



Company: Noble Energy
Rig: Production/VES
API # 05-123-25725

Date: 3/26/2013
Surveyor: Nick Kula

VS:
Lat : 40.46654
Long: -104.407

Well: Wells Ranch USX AA 23-14
Location: Weld County, Colorado
North Reference: GRID
Convergence: Grid north is -0.71 of Tr
Declination: 8.44

Depth Reference: Ground Level
Elevation: 4815'

Total Depth as Drilled: 6960'

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	0.400	6.165	0.347	0.037	99.999	0.400	0.347	0.349	6.165
200.000	0.539	342.516	1.142	-0.066	199.996	0.235	1.142	1.144	356.681
300.000	0.342	359.892	1.889	-0.208	299.993	0.236	1.889	1.901	353.716
400.000	0.250	323.933	2.364	-0.337	399.992	0.203	2.364	2.388	351.887
500.000	0.608	341.288	3.043	-0.636	499.989	0.377	3.043	3.109	348.201
600.000	0.553	304.868	3.822	-1.202	599.984	0.367	3.822	4.006	342.542
700.000	0.479	294.720	4.273	-1.978	699.980	0.117	4.273	4.708	335.161
800.000	0.602	354.726	4.970	-2.406	799.976	0.551	4.970	5.522	334.171
900.000	0.661	311.941	5.879	-2.883	899.971	0.464	5.879	6.548	333.874
1000.000	0.555	316.497	6.616	-3.646	999.965	0.117	6.616	7.554	331.140
1100.000	0.797	325.490	7.541	-4.374	1099.958	0.263	7.541	8.717	329.885
1200.000	0.837	338.172	8.792	-5.039	1199.948	0.185	8.792	10.134	330.180
1300.000	0.777	350.758	10.139	-5.420	1299.938	0.187	10.139	11.497	331.874
1400.000	0.547	296.896	11.024	-5.954	1399.932	0.634	11.024	12.529	331.627
1500.000	0.544	7.219	11.711	-6.320	1499.929	0.628	11.711	13.307	331.646
1600.000	0.403	341.964	12.516	-6.369	1599.925	0.248	12.516	14.044	333.030
1700.000	0.582	337.164	13.319	-6.675	1699.922	0.183	13.319	14.898	333.381
1800.000	0.833	353.192	14.508	-6.958	1799.914	0.317	14.508	16.091	334.377
1900.000	0.722	347.624	15.846	-7.180	1899.905	0.134	15.846	17.396	335.625
2000.000	0.161	291.068	16.512	-7.446	1999.902	0.648	16.512	18.114	335.727
2100.000	0.169	246.645	16.505	-7.713	2099.901	0.125	16.505	18.218	334.952
2200.000	0.329	133.668	16.248	-7.640	2199.901	0.424	16.248	17.954	334.816
2300.000	0.385	181.172	15.714	-7.439	2299.899	0.292	15.714	17.386	334.666
2400.000	0.085	139.401	15.322	-7.398	2399.898	0.327	15.322	17.014	334.227
2500.000	0.467	207.279	14.904	-7.537	2499.897	0.442	14.904	16.701	333.175
2600.000	1.035	193.169	13.662	-7.929	2599.888	0.593	13.662	15.796	329.871
2700.000	0.432	206.572	12.446	-8.303	2699.879	0.622	12.446	14.961	326.290
2800.000	0.700	172.766	11.503	-8.395	2799.875	0.417	11.503	14.241	323.876
2900.000	0.481	184.318	10.478	-8.350	2899.869	0.248	10.478	13.398	321.449
3000.000	0.570	138.477	9.687	-8.052	2999.865	0.418	9.687	12.596	320.266
3100.000	0.294	119.568	9.187	-7.499	3099.863	0.308	9.187	11.859	320.779
3200.000	0.696	170.638	8.462	-7.177	3199.859	0.560	8.462	11.095	319.696
3300.000	0.498	186.770	7.431	-7.129	3299.854	0.258	7.431	10.298	316.185
3400.000	0.318	293.867	7.111	-7.435	3399.852	0.665	7.111	10.288	313.727
3500.000	0.208	346.969	7.401	-7.729	3499.851	0.255	7.401	10.701	313.755

3600.000	0.158	26.011	7.702	-7.710	3599.851	0.131	7.702	10.898	314.971
3700.000	0.310	347.684	8.091	-7.707	3699.850	0.210	8.091	11.174	316.391
3800.000	0.428	233.566	8.133	-8.065	3799.849	0.623	8.133	11.454	315.240
3900.000	0.530	233.488	7.636	-8.737	3899.845	0.102	7.636	11.604	311.152
4000.000	0.655	176.456	6.791	-9.074	3999.841	0.576	6.791	11.333	306.810
4100.000	0.705	228.654	5.814	-9.500	4099.835	0.600	5.814	11.138	301.464
4200.000	0.959	215.081	4.722	-10.443	4199.824	0.320	4.722	11.461	294.333
4300.000	0.736	223.883	3.575	-11.369	4299.813	0.258	3.575	11.918	287.455
4400.000	1.133	221.127	2.367	-12.464	4399.800	0.399	2.367	12.687	280.755
4500.000	1.319	232.012	0.915	-14.021	4499.777	0.297	0.915	14.051	273.733
4600.000	1.001	211.450	-0.539	-15.384	4599.757	0.519	-0.539	15.394	267.994
4700.000	1.261	233.252	-1.943	-16.722	4699.737	0.498	-1.943	16.834	263.373
4800.000	1.306	241.009	-3.153	-18.600	4799.712	0.179	-3.153	18.865	260.378
4900.000	1.705	246.202	-4.306	-20.958	4899.678	0.422	-4.306	21.396	258.390
5000.000	1.546	242.997	-5.518	-23.521	4999.638	0.183	-5.518	24.159	256.796
5100.000	1.835	245.482	-6.795	-26.179	5099.594	0.298	-6.795	27.047	255.449
5200.000	1.751	235.235	-8.331	-28.891	5199.545	0.331	-8.331	30.068	253.915
5300.000	1.969	234.391	-10.202	-31.542	5299.492	0.220	-10.202	33.151	252.077
5400.000	1.772	240.441	-11.965	-34.284	5399.439	0.279	-11.965	36.312	250.761
5500.000	2.212	225.500	-14.080	-37.005	5499.379	0.677	-14.080	39.593	249.169
5600.000	2.229	232.529	-16.616	-39.924	5599.304	0.273	-16.616	43.244	247.404
5700.000	1.386	234.934	-18.493	-42.457	5699.254	0.846	-18.493	46.310	246.464
5800.000	1.064	256.003	-19.412	-44.348	5799.231	0.548	-19.412	48.410	246.360
5900.000	0.899	292.703	-19.334	-45.972	5899.218	0.637	-19.334	49.872	247.190
6000.000	0.750	281.047	-18.906	-47.338	5999.207	0.223	-18.906	50.974	248.229
6100.000	0.789	265.566	-18.834	-48.668	6099.198	0.211	-18.834	52.185	248.844
6200.000	0.195	255.914	-18.929	-49.520	6199.194	0.598	-18.929	53.014	249.081
6300.000	0.648	262.069	-19.048	-50.245	6299.191	0.455	-19.048	53.735	249.238
6400.000	0.503	276.788	-19.074	-51.242	6399.186	0.206	-19.074	54.677	249.583
6500.000	0.496	264.689	-19.062	-52.109	6499.182	0.106	-19.062	55.486	249.906
6600.000	0.249	202.096	-19.304	-52.621	6599.181	0.441	-19.304	56.050	249.855
6700.000	0.787	298.973	-19.173	-53.304	6699.177	0.853	-19.173	56.647	250.217
6800.000	0.736	294.631	-18.573	-54.488	6799.168	0.077	-18.573	57.567	251.178

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