



Company: Noble Energy
Rig: Production/VES
API # 05-123-19425

Date: 6/6/13

Surveyor: Levi Sheldon

VS: 0.000

Lat : 40.39815

Long: -104.853

Well: Bass N 14-9

Location: Weld County, Colorado

North Reference: GRID

Convergence: Grid North is .420 Degrees East of

Declination: 8.64

Depth Reference: Ground Level

Elevation: 4929 Feet

Total Depth as Drilled: 7353 Feet

Lat & Long obtained by handheld GPS at wellhead

Gryo 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	0.229	153.929	-0.180	0.088	100.000	0.229	-0.180	0.200	153.929
200.000	0.335	1.666	-0.067	0.184	199.999	0.549	-0.067	0.196	110.046
300.000	0.349	90.778	0.221	0.497	299.998	0.480	0.221	0.544	66.043
400.000	0.253	330.422	0.409	0.692	399.997	0.524	0.409	0.804	59.427
500.000	0.805	62.305	0.928	1.205	499.994	0.852	0.928	1.521	52.415
600.000	0.646	61.525	1.523	2.323	599.986	0.159	1.523	2.777	56.750
700.000	0.794	42.052	2.306	3.282	699.978	0.284	2.306	4.011	54.909
800.000	0.514	67.590	2.992	4.161	799.972	0.398	2.992	5.125	54.287
900.000	0.032	344.016	3.190	4.569	899.970	0.512	3.190	5.572	55.076
1000.000	0.244	279.293	3.251	4.351	999.970	0.232	3.251	5.432	53.230
1100.000	0.433	270.242	3.287	3.763	1099.968	0.196	3.287	4.997	48.860
1200.000	0.425	262.907	3.243	3.017	1199.965	0.056	3.243	4.430	42.935
1300.000	0.789	277.393	3.286	1.967	1299.960	0.392	3.286	3.830	30.910
1400.000	0.917	336.429	4.108	0.965	1399.950	0.848	4.108	4.220	13.221
1500.000	1.133	316.411	5.557	-0.037	1499.934	0.415	5.557	5.557	359.624
1600.000	1.000	329.850	7.028	-1.156	1599.917	0.282	7.028	7.122	350.657
1700.000	1.137	328.228	8.626	-2.117	1699.900	0.141	8.626	8.882	346.210
1800.000	0.886	307.616	9.941	-3.252	1799.885	0.439	9.941	10.460	341.887
1900.000	1.536	281.602	10.683	-5.177	1899.862	0.836	10.683	11.871	334.143
2000.000	1.435	313.002	11.806	-7.406	1999.830	0.810	11.806	13.937	327.899
2100.000	1.514	309.975	13.509	-9.335	2099.797	0.111	13.509	16.421	325.356
2200.000	1.094	271.616	14.385	-11.301	2199.773	0.944	14.385	18.293	321.846
2300.000	0.857	291.047	14.681	-12.953	2299.759	0.403	14.681	19.578	318.577
2400.000	1.016	271.413	14.971	-14.538	2399.746	0.356	14.971	20.869	315.840
2500.000	0.867	305.406	15.431	-16.041	2499.733	0.569	15.431	22.259	313.889
2600.000	1.445	285.460	16.205	-17.873	2599.712	0.696	16.205	24.126	312.199
2700.000	0.837	298.733	16.893	-19.729	2699.692	0.658	16.893	25.973	310.572
2800.000	1.334	318.412	18.115	-21.142	2799.674	0.614	18.115	27.841	310.590
2900.000	1.803	312.605	20.051	-23.073	2899.637	0.494	20.051	30.568	310.991
3000.000	1.399	313.771	21.960	-25.112	2999.597	0.405	21.960	33.360	311.169
3100.000	2.085	312.559	24.035	-27.334	3099.551	0.686	24.035	36.398	311.325
3200.000	1.673	291.574	25.802	-30.031	3199.498	0.795	25.802	39.593	310.668
3300.000	1.891	294.768	27.029	-32.886	3299.449	0.239	27.029	42.569	309.417
3400.000	2.478	308.563	29.068	-36.075	3399.377	0.785	29.068	46.329	308.861

3500.000	2.672	299.636	31.569	-39.792	3499.276	0.445	31.569	50.793	308.427
3600.000	2.527	315.518	34.294	-43.362	3599.175	0.732	34.294	55.285	308.340
3700.000	2.376	310.660	37.218	-46.480	3699.083	0.256	37.218	59.544	308.686
3800.000	1.821	290.759	39.132	-49.538	3799.017	0.908	39.132	63.130	308.306
3900.000	1.803	297.584	40.424	-52.418	3898.967	0.216	40.424	66.195	307.638
4000.000	2.154	315.445	42.491	-55.131	3998.908	0.705	42.491	69.605	307.623
4100.000	2.306	320.574	45.384	-57.727	4098.833	0.251	45.384	73.431	308.174
4200.000	2.331	318.674	48.465	-60.347	4198.751	0.081	48.465	77.399	308.768
4300.000	2.305	308.192	51.236	-63.271	4298.670	0.424	51.236	81.414	309.000
4400.000	1.797	323.017	53.731	-65.794	4398.606	0.730	53.731	84.947	309.237
4500.000	1.580	313.149	55.926	-67.743	4498.563	0.362	55.926	87.846	309.542
4600.000	1.987	334.122	58.429	-69.505	4598.515	0.763	58.429	90.801	310.052
4700.000	1.785	358.118	61.545	-70.313	4698.462	0.808	61.545	93.443	311.196
4800.000	1.657	12.119	64.515	-70.060	4798.418	0.438	64.515	95.240	312.641
4900.000	1.881	12.490	67.532	-69.402	4898.370	0.224	67.532	96.836	314.217
5000.000	1.222	348.293	70.178	-69.263	4998.334	0.916	70.178	98.602	315.376
5100.000	1.801	1.398	72.793	-69.441	5098.299	0.671	72.793	100.603	316.350
5200.000	1.809	343.518	75.878	-69.851	5198.250	0.561	75.878	103.134	317.368
5300.000	1.293	318.466	78.236	-71.047	5298.214	0.840	78.236	105.682	317.757
5400.000	1.645	283.471	79.416	-73.191	5398.183	0.945	79.416	107.999	317.336
5500.000	1.288	253.200	79.425	-75.663	5498.152	0.840	79.425	109.696	316.390
5600.000	1.914	241.375	78.300	-78.204	5598.112	0.705	78.300	110.665	315.035
5700.000	1.380	262.498	77.343	-80.864	5698.072	0.800	77.343	111.897	313.725
5800.000	1.468	300.738	77.841	-83.158	5798.043	0.936	77.841	113.905	313.108
5900.000	1.064	282.339	78.693	-85.166	5898.019	0.568	78.693	115.956	312.738
6000.000	1.508	276.367	79.038	-87.380	5997.993	0.463	79.038	117.823	312.130
6100.000	0.946	269.651	79.179	-89.513	6097.970	0.580	79.179	119.507	311.494
6200.000	1.482	309.375	79.994	-91.338	6197.949	0.967	79.994	121.415	311.212
6300.000	1.228	299.934	81.348	-93.266	6297.921	0.337	81.348	123.758	311.096
6400.000	1.400	340.781	83.037	-94.596	6397.897	0.931	83.037	125.871	311.277
6500.000	1.236	298.780	84.710	-95.943	6497.873	0.957	84.710	127.988	311.442
6600.000	1.710	308.118	86.150	-98.062	6597.839	0.530	86.150	130.529	311.300
6700.000	1.315	289.337	87.451	-100.319	6697.805	0.629	87.451	133.084	311.080
6800.000	0.458	275.789	87.871	-101.799	6797.792	0.876	87.871	134.478	310.800
6900.000	0.762	240.103	87.580	-102.774	6897.787	0.473	87.580	135.028	310.436
7000.000	2.175	233.680	86.125	-104.879	6997.751	1.420	86.125	135.709	309.392
7100.000	4.803	246.461	83.328	-110.246	7097.559	2.725	83.328	138.195	307.083
7160.000	5.108	249.313	81.382	-115.048	7157.334	0.654	81.382	140.922	305.275

True North