



**Company:** Noble Energy  
**Rig:** Production/Coretech  
**API #** 05-123-24310  
**Date:** 1-9-14  
**Surveyor:** Justin Williams  
**VS:** 0.000  
**Lat :** 40.484  
**Long:** -104.463

**Well:** Peppler 17-31  
**Location:** Weld County, Colorado  
**North Reference:** GRID  
**Convergence:** GRID North is 0.67 De  
**Declination:** 8.36  
**Depth Reference:** Ground Level  
**Elevation:** 4671  
**Total Depth as Drilled:** 6948

**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	0.280	227.792	-0.164	-0.181	100.000	0.280	-0.164	0.245
200.000	0.462	264.617	-0.367	-0.764	199.998	0.291	-0.367	0.847
300.000	0.159	230.138	-0.493	-1.272	299.996	0.343	-0.493	1.364
400.000	0.345	287.471	-0.492	-1.666	399.995	0.292	-0.492	1.737
500.000	0.519	251.377	-0.546	-2.382	499.992	0.314	-0.546	2.444
600.000	0.102	132.108	-0.750	-2.745	599.991	0.575	-0.750	2.846
700.000	0.435	239.744	-1.001	-3.007	699.990	0.476	-1.001	3.169
800.000	0.434	236.131	-1.403	-3.649	799.987	0.027	-1.403	3.910
900.000	0.350	219.689	-1.849	-4.159	899.985	0.139	-1.849	4.551
1000.000	0.261	257.206	-2.135	-4.577	999.984	0.214	-2.135	5.050
1100.000	0.211	259.449	-2.219	-4.980	1099.983	0.051	-2.219	5.452
1200.000	0.703	205.863	-2.805	-5.429	1199.980	0.603	-2.805	6.111
1300.000	0.264	222.628	-3.527	-5.852	1299.976	0.457	-3.527	6.833
1400.000	0.192	238.413	-3.784	-6.150	1399.975	0.095	-3.784	7.221
1500.000	0.345	336.112	-3.596	-6.415	1499.974	0.416	-3.596	7.354
1600.000	0.329	5.552	-3.036	-6.509	1599.973	0.172	-3.036	7.182
1700.000	0.325	340.547	-2.483	-6.575	1699.971	0.142	-2.483	7.029
1800.000	0.325	18.811	-1.947	-6.578	1799.970	0.213	-1.947	6.860
1900.000	0.066	311.590	-1.639	-6.530	1899.969	0.306	-1.639	6.733
2000.000	0.308	68.087	-1.501	-6.324	1999.969	0.343	-1.501	6.500
2100.000	0.492	109.769	-1.546	-5.672	2099.966	0.332	-1.546	5.878
2200.000	0.870	112.135	-1.977	-4.565	2199.959	0.379	-1.977	4.975
2300.000	0.734	131.326	-2.686	-3.381	2299.949	0.299	-2.686	4.318
2400.000	0.636	129.826	-3.464	-2.474	2399.942	0.100	-3.464	4.257
2500.000	0.566	129.909	-4.137	-1.668	2499.937	0.070	-4.137	4.460
2600.000	0.629	126.818	-4.783	-0.850	2599.931	0.070	-4.783	4.858
2700.000	0.787	122.781	-5.483	0.167	2699.924	0.166	-5.483	5.486
2800.000	0.506	62.072	-5.649	1.134	2799.918	0.697	-5.649	5.761
2900.000	0.654	106.363	-5.603	2.072	2899.914	0.458	-5.603	5.973
3000.000	0.375	104.543	-5.846	2.936	2999.909	0.279	-5.846	6.542
3100.000	0.273	65.373	-5.829	3.470	3099.908	0.238	-5.829	6.783
3200.000	0.405	265.059	-5.760	3.334	3199.907	0.668	-5.760	6.656
3300.000	1.315	279.416	-5.603	1.850	3299.895	0.928	-5.603	5.900
3400.000	1.422	297.176	-4.848	-0.385	3399.867	0.435	-4.848	4.864
3500.000	1.577	275.507	-4.150	-2.859	3499.833	0.584	-4.150	5.039

3600.000	2.184	267.915	-4.087	-6.133	3599.779	0.655	-4.087	7.370
3700.000	2.300	266.907	-4.265	-10.041	3699.703	0.122	-4.265	10.909
3800.000	2.443	259.053	-4.778	-14.137	3799.617	0.355	-4.778	14.922
3900.000	2.467	257.693	-5.641	-18.332	3899.526	0.063	-5.641	19.180
4000.000	2.302	261.135	-6.409	-22.419	3999.439	0.218	-6.409	23.317
4100.000	1.916	277.030	-6.514	-26.062	4099.372	0.697	-6.514	26.864
4200.000	1.899	285.652	-5.863	-29.316	4199.317	0.287	-5.863	29.896
4300.000	1.611	313.204	-4.454	-31.935	4299.272	0.881	-4.454	32.245
4400.000	1.839	343.089	-1.957	-33.426	4399.228	0.916	-1.957	33.484
4500.000	2.294	4.518	1.574	-33.735	4499.164	0.889	1.574	33.772
4600.000	2.953	20.769	5.978	-32.664	4599.060	0.988	5.978	33.207
4700.000	3.182	26.564	10.869	-30.509	4698.917	0.385	10.869	32.388
4800.000	3.124	32.087	15.661	-27.821	4798.766	0.309	15.661	31.926
4900.000	3.016	31.549	20.211	-24.997	4898.623	0.112	20.211	32.145
5000.000	2.943	34.524	24.568	-22.166	4998.487	0.171	24.568	33.089
5100.000	2.463	31.224	28.520	-19.597	5098.376	0.504	28.520	34.604
5200.000	1.591	33.909	31.510	-17.709	5198.312	0.878	31.510	36.145
5300.000	0.873	63.264	33.004	-16.254	5298.290	0.934	33.004	36.790
5400.000	0.255	92.084	33.339	-15.352	5398.284	0.661	33.339	36.703
5500.000	0.112	144.740	33.250	-15.073	5498.284	0.207	33.250	36.507
5600.000	0.135	167.256	33.055	-14.991	5598.284	0.053	33.055	36.296
5700.000	0.755	138.277	32.449	-14.526	5698.280	0.640	32.449	35.551
5800.000	0.398	194.024	31.620	-14.172	5798.276	0.625	31.620	34.650
5900.000	0.628	313.412	31.659	-14.654	5898.273	0.894	31.659	34.886
6000.000	1.304	334.697	33.065	-15.539	5998.259	0.754	33.065	36.534
6100.000	1.677	345.057	35.508	-16.403	6098.225	0.459	35.508	39.114
6200.000	2.247	350.293	38.855	-17.111	6198.166	0.596	38.855	42.455
6300.000	2.810	354.558	43.227	-17.674	6298.068	0.593	43.227	46.700
6400.000	3.286	356.069	48.525	-18.103	6397.927	0.482	48.525	51.792
6500.000	3.316	354.409	54.263	-18.581	6497.761	0.100	54.263	57.356
6600.000	2.643	3.986	59.442	-18.702	6597.626	0.835	59.442	62.315
6700.000	2.055	7.274	63.521	-18.315	6697.541	0.603	63.521	66.109

0

degrees East of True North

Cbrg
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0.000
227.792
244.360
248.797
253.554
257.096
254.723
251.596
248.974
246.030
244.992
245.982
242.673
238.925
238.400
240.724
244.996
249.314
253.515
255.907
256.651
254.756
246.587
231.538
215.530
201.964
190.077
178.257
168.645
159.706
153.328
149.235
149.935
161.723
184.542
214.562

236.319  
246.988  
251.327  
252.896  
254.046  
255.967  
258.691  
262.061  
266.650  
272.671  
280.371  
289.609  
299.376  
308.957  
317.942  
325.506  
330.664  
333.780  
335.275  
335.614  
335.606  
335.884  
335.859  
335.162  
334.829  
335.206  
336.232  
337.762  
339.542  
341.098  
342.535  
343.916