



Company: Noble Energy
Rig: Production/ VES
API # 05-123-31894
Date: 11/25/2013
Surveyor: Sean Bratt
VS: 0.000
Lat : 40.478
Long: -104.430

Well: Wells Ranch PC AA 22-
Location: Weld County, Colorado
North Reference: GRID
Convergence: Grid north is 0.69 of 1
Declination: 8.36 Degrees
Depth Reference: Ground Level
Elevation: 4710 Feet
Total Depth as Drilled: 6943 Feet

Lat & Long obtained by handheld GPS at wellhead
HA Gyro Survey Calculations

Depth	Inc	AzG	N/-S	E/-W	TVD	DL	VS	CD
0.000	0.000	0.000	0.000	0.000	0.000	****	0.000	0.000
100.000	0.397	22.255	0.321	0.131	99.999	0.397	0.321	0.347
200.000	1.272	44.491	1.434	1.041	199.988	0.917	1.434	1.772
300.000	1.197	53.573	2.846	2.659	299.965	0.209	2.846	3.895
400.000	1.420	85.159	3.571	4.734	399.940	0.744	3.571	5.930
500.000	1.484	96.328	3.533	7.256	499.908	0.290	3.533	8.070
600.000	1.462	127.927	2.605	9.549	599.876	0.802	2.605	9.898
700.000	1.447	130.519	1.001	11.515	699.844	0.068	1.001	11.559
800.000	1.551	124.713	-0.590	13.588	799.810	0.184	-0.590	13.600
900.000	1.417	116.724	-1.917	15.805	899.777	0.246	-1.917	15.921
1000.000	1.312	124.610	-3.123	17.851	999.748	0.215	-3.123	18.122
1100.000	1.340	117.062	-4.305	19.835	1099.722	0.177	-4.305	20.297
1200.000	1.372	113.012	-5.305	21.978	1199.694	0.101	-5.305	22.610
1300.000	1.047	113.480	-6.138	23.919	1299.671	0.325	-6.138	24.694
1400.000	0.876	100.237	-6.637	25.509	1399.657	0.280	-6.637	26.358
1500.000	0.822	105.410	-6.964	26.953	1499.646	0.093	-6.964	27.838
1600.000	0.794	94.523	-7.209	28.335	1599.636	0.156	-7.209	29.238
1700.000	0.589	49.517	-6.930	29.416	1699.630	0.562	-6.930	30.221
1800.000	1.493	41.964	-5.628	30.677	1799.612	0.912	-5.628	31.189
1900.000	1.512	29.499	-3.512	32.198	1899.578	0.327	-3.512	32.389
2000.000	1.745	6.522	-0.850	33.021	1999.539	0.687	-0.850	33.032
2100.000	1.555	351.851	2.005	33.001	2099.498	0.461	2.005	33.062
2200.000	0.986	320.453	4.012	32.261	2199.474	0.879	4.012	32.510
2300.000	1.227	274.041	4.751	30.645	2299.457	0.900	4.751	31.011
2400.000	1.259	267.419	4.777	28.479	2399.434	0.147	4.777	28.876
2500.000	1.042	268.734	4.708	26.472	2499.413	0.219	4.708	26.888
2600.000	0.817	278.539	4.793	24.858	2599.400	0.274	4.793	25.316
2700.000	0.688	284.338	5.048	23.571	2699.392	0.150	5.048	24.106
2800.000	0.905	293.049	5.506	22.263	2799.382	0.248	5.506	22.934
2900.000	0.790	290.886	6.061	20.892	2899.371	0.120	6.061	21.753
3000.000	0.580	288.827	6.470	19.769	2999.364	0.212	6.470	20.801
3100.000	0.443	311.516	6.889	19.001	3099.360	0.242	6.889	20.212
3200.000	0.197	291.107	7.207	18.552	3199.358	0.268	7.207	19.902
3300.000	0.230	292.318	7.345	18.206	3299.357	0.033	7.345	19.632
3400.000	0.413	326.798	7.723	17.823	3399.356	0.259	7.723	19.425
3500.000	0.426	297.037	8.194	17.295	3499.353	0.216	8.194	19.138

3600.000	0.296	197.520	8.117	16.886	3599.352	0.557	8.117	18.736
3700.000	0.298	181.995	7.611	16.800	3699.351	0.080	7.611	18.443
3800.000	0.462	225.794	7.070	16.501	3799.349	0.322	7.070	17.952
3900.000	0.424	208.651	6.464	16.035	3899.346	0.137	6.464	17.288
4000.000	0.719	185.072	5.514	15.802	3999.341	0.371	5.514	16.736
4100.000	1.149	172.624	3.895	15.875	4099.327	0.473	3.895	16.346
4200.000	1.345	158.529	1.809	16.433	4199.304	0.363	1.809	16.532
4300.000	1.812	155.358	-0.721	17.522	4299.266	0.475	-0.721	17.537
4400.000	1.458	166.206	-3.394	18.485	4399.225	0.469	-3.394	18.794
4500.000	1.363	168.852	-5.796	19.018	4499.195	0.115	-5.796	19.882
4600.000	1.464	189.221	-8.225	19.043	4599.165	0.510	-8.225	20.744
4700.000	2.007	201.700	-11.113	18.191	4699.119	0.658	-11.113	21.317
4800.000	1.606	213.617	-13.908	16.768	4799.069	0.547	-13.908	21.785
4900.000	1.304	220.118	-15.945	15.258	4899.037	0.344	-15.945	22.069
5000.000	1.104	198.082	-17.732	14.226	4999.016	0.500	-17.732	22.733
5100.000	0.493	150.716	-19.023	14.137	5099.006	0.852	-19.023	23.701
5200.000	0.386	125.396	-19.594	14.623	5199.003	0.219	-19.594	24.449
5300.000	0.376	345.061	-19.472	14.813	5299.002	0.717	-19.472	24.466
5400.000	0.231	299.539	-19.055	14.553	5399.001	0.271	-19.055	23.977
5500.000	0.250	296.536	-18.859	14.183	5499.000	0.023	-18.859	23.597
5600.000	0.564	305.617	-18.475	13.588	5598.998	0.320	-18.475	22.933
5700.000	0.689	324.459	-17.699	12.838	5698.992	0.239	-17.699	21.864
5800.000	0.579	334.652	-16.753	12.272	5798.986	0.157	-16.753	20.767
5900.000	0.410	81.647	-16.245	12.410	5898.983	0.801	-16.245	20.443
6000.000	0.390	91.544	-16.202	13.104	5998.981	0.072	-16.202	20.838
6100.000	0.380	122.727	-16.390	13.723	6098.979	0.207	-16.390	21.377
6200.000	0.561	123.911	-16.842	14.408	6198.976	0.181	-16.842	22.164
6300.000	0.535	106.310	-17.247	15.262	6298.971	0.170	-17.247	23.030
6400.000	0.835	98.245	-17.482	16.431	6398.964	0.315	-17.482	23.991
6500.000	0.783	120.452	-17.933	17.741	6498.954	0.316	-17.933	25.225
6600.000	0.681	94.167	-18.322	18.922	6598.946	0.347	-18.322	26.339
6700.000	1.036	63.259	-17.958	20.322	6698.935	0.571	-17.958	27.120
6800.000	0.269	357.054	-17.317	21.118	6798.929	0.959	-17.317	27.310
6850.000	0.505	299.792	-17.090	20.920	6848.928	0.849	-17.090	27.014

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True North

Cbrg

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22.255
35.971
43.054
52.975
64.041
74.739
85.032
92.486
96.915
99.923
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104.585
104.487
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