



Company: Noble Energy
Rig: Production / V.E.S.

API # 05-123-25267

Date: 5/7/2013

Surveyor: Norman Cowan

VS: 0.000

Lat : 40.462

Long: -104.420

Well: Wells Ranch USX AA 27-2

Location: Weld County, Colorado

North Reference: GRID

Convergence: Grid north is -0.7 Deg of True North

Declination: 8.43 Degrees

Depth Reference: Ground Level

Elevation: 4792 Feet

Total Depth as Drilled: 6987 Feet

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
100.000	0.767	48.613	0.443	0.502	99.997	0.767	0.443	0.670	48.613
200.000	0.455	19.617	1.259	1.138	199.991	0.431	1.259	1.697	42.108
300.000	0.644	341.977	2.168	1.097	299.987	0.397	2.168	2.430	26.852
400.000	1.592	333.135	3.942	0.296	399.967	0.961	3.942	3.953	4.290
500.000	1.566	332.821	6.397	-0.956	499.929	0.028	6.397	6.468	351.497
600.000	1.627	329.338	8.833	-2.304	599.890	0.114	8.833	9.129	345.379
700.000	1.486	330.579	11.183	-3.665	699.853	0.145	11.183	11.769	341.855
800.000	1.632	327.605	13.515	-5.065	799.816	0.167	13.515	14.433	339.456
900.000	1.489	331.779	15.862	-6.442	899.779	0.183	15.862	17.121	337.897
1000.000	1.640	324.876	18.178	-7.880	999.742	0.242	18.178	19.812	336.564
1100.000	1.700	322.850	20.531	-9.599	1099.699	0.084	20.531	22.664	334.941
1200.000	1.622	322.814	22.840	-11.350	1199.657	0.078	22.840	25.505	333.575
1300.000	1.730	331.615	25.296	-12.923	1299.615	0.279	25.296	28.406	332.938
1400.000	1.482	327.827	27.718	-14.329	1399.575	0.270	27.718	31.203	332.663
1500.000	1.824	328.459	30.169	-15.850	1499.534	0.342	30.169	34.079	332.283
1600.000	1.710	324.625	32.741	-17.546	1599.486	0.164	32.741	37.146	331.813
1700.000	1.646	326.072	35.149	-19.211	1699.443	0.076	35.149	40.057	331.341
1800.000	0.970	308.269	36.865	-20.677	1799.417	0.781	36.865	42.268	330.712
1900.000	1.018	303.326	37.877	-22.084	1899.402	0.098	37.877	43.845	329.756
2000.000	1.197	299.485	38.879	-23.735	1999.383	0.194	38.879	45.552	328.596
2100.000	1.459	298.327	39.997	-25.765	2099.356	0.263	39.997	47.578	327.211
2200.000	1.509	295.637	41.171	-28.073	2199.323	0.085	41.171	49.831	325.712
2300.000	1.557	301.595	42.452	-30.417	2299.287	0.166	42.452	52.224	324.379
2400.000	1.736	298.422	43.885	-32.906	2399.246	0.200	43.885	54.851	323.137
2500.000	1.672	300.561	45.348	-35.494	2499.202	0.090	45.348	57.587	321.949
2600.000	1.607	305.585	46.906	-37.891	2599.161	0.158	46.906	60.298	321.068
2700.000	1.451	313.343	48.590	-39.952	2699.125	0.259	48.590	62.906	320.572
2800.000	1.206	313.643	50.186	-41.634	2799.098	0.245	50.186	65.208	320.321
2900.000	1.283	319.150	51.759	-43.128	2899.075	0.142	51.759	67.372	320.197
3000.000	1.311	323.407	53.524	-44.542	2999.049	0.100	53.524	69.634	320.233
3100.000	1.233	321.629	55.286	-45.892	3099.025	0.087	55.286	71.851	320.305
3200.000	1.168	317.886	56.885	-47.243	3199.003	0.102	56.885	73.944	320.290
3300.000	1.001	308.087	58.180	-48.613	3298.985	0.249	58.180	75.816	320.119
3400.000	1.217	279.005	58.884	-50.349	3398.967	0.595	58.884	77.475	319.468
3500.000	1.262	267.718	59.007	-52.499	3498.943	0.248	59.007	78.980	318.340

3600.000	1.389	262.172	58.798	-54.799	3598.917	0.180	58.798	80.375	317.016
3700.000	1.850	255.477	58.228	-57.563	3698.877	0.498	58.228	81.878	315.329
3800.000	2.249	238.172	56.789	-60.792	3798.813	0.732	56.789	83.190	313.050
3900.000	2.553	241.702	54.698	-64.420	3898.726	0.338	54.698	84.510	310.334
4000.000	3.113	234.870	52.080	-68.602	3998.603	0.653	52.080	86.131	307.204
4100.000	3.403	224.715	48.408	-72.911	4098.442	0.645	48.408	87.518	303.582
4200.000	4.115	223.457	43.695	-77.467	4198.227	0.716	43.695	88.940	299.425
4300.000	4.637	224.643	38.215	-82.775	4297.935	0.531	38.215	91.170	294.781
4400.000	4.614	224.087	32.450	-88.414	4397.609	0.051	32.450	94.180	290.154
4500.000	4.302	219.755	26.677	-93.611	4497.307	0.458	26.677	97.338	285.907
4600.000	3.919	223.040	21.296	-98.341	4597.049	0.450	21.296	100.621	282.219
4700.000	3.689	227.487	16.625	-103.045	4696.829	0.374	16.625	104.378	279.165
4800.000	3.660	226.664	12.260	-107.738	4796.624	0.060	12.260	108.434	276.492
4900.000	3.281	229.822	8.223	-112.247	4896.440	0.425	8.223	112.547	274.190
5000.000	2.921	228.607	4.692	-116.344	4996.294	0.365	4.692	116.439	272.309
5100.000	2.014	232.161	1.929	-119.644	5096.200	0.919	1.929	119.660	270.924
5200.000	1.208	213.869	-0.025	-121.620	5196.160	0.946	-0.025	121.620	269.988
5300.000	0.540	198.156	-1.349	-122.355	5296.148	0.704	-1.349	122.362	269.368
5400.000	0.105	143.080	-1.870	-122.446	5396.146	0.487	-1.870	122.461	269.125
5500.000	0.991	84.075	-1.855	-121.531	5496.141	0.941	-1.855	121.545	269.126
5600.000	1.432	91.386	-1.796	-119.422	5596.118	0.467	-1.796	119.435	269.139
5700.000	1.707	100.863	-2.107	-116.709	5696.081	0.377	-2.107	116.728	268.966
5800.000	1.864	98.484	-2.627	-113.638	5796.032	0.173	-2.627	113.668	268.676
5900.000	2.243	97.319	-3.116	-110.089	5895.968	0.382	-3.116	110.133	268.378
6000.000	2.403	102.350	-3.814	-106.100	5995.886	0.259	-3.814	106.169	267.941
6100.000	2.736	94.551	-4.452	-101.673	6095.786	0.482	-4.452	101.771	267.493
6200.000	3.140	93.277	-4.798	-96.560	6195.654	0.410	-4.798	96.679	267.155
6300.000	2.573	94.878	-5.145	-91.588	6295.529	0.573	-5.145	91.732	266.785
6400.000	1.590	97.956	-5.528	-87.977	6395.462	0.990	-5.528	88.151	266.404
6500.000	0.871	115.178	-6.044	-85.915	6495.439	0.800	-6.044	86.127	265.976
6600.000	0.606	121.021	-6.640	-84.774	6595.430	0.276	-6.640	85.033	265.521
6700.000	0.752	149.670	-7.479	-83.989	6695.424	0.365	-7.479	84.321	264.911
6750.000	0.841	138.434	-8.037	-83.580	6745.419	0.359	-8.037	83.965	264.507

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