



Company: Noble Energy
Rig: Production/Coretech
API # 05-123-31895
Date: 12/27/13
Surveyor: Levi Sheldon
VS: 0.000
Lat : 40.477
Long: -104.425

Well: Wells Ranch PC AA 22-3
Location: Weld County, Colorado
North Reference: GRID
Convergence: GRID North is 0.690 Degrees East
Declination: 8.35
Depth Reference: Ground Level
Elevation: 4,722 Feet
Total Depth as Drilled: 6,956 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	0.405	289.295	0.117	-0.333	99.999	0.405	0.117	0.353	289.295
200.000	0.430	305.405	0.451	-0.972	199.997	0.119	0.451	1.071	294.867
300.000	0.426	328.085	0.983	-1.474	299.994	0.168	0.983	1.772	303.703
400.000	0.701	308.124	1.676	-2.152	399.989	0.334	1.676	2.728	307.920
500.000	1.158	293.634	2.459	-3.559	499.976	0.510	2.459	4.325	304.645
600.000	1.079	309.109	3.458	-5.215	599.957	0.311	3.458	6.257	303.549
700.000	0.893	316.899	4.621	-6.478	699.942	0.229	4.621	7.957	305.503
800.000	0.880	318.931	5.769	-7.515	799.930	0.034	5.769	9.474	307.512
900.000	0.906	321.409	6.966	-8.512	899.918	0.047	6.966	10.999	309.293
1000.000	0.913	325.020	8.237	-9.463	999.905	0.058	8.237	12.545	311.038
1100.000	0.858	319.390	9.458	-10.407	1099.893	0.103	9.458	14.062	312.266
1200.000	0.798	325.933	10.603	-11.284	1199.883	0.112	10.603	15.484	313.218
1300.000	0.674	326.093	11.667	-12.002	1299.875	0.124	11.667	16.738	314.191
1400.000	0.520	321.261	12.509	-12.614	1399.869	0.162	12.509	17.765	314.762
1500.000	0.508	332.690	13.257	-13.101	1499.865	0.103	13.257	18.639	315.340
1600.000	0.419	341.384	13.998	-13.421	1599.862	0.113	13.998	19.393	316.205
1700.000	0.251	13.308	14.558	-13.488	1699.860	0.245	14.558	19.845	317.185
1800.000	0.395	25.967	15.080	-13.287	1799.859	0.160	15.080	20.098	318.618
1900.000	0.338	64.418	15.517	-12.870	1899.857	0.247	15.517	20.160	320.328
2000.000	0.447	61.446	15.831	-12.261	1999.855	0.111	15.831	20.024	322.243
2100.000	0.826	91.385	16.000	-11.198	2099.848	0.492	16.000	19.529	325.012
2200.000	1.062	58.171	16.471	-9.690	2199.835	0.585	16.471	19.110	329.532
2300.000	0.949	42.807	17.568	-8.340	2299.820	0.292	17.568	19.447	334.604
2400.000	0.751	90.116	18.174	-7.123	2399.810	0.705	18.174	19.520	338.598
2500.000	0.645	52.472	18.515	-6.022	2499.803	0.461	18.515	19.469	341.984
2600.000	0.612	64.038	19.091	-5.096	2599.798	0.131	19.091	19.760	345.055
2700.000	0.427	6.421	19.695	-4.574	2699.794	0.526	19.695	20.219	346.925
2800.000	0.425	334.505	20.399	-4.692	2799.791	0.234	20.399	20.932	347.046
2900.000	0.529	316.311	21.068	-5.171	2899.788	0.183	21.068	21.693	346.210
3000.000	0.525	292.402	21.576	-5.913	2999.784	0.218	21.576	22.372	344.673
3100.000	0.670	12.751	22.321	-6.208	3099.780	0.779	22.321	23.168	344.457
3200.000	0.754	11.493	23.535	-5.948	3199.772	0.086	23.535	24.275	345.817
3300.000	1.059	10.752	25.088	-5.645	3299.759	0.305	25.088	25.715	347.320
3400.000	1.057	60.912	26.444	-4.666	3399.744	0.897	26.444	26.852	349.993
3500.000	1.391	99.664	26.689	-2.664	3499.723	0.871	26.689	26.821	354.300

3600.000	1.305	110.727	26.082	-0.403	3599.696	0.274	26.082	26.085	359.116
3700.000	1.470	87.366	25.738	1.943	3699.667	0.585	25.738	25.811	4.318
3800.000	1.475	92.652	25.737	4.511	3799.634	0.136	25.737	26.130	9.940
3900.000	1.491	93.839	25.591	7.094	3899.601	0.034	25.591	26.556	15.494
4000.000	1.778	127.195	24.566	9.628	3999.562	0.978	24.566	26.385	21.402
4100.000	2.370	145.359	21.926	12.040	4099.497	0.878	21.926	25.014	28.771
4200.000	2.753	163.817	17.918	13.885	4199.399	0.904	17.918	22.668	37.772
4300.000	2.639	168.066	13.359	15.030	4299.288	0.230	13.359	20.109	48.368
4400.000	2.676	183.699	8.778	15.356	4399.182	0.723	8.778	17.687	60.246
4500.000	2.754	170.040	4.083	15.620	4499.071	0.650	4.083	16.145	75.352
4600.000	3.550	171.076	-1.342	16.516	4598.919	0.799	-1.342	16.571	94.644
4700.000	3.483	158.339	-7.224	18.118	4698.732	0.782	-7.224	19.505	111.738
4800.000	2.751	147.463	-12.070	20.530	4798.584	0.939	-12.070	23.815	120.453
4900.000	2.535	151.570	-16.038	22.873	4898.478	0.287	-16.038	27.935	125.036
5000.000	2.125	154.849	-19.660	24.714	4998.395	0.431	-19.660	31.580	128.503
5100.000	1.799	132.557	-22.400	26.658	5098.338	0.823	-22.400	34.819	130.039
5200.000	1.530	133.734	-24.384	28.778	5198.295	0.271	-24.384	37.720	130.275
5300.000	1.375	140.069	-26.227	30.513	5298.263	0.223	-26.227	40.235	130.680
5400.000	1.300	145.777	-28.084	31.920	5398.236	0.153	-28.084	42.516	131.342
5500.000	1.303	148.308	-29.989	33.156	5498.210	0.058	-29.989	44.706	132.129
5600.000	1.197	163.483	-31.958	34.050	5598.187	0.346	-31.958	46.698	133.185
5700.000	1.211	169.986	-34.000	34.531	5698.165	0.137	-34.000	48.460	134.557
5800.000	1.009	186.399	-35.915	34.616	5798.146	0.375	-35.915	49.882	136.055
5900.000	0.843	164.778	-37.500	34.711	5898.133	0.383	-37.500	51.099	137.212
6000.000	0.768	177.580	-38.880	34.933	5998.124	0.195	-38.880	52.269	138.061
6100.000	1.012	183.455	-40.432	34.908	6098.112	0.260	-40.432	53.417	139.194
6200.000	0.858	191.093	-42.049	34.711	6198.098	0.198	-42.049	54.525	140.461
6300.000	0.802	164.063	-43.456	34.759	6298.088	0.392	-43.456	55.647	141.345
6400.000	0.594	152.509	-44.589	35.190	6398.081	0.250	-44.589	56.802	141.719
6500.000	0.485	143.478	-45.389	35.681	6498.076	0.138	-45.389	57.735	141.828
6600.000	0.387	131.533	-45.953	36.186	6598.073	0.134	-45.953	58.490	141.781
6650.000	0.396	128.263	-46.172	36.448	6648.072	0.049	-46.172	58.824	141.712

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