



**Company:** Noble Energy  
**Rig:** Production/VES  
**API #** 05-123-25882  
**Date:** 7/26/2013  
**Surveyor:** Nick Kula

**Well:** Wells Ranch USX AA 35-02  
**Location:** Weld County, Colorado  
**North Reference:** GRID  
**Convergence:** Grid north is -0.71 of Tr  
**Declination:** 8.39

**VS:**  
**Lat :** 40.44805  
**Long:** -104.402  
**Depth Reference:** Ground Level  
**Elevation:** 4789'  
**Total Depth as Drilled:** 6930'

**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	0.000
100.000	0.603	315.216	0.374	-0.371	99.998	0.603	0.374	0.526	315.216
200.000	0.899	328.077	1.413	-1.157	199.990	0.339	1.413	1.826	320.705
300.000	0.889	314.725	2.625	-2.123	299.977	0.208	2.625	3.376	321.043
400.000	0.533	301.164	3.411	-3.071	399.970	0.391	3.411	4.590	318.004
500.000	0.091	151.417	3.582	-3.431	499.968	0.613	3.582	4.960	316.236
600.000	0.377	50.551	3.721	-3.139	599.968	0.404	3.721	4.868	319.857
700.000	0.327	114.633	3.812	-2.625	699.966	0.376	3.812	4.628	325.448
800.000	0.421	113.515	3.546	-2.028	799.964	0.094	3.546	4.085	330.235
900.000	0.223	327.892	3.564	-1.794	899.963	0.619	3.564	3.990	333.280
1000.000	0.202	175.112	3.553	-1.883	999.963	0.413	3.553	4.021	332.086
1100.000	0.166	54.424	3.462	-1.750	1099.963	0.320	3.462	3.879	333.185
1200.000	0.139	308.268	3.621	-1.728	1199.962	0.244	3.621	4.013	334.494
1300.000	0.167	195.911	3.557	-1.863	1299.962	0.255	3.557	4.015	332.351
1400.000	0.169	246.492	3.358	-2.038	1399.962	0.143	3.358	3.928	328.742
1500.000	0.203	96.324	3.279	-1.997	1499.962	0.359	3.279	3.840	328.662
1600.000	0.224	76.339	3.306	-1.631	1599.961	0.077	3.306	3.686	333.746
1700.000	0.151	226.040	3.261	-1.536	1699.961	0.363	3.261	3.604	334.782
1800.000	0.127	281.195	3.190	-1.739	1799.961	0.131	3.190	3.634	331.403
1900.000	0.139	191.312	3.093	-1.872	1899.960	0.188	3.093	3.615	328.824
2000.000	0.167	207.711	2.846	-1.963	1999.960	0.052	2.846	3.457	325.406
2100.000	0.101	161.959	2.634	-2.003	2099.960	0.120	2.634	3.309	322.742
2200.000	0.116	322.705	2.631	-2.037	2199.960	0.214	2.631	3.327	322.242
2300.000	0.425	102.344	2.632	-1.737	2299.959	0.519	2.632	3.154	326.579
2400.000	0.863	88.651	2.571	-0.622	2399.952	0.461	2.571	2.645	346.389
2500.000	0.523	97.592	2.528	0.583	2499.945	0.355	2.528	2.594	12.980
2600.000	1.375	105.339	2.150	2.192	2599.930	0.859	2.150	3.071	45.553
2700.000	1.511	107.288	1.441	4.608	2699.899	0.145	1.441	4.828	72.635
2800.000	1.310	99.219	0.866	6.996	2799.868	0.282	0.866	7.049	82.942
2900.000	0.108	336.512	0.769	8.086	2899.860	1.371	0.769	8.123	84.565
3000.000	0.166	234.790	0.772	7.931	2999.860	0.216	0.772	7.968	84.438
3100.000	0.292	37.682	0.891	7.968	3099.859	0.454	0.891	8.018	83.621
3200.000	0.475	23.160	1.474	8.287	3199.857	0.205	1.474	8.417	79.916
3300.000	1.225	340.895	2.865	8.100	3299.846	0.930	2.865	8.592	70.522
3400.000	1.739	358.309	5.392	7.705	3399.813	0.678	5.392	9.405	55.016
3500.000	1.892	351.787	8.543	7.425	3499.763	0.257	8.543	11.319	40.995

3600.000	1.299	348.362	11.287	6.960	3599.724	0.600	11.287	13.260	31.662
3700.000	0.077	221.824	12.347	6.687	3699.715	1.346	12.347	14.041	28.440
3800.000	0.150	214.761	12.189	6.568	3799.715	0.074	12.189	13.846	28.316
3900.000	0.175	338.651	12.224	6.437	3899.715	0.287	12.224	13.815	27.772
4000.000	0.175	39.440	12.484	6.479	3999.715	0.177	12.484	14.065	27.427
4100.000	0.088	210.773	12.536	6.536	4099.714	0.263	12.536	14.138	27.537
4200.000	0.113	20.521	12.562	6.531	4199.714	0.200	12.562	14.159	27.471
4300.000	0.154	214.754	12.544	6.489	4299.714	0.265	12.544	14.123	27.354
4400.000	0.177	262.538	12.413	6.260	4399.714	0.136	12.413	13.902	26.760
4500.000	0.215	118.714	12.303	6.271	4499.714	0.372	12.303	13.809	27.008
4600.000	0.176	4.352	12.367	6.447	4599.713	0.329	12.367	13.946	27.535
4700.000	0.120	332.549	12.613	6.411	4699.713	0.098	12.613	14.148	26.944
4800.000	0.110	115.926	12.663	6.449	4799.713	0.218	12.663	14.211	26.990
4900.000	0.041	35.931	12.650	6.557	4899.713	0.111	12.650	14.249	27.400
5000.000	0.179	246.849	12.618	6.435	4999.713	0.215	12.618	14.164	27.020
5100.000	0.116	119.589	12.506	6.379	5099.713	0.266	12.506	14.039	27.025
5200.000	0.116	281.997	12.477	6.369	5199.713	0.229	12.477	14.009	27.040
5300.000	0.151	300.435	12.565	6.156	5299.712	0.055	12.565	13.992	26.101
5400.000	0.144	127.389	12.556	6.142	5399.712	0.295	12.556	13.978	26.068
5500.000	0.150	36.490	12.585	6.320	5499.712	0.210	12.585	14.083	26.667
5600.000	0.706	207.126	12.142	6.118	5599.710	0.854	12.142	13.596	26.741
5700.000	0.375	205.515	11.298	5.696	5699.705	0.331	11.298	12.653	26.754
5800.000	0.243	196.878	10.800	5.493	5799.704	0.140	10.800	12.117	26.959
5900.000	0.151	45.723	10.690	5.526	5899.704	0.382	10.690	12.034	27.338
6000.000	0.210	143.308	10.635	5.730	5999.703	0.275	10.635	12.080	28.318
6100.000	0.186	113.149	10.424	5.989	6099.703	0.106	10.424	12.022	29.880
6200.000	0.216	94.383	10.346	6.326	6199.702	0.072	10.346	12.126	31.443
6300.000	0.156	60.523	10.399	6.632	6299.702	0.122	10.399	12.333	32.529
6400.000	0.100	49.617	10.522	6.817	6399.701	0.061	10.522	12.538	32.939
6500.000	0.789	188.398	9.898	6.783	6499.698	0.867	9.898	11.999	34.425
6600.000	0.809	195.256	8.535	6.497	6599.689	0.098	8.535	10.727	37.278
6700.000	1.230	199.646	6.844	5.951	6699.673	0.428	6.844	9.069	41.006

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