.639	-1.241	1299.980	0.244	-5.639	5.774	192.412
1400.000	0.476	167.271	-6.339	-1.110	1399.978	0.140	-6.339	6.436	189.935
1500.000	0.413	169.606	-7.099	-0.954	1499.975	0.066	-7.099	7.162	187.653
1600.000	0.440	179.620	-7.837	-0.886	1599.972	0.079	-7.837	7.887	186.453
1700.000	0.382	220.155	-8.476	-1.099	1699.970	0.290	-8.476	8.546	187.386
1800.000	0.528	228.825	-9.033	-1.660	1799.967	0.161	-9.033	9.185	190.414
1900.000	0.882	243.884	-9.676	-2.698	1899.959	0.397	-9.676	10.045	195.583
2000.000	1.096	237.027	-10.535	-4.192	1999.944	0.244	-10.535	11.338	201.698
2100.000	0.943	244.883	-11.405	-5.740	2099.928	0.207	-11.405	12.768	206.715
2200.000	0.991	242.220	-12.157	-7.250	2199.914	0.065	-12.157	14.155	210.810
2300.000	1.042	231.736	-13.124	-8.730	2299.898	0.193	-13.124	15.762	213.631
2400.000	1.036	235.344	-14.201	-10.187	2399.882	0.066	-14.201	17.477	215.654
2500.000	0.920	237.173	-15.150	-11.605	2499.867	0.120	-15.150	19.084	217.453
2600.000	0.891	233.319	-16.050	-12.903	2599.855	0.067	-16.050	20.593	218.797
2700.000	0.844	227.069	-17.016	-14.066	2699.843	0.105	-17.016	22.077	219.578
2800.000	0.559	216.040	-17.912	-14.892	2799.836	0.315	-17.912	23.294	219.741
2900.000	0.350	198.617	-18.596	-15.277	2899.833	0.248	-18.596	24.067	219.403
3000.000	0.382	236.694	-19.069	-15.653	2999.831	0.241	-19.069	24.671	219.381
3100.000	0.192	239.931	-19.336	-16.076	3099.829	0.190	-19.336	25.146	219.741
3200.000	0.379	292.865	-19.291	-16.526	3199.828	0.305	-19.291	25.402	220.586
3300.000	0.209	308.900	-19.048	-16.974	3299.827	0.188	-19.048	25.513	221.704
3400.000	0.423	293.257	-18.788	-17.454	3399.825	0.228	-18.788	25.644	222.893
3500.000	0.375	291.510	-18.522	-18.097	3499.823	0.049	-18.522	25.896	224.336

3600.000	0.397	296.156	-18.249	-18.713	3599.821	0.039	-18.249	26.138	225.718
3700.000	0.197	338.506	-17.936	-19.087	3699.819	0.284	-17.936	26.192	226.780
3800.000	0.157	303.744	-17.700	-19.264	3799.819	0.113	-17.700	26.161	227.423
3900.000	0.119	95.203	-17.633	-19.275	3899.819	0.267	-17.633	26.124	227.546
4000.000	0.533	127.513	-17.926	-18.803	3999.817	0.437	-17.926	25.978	226.368
4100.000	0.460	123.892	-18.432	-18.101	4099.813	0.079	-18.432	25.834	224.480
4200.000	0.545	143.522	-19.039	-17.485	4199.810	0.191	-19.039	25.850	222.564
4300.000	0.388	133.684	-19.655	-16.957	4299.806	0.176	-19.655	25.959	220.785
4400.000	0.306	136.982	-20.084	-16.530	4399.804	0.085	-20.084	26.012	219.456
4500.000	0.828	129.724	-20.741	-15.792	4499.799	0.527	-20.741	26.069	217.286
4600.000	0.381	125.389	-21.396	-14.965	4599.793	0.449	-21.396	26.110	214.971
4700.000	0.404	336.764	-21.265	-14.833	4699.792	0.755	-21.265	25.927	214.898
4800.000	0.507	311.268	-20.649	-15.305	4799.789	0.225	-20.649	25.703	216.546
4900.000	0.440	285.249	-20.256	-16.008	4899.786	0.223	-20.256	25.818	218.319
5000.000	0.399	223.061	-20.409	-16.616	4999.784	0.434	-20.409	26.318	219.150
5100.000	0.783	201.892	-21.298	-17.108	5099.778	0.436	-21.298	27.319	218.775
5200.000	0.909	213.131	-22.596	-17.797	5199.768	0.208	-22.596	28.763	218.224
5300.000	1.417	196.972	-24.443	-18.591	5299.747	0.600	-24.443	30.710	217.256
5400.000	1.517	200.200	-26.869	-19.409	5399.714	0.130	-26.869	33.146	215.844
5500.000	1.440	197.473	-29.310	-20.244	5499.681	0.104	-29.310	35.621	214.632
5600.000	1.071	192.820	-31.420	-20.829	5599.657	0.383	-31.420	37.697	213.541
5700.000	0.945	176.879	-33.155	-20.991	5699.641	0.306	-33.155	39.241	212.339
5800.000	1.375	201.541	-35.094	-21.387	5799.621	0.650	-35.094	41.098	211.358
5900.000	1.258	211.140	-37.150	-22.395	5899.595	0.249	-37.150	43.378	211.083
6000.000	1.066	211.957	-38.879	-23.455	5999.574	0.193	-38.879	45.407	211.102
6100.000	1.027	217.731	-40.378	-24.496	6099.558	0.112	-40.378	47.227	211.244
6200.000	0.808	206.136	-41.720	-25.355	6199.545	0.286	-41.720	48.820	211.290
6300.000	0.865	203.299	-43.046	-25.965	6299.534	0.071	-43.046	50.271	211.098
6400.000	1.017	215.222	-44.464	-26.775	6399.521	0.247	-44.464	51.904	211.055
6500.000	0.937	207.535	-45.914	-27.665	6499.506	0.153	-45.914	53.605	211.070
6600.000	0.782	211.928	-47.219	-28.404	6599.495	0.168	-47.219	55.104	211.028
6700.000	0.800	210.140	-48.402	-29.116	6699.485	0.031	-48.402	56.485	211.028
6755.000	0.608	221.836	-48.952	-29.503	6754.481	0.435	-48.952	57.155	211.077