



**Company:** Noble Energy  
**Rig:** Producton / V.E.S.  
**API #** 05-123-14789  
**Date:** 4/17/2014  
**Surveyor:** Norman Cowan  
**VS:** 0.000  
**Lat :** 40.441  
**Long:** -104.501

**Well:** State A 36-11  
**Location:** Weld County, Colorado  
**North Reference:** GRID  
**Convergence:** Grid north is 0.65 Deg East of Tru  
**Declination:** 8.34 Degrees  
**Depth Reference:** Ground Level  
**Elevation:** 4608 Feet  
**Total Depth as Drilled:** 6959 Feet

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

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	0.515	262.884	-0.056	-0.446	99.999	0.515	-0.056	0.449	262.884
200.000	0.350	208.327	-0.380	-1.036	199.996	0.422	-0.380	1.104	249.846
300.000	0.011	100.399	-0.651	-1.172	299.996	0.354	-0.651	1.341	240.950
400.000	0.392	132.770	-0.885	-0.912	399.995	0.383	-0.885	1.271	225.844
500.000	0.162	112.241	-1.171	-0.530	499.994	0.247	-1.171	1.285	204.345
600.000	0.250	97.738	-1.254	-0.183	599.993	0.102	-1.254	1.267	188.320
700.000	0.316	90.656	-1.286	0.309	699.992	0.075	-1.286	1.323	166.502
800.000	0.321	115.028	-1.408	0.838	799.990	0.135	-1.408	1.638	149.223
900.000	0.211	95.524	-1.544	1.276	899.989	0.140	-1.544	2.003	140.434
1000.000	0.221	96.330	-1.583	1.651	999.988	0.010	-1.583	2.287	133.790
1100.000	0.086	84.805	-1.597	1.918	1099.988	0.138	-1.597	2.496	129.793
1200.000	0.248	126.787	-1.720	2.166	1199.988	0.193	-1.720	2.766	128.461
1300.000	0.117	97.713	-1.863	2.440	1299.987	0.156	-1.863	3.070	127.366
1400.000	0.123	98.929	-1.894	2.648	1399.987	0.007	-1.894	3.256	125.572
1500.000	0.133	155.403	-2.016	2.803	1499.987	0.121	-2.016	3.452	125.727
1600.000	0.095	197.130	-2.200	2.826	1599.986	0.088	-2.200	3.582	127.901
1700.000	0.386	166.178	-2.606	2.882	1699.985	0.308	-2.606	3.886	132.123
1800.000	0.350	34.472	-2.682	3.135	1799.985	0.671	-2.682	4.126	130.540
1900.000	0.449	113.651	-2.587	3.667	1899.983	0.514	-2.587	4.488	125.207
2000.000	0.241	133.560	-2.889	4.178	1999.981	0.237	-2.889	5.080	124.667
2100.000	0.500	186.452	-3.468	4.281	2099.979	0.403	-3.468	5.510	129.008
2200.000	0.487	164.244	-4.310	4.348	2199.975	0.190	-4.310	6.122	134.753
2300.000	0.610	116.793	-4.959	4.938	2299.971	0.456	-4.959	6.999	135.120
2400.000	0.383	130.240	-5.415	5.669	2399.967	0.254	-5.415	7.840	133.688
2500.000	0.251	195.315	-5.843	5.866	2499.966	0.359	-5.843	8.280	134.885
2600.000	0.237	104.980	-6.108	6.008	2599.966	0.347	-6.108	8.568	135.471
2700.000	0.556	75.341	-6.039	6.678	2699.963	0.369	-6.039	9.003	132.123
2800.000	0.626	40.417	-5.500	7.502	2799.958	0.361	-5.500	9.302	126.249
2900.000	0.526	36.695	-4.716	8.130	2899.953	0.107	-4.716	9.399	120.120
3000.000	0.325	19.233	-4.081	8.497	2999.950	0.237	-4.081	9.426	115.651
3100.000	0.564	43.657	-3.456	8.931	3099.947	0.300	-3.456	9.576	111.158
3200.000	0.890	9.008	-2.334	9.392	3199.940	0.533	-2.334	9.678	103.953
3300.000	0.717	337.612	-0.988	9.275	3299.930	0.465	-0.988	9.328	96.080
3400.000	0.731	348.162	0.214	8.906	3399.922	0.134	0.214	8.909	88.620

3500.000	0.360	29.586	1.111	8.930	3499.918	0.519	1.111	8.999	82.907
3600.000	0.133	20.554	1.493	9.126	3599.917	0.229	1.493	9.247	80.710
3700.000	0.772	351.962	2.268	9.073	3699.913	0.658	2.268	9.352	75.962
3800.000	0.431	17.890	3.293	9.094	3799.908	0.428	3.293	9.672	70.092
3900.000	0.413	59.059	3.837	9.518	3899.905	0.297	3.837	10.263	68.047
4000.000	1.097	119.824	3.546	10.658	3999.897	0.965	3.546	11.232	71.597
4100.000	1.620	147.848	1.873	12.240	4099.870	0.831	1.873	12.383	81.298
4200.000	2.461	161.011	-1.354	13.691	4199.806	0.958	-1.354	13.758	95.646
4300.000	3.112	162.024	-5.966	15.227	4299.687	0.652	-5.966	16.354	111.394
4400.000	3.141	169.888	-11.245	16.546	4399.539	0.430	-11.245	20.005	124.201
4500.000	3.661	168.232	-17.068	17.678	4499.362	0.529	-17.068	24.573	133.995
4600.000	3.152	171.321	-22.912	18.744	4599.185	0.541	-22.912	29.603	140.714
4700.000	3.268	167.732	-28.416	19.765	4699.029	0.232	-28.416	34.613	145.179
4800.000	3.311	180.466	-34.089	20.347	4798.865	0.730	-34.089	39.699	149.168
4900.000	3.354	173.142	-39.881	20.673	4898.697	0.428	-39.881	44.920	152.599
5000.000	2.810	176.132	-45.231	21.188	4998.552	0.567	-45.231	49.948	154.900
5100.000	2.568	173.934	-49.905	21.590	5098.441	0.264	-49.905	54.374	156.606
5200.000	2.500	180.483	-54.312	21.808	5198.344	0.297	-54.312	58.527	158.123
5300.000	2.995	195.424	-59.011	21.095	5298.230	0.867	-59.011	62.668	160.330
5400.000	2.153	188.695	-63.387	20.116	5398.128	0.893	-63.387	66.502	162.393
5500.000	1.361	195.435	-66.389	19.516	5498.081	0.818	-66.389	69.198	163.619
5600.000	1.891	178.119	-69.182	19.254	5598.041	0.717	-69.182	71.812	164.448
5700.000	1.784	203.895	-72.254	18.677	5697.991	0.826	-72.254	74.629	165.507
5800.000	2.266	182.076	-75.653	17.975	5797.930	0.901	-75.653	77.760	166.634
5900.000	2.382	174.987	-79.699	18.085	5897.848	0.310	-79.699	81.726	167.215
6000.000	1.521	183.362	-83.095	18.189	5997.789	0.905	-83.095	85.062	167.653
6100.000	1.641	217.510	-85.556	17.239	6097.753	0.935	-85.556	87.275	168.607
6200.000	1.394	198.972	-87.842	15.972	6197.718	0.546	-87.842	89.282	169.695
6300.000	1.637	198.206	-90.349	15.130	6297.683	0.244	-90.349	91.608	170.493
6400.000	1.382	211.801	-92.731	14.049	6397.649	0.438	-92.731	93.789	171.385
6500.000	2.120	210.506	-95.350	12.474	6497.601	0.740	-95.350	96.162	172.547
6600.000	2.133	202.040	-98.669	10.837	6597.533	0.314	-98.669	99.262	173.732
6700.000	1.481	223.994	-101.324	9.240	6697.484	0.940	-101.324	101.744	174.789

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