



**Company:** Noble Energy  
**Rig:** Production/VES  
**API #** 05-123-25808

**Date:** 4/4/13

**Surveyor:** Levi Sheldon

**VS:**

**Lat :** 40.47391

**Long:** -104.396

**Well:** Wells Ranch USX AA 23-08

**Location:** Weld County, Colorado

**North Reference:** GRID

**Convergence:** Grid north is -0.71 of True North

**Declination:** 8.43

**Depth Reference:** Ground Level

**Elevation:** 4,813 Feet

**Total Depth as Drilled:** 7,963 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	0.912	54.985	0.457	0.652	99.996	0.912	0.457	0.796	54.985
200.000	0.912	57.079	1.346	1.972	199.983	0.033	1.346	2.388	55.683
300.000	0.626	41.529	2.188	3.003	299.974	0.351	2.188	3.715	53.920
400.000	0.515	30.222	2.985	3.591	399.969	0.158	2.985	4.670	50.264
500.000	0.406	12.771	3.719	3.896	499.966	0.176	3.719	5.386	46.328
600.000	0.412	302.240	4.257	3.670	599.964	0.472	4.257	5.621	40.770
700.000	0.502	297.470	4.651	2.978	699.961	0.098	4.651	5.522	32.632
800.000	0.567	289.003	5.014	2.121	799.956	0.102	5.014	5.444	22.933
900.000	0.515	283.443	5.279	1.216	899.952	0.074	5.279	5.418	12.972
1000.000	0.493	290.153	5.532	0.375	999.948	0.063	5.532	5.545	3.876
1100.000	0.372	296.950	5.828	-0.319	1099.945	0.131	5.828	5.836	356.869
1200.000	0.272	286.786	6.044	-0.836	1199.944	0.115	6.044	6.101	352.125
1300.000	0.339	297.319	6.248	-1.326	1299.942	0.087	6.248	6.387	348.014
1400.000	0.119	311.889	6.453	-1.667	1399.941	0.226	6.453	6.665	345.520
1500.000	0.126	30.529	6.617	-1.688	1499.941	0.155	6.617	6.829	345.691
1600.000	0.229	51.662	6.835	-1.475	1599.941	0.120	6.835	6.993	347.821
1700.000	0.094	87.596	6.963	-1.237	1699.940	0.162	6.963	7.072	349.926
1800.000	0.150	342.487	7.091	-1.195	1799.940	0.196	7.091	7.191	350.437
1900.000	0.205	343.652	7.388	-1.284	1899.940	0.056	7.388	7.498	350.137
2000.000	0.252	26.628	7.756	-1.236	1999.939	0.173	7.756	7.854	350.944
2100.000	0.222	154.809	7.778	-1.055	2099.939	0.427	7.778	7.849	352.273
2200.000	0.338	120.820	7.451	-0.720	2199.937	0.197	7.451	7.486	354.483
2300.000	0.688	88.987	7.311	0.134	2299.933	0.439	7.311	7.312	1.048
2400.000	0.792	77.982	7.465	1.410	2399.925	0.175	7.465	7.597	10.694
2500.000	1.080	85.704	7.680	3.025	2499.912	0.314	7.680	8.254	21.499
2600.000	1.151	79.321	7.937	4.952	2599.893	0.143	7.937	9.355	31.961
2700.000	1.241	74.903	8.405	6.985	2699.871	0.128	8.405	10.928	39.728
2800.000	1.259	81.768	8.844	9.118	2799.847	0.151	8.844	12.703	45.873
2900.000	1.222	79.896	9.189	11.255	2899.824	0.055	9.189	14.530	50.772
3000.000	0.984	76.702	9.573	13.141	2999.805	0.245	9.573	16.258	53.926
3100.000	0.902	77.610	9.940	14.746	3099.792	0.084	9.940	17.783	56.017
3200.000	0.871	77.612	10.272	16.257	3199.780	0.032	10.272	19.230	57.713
3300.000	0.983	92.084	10.404	17.856	3299.767	0.259	10.404	20.666	59.774
3400.000	1.336	99.501	10.180	19.863	3399.746	0.382	10.180	22.320	62.865
3500.000	1.605	62.165	10.642	22.252	3499.715	0.975	10.642	24.665	64.441



3600.000	1.721	54.874	12.159	24.718	3599.673	0.241	12.159	27.547	63.806
3700.000	1.758	62.886	13.722	27.311	3699.627	0.246	13.722	30.565	63.323
3800.000	1.990	58.866	15.319	30.162	3799.574	0.266	15.319	33.830	63.075
3900.000	2.290	47.987	17.554	33.133	3899.505	0.504	17.554	37.496	62.085
4000.000	2.159	66.313	19.648	36.342	3999.430	0.720	19.648	41.313	61.603
4100.000	1.918	78.124	20.749	39.705	4099.368	0.483	20.749	44.800	62.409
4200.000	1.949	103.776	20.689	42.995	4199.312	0.859	20.689	47.713	64.304
4300.000	2.557	123.687	19.046	46.502	4299.236	0.983	19.046	50.252	67.727
4400.000	3.414	133.107	15.774	50.533	4399.100	0.985	15.774	52.937	72.664
4500.000	4.327	138.586	10.910	55.202	4498.871	0.984	10.910	56.270	78.820
4600.000	3.430	140.985	5.757	59.580	4598.641	0.911	5.757	59.858	84.481
4700.000	2.444	142.677	1.737	62.756	4698.509	0.989	1.737	62.780	88.414
4800.000	1.925	141.098	-1.266	65.104	4798.436	0.522	-1.266	65.116	91.114
4900.000	1.862	124.533	-3.494	67.497	4898.382	0.549	-3.494	67.587	92.963
5000.000	1.996	126.751	-5.457	70.231	4998.325	0.153	-5.457	70.443	94.443
5100.000	1.912	117.634	-7.273	73.105	5098.267	0.322	-7.273	73.466	95.682
5200.000	1.663	107.023	-8.472	75.970	5198.219	0.413	-8.472	76.441	96.363
5300.000	1.999	95.768	-9.072	79.093	5298.168	0.491	-9.072	79.611	96.543
5400.000	2.090	107.740	-9.803	82.565	5398.105	0.436	-9.803	83.144	96.771
5500.000	2.615	97.794	-10.667	86.561	5498.021	0.663	-10.667	87.216	97.025
5600.000	3.071	102.791	-11.570	91.433	5597.897	0.519	-11.570	92.162	97.212
5700.000	3.733	100.224	-12.741	97.248	5697.721	0.679	-12.741	98.080	97.464
5800.000	4.251	92.166	-13.459	104.156	5797.479	0.762	-13.459	105.022	97.363
5900.000	3.344	97.547	-13.982	110.750	5897.258	0.973	-13.982	111.629	97.195
6000.000	1.778	113.546	-14.985	115.064	5997.156	1.707	-14.985	116.036	97.420
6100.000	0.779	134.705	-16.083	116.970	6097.131	1.089	-16.083	118.070	97.829
6200.000	0.522	220.352	-16.908	117.158	6197.126	0.904	-16.908	118.372	98.212
6300.000	0.617	245.832	-17.475	116.373	6297.121	0.268	-17.475	117.677	98.540
6400.000	0.503	240.281	-17.913	115.500	6397.117	0.125	-17.913	116.881	98.816
6500.000	0.596	254.978	-18.265	114.617	6497.112	0.168	-18.265	116.063	99.055
6600.000	0.075	186.338	-18.465	114.107	6597.110	0.573	-18.465	115.592	99.192
6700.000	0.260	351.549	-18.305	114.067	6697.110	0.333	-18.305	115.526	99.117