



Company: Noble Energy
Rig: Production/Coretech
API # 05-123-31063
Date: 4-3-14
Surveyor: Justin Williams
VS: 0.000
Lat : 40.495
Long: -104.397

Well: Wells Ranch USX AA 1:
Location: Weld County, Colorado
North Reference: GRID
Convergence: GRID North is 0.71 De
Declination: 8.3
Depth Reference: RKB = Ground Level
Elevation: 4829
Total Depth as Drilled: 7026

Lat & Long obtained by handheld GPS at wellhead

MS 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	0.567	155.537	-0.450	0.205	99.998	0.567	-0.450	0.495
200.000	0.537	112.047	-1.076	0.844	199.994	0.410	-1.076	1.368
300.000	0.453	74.414	-1.146	1.659	299.991	0.329	-1.146	2.016
400.000	0.206	209.143	-1.197	1.952	399.990	0.615	-1.197	2.290
500.000	0.176	80.889	-1.330	2.016	499.989	0.344	-1.330	2.415
600.000	0.269	143.487	-1.494	2.307	599.989	0.245	-1.494	2.749
700.000	0.120	251.606	-1.716	2.347	699.988	0.327	-1.716	2.908
800.000	0.379	216.219	-2.016	2.052	799.987	0.289	-2.016	2.877
900.000	0.579	290.542	-2.105	1.383	899.985	0.600	-2.105	2.519
1000.000	0.842	264.040	-2.004	0.179	999.977	0.414	-2.004	2.012
1100.000	0.671	257.963	-2.203	-1.125	1099.968	0.189	-2.203	2.473
1200.000	1.058	258.847	-2.503	-2.603	1199.957	0.387	-2.503	3.611
1300.000	0.732	279.742	-2.574	-4.137	1299.945	0.456	-2.574	4.873
1400.000	0.961	272.831	-2.424	-5.604	1399.934	0.251	-2.424	6.106
1500.000	1.208	272.761	-2.332	-7.495	1499.916	0.247	-2.332	7.850
1600.000	1.747	294.752	-1.643	-9.933	1599.883	0.773	-1.643	10.068
1700.000	2.579	296.199	-0.012	-13.335	1699.811	0.834	-0.012	13.335
1800.000	3.419	293.090	2.151	-18.097	1799.673	0.856	2.151	18.225
1900.000	3.817	298.787	4.924	-23.758	1899.474	0.536	4.924	24.263
2000.000	4.645	304.556	8.823	-30.010	1999.201	0.929	8.823	31.280
2100.000	4.835	301.152	13.300	-36.950	2098.859	0.339	13.300	39.271
2200.000	4.668	302.774	17.682	-43.978	2198.516	0.214	17.682	47.399
2300.000	4.386	299.638	21.776	-50.723	2298.204	0.374	21.776	55.199
2400.000	4.576	303.752	25.883	-57.364	2397.898	0.373	25.883	62.933
2500.000	5.051	307.726	30.793	-64.162	2497.545	0.580	30.793	71.169
2600.000	4.406	309.977	35.955	-70.587	2597.205	0.671	35.955	79.217
2700.000	2.314	313.989	39.825	-74.984	2697.027	2.104	39.825	84.903
2800.000	1.381	317.231	42.112	-77.255	2796.974	0.938	42.112	87.987
2900.000	1.542	315.029	43.948	-79.024	2896.942	0.170	43.948	90.422
3000.000	1.466	309.449	45.712	-80.962	2996.907	0.165	45.712	92.976
3100.000	1.212	308.540	47.184	-82.777	3096.880	0.256	47.184	95.281
3200.000	1.112	304.724	48.396	-84.402	3196.859	0.126	48.396	97.292
3300.000	0.830	294.834	49.253	-85.857	3296.845	0.327	49.253	98.981
3400.000	0.792	310.974	50.010	-87.036	3396.835	0.231	50.010	100.381

3500.000	0.702	277.197	50.540	-88.166	3496.827	0.443	50.540	101.624
3600.000	0.570	269.164	50.610	-89.271	3596.821	0.159	50.610	102.618
3700.000	0.265	259.992	50.562	-89.996	3696.818	0.311	50.562	103.227
3800.000	0.206	310.305	50.638	-90.361	3796.817	0.208	50.638	103.583
3900.000	0.467	262.708	50.703	-90.903	3896.816	0.362	50.703	104.087
4000.000	0.265	320.244	50.828	-91.454	3996.814	0.394	50.828	104.630
4100.000	0.118	327.806	51.093	-91.657	4096.813	0.149	51.093	104.936
4200.000	0.196	336.311	51.337	-91.781	4196.813	0.082	51.337	105.162
4300.000	0.156	22.212	51.620	-91.798	4296.813	0.142	51.620	105.316
4400.000	0.187	205.231	51.599	-91.816	4396.812	0.343	51.599	105.321
4500.000	0.170	356.385	51.600	-91.894	4496.812	0.345	51.600	105.390
4600.000	0.644	318.542	52.169	-92.276	4596.810	0.521	52.169	106.002
4700.000	0.602	305.895	52.898	-93.073	4696.804	0.144	52.898	107.055
4800.000	0.807	275.803	53.277	-94.199	4796.796	0.416	53.277	108.222
4900.000	0.920	258.084	53.183	-95.684	4896.785	0.288	53.183	109.471
5000.000	1.108	260.123	52.851	-97.423	4996.770	0.192	52.851	110.835
5100.000	1.215	254.461	52.401	-99.397	5096.749	0.156	52.401	112.364
5200.000	1.004	247.023	51.775	-101.225	5196.730	0.255	51.775	113.698
5300.000	0.929	242.291	51.056	-102.750	5296.716	0.110	51.056	114.735
5400.000	0.723	260.860	50.579	-104.090	5396.706	0.336	50.579	115.728
5500.000	1.034	287.544	50.751	-105.573	5496.694	0.506	50.751	117.137
5600.000	1.178	324.632	51.860	-107.027	5596.677	0.716	51.860	118.930
5700.000	1.116	293.553	53.087	-108.515	5696.658	0.617	53.087	120.804
5800.000	0.896	274.498	53.538	-110.186	5796.643	0.397	53.538	122.504
5900.000	1.129	293.288	53.988	-111.870	5896.627	0.402	53.988	124.216
6000.000	1.298	305.685	55.038	-113.695	5996.605	0.312	55.038	126.316
6100.000	0.383	287.605	55.800	-114.933	6096.593	0.942	55.800	127.763
6200.000	0.145	349.440	56.026	-115.275	6196.592	0.340	56.026	128.169
6300.000	0.529	62.306	56.364	-114.889	6296.591	0.506	56.364	127.971
6400.000	0.933	85.484	56.643	-113.669	6396.583	0.492	56.643	127.000
6500.000	1.286	93.823	56.632	-111.738	6496.564	0.388	56.632	125.270
6600.000	1.538	86.737	56.634	-109.278	6596.533	0.306	56.634	123.082
6700.000	1.836	77.922	57.045	-106.372	6696.490	0.395	57.045	120.703

1-16P

0

degrees East of True North

Cbrg

0.000

155.537

141.896

124.638

121.519

123.416

122.937

126.181

134.496

146.691

174.901

207.050

226.117

238.118

246.610

252.718

260.607

269.950

276.779

281.709

286.384

289.795

291.903

293.234

294.286

295.638

296.993

297.973

298.595

299.080

299.450

299.684

299.830

299.841

299.881

299.823
299.550
299.328
299.266
299.151
299.064
299.137
299.220
299.350
299.335
299.315
299.482
299.612
299.492
299.066
298.480
297.798
297.089
296.423
295.916
295.674
295.853
296.069
295.914
295.762
295.831
295.897
295.920
296.132
296.488
296.877
297.395
298.204