



Company: Noble Energy

Rig: Production/Coretech

API # 05-123-21947

Date: 3/21/2014

Surveyor: Randy Holcomb

VS: 0.000

Lat : 40.487

Long: -104.628

Well: Dinner 14-13

Location: Weld County, Colorado

North Reference: GRID

Convergence: Grid north is 0.56 East of True North

Declination: 8.43

Depth Reference: Ground Level

Elevation: 4740 Feet

Total Depth as Drilled: 7240 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	0.779	189.092	-0.671	-0.107	99.997	0.779	-0.671	0.680	189.092
200.000	0.837	188.349	-2.065	-0.321	199.987	0.059	-2.065	2.090	188.832
300.000	0.572	180.213	-3.287	-0.429	299.979	0.283	-3.287	3.315	187.433
400.000	0.678	145.120	-4.271	-0.092	399.974	0.390	-4.271	4.272	181.236
500.000	1.401	128.304	-5.515	1.206	499.957	0.777	-5.515	5.645	167.664
600.000	1.089	133.170	-6.923	2.859	599.933	0.329	-6.923	7.490	157.562
700.000	1.491	119.128	-8.207	4.689	699.908	0.509	-8.207	9.452	150.260
800.000	1.498	124.681	-9.584	6.900	799.874	0.145	-9.584	11.810	144.247
900.000	1.180	127.361	-10.953	8.793	899.846	0.324	-10.953	14.046	141.240
1000.000	1.425	133.786	-12.437	10.509	999.821	0.285	-12.437	16.283	139.804
1100.000	1.297	118.546	-13.839	12.401	1099.793	0.382	-13.839	18.582	138.137
1200.000	1.074	126.707	-14.940	14.146	1199.771	0.279	-14.940	20.575	136.562
1300.000	1.026	123.557	-15.995	15.644	1299.754	0.075	-15.995	22.374	135.635
1400.000	0.964	137.900	-17.114	16.955	1399.740	0.256	-17.114	24.091	135.269
1500.000	1.127	120.657	-18.240	18.365	1499.723	0.352	-18.240	25.884	134.805
1600.000	0.902	121.633	-19.154	19.880	1599.707	0.226	-19.154	27.606	133.934
1700.000	0.619	133.670	-19.940	20.941	1699.699	0.323	-19.940	28.916	133.597
1800.000	0.270	107.402	-20.384	21.557	1799.695	0.395	-20.384	29.668	133.398
1900.000	0.340	73.209	-20.368	22.066	1899.694	0.192	-20.368	30.030	132.709
2000.000	0.338	49.575	-20.091	22.575	1999.692	0.139	-20.091	30.221	131.669
2100.000	0.218	341.855	-19.720	22.740	2099.691	0.325	-19.720	30.099	130.931
2200.000	0.453	358.853	-19.143	22.673	2199.690	0.253	-19.143	29.674	130.176
2300.000	0.400	21.945	-18.424	22.795	2299.687	0.178	-18.424	29.310	128.946
2400.000	0.198	318.282	-17.971	22.811	2399.686	0.359	-17.971	29.040	128.232
2500.000	0.681	246.884	-18.076	22.149	2499.683	0.646	-18.076	28.589	129.217
2600.000	0.288	227.978	-18.477	21.416	2599.679	0.419	-18.477	28.285	130.787
2700.000	0.708	228.790	-19.053	20.764	2699.675	0.420	-19.053	28.181	132.538
2800.000	0.510	262.590	-19.517	19.858	2799.670	0.402	-19.517	27.844	134.504
2900.000	0.573	219.040	-19.963	19.101	2899.666	0.406	-19.963	27.630	136.265
3000.000	0.693	235.434	-20.695	18.288	2999.660	0.216	-20.695	27.618	138.534
3100.000	0.547	197.983	-21.492	17.642	3099.654	0.421	-21.492	27.806	140.619
3200.000	0.525	218.130	-22.307	17.212	3199.650	0.189	-22.307	28.176	142.347
3300.000	0.458	223.688	-22.957	16.653	3299.646	0.083	-22.957	28.361	144.043
3400.000	0.349	185.154	-23.549	16.350	3399.644	0.285	-23.549	28.668	145.228
3500.000	0.283	98.153	-23.887	16.567	3499.643	0.437	-23.887	29.069	145.257
3600.000	0.567	84.311	-23.873	17.304	3599.640	0.301	-23.873	29.484	144.064
3700.000	0.846	100.393	-23.957	18.522	3699.633	0.339	-23.957	30.282	142.290

3800.000	0.971	107.175	-24.340	20.058	3799.620	0.165	-24.340	31.540	140.509
3900.000	0.967	109.879	-24.877	21.662	3899.606	0.046	-24.877	32.986	138.953
4000.000	0.962	111.845	-25.477	23.235	3999.591	0.033	-25.477	34.481	137.635
4100.000	1.044	158.378	-26.637	24.350	4099.578	0.796	-26.637	36.089	137.568
4200.000	1.324	188.826	-28.626	24.509	4199.557	0.678	-28.626	37.684	139.431
4300.000	1.290	204.441	-30.792	23.866	4299.532	0.357	-30.792	38.958	142.223
4400.000	1.487	227.630	-32.692	22.441	4399.503	0.591	-32.692	39.653	145.533
4500.000	1.775	239.887	-34.343	20.143	4499.463	0.451	-34.343	39.814	149.608
4600.000	1.755	262.592	-35.318	17.284	4599.416	0.695	-35.318	39.320	153.923
4700.000	2.332	279.343	-35.185	13.758	4699.353	0.825	-35.185	37.779	158.643
4800.000	2.381	279.056	-34.528	9.699	4799.269	0.050	-34.528	35.864	164.309
4900.000	2.044	277.274	-33.975	5.879	4899.194	0.343	-33.975	34.480	170.183
5000.000	1.887	277.306	-33.540	2.477	4999.135	0.158	-33.540	33.631	175.777
5100.000	1.534	259.188	-33.581	-0.471	5099.091	0.641	-33.581	33.585	180.804
5200.000	1.274	251.401	-34.187	-2.840	5199.061	0.322	-34.187	34.305	184.748
5300.000	1.127	254.824	-34.799	-4.842	5299.039	0.164	-34.799	35.134	187.921
5400.000	1.210	233.962	-35.678	-6.645	5399.019	0.431	-35.678	36.291	190.550
5500.000	1.475	248.422	-36.772	-8.696	5498.991	0.428	-36.772	37.787	193.305
5600.000	1.541	251.793	-37.666	-11.171	5598.957	0.111	-37.666	39.288	196.519
5700.000	0.868	228.979	-38.583	-13.020	5698.935	0.814	-38.583	40.721	198.647
5800.000	0.554	205.481	-39.516	-13.799	5798.927	0.422	-39.516	41.856	199.249
5900.000	0.625	157.669	-40.458	-13.799	5898.922	0.482	-40.458	42.746	198.834
6000.000	0.659	130.345	-41.335	-13.154	5998.916	0.305	-41.335	43.377	197.653
6100.000	0.801	165.547	-42.384	-12.541	6098.909	0.462	-42.384	44.200	196.483
6200.000	0.756	125.219	-43.441	-11.828	6198.900	0.538	-43.441	45.023	195.231
6300.000	0.948	130.109	-44.354	-10.657	6298.889	0.205	-44.354	45.617	193.510
6400.000	0.828	144.504	-45.475	-9.605	6398.877	0.252	-45.475	46.478	191.926
6500.000	0.842	147.395	-46.682	-8.790	6498.867	0.044	-46.682	47.502	190.664
6600.000	0.821	159.474	-47.971	-8.143	6598.856	0.176	-47.971	48.658	189.634
6700.000	0.492	161.242	-49.049	-7.754	6698.849	0.330	-49.049	49.658	188.983
6800.000	0.585	235.897	-49.742	-8.038	6798.846	0.657	-49.742	50.387	189.180
6900.000	1.161	294.856	-49.602	-9.381	6898.836	0.995	-49.602	50.481	190.709