



Company: Noble Energy
Rig: Production/VES
API # 05-123-25802

Date: 3/21/2013
Surveyor: Justin Williams

VS: 0.000
Lat : 40.46621

Long: -104.397

Well: Wells Ranch USX AA 23-16

Location: Weld County, Colorado

North Reference: GRID

Convergence: Grid North is 0.71 Degrees East of

Declination: 8.43

Depth Reference: Ground Level

Elevation: 4819'

Total Depth as Drilled: 6954'

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	0.141	76.726	0.028	0.119	100.000	0.141	0.028	0.123	76.726
200.000	0.161	216.704	-0.056	0.155	200.000	0.284	-0.056	0.165	110.038
300.000	0.224	246.180	-0.248	-0.108	299.999	0.115	-0.248	0.271	203.533
400.000	0.283	243.047	-0.439	-0.507	399.998	0.061	-0.439	0.671	229.115
500.000	0.217	233.480	-0.664	-0.880	499.997	0.078	-0.664	1.102	232.962
600.000	0.657	254.067	-0.934	-1.584	599.994	0.460	-0.934	1.839	239.465
700.000	0.846	273.441	-1.047	-2.872	699.986	0.314	-1.047	3.057	249.966
800.000	0.910	267.716	-1.035	-4.402	799.974	0.108	-1.035	4.522	256.774
900.000	0.960	261.744	-1.187	-6.024	899.961	0.109	-1.187	6.140	258.858
1000.000	0.974	252.125	-1.568	-7.662	999.946	0.163	-1.568	7.821	258.437
1100.000	0.868	268.010	-1.855	-9.229	1099.934	0.275	-1.855	9.413	258.635
1200.000	0.842	273.745	-1.833	-10.720	1199.923	0.090	-1.833	10.875	260.295
1300.000	0.849	271.963	-1.760	-12.193	1299.912	0.027	-1.760	12.320	261.787
1400.000	0.829	265.501	-1.791	-13.655	1399.901	0.097	-1.791	13.772	262.527
1500.000	0.648	265.861	-1.889	-14.940	1499.893	0.181	-1.889	15.059	262.794
1600.000	0.651	272.346	-1.906	-16.072	1599.886	0.074	-1.906	16.184	263.235
1700.000	0.626	269.217	-1.891	-17.185	1699.880	0.043	-1.891	17.289	263.722
1800.000	0.632	258.224	-2.011	-18.271	1799.874	0.121	-2.011	18.381	263.720
1900.000	0.637	274.271	-2.082	-19.365	1899.868	0.177	-2.082	19.477	263.864
2000.000	0.967	264.726	-2.118	-20.760	1999.858	0.355	-2.118	20.867	264.175
2100.000	1.079	278.183	-2.062	-22.532	2099.842	0.264	-2.062	22.626	264.772
2200.000	1.028	272.025	-1.896	-24.360	2199.825	0.124	-1.896	24.434	265.550
2300.000	1.215	277.357	-1.728	-26.308	2299.806	0.214	-1.728	26.365	266.241
2400.000	1.148	277.634	-1.459	-28.353	2399.785	0.067	-1.459	28.390	267.053
2500.000	0.959	261.564	-1.449	-30.174	2499.768	0.349	-1.449	30.209	267.251
2600.000	0.562	265.274	-1.612	-31.490	2599.759	0.399	-1.612	31.532	267.069
2700.000	0.442	232.990	-1.885	-32.288	2699.756	0.302	-1.885	32.343	266.659
2800.000	0.403	199.031	-2.450	-32.711	2799.753	0.250	-2.450	32.803	265.716
2900.000	0.484	202.014	-3.175	-32.984	2899.750	0.084	-3.175	33.137	264.502
3000.000	0.416	233.682	-3.781	-33.435	2999.747	0.254	-3.781	33.648	263.548
3100.000	0.898	151.332	-4.683	-33.351	3099.742	0.938	-4.683	33.679	262.007
3200.000	0.821	119.703	-5.726	-32.353	3199.731	0.474	-5.726	32.856	259.964
3300.000	1.114	106.284	-6.354	-30.797	3299.717	0.368	-6.354	31.446	258.343
3400.000	1.152	57.881	-6.092	-29.013	3399.700	0.929	-6.092	29.646	258.142

3500.000	1.880	32.349	-4.171	-27.284	3499.665	0.977	-4.171	27.601	261.308
3600.000	2.546	15.519	-0.645	-25.811	3599.591	0.924	-0.645	25.819	268.569
3700.000	2.665	8.000	3.798	-24.894	3699.488	0.362	3.798	25.182	278.674
3800.000	2.933	17.034	8.546	-23.820	3799.369	0.515	8.546	25.307	289.737
3900.000	2.876	6.020	13.487	-22.808	3899.241	0.560	13.487	26.497	300.597
4000.000	2.631	353.989	18.265	-22.785	3999.126	0.626	18.265	29.202	308.716
4050.000	2.281	349.914	20.386	-23.080	4049.080	0.782	20.386	30.794	311.454

True North