



Company: Noble Energy
Rig: Production/ V.E.S
API # 05-123-22948
Date: 5/2/2013
Surveyor: Jay Hinman
VS:
Lat : 40.45256
Long: -104.42614

Well: Wells Ranch 24-27
Location: Weld County, Colorado
North Reference: GRID
Convergence: Grid North is -0.69 of 1
Declination: 8.43
Depth Reference: Ground Level
Elevation: 4830'
Total Depth as Drilled: 7042'

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	0.285	62.168	0.116	0.220	100.000	0.285	0.116	0.249
200.000	0.390	60.359	0.401	0.736	199.998	0.106	0.401	0.838
300.000	0.055	14.754	0.616	1.045	299.997	0.354	0.616	1.213
400.000	0.442	134.472	0.391	1.332	399.996	0.472	0.391	1.388
500.000	0.031	90.368	0.121	1.635	499.995	0.420	0.121	1.639
600.000	0.507	69.166	0.278	2.076	599.994	0.478	0.278	2.095
700.000	0.494	119.218	0.225	2.866	699.990	0.424	0.225	2.875
800.000	0.313	60.312	0.150	3.479	799.988	0.427	0.150	3.482
900.000	0.354	79.549	0.341	4.020	899.986	0.119	0.341	4.035
1000.000	0.181	133.762	0.288	4.439	999.985	0.289	0.288	4.448
1100.000	0.329	43.042	0.389	4.749	1099.985	0.378	0.389	4.765
1200.000	0.064	167.835	0.545	4.957	1199.984	0.370	0.545	4.987
1300.000	0.041	107.939	0.480	5.002	1299.984	0.056	0.480	5.025
1400.000	0.296	35.700	0.679	5.187	1399.984	0.286	0.679	5.231
1500.000	0.212	123.617	0.786	5.492	1499.983	0.358	0.786	5.548
1600.000	0.211	280.889	0.718	5.465	1599.983	0.415	0.718	5.512
1700.000	0.386	168.601	0.423	5.350	1699.982	0.506	0.423	5.367
1800.000	0.506	171.819	-0.345	5.480	1799.979	0.123	-0.345	5.491
1900.000	0.503	177.341	-1.220	5.563	1899.975	0.049	-1.220	5.695
2000.000	0.499	138.494	-1.984	5.872	1999.971	0.333	-1.984	6.198
2100.000	0.353	160.984	-2.602	6.261	2099.969	0.219	-2.602	6.780
2200.000	0.952	129.673	-3.424	7.001	2199.962	0.676	-3.424	7.794
2300.000	0.668	136.726	-4.379	8.041	2299.952	0.300	-4.379	9.156
2400.000	0.628	130.523	-5.160	8.857	2399.946	0.081	-5.160	10.251
2500.000	1.174	101.667	-5.724	10.277	2499.933	0.693	-5.724	11.763
2600.000	1.214	126.360	-6.559	12.133	2599.912	0.512	-6.559	13.792
2700.000	0.523	128.099	-7.468	13.345	2699.900	0.691	-7.468	15.293
2800.000	0.877	125.152	-8.191	14.330	2799.893	0.355	-8.191	16.506
2900.000	0.998	130.739	-9.199	15.615	2899.879	0.151	-9.199	18.124
3000.000	0.757	150.879	-10.344	16.596	2999.868	0.388	-10.344	19.556
3100.000	0.748	164.340	-11.550	17.094	3099.859	0.177	-11.550	20.630
3200.000	0.891	156.013	-12.889	17.586	3199.849	0.186	-12.889	21.803
3300.000	0.888	194.086	-14.351	17.714	3299.838	0.580	-14.351	22.797
3400.000	0.865	153.992	-15.781	17.856	3399.827	0.601	-15.781	23.830
3500.000	0.775	129.510	-16.889	18.709	3499.817	0.359	-16.889	25.205

3600.000	0.960	96.473	-17.414	20.063	3599.806	0.524	-17.414	26.567
3700.000	1.047	72.607	-17.236	21.768	3699.791	0.424	-17.236	27.765
3800.000	1.052	71.833	-16.676	23.511	3799.774	0.015	-16.676	28.825
3900.000	1.203	50.786	-15.727	25.197	3899.755	0.438	-15.727	29.702
4000.000	1.190	63.861	-14.605	26.942	3999.734	0.273	-14.605	30.646
4100.000	0.948	64.446	-13.791	28.620	4099.716	0.243	-13.791	31.770
4200.000	1.094	68.279	-13.081	30.253	4199.700	0.162	-13.081	32.960
4300.000	0.405	59.342	-12.548	31.444	4299.691	0.698	-12.548	33.855
4400.000	0.687	73.055	-12.193	32.322	4399.687	0.309	-12.193	34.545
4500.000	0.756	49.464	-11.590	33.397	4499.679	0.302	-11.590	35.350
4600.000	0.349	45.033	-10.946	34.113	4599.674	0.408	-10.946	35.826
4700.000	0.632	308.773	-10.385	33.899	4699.672	0.755	-10.385	35.454
4800.000	1.008	242.946	-10.440	32.685	4799.663	0.946	-10.440	34.312
4900.000	0.738	232.239	-11.234	31.392	4899.651	0.315	-11.234	33.342
5000.000	0.920	233.260	-12.109	30.240	4999.641	0.182	-12.109	32.574
5100.000	0.668	236.488	-12.911	29.111	5099.631	0.256	-12.911	31.845
5200.000	1.019	250.397	-13.531	27.787	5199.620	0.404	-13.531	30.906
5300.000	0.667	244.389	-14.081	26.424	5299.609	0.363	-14.081	29.942
5400.000	0.770	267.324	-14.364	25.228	5399.602	0.303	-14.364	29.031
5500.000	0.416	225.203	-14.651	24.299	5499.597	0.539	-14.651	28.375
5600.000	0.764	261.399	-15.007	23.382	5599.591	0.494	-15.007	27.784
5700.000	0.367	275.633	-15.075	22.404	5699.586	0.418	-15.075	27.003
5800.000	0.671	321.499	-14.585	21.720	5799.583	0.492	-14.585	26.163
5900.000	0.911	325.920	-13.468	20.910	5899.573	0.247	-13.468	24.872
6000.000	0.975	303.201	-12.344	19.753	5999.560	0.377	-12.344	23.293
6100.000	1.168	320.507	-11.092	18.393	6099.543	0.375	-11.092	21.479
6200.000	1.289	307.565	-9.619	16.853	6199.520	0.302	-9.619	19.405
6300.000	1.567	322.775	-7.845	15.134	6299.489	0.468	-7.845	17.047
6400.000	1.615	340.569	-5.427	13.838	6399.451	0.494	-5.427	14.864
6500.000	1.774	327.889	-2.786	12.546	6499.408	0.406	-2.786	12.852
6600.000	1.954	324.377	-0.089	10.731	6599.355	0.212	-0.089	10.731
6700.000	1.810	308.962	2.289	8.510	6699.301	0.524	2.289	8.812
6800.000	1.365	282.116	3.533	6.117	6799.264	0.855	3.533	7.063

0

True North

Cbrg

0.000
62.168
61.433
59.493
73.628
85.770
82.367
85.504
87.529
85.146
86.283
85.314
83.727
84.524
82.546
81.855
82.512
85.481
93.599
102.370
108.672
112.567
116.062
118.575
120.225
119.115
118.394
119.233
119.751
120.503
121.935
124.045
126.237
129.013
131.469
132.074

130.957
128.372
125.348
121.971
118.462
115.728
113.383
111.754
110.668
109.138
107.789
107.032
107.713
109.691
111.823
113.918
115.965
118.053
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121.088
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90.478
74.943
59.991