



Company: Noble Energy

Rig: Production/CoreTech

API # 05-123-31896

Date: 1/9/2014

Surveyor: Randy Holcomb

VS: 0.000

Lat : 40.474

Long: -104.430

Well: Wells Ranch PC AA 22-5

Location: Weld County, Colorado

North Reference: GRID

Convergence: Grid north is 0.69 East of True North

Declination: 8.34

Depth Reference: Ground Level

Elevation: 4741 Feet

Total Depth as Drilled: 6972 Feet

Lat & Long obtained by handheld GPS at wellhead

MS Gyo 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	0.652	5.983	0.566	0.059	99.998	0.652	0.566	0.569	5.983
200.000	0.614	37.428	1.557	0.444	199.992	0.345	1.557	1.619	15.921
300.000	0.348	87.866	1.993	1.073	299.989	0.475	1.993	2.263	28.289
400.000	0.160	136.773	1.903	1.471	399.988	0.271	1.903	2.405	37.717
500.000	0.896	251.838	1.557	0.824	499.984	0.975	1.557	1.762	27.888
600.000	0.984	271.998	1.344	-0.777	599.971	0.340	1.344	1.552	329.972
700.000	0.820	296.330	1.691	-2.276	699.959	0.412	1.691	2.835	306.612
800.000	0.783	289.320	2.234	-3.561	799.949	0.105	2.234	4.204	302.101
900.000	0.704	267.931	2.438	-4.820	899.941	0.286	2.438	5.401	296.828
1000.000	0.622	264.011	2.359	-5.974	999.934	0.094	2.359	6.423	291.549
1100.000	0.603	263.633	2.244	-7.037	1099.928	0.019	2.244	7.386	287.688
1200.000	0.851	257.077	2.020	-8.284	1199.920	0.261	2.020	8.527	283.701
1300.000	0.631	281.473	1.963	-9.547	1299.912	0.380	1.963	9.747	281.618
1400.000	0.444	282.879	2.159	-10.464	1399.908	0.187	2.159	10.685	281.656
1500.000	0.525	291.224	2.411	-11.269	1499.904	0.107	2.411	11.524	282.076
1600.000	0.340	276.352	2.609	-11.991	1599.901	0.215	2.609	12.271	282.277
1700.000	0.122	246.665	2.600	-12.383	1699.900	0.242	2.600	12.653	281.859
1800.000	0.319	188.536	2.283	-12.521	1799.900	0.275	2.283	12.728	280.334
1900.000	0.217	210.936	1.845	-12.660	1899.899	0.144	1.845	12.794	278.293
2000.000	0.410	198.266	1.343	-12.870	1999.897	0.203	1.343	12.940	275.957
2100.000	0.414	182.878	0.642	-13.000	2099.894	0.110	0.642	13.016	272.827
2200.000	0.287	107.716	0.204	-12.779	2199.893	0.440	0.204	12.781	270.916
2300.000	0.834	85.880	0.180	-11.814	2299.888	0.578	0.180	11.815	270.875
2400.000	1.306	70.538	0.612	-10.013	2399.870	0.548	0.612	10.032	273.500
2500.000	1.310	66.070	1.456	-7.894	2499.844	0.102	1.456	8.027	280.447
2600.000	1.084	58.076	2.419	-6.047	2599.823	0.280	2.419	6.513	291.808
2700.000	0.971	67.884	3.239	-4.459	2699.807	0.209	3.239	5.511	305.996
2800.000	0.831	56.558	3.958	-3.068	2799.794	0.226	3.958	5.008	322.213
2900.000	1.000	60.346	4.789	-1.705	2899.781	0.179	4.789	5.083	340.401
3000.000	0.956	67.672	5.537	-0.175	2999.767	0.132	5.537	5.540	358.190
3100.000	1.006	64.359	6.234	1.388	3099.752	0.075	6.234	6.387	12.553
3200.000	0.731	114.382	6.351	2.760	3199.742	0.775	6.351	6.924	23.491
3300.000	0.866	190.917	5.346	3.198	3299.735	0.994	5.346	6.229	30.891
3400.000	1.421	219.794	3.651	2.261	3399.715	0.784	3.651	4.295	31.773
3500.000	1.416	225.653	1.835	0.584	3499.685	0.145	1.835	1.926	17.665
3600.000	1.499	225.968	0.062	-1.239	3599.652	0.084	0.062	1.241	272.878
3700.000	1.592	228.913	-1.760	-3.227	3699.616	0.123	-1.760	3.675	241.393

3800.000	1.697	227.141	-3.680	-5.359	3799.575	0.117	-3.680	6.501	235.524
3900.000	1.732	228.481	-5.689	-7.577	3899.530	0.053	-5.689	9.475	233.097
4000.000	1.191	244.392	-7.140	-9.645	3999.497	0.672	-7.140	12.000	233.488
4100.000	0.945	278.975	-7.460	-11.396	4099.481	0.677	-7.460	13.621	236.790
4200.000	0.796	331.999	-6.719	-12.537	4199.471	0.788	-6.719	14.224	241.812
4300.000	0.983	12.968	-5.270	-12.670	4299.460	0.647	-5.270	13.722	247.417
4400.000	0.918	358.518	-3.633	-12.498	4399.446	0.248	-3.633	13.016	253.793
4500.000	1.544	341.444	-1.555	-12.948	4499.423	0.719	-1.555	13.041	263.153
4600.000	2.064	336.509	1.374	-14.094	4599.373	0.542	1.374	14.161	275.568
4700.000	2.178	314.996	4.369	-16.156	4699.306	0.799	4.369	16.736	285.131
4800.000	2.280	305.152	6.857	-19.125	4799.231	0.396	6.857	20.317	289.724
4900.000	2.279	303.300	9.094	-22.413	4899.152	0.074	9.094	24.188	292.084
5000.000	1.986	311.660	11.338	-25.370	4999.083	0.426	11.338	27.788	294.079
5100.000	1.767	315.396	13.587	-27.747	5099.029	0.251	13.587	30.895	296.090
5200.000	1.358	322.773	15.628	-29.547	5198.992	0.454	15.628	33.425	297.876
5300.000	0.840	338.799	17.255	-30.529	5298.973	0.597	17.255	35.068	299.476
5400.000	0.651	353.900	18.505	-30.855	5398.965	0.271	18.505	35.978	300.953
5500.000	0.645	0.477	19.633	-30.910	5498.958	0.075	19.633	36.618	302.422
5600.000	0.673	21.664	20.742	-30.689	5598.952	0.244	20.742	37.041	304.054
5700.000	0.847	54.544	21.716	-29.870	5698.944	0.462	21.716	36.930	306.018
5800.000	0.981	96.568	22.047	-28.417	5798.932	0.668	22.047	35.967	307.805
5900.000	1.030	104.403	21.725	-26.696	5898.917	0.146	21.725	34.419	309.139
6000.000	0.999	127.276	20.974	-25.132	5998.901	0.403	20.974	32.734	309.847
6100.000	1.133	124.398	19.887	-23.622	6098.884	0.143	19.887	30.879	310.093
6200.000	1.174	150.887	18.434	-22.308	6198.864	0.530	18.434	28.939	309.567
6300.000	0.837	149.856	16.906	-21.443	6298.849	0.337	16.906	27.306	308.254
6400.000	0.773	175.928	15.601	-21.028	6398.839	0.369	15.601	26.184	306.573
6500.000	0.908	181.990	14.136	-21.008	6498.829	0.161	14.136	25.321	303.936
6600.000	0.929	174.358	12.537	-20.955	6598.816	0.124	12.537	24.420	300.891
6700.000	0.939	161.985	10.951	-20.622	6698.803	0.202	10.951	23.350	297.971