



Company: Noble Energy
Rig: Production/ V.E.S
API # 05-123-20172
Date: 5/1/2013
Surveyor: Jay Hinman
VS: 0.000
Lat : 40.40031
Long: -104.53014

Well: Loustalet 42-15
Location: Weld County, Colorado
North Reference: GRID
Convergence: Grid North is 0.63 Deg
Declination: 8.49
Depth Reference: Ground Level
Elevation: 4595'
Total Depth as Drilled: 7050'

Lat & Long obtained by handheld GPS at wellhead

HA 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
100.000	0.502	19.782	0.413	0.148	99.999	0.502	0.413	0.438
200.000	0.506	297.836	1.031	-0.094	199.996	0.662	1.031	1.036
300.000	1.134	357.585	2.226	-0.527	299.987	0.981	2.226	2.288
400.000	2.327	359.644	5.244	-0.581	399.939	1.195	5.244	5.277
500.000	2.822	346.363	9.667	-1.174	499.839	0.772	9.667	9.738
600.000	2.915	353.718	14.587	-2.033	599.714	0.379	14.587	14.728
700.000	3.226	345.726	19.842	-3.005	699.571	0.528	19.842	20.068
800.000	2.831	347.064	24.975	-4.251	799.431	0.401	24.975	25.334
900.000	3.051	344.996	29.952	-5.493	899.299	0.245	29.952	30.451
1000.000	3.045	344.278	35.079	-6.902	999.158	0.039	35.079	35.752
1100.000	3.269	349.227	40.437	-8.154	1099.006	0.353	40.437	41.250
1200.000	3.198	348.571	45.972	-9.240	1198.847	0.080	45.972	46.891
1300.000	3.036	354.230	51.341	-10.059	1298.699	0.348	51.341	52.317
1400.000	2.847	350.261	56.424	-10.745	1398.567	0.278	56.424	57.438
1500.000	2.342	352.313	60.897	-11.439	1498.465	0.514	60.897	61.962
1600.000	2.231	349.732	64.837	-12.059	1598.385	0.152	64.837	65.949
1700.000	2.242	5.433	68.699	-12.221	1698.310	0.611	68.699	69.778
1800.000	2.281	2.143	72.635	-11.961	1798.232	0.136	72.635	73.613
1900.000	2.402	4.355	76.713	-11.728	1898.148	0.151	76.713	77.604
2000.000	2.392	359.279	80.889	-11.595	1998.061	0.212	80.889	81.716
2100.000	2.105	7.468	84.798	-11.382	2097.984	0.430	84.798	85.558
2200.000	1.952	349.051	88.291	-11.467	2197.922	0.667	88.291	89.033
2300.000	2.003	353.833	91.702	-11.978	2297.863	0.173	91.702	92.481
2400.000	2.415	3.199	95.543	-12.049	2397.789	0.546	95.543	96.300
2500.000	2.939	7.088	100.191	-11.615	2497.679	0.554	100.191	100.862
2600.000	3.218	11.697	105.484	-10.729	2597.535	0.373	105.484	106.029
2700.000	3.060	17.278	110.782	-9.367	2697.385	0.344	110.782	111.177
2800.000	2.559	13.098	115.506	-8.069	2797.265	0.541	115.506	115.787
2900.000	2.181	11.312	119.546	-7.189	2897.179	0.386	119.546	119.762
3000.000	1.533	358.293	122.749	-6.856	2997.126	0.769	122.749	122.940
3100.000	1.327	354.595	125.239	-7.005	3097.095	0.226	125.239	125.435
3200.000	0.843	15.461	127.101	-6.918	3197.077	0.617	127.101	127.289
3300.000	0.752	42.356	128.295	-6.280	3297.068	0.382	128.295	128.449
3400.000	1.108	74.374	129.040	-4.907	3397.055	0.616	129.040	129.134

3500.000	1.250	68.379	129.703	-2.962	3497.034	0.188	129.703	129.736
3600.000	1.277	63.292	130.606	-0.952	3597.010	0.115	130.606	130.609
3700.000	1.104	66.941	131.484	0.930	3696.988	0.189	131.484	131.487
3800.000	1.137	73.318	132.146	2.768	3796.969	0.129	132.146	132.175
3900.000	0.955	74.943	132.648	4.523	3896.952	0.185	132.648	132.725
4000.000	0.727	101.608	132.737	5.949	3996.942	0.447	132.737	132.870
4100.000	0.511	114.390	132.425	6.977	4096.936	0.255	132.425	132.608
4200.000	0.452	147.687	131.907	7.594	4196.933	0.282	131.907	132.125
4300.000	0.540	120.890	131.331	8.210	4296.929	0.245	131.331	131.588
4400.000	0.140	73.973	131.123	8.732	4396.927	0.456	131.123	131.413
4500.000	0.851	95.886	131.081	9.589	4496.923	0.723	131.081	131.431
4600.000	0.695	109.886	130.798	10.898	4596.914	0.244	130.798	131.251
4700.000	0.936	150.457	129.882	11.870	4696.905	0.609	129.882	130.423
4800.000	1.930	180.631	127.487	12.254	4796.873	1.216	127.487	128.075
4900.000	1.682	210.712	124.541	11.486	4896.826	0.967	124.541	125.070
5000.000	1.291	215.716	122.365	10.079	4996.792	0.411	122.365	122.780
5100.000	0.872	244.489	121.123	8.734	5096.775	0.673	121.123	121.437
5200.000	0.719	272.546	120.823	7.421	5196.765	0.414	120.823	121.050
5300.000	0.721	248.920	120.624	6.207	5296.758	0.295	120.624	120.784
5400.000	0.365	190.213	120.085	5.564	5396.754	0.616	120.085	120.213
5500.000	1.108	143.840	118.991	6.078	5496.745	0.896	118.991	119.146
5600.000	1.244	138.463	117.398	7.368	5596.724	0.175	117.398	117.629
5700.000	1.227	139.436	115.771	8.785	5696.701	0.027	115.771	116.104
5800.000	1.657	149.880	113.707	10.207	5796.669	0.502	113.707	114.164
5900.000	1.546	151.269	111.273	11.581	5896.630	0.117	111.273	111.874
6000.000	1.782	155.766	108.672	12.868	5996.588	0.269	108.672	109.431
6100.000	1.827	170.276	105.683	13.775	6096.539	0.458	105.683	106.577
6200.000	2.571	166.733	101.929	14.559	6196.465	0.757	101.929	102.964
6300.000	2.994	174.767	97.145	15.312	6296.347	0.574	97.145	98.344
6400.000	3.562	172.118	91.467	15.976	6396.183	0.588	91.467	92.851
6500.000	4.316	163.421	84.783	17.476	6495.947	0.959	84.783	86.565
6600.000	4.628	170.432	77.198	19.220	6595.643	0.629	77.198	79.555
6700.000	4.047	180.818	69.691	19.841	6695.358	0.975	69.691	72.460

0

rees East of True North

Cbrg

0.000

19.782

354.789

346.692

353.680

353.076

352.067

351.389

350.340

349.608

348.870

348.599

348.636

348.915

349.218

349.362

349.464

349.913

350.649

351.308

351.843

352.355

352.600

352.558

352.813

353.387

354.192

355.167

356.004

356.558

356.803

356.799

356.885

357.198

357.822

358.692
359.582
0.405
1.200
1.953
2.566
3.016
3.295
3.577
3.810
4.184
4.763
5.222
5.490
5.269
4.709
4.125
3.515
2.946
2.653
2.924
3.591
4.339
5.129
5.942
6.753
7.426
8.129
8.957
9.908
11.647
13.981
15.891