



Company: Noble Energy
Rig: Production/Coretech
API # 05-123-27187
Date: 5/2/14
Surveyor: Levi Sheldon
VS: 0.000
Lat : 40.449
Long: -104.473

Well: Wells Ranch USX AA 31-01
Location: Weld County, Colorado
North Reference: GRID
Convergence: GRID North is 0.660 Degrees East
Declination: 8.32
Depth Reference: Ground Level
Elevation: 4,658 Feet
Total Depth as Drilled: 6,982 Feet

Lat & Long obtained by handheld GPS at wellhead

MS 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	0.482	228.988	-0.276	-0.318	99.999	0.482	-0.276	0.421	228.988
200.000	0.598	215.625	-0.977	-0.939	199.994	0.171	-0.977	1.355	223.879
300.000	0.582	187.542	-1.905	-1.310	299.989	0.287	-1.905	2.312	214.521
400.000	0.948	199.174	-3.190	-1.649	399.980	0.396	-3.190	3.591	207.330
500.000	1.144	191.232	-4.950	-2.115	499.964	0.243	-4.950	5.383	203.132
600.000	1.212	203.225	-6.901	-2.726	599.943	0.255	-6.901	7.420	201.556
700.000	1.266	191.962	-8.953	-3.372	699.919	0.249	-8.953	9.567	200.638
800.000	1.587	193.124	-11.383	-3.916	799.888	0.323	-11.383	12.037	198.983
900.000	1.758	198.609	-14.185	-4.719	899.846	0.233	-14.185	14.950	198.402
1000.000	1.987	208.022	-17.169	-6.023	999.792	0.383	-17.169	18.195	199.332
1100.000	2.438	211.757	-20.508	-7.957	1099.718	0.473	-20.508	21.998	201.207
1200.000	2.830	210.719	-24.439	-10.338	1199.612	0.395	-24.439	26.536	202.929
1300.000	2.990	213.436	-28.738	-13.036	1299.483	0.211	-28.738	31.557	204.400
1400.000	3.338	213.009	-33.357	-16.060	1399.330	0.349	-33.357	37.022	205.709
1500.000	3.683	219.462	-38.278	-19.687	1499.143	0.523	-38.278	43.044	207.218
1600.000	4.454	222.239	-43.632	-24.339	1598.890	0.796	-43.632	49.961	209.153
1700.000	4.024	230.386	-48.744	-29.652	1698.617	0.739	-48.744	57.054	211.313
1800.000	4.065	229.169	-53.299	-35.036	1798.368	0.095	-53.299	63.783	213.319
1900.000	3.433	234.998	-57.334	-40.171	1898.154	0.738	-57.334	70.006	215.017
2000.000	3.887	228.099	-61.315	-45.146	1997.950	0.632	-61.315	76.142	216.364
2100.000	3.998	235.198	-65.567	-50.531	2097.714	0.500	-65.567	82.780	217.620
2200.000	4.614	235.931	-69.810	-56.725	2197.432	0.619	-69.810	89.951	219.096
2300.000	5.158	243.282	-74.084	-64.072	2297.069	0.828	-74.084	97.948	220.855
2400.000	4.935	240.085	-78.250	-71.816	2396.681	0.359	-78.250	106.210	222.545
2500.000	4.479	239.890	-82.355	-78.922	2496.344	0.456	-82.355	114.066	223.781
2600.000	4.079	250.157	-85.521	-85.645	2596.066	0.863	-85.521	121.033	225.042
2700.000	3.523	249.063	-87.826	-91.860	2695.846	0.561	-87.826	127.089	226.286
2800.000	2.835	253.385	-89.631	-97.100	2795.692	0.728	-89.631	132.144	227.290
2900.000	2.922	249.714	-91.222	-101.860	2895.566	0.204	-91.222	136.736	228.154
3000.000	2.650	243.976	-93.120	-106.328	2995.448	0.389	-93.120	141.339	228.789
3100.000	2.027	225.847	-95.366	-109.674	3095.365	0.960	-95.366	145.337	228.992
3200.000	1.250	209.310	-97.548	-111.476	3195.324	0.902	-97.548	148.130	228.812
3300.000	1.184	162.437	-99.484	-111.698	3295.304	0.970	-99.484	149.578	228.310
3400.000	1.365	120.860	-101.080	-110.364	3395.281	0.920	-101.080	149.658	227.514
3500.000	1.949	93.818	-101.804	-107.646	3495.240	0.960	-101.804	148.161	226.598

3600.000	2.212	101.613	-102.306	-104.059	3595.175	0.386	-102.306	145.927	225.487
3700.000	2.255	97.445	-102.949	-100.218	3695.099	0.168	-102.949	143.674	224.230
3800.000	2.398	77.344	-102.746	-96.226	3795.018	0.824	-102.746	140.770	223.123
3900.000	1.934	88.073	-102.231	-92.499	3894.947	0.614	-102.231	137.866	222.139
4000.000	1.279	91.890	-102.211	-89.697	3994.907	0.664	-102.211	135.987	221.269
4100.000	1.063	109.079	-102.551	-87.705	4094.886	0.410	-102.551	134.940	220.538
4200.000	1.121	156.182	-103.749	-86.433	4194.870	0.874	-103.749	135.035	219.798
4300.000	1.548	193.465	-105.957	-86.353	4294.844	0.944	-105.957	136.688	219.179
4400.000	1.579	189.893	-108.628	-86.904	4394.807	0.102	-108.628	139.113	218.660
4500.000	1.072	200.579	-110.861	-87.469	4494.780	0.562	-110.861	141.213	218.273
4600.000	0.654	173.269	-112.304	-87.731	4594.769	0.575	-112.304	142.510	217.997
4700.000	0.499	182.503	-113.306	-87.683	4694.764	0.180	-113.306	143.271	217.735
4800.000	0.554	320.082	-113.371	-88.013	4794.762	0.982	-113.371	143.524	217.823
4900.000	0.947	347.353	-112.194	-88.504	4894.754	0.521	-112.194	142.900	218.268
5000.000	1.035	333.385	-110.580	-89.089	4994.739	0.256	-110.580	142.003	218.857
5100.000	0.848	348.026	-109.049	-89.647	5094.726	0.304	-109.049	141.168	219.423
5200.000	0.203	331.507	-108.170	-89.885	5194.721	0.656	-108.170	140.642	219.725
5300.000	0.660	345.926	-107.456	-90.110	5294.718	0.466	-107.456	140.237	219.982
5400.000	0.463	281.607	-106.816	-90.646	5394.714	0.620	-106.816	140.094	220.318
5500.000	0.934	288.947	-106.471	-91.812	5494.706	0.478	-106.471	140.590	220.772
5600.000	1.044	307.891	-105.646	-93.302	5594.691	0.343	-105.646	140.948	221.449
5700.000	0.749	356.722	-104.434	-94.058	5694.680	0.789	-104.434	140.547	222.008
5800.000	1.164	335.867	-102.855	-94.511	5794.667	0.535	-102.855	139.683	222.579
5900.000	1.405	351.791	-100.715	-95.101	5894.642	0.428	-100.715	138.520	223.358
6000.000	1.806	336.597	-98.055	-95.902	5994.603	0.582	-98.055	137.157	224.364
6100.000	1.170	331.210	-95.714	-97.020	6094.569	0.651	-95.714	136.287	225.388
6200.000	1.825	355.134	-93.233	-97.646	6194.535	0.892	-93.233	135.008	226.324
6300.000	0.931	14.835	-90.861	-97.573	6294.505	0.999	-90.861	133.328	227.040
6400.000	0.844	76.379	-89.902	-96.650	6394.495	0.911	-89.902	131.998	227.071
6500.000	1.681	99.497	-89.971	-94.487	6494.471	0.964	-89.971	130.471	226.402
6600.000	1.961	110.544	-90.813	-91.438	6594.421	0.448	-90.813	128.872	225.196
6650.000	1.896	108.776	-91.380	-89.854	6644.392	0.176	-91.380	128.156	224.518

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