



Company: Noble Energy
Rig: Production/VES
API # 05-123-26414
Date: 1-9-14
Surveyor: Justin Williams
VS: 0.000
Lat : 40.252
Long: -104.491

Well: Woody D01-09
Location: Weld County, Colorado
North Reference: GRID
Convergence: GRID North is 0.65 De
Declination: 8.36
Depth Reference: RKB = Ground Level
Elevation: 4788
Total Depth as Drilled: 6999

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	0.000
100.000	0.141	107.730	-0.037	0.117	100.000	0.141	-0.037	0.123
200.000	0.136	31.359	0.027	0.296	200.000	0.171	0.027	0.297
300.000	0.129	46.670	0.206	0.440	299.999	0.036	0.206	0.485
400.000	0.119	296.026	0.329	0.428	399.999	0.205	0.329	0.540
500.000	0.171	12.234	0.521	0.366	499.999	0.184	0.521	0.637
600.000	0.123	31.436	0.759	0.454	599.999	0.068	0.759	0.884
700.000	0.424	245.881	0.700	0.173	699.998	0.530	0.700	0.721
800.000	0.551	258.284	0.451	-0.635	799.994	0.164	0.451	0.779
900.000	0.609	244.607	0.125	-1.586	899.989	0.150	0.125	1.591
1000.000	0.609	254.390	-0.245	-2.578	999.984	0.104	-0.245	2.589
1100.000	0.628	243.244	-0.635	-3.579	1099.978	0.122	-0.635	3.635
1200.000	0.736	254.878	-1.049	-4.688	1199.971	0.175	-1.049	4.804
1300.000	0.602	247.292	-1.420	-5.793	1299.964	0.160	-1.420	5.964
1400.000	0.598	267.430	-1.646	-6.799	1399.959	0.210	-1.646	6.995
1500.000	0.772	266.004	-1.716	-7.992	1499.951	0.175	-1.716	8.174
1600.000	0.705	260.994	-1.860	-9.272	1599.943	0.093	-1.860	9.456
1700.000	0.633	268.582	-1.970	-10.431	1699.936	0.114	-1.970	10.616
1800.000	0.829	283.070	-1.820	-11.688	1799.928	0.268	-1.820	11.829
1900.000	0.931	297.778	-1.278	-13.111	1899.917	0.247	-1.278	13.173
2000.000	1.004	313.413	-0.297	-14.466	1999.902	0.273	-0.297	14.469
2100.000	0.888	318.812	0.889	-15.613	2099.889	0.146	0.889	15.639
2200.000	0.956	340.108	2.256	-16.407	2199.876	0.347	2.256	16.562
2300.000	1.142	342.156	3.988	-16.996	2299.859	0.190	3.988	17.458
2400.000	1.138	4.244	5.927	-17.228	2399.840	0.437	5.927	18.219
2500.000	0.882	7.065	7.681	-17.060	2499.824	0.261	7.681	18.709
2600.000	0.553	22.924	8.889	-16.777	2599.817	0.381	8.889	18.987
2700.000	0.591	40.344	9.726	-16.256	2699.812	0.177	9.726	18.943
2800.000	0.463	38.161	10.437	-15.672	2799.807	0.129	10.437	18.829
2900.000	0.589	44.428	11.121	-15.063	2899.803	0.138	11.121	18.724
3000.000	0.718	56.912	11.830	-14.179	2999.797	0.191	11.830	18.466
3100.000	0.802	46.821	12.651	-13.144	3099.788	0.158	12.651	18.243
3200.000	0.611	38.287	13.548	-12.303	3199.780	0.217	13.548	18.301
3300.000	0.585	15.540	14.459	-11.836	3299.775	0.237	14.459	18.686
3400.000	0.566	9.813	15.437	-11.615	3399.770	0.061	15.437	19.319
3500.000	0.083	82.040	15.934	-11.459	3499.768	0.546	15.934	19.626

3600.000	0.247	143.042	15.771	-11.257	3599.768	0.219	15.771	19.377
3700.000	0.255	186.071	15.378	-11.151	3699.767	0.184	15.378	18.996
3800.000	0.292	189.560	14.906	-11.217	3799.766	0.041	14.906	18.655
3900.000	0.327	190.596	14.375	-11.312	3899.764	0.036	14.375	18.292
4000.000	0.490	210.950	13.727	-11.584	3999.762	0.216	13.727	17.962
4100.000	0.359	217.019	13.110	-11.993	4099.759	0.139	13.110	17.768
4200.000	0.288	247.002	12.762	-12.413	4199.758	0.181	12.762	17.803
4300.000	0.311	246.362	12.555	-12.893	4299.756	0.023	12.555	17.996
4400.000	0.468	264.944	12.410	-13.548	4399.754	0.200	12.410	18.373
4500.000	0.618	290.820	12.566	-14.459	4499.750	0.284	12.566	19.156
4600.000	0.671	293.838	12.994	-15.498	4599.743	0.063	12.994	20.225
4700.000	0.983	298.811	13.644	-16.786	4699.733	0.320	13.644	21.632
4800.000	1.002	282.442	14.246	-18.392	4799.718	0.283	14.246	23.264
4900.000	1.195	295.917	14.890	-20.184	4899.700	0.321	14.890	25.082
5000.000	1.231	295.744	15.813	-22.089	4999.677	0.036	15.813	27.165
5100.000	1.334	306.263	16.968	-23.995	5099.652	0.257	16.968	29.388
5200.000	1.211	325.370	18.526	-25.534	5199.628	0.439	18.526	31.547
5300.000	1.170	338.995	20.349	-26.501	5299.607	0.285	20.349	33.412
5400.000	1.102	346.552	22.237	-27.090	5399.587	0.165	22.237	35.048
5500.000	1.228	354.329	24.239	-27.420	5499.566	0.202	24.239	36.597
5600.000	1.332	9.420	26.452	-27.335	5599.542	0.352	26.452	38.039
5700.000	1.393	7.921	28.803	-26.978	5699.513	0.070	28.803	39.464
5800.000	1.684	23.114	31.358	-26.233	5799.478	0.499	31.358	40.884
5900.000	2.100	22.384	34.403	-24.959	5899.423	0.417	34.403	42.503
6000.000	1.978	31.802	37.565	-23.351	5999.360	0.356	37.565	44.231
6100.000	2.145	30.489	40.644	-21.492	6099.295	0.173	40.644	45.977
6200.000	2.051	25.976	43.865	-19.759	6199.228	0.190	43.865	48.110
6300.000	1.768	32.582	46.774	-18.145	6299.173	0.358	46.774	50.170
6400.000	1.199	14.624	49.086	-17.050	6399.139	0.728	49.086	51.962
6500.000	1.546	11.368	51.421	-16.520	6499.110	0.356	51.421	54.009
6600.000	2.058	37.857	54.161	-15.152	6599.062	0.964	54.161	56.241
6700.000	2.199	46.144	56.908	-12.667	6698.994	0.338	56.908	58.301
6750.000	1.812	51.282	58.067	-11.358	6748.963	0.853	58.067	59.168

0

degrees East of True North

Cbrg

0.000
107.730
84.847
64.940
52.490
35.139
30.912
13.888
305.360
274.519
264.561
259.936
257.382
256.228
256.390
257.879
258.658
259.307
261.150
264.434
268.824
273.257
277.829
283.206
288.984
294.238
297.915
300.893
303.662
306.439
309.840
313.904
317.756
320.696
323.042
324.278

324.482
324.053
323.038
321.800
319.840
317.549
315.794
314.239
312.490
310.993
309.977
309.106
307.761
306.418
305.597
305.266
305.962
307.519
309.381
311.476
314.059
316.874
320.084
324.040
328.133
332.130
335.751
338.797
340.845
342.189
344.370
347.452
348.933