



Company: Noble Energy
Rig: Bohler Rig
API # 05-123-27347
Date: 5/1/2013
Surveyor: Justin Williams
VS:
Lat : 40.46817
Long: -104.409

Well: Wells Ranch USX AA 23-25
Location: Weld County, Colorado
North Reference: GRID
Convergence: Grid north is of -0.7 True North
Declination: 8.43
Depth Reference: Ground Level
Elevation: 4806
Total Depth as Drilled: 6987

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	0.467	297.358	0.187	-0.362	99.999	0.467	0.187	0.407	297.358
200.000	0.376	283.925	0.453	-1.042	199.996	0.133	0.453	1.136	293.511
300.000	0.365	280.743	0.592	-1.674	299.994	0.023	0.592	1.775	289.471
400.000	0.470	287.519	0.775	-2.378	399.991	0.116	0.775	2.501	288.043
500.000	0.280	277.860	0.931	-3.011	499.989	0.200	0.931	3.151	287.191
600.000	0.335	280.069	1.016	-3.540	599.988	0.057	1.016	3.683	286.012
700.000	0.292	293.164	1.167	-4.062	699.986	0.083	1.167	4.227	286.032
800.000	0.264	268.609	1.262	-4.528	799.985	0.121	1.262	4.700	285.576
900.000	0.325	277.018	1.291	-5.039	899.984	0.074	1.291	5.202	284.370
1000.000	0.171	273.457	1.335	-5.470	999.983	0.154	1.335	5.630	283.713
1100.000	0.307	287.265	1.423	-5.875	1099.982	0.147	1.423	6.044	283.618
1200.000	0.335	273.955	1.523	-6.422	1199.980	0.079	1.523	6.600	283.341
1300.000	0.313	290.616	1.639	-6.968	1299.979	0.096	1.639	7.159	283.237
1400.000	0.322	294.982	1.854	-7.479	1399.977	0.026	1.854	7.705	283.923
1500.000	0.242	299.160	2.075	-7.918	1499.976	0.083	2.075	8.185	284.688
1600.000	0.286	275.862	2.204	-8.351	1599.975	0.115	2.204	8.637	284.784
1700.000	0.124	279.539	2.247	-8.706	1699.974	0.163	2.247	8.991	284.474
1800.000	0.138	160.276	2.152	-8.772	1799.974	0.226	2.152	9.032	283.786
1900.000	0.173	136.443	1.930	-8.627	1899.974	0.073	1.930	8.840	282.608
2000.000	0.229	147.909	1.650	-8.416	1999.973	0.069	1.650	8.577	281.095
2100.000	0.360	116.947	1.339	-8.030	2099.972	0.201	1.339	8.141	279.464
2200.000	0.410	106.738	1.093	-7.408	2199.970	0.085	1.093	7.488	278.395
2300.000	0.319	113.632	0.878	-6.810	2299.968	0.101	0.878	6.866	277.351
2400.000	0.323	92.292	0.755	-6.272	2399.966	0.119	0.755	6.318	276.868
2500.000	0.301	66.577	0.848	-5.750	2499.965	0.141	0.848	5.812	278.394
2600.000	0.373	67.832	1.076	-5.208	2599.963	0.073	1.076	5.318	281.669
2700.000	0.260	64.139	1.297	-4.702	2699.962	0.115	1.297	4.878	285.426
2800.000	0.349	61.225	1.543	-4.231	2799.960	0.090	1.543	4.503	290.037
2900.000	0.257	68.236	1.773	-3.755	2899.959	0.099	1.773	4.153	295.271
3000.000	0.177	96.162	1.840	-3.393	2999.958	0.131	1.840	3.860	298.461
3100.000	0.147	68.234	1.871	-3.121	3099.958	0.083	1.871	3.639	300.936
3200.000	0.100	42.227	1.983	-2.943	3199.957	0.072	1.983	3.549	303.968
3300.000	0.426	60.622	2.230	-2.561	3299.956	0.332	2.230	3.395	311.048
3400.000	0.564	62.008	2.643	-1.803	3399.952	0.138	2.643	3.199	325.705
3500.000	0.579	77.010	2.987	-0.876	3499.948	0.150	2.987	3.113	343.664

3600.000	0.745	66.047	3.365	0.211	3599.941	0.208	3.365	3.372	3.595
3700.000	0.628	51.269	3.972	1.233	3699.934	0.212	3.972	4.159	17.250
3800.000	0.629	57.032	4.613	2.121	3799.928	0.063	4.613	5.078	24.691
3900.000	0.666	53.089	5.261	3.046	3899.921	0.058	5.261	6.079	30.069
4000.000	0.754	53.558	6.000	4.039	3999.914	0.088	6.000	7.233	33.948
4100.000	0.578	45.917	6.742	4.931	4099.907	0.197	6.742	8.352	36.180
4200.000	0.410	59.555	7.274	5.601	4199.903	0.203	7.274	9.181	37.598
4300.000	0.297	72.346	7.534	6.156	4299.901	0.138	7.534	9.729	39.255
4400.000	0.157	129.341	7.525	6.509	4399.901	0.249	7.525	9.950	40.859
4500.000	0.050	257.367	7.429	6.573	4499.900	0.192	7.429	9.919	41.501
4600.000	0.110	334.892	7.506	6.489	4599.900	0.111	7.506	9.922	40.843
4700.000	0.172	234.419	7.506	6.326	4699.900	0.221	7.506	9.816	40.124
4800.000	0.550	230.108	7.111	5.835	4799.898	0.378	7.111	9.198	39.374
4900.000	0.833	235.629	6.392	4.867	4899.891	0.291	6.392	8.035	37.285
5000.000	0.755	248.916	5.745	3.652	4999.881	0.200	5.745	6.808	32.447
5100.000	1.070	251.101	5.206	2.154	5099.868	0.317	5.206	5.634	22.482
5200.000	1.004	242.376	4.497	0.495	5199.852	0.171	4.497	4.524	6.277
5300.000	1.168	238.828	3.563	-1.153	5299.834	0.177	3.563	3.745	342.066
5400.000	1.439	239.831	2.405	-3.111	5399.808	0.272	2.405	3.932	307.709
5500.000	1.275	238.613	1.195	-5.146	5499.780	0.166	1.195	5.283	283.071
5600.000	1.458	232.461	-0.160	-7.104	5599.752	0.234	-0.160	7.106	268.712
5700.000	1.203	236.332	-1.517	-8.986	5699.725	0.270	-1.517	9.113	260.420
5800.000	0.828	240.814	-2.451	-10.490	5799.709	0.383	-2.451	10.773	256.850
5900.000	0.752	247.756	-3.051	-11.728	5899.699	0.122	-3.051	12.118	255.417
6000.000	0.528	253.761	-3.428	-12.777	5999.693	0.233	-3.428	13.229	254.980
6100.000	0.604	252.591	-3.715	-13.722	6099.688	0.077	-3.715	14.216	254.852
6200.000	0.550	263.728	-3.925	-14.702	6199.683	0.124	-3.925	15.217	255.053
6300.000	0.403	258.515	-4.047	-15.524	6299.680	0.153	-4.047	16.043	255.387
6400.000	0.385	256.733	-4.195	-16.196	6399.677	0.022	-4.195	16.730	255.480
6500.000	0.389	262.774	-4.314	-16.860	6499.675	0.041	-4.314	17.403	255.646
6600.000	0.054	59.773	-4.334	-17.156	6599.674	0.439	-4.334	17.695	255.824
6700.000	0.213	0.602	-4.124	-17.114	6699.674	0.191	-4.124	17.604	256.450
6800.000	0.279	7.877	-3.697	-17.078	6799.673	0.073	-3.697	17.474	257.784
6850.000	0.240	38.543	-3.495	-16.997	6849.673	0.285	-3.495	17.352	258.380