



Company: Noble Energy
Rig: Production/ V.E.S
API # 05-123-30260
Date: 3/18/2013
Surveyor: Jay Hinman
VS: n/a
Lat : 40.39787
Long: -104.53369

Well: Glover USX B 15-02CD
Location: Weld County, Colorado
North Reference: GRID
Convergence: Grid North is -0.62 of
Declination: 8.5
Depth Reference: Ground Level
Elevation: 4573'
Total Depth as Drilled: 7243'

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	0.188	151.808	-0.144	0.077	100.000	0.188	-0.144	0.164
200.000	0.281	179.197	-0.534	0.158	199.999	0.143	-0.534	0.556
300.000	0.397	169.375	-1.119	0.225	299.997	0.129	-1.119	1.141
400.000	0.347	315.140	-1.244	0.076	399.996	0.711	-1.244	1.246
500.000	1.381	351.659	0.163	-0.313	499.984	1.121	0.163	0.353
600.000	2.614	355.176	3.627	-0.680	599.922	1.239	3.627	3.691
700.000	4.661	357.053	9.959	-1.080	699.715	2.050	9.959	10.017
800.000	6.397	356.245	19.576	-1.654	799.246	1.738	19.576	19.646
900.000	8.434	357.847	32.465	-2.294	898.404	2.047	32.465	32.546
1000.000	10.681	358.819	49.061	-2.761	997.010	2.253	49.061	49.138
1100.000	12.946	359.921	69.530	-2.967	1094.885	2.275	69.530	69.593
1200.000	14.113	5.696	92.864	-1.773	1192.113	1.784	92.864	92.881
1300.000	17.449	359.641	119.997	-0.656	1288.337	3.716	119.997	119.999
1400.000	19.099	358.389	151.345	-1.210	1383.291	1.696	151.345	151.350
1500.000	21.074	356.871	185.654	-2.651	1477.205	2.042	185.654	185.673
1600.000	23.926	356.990	223.863	-4.698	1569.584	2.852	223.863	223.913
1700.000	25.072	354.768	265.215	-7.695	1660.581	1.471	265.215	265.327
1800.000	25.708	354.458	307.903	-11.721	1750.921	0.650	307.903	308.126
1900.000	25.160	355.321	350.679	-15.550	1841.229	0.661	350.679	351.023
2000.000	24.627	351.725	392.487	-20.283	1931.943	1.604	392.487	393.011
2100.000	24.604	351.448	433.691	-26.377	2022.855	0.118	433.691	434.493
2200.000	24.184	351.561	474.539	-32.479	2113.928	0.422	474.539	475.650
2300.000	23.429	353.114	514.539	-37.869	2205.419	0.981	514.539	515.931
2400.000	23.584	355.659	554.225	-41.767	2297.123	1.027	554.225	555.796
2500.000	24.235	354.444	594.601	-45.268	2388.542	0.816	594.601	596.321
2600.000	25.626	358.368	636.649	-47.872	2479.228	2.160	636.649	638.447
2700.000	27.971	356.680	681.684	-49.846	2568.483	2.465	681.684	683.504
2800.000	30.045	356.375	730.085	-52.787	2655.933	2.079	730.085	731.990
2900.000	28.797	355.882	779.093	-56.100	2743.035	1.271	779.093	781.110
3000.000	29.836	355.911	827.930	-59.604	2830.227	1.039	827.930	830.073
3100.000	29.387	356.284	877.226	-62.968	2917.167	0.485	877.226	879.483
3200.000	27.158	356.060	924.485	-66.127	3005.232	2.232	924.485	926.847
3300.000	24.622	355.530	968.028	-69.319	3095.188	2.547	968.028	970.507
3400.000	23.176	353.615	1008.355	-73.131	3186.613	1.641	1008.355	1011.003
3500.000	22.211	354.593	1046.728	-77.101	3278.871	1.036	1046.728	1049.564

3600.000	22.300	356.700	1084.486	-79.974	3371.423	0.803	1084.486	1087.431
3700.000	24.855	356.551	1124.412	-82.331	3463.067	2.555	1124.412	1127.422
3800.000	27.082	355.334	1168.083	-85.447	3552.966	2.290	1168.083	1171.204
3900.000	28.012	355.867	1214.193	-88.991	3641.629	0.962	1214.193	1217.450
4000.000	28.484	355.985	1261.402	-92.353	3729.720	0.475	1261.402	1264.778
4100.000	27.611	356.293	1308.314	-95.521	3817.975	0.885	1308.314	1311.796
4200.000	27.001	355.846	1354.080	-98.664	3906.831	0.643	1354.080	1357.670
4300.000	27.001	357.964	1399.408	-101.115	3995.933	0.962	1399.408	1403.056
4400.000	26.638	355.149	1444.433	-103.818	4085.180	1.321	1444.433	1448.159
4500.000	26.044	357.621	1488.706	-106.624	4174.799	1.247	1488.706	1492.520
4600.000	25.763	356.683	1532.337	-108.793	4264.753	0.497	1532.337	1536.194
4700.000	25.866	356.819	1575.812	-111.261	4354.774	0.119	1575.812	1579.735
4800.000	24.944	358.454	1618.673	-113.040	4445.104	1.158	1618.673	1622.615
4900.000	24.959	0.302	1660.851	-113.498	4535.771	0.780	1660.851	1664.724
5000.000	24.709	358.166	1702.840	-114.056	4626.526	0.931	1702.840	1706.655
5100.000	23.916	353.356	1743.869	-117.070	4717.665	2.132	1743.869	1747.794
5200.000	25.907	355.213	1785.777	-121.239	4808.358	2.138	1785.777	1789.888
5300.000	26.535	356.390	1829.840	-124.468	4898.068	0.816	1829.840	1834.068
5400.000	25.935	355.824	1873.943	-127.467	4987.766	0.650	1873.943	1878.273
5500.000	24.125	356.866	1916.162	-130.177	5078.372	1.863	1916.162	1920.579
5600.000	23.094	352.218	1956.003	-133.950	5170.008	2.127	1956.003	1960.585
5700.000	22.707	355.588	1994.680	-138.091	5262.131	1.367	1994.680	1999.454
5800.000	20.222	357.160	2031.191	-140.432	5355.189	2.550	2031.191	2036.040
5900.000	17.389	350.015	2063.180	-143.881	5449.854	3.646	2063.180	2068.191
6000.000	15.711	351.563	2091.291	-148.458	5545.708	1.735	2091.291	2096.554
6100.000	16.917	356.854	2119.213	-151.243	5641.685	1.913	2119.213	2124.604
6200.000	17.558	356.106	2148.790	-153.066	5737.193	0.679	2148.790	2154.235
6300.000	17.140	354.648	2178.511	-155.465	5832.644	0.603	2178.511	2184.051
6400.000	16.417	354.105	2207.240	-158.291	5928.386	0.740	2207.240	2212.908
6500.000	16.301	352.844	2235.221	-161.491	6024.338	0.374	2235.221	2241.047
6600.000	16.295	350.661	2262.989	-165.515	6120.320	0.612	2262.989	2269.034
6700.000	15.093	347.868	2289.562	-170.528	6216.592	1.419	2289.562	2295.903
6800.000	15.383	348.524	2315.289	-175.904	6313.076	0.338	2315.289	2321.962
6900.000	14.702	350.009	2340.785	-180.744	6409.649	0.783	2340.785	2347.753
7000.000	13.291	357.685	2364.771	-183.410	6506.686	2.329	2364.771	2371.873
7100.000	13.482	357.077	2387.899	-184.469	6603.969	0.237	2387.899	2395.013
7175.000	12.756	358.857	2404.908	-185.080	6677.012	1.108	2404.908	2412.020

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True North

Cbrg

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151.808

163.489

168.608

176.527

297.463

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