



Company: Noble Energy
Rig: Production/Coretech
API # 05-123-32250
Date: 12/27/13
Surveyor: Levi Sheldon
VS: 0.000
Lat : 40.478
Long: -104.420

Well: Wells Ranch PC AA 22-2
Location: Weld County, Colorado
North Reference: GRID
Convergence: GRID North is 0.700 Degrees East
Declination: 8.34
Depth Reference: Ground Level
Elevation: 4,733 Feet
Total Depth as Drilled: 6,935 Feet

Lat & Long obtained by handheld GPS at wellhead

MS 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	0.454	10.876	0.389	0.075	99.999	0.454	0.389	0.396	10.876
200.000	0.546	24.303	1.213	0.346	199.995	0.148	1.213	1.261	15.908
300.000	0.679	21.029	2.200	0.754	299.989	0.138	2.200	2.326	18.926
400.000	0.596	35.296	3.178	1.267	399.983	0.179	3.178	3.421	21.746
500.000	0.526	135.975	3.272	1.887	499.980	0.865	3.272	3.777	29.970
600.000	0.459	191.870	2.550	2.123	599.977	0.465	2.550	3.318	39.785
700.000	0.727	171.186	1.530	2.138	699.972	0.339	1.530	2.629	54.404
800.000	0.717	159.841	0.316	2.451	799.964	0.143	0.316	2.471	82.643
900.000	0.541	183.948	-0.742	2.634	899.958	0.314	-0.742	2.736	105.734
1000.000	0.711	165.637	-1.814	2.755	999.952	0.260	-1.814	3.299	123.363
1100.000	0.360	190.018	-2.724	2.854	1099.948	0.411	-2.724	3.945	133.661
1200.000	0.450	174.879	-3.424	2.835	1199.945	0.139	-3.424	4.445	140.378
1300.000	0.388	165.588	-4.143	2.954	1299.943	0.092	-4.143	5.088	144.509
1400.000	0.335	172.062	-4.760	3.079	1399.941	0.067	-4.760	5.669	147.108
1500.000	0.252	183.667	-5.269	3.105	1499.939	0.102	-5.269	6.116	149.491
1600.000	0.109	184.769	-5.583	3.083	1599.939	0.143	-5.583	6.378	151.093
1700.000	0.244	0.847	-5.465	3.078	1699.939	0.352	-5.465	6.273	150.611
1800.000	0.574	342.548	-4.775	2.931	1799.936	0.351	-4.775	5.603	148.457
1900.000	0.611	330.465	-3.833	2.518	1899.931	0.130	-3.833	4.586	146.700
2000.000	0.692	327.759	-2.859	1.933	1999.924	0.087	-2.859	3.451	145.933
2100.000	0.791	306.727	-1.935	1.058	2099.916	0.288	-1.935	2.205	151.341
2200.000	0.900	293.312	-1.212	-0.217	2199.905	0.225	-1.212	1.231	190.132
2300.000	0.689	278.566	-0.811	-1.532	2299.896	0.292	-0.811	1.733	242.084
2400.000	0.746	279.335	-0.616	-2.768	2399.888	0.059	-0.616	2.836	257.449
2500.000	0.250	291.078	-0.432	-3.615	2499.884	0.504	-0.432	3.641	263.183
2600.000	0.361	331.916	-0.076	-3.967	2599.882	0.237	-0.076	3.968	268.906
2700.000	0.326	338.303	0.467	-4.221	2699.881	0.051	0.467	4.246	276.312
2800.000	0.568	333.532	1.175	-4.547	2799.877	0.244	1.175	4.696	284.493
2900.000	0.595	322.999	2.034	-5.080	2899.872	0.110	2.034	5.472	291.819
3000.000	0.598	348.713	2.960	-5.495	2999.867	0.265	2.960	6.242	298.311
3100.000	0.630	42.310	3.878	-5.227	3099.862	0.554	3.878	6.509	306.570
3200.000	0.936	100.959	4.129	-4.055	3199.854	0.812	4.129	5.787	315.515
3300.000	1.744	118.046	3.258	-1.910	3299.826	0.893	3.258	3.776	329.622
3400.000	2.478	136.411	0.976	0.924	3399.759	0.989	0.976	1.344	43.441
3500.000	2.578	157.548	-2.669	3.274	3499.664	0.932	-2.669	4.224	129.181

3600.000	2.491	172.081	-6.900	4.433	3599.567	0.647	-6.900	8.201	147.283
3700.000	2.132	175.259	-10.907	4.886	3699.485	0.381	-10.907	11.951	155.869
3800.000	2.132	170.753	-14.597	5.338	3799.416	0.168	-14.597	15.542	159.911
3900.000	1.772	178.019	-17.978	5.691	3899.358	0.436	-17.978	18.857	162.435
4000.000	1.085	195.663	-20.435	5.489	3999.327	0.808	-20.435	21.159	164.966
4100.000	0.832	249.783	-21.597	4.552	4099.315	0.901	-21.597	22.072	168.099
4200.000	0.832	298.394	-21.503	3.232	4199.305	0.685	-21.503	21.745	171.453
4300.000	1.001	292.965	-20.817	1.789	4299.293	0.190	-20.817	20.894	175.089
4400.000	0.870	306.743	-20.022	0.376	4399.279	0.259	-20.022	20.026	178.924
4500.000	0.554	294.988	-19.364	-0.670	4499.272	0.346	-19.364	19.375	181.983
4600.000	0.222	212.315	-19.324	-1.213	4599.270	0.570	-19.324	19.362	183.591
4700.000	0.535	128.206	-19.776	-0.950	4699.268	0.558	-19.776	19.799	182.750
4800.000	0.845	127.381	-20.513	0.003	4799.261	0.311	-20.513	20.513	179.992
4900.000	1.162	145.521	-21.796	1.163	4899.245	0.445	-21.796	21.827	176.945
5000.000	1.184	106.847	-22.932	2.726	4999.226	0.777	-22.932	23.094	173.220
5100.000	1.102	96.723	-23.344	4.670	5099.206	0.218	-23.344	23.807	168.687
5200.000	1.265	74.251	-23.157	6.688	5199.185	0.488	-23.157	24.104	163.892
5300.000	1.228	70.657	-22.503	8.761	5299.162	0.086	-22.503	24.148	158.727
5400.000	0.988	98.383	-22.273	10.625	5399.144	0.580	-22.273	24.678	154.497
5500.000	1.146	105.180	-22.661	12.444	5499.126	0.202	-22.661	25.853	151.227
5600.000	1.099	123.206	-23.448	14.212	5599.107	0.355	-23.448	27.419	148.780
5700.000	0.851	164.275	-24.688	15.215	5699.094	0.722	-24.688	29.000	148.354
5800.000	0.849	221.073	-25.961	14.930	5799.085	0.808	-25.961	29.948	150.097
5900.000	0.783	278.343	-26.420	13.767	5899.076	0.784	-26.420	29.792	152.476
6000.000	1.481	316.798	-25.379	12.206	5999.057	0.995	-25.379	28.162	154.314
6100.000	2.384	328.381	-22.665	10.231	6099.000	0.980	-22.665	24.868	155.705
6200.000	2.719	347.894	-18.574	8.643	6198.902	0.926	-18.574	20.487	155.046
6300.000	2.682	8.705	-13.942	8.500	6298.793	0.976	-13.942	16.329	148.631
6400.000	2.601	29.535	-9.655	9.973	6398.689	0.958	-9.655	13.880	134.072
6500.000	1.912	17.565	-6.090	11.595	6498.612	0.832	-6.090	13.097	117.710
6600.000	1.547	5.693	-3.157	12.232	6598.567	0.510	-3.157	12.633	104.471
6650.000	1.672	11.028	-1.769	12.438	6648.547	0.391	-1.769	12.564	98.096

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