



Company: Noble Energy
Rig: Production / CoreTech
API # 05-123-30546
Date: 10/8/2013
Surveyor: CJ Hines
VS: 0.000
Lat : 40.329
Long: -104.788

Well: Five Rivers USX K #09-02D
Location: Weld County, Colorado
North Reference: GRID
Convergence: Grid north is 0.46 Deg East of True
Declination: 8.55
Depth Reference: Ground Level
Elevation: 4698
Total Depth as Drilled: 7770

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	0.419	356.225	0.365	-0.024	99.999	0.419	0.365	0.366	356.225
200.000	0.405	336.752	1.055	-0.188	199.997	0.140	1.055	1.071	349.903
300.000	0.644	353.740	1.939	-0.389	299.992	0.283	1.939	1.977	348.661
400.000	0.668	348.552	3.069	-0.566	399.986	0.064	3.069	3.121	349.554
500.000	0.728	353.583	4.272	-0.753	499.978	0.086	4.272	4.338	350.010
600.000	0.780	33.506	5.471	-0.448	599.970	0.517	5.471	5.490	355.320
700.000	1.984	28.491	7.560	0.754	699.939	1.209	7.560	7.598	5.694
800.000	4.342	29.805	12.367	3.462	799.780	2.358	12.367	12.843	15.636
900.000	7.414	28.818	21.307	8.454	899.242	3.073	21.307	22.923	21.642
1000.000	9.672	27.910	34.384	15.497	998.127	2.262	34.384	37.715	24.261
1100.000	11.712	28.124	50.761	24.215	1096.385	2.041	50.761	56.241	25.503
1200.000	13.878	29.114	70.192	34.835	1193.896	2.177	70.192	78.361	26.395
1300.000	15.512	28.407	92.433	47.033	1290.622	1.643	92.433	103.711	26.968
1400.000	16.118	33.277	115.800	61.011	1386.841	1.459	115.800	130.889	27.783
1500.000	18.050	37.507	139.698	78.062	1482.428	2.297	139.698	160.029	29.196
1600.000	20.372	41.564	165.016	99.047	1576.857	2.677	165.016	192.459	30.973
1700.000	20.981	44.836	190.736	123.219	1670.418	1.306	190.736	227.075	32.863
1800.000	21.590	47.181	215.937	149.338	1763.598	1.046	215.937	262.546	34.667
1900.000	22.473	58.183	238.528	179.087	1856.334	4.215	238.528	298.275	36.899
2000.000	23.372	62.385	257.800	212.907	1948.443	1.867	257.800	334.350	39.552
2100.000	25.031	59.121	277.854	248.643	2039.655	2.131	277.854	372.862	41.824
2200.000	23.981	59.118	299.143	284.242	2130.645	1.050	299.143	412.650	43.537
2300.000	22.108	61.506	318.553	318.225	2222.663	2.093	318.553	450.270	44.970
2400.000	22.460	60.174	337.031	351.335	2315.195	0.615	337.031	486.853	46.190
2500.000	26.831	61.518	357.304	387.761	2406.064	4.407	357.304	527.281	47.341
2600.000	26.827	61.905	378.693	427.504	2495.300	0.175	378.693	571.111	48.465
2700.000	27.640	60.717	400.666	467.643	2584.214	0.978	400.666	615.811	49.411
2800.000	29.052	59.429	424.362	508.783	2672.222	1.538	424.362	662.528	50.169
2900.000	27.342	61.599	447.637	549.893	2760.354	1.993	447.637	709.057	50.853
3000.000	27.355	62.569	469.144	590.487	2849.177	0.446	469.144	754.169	51.533
3100.000	28.557	60.998	491.318	631.785	2937.508	1.410	491.318	800.341	52.129
3200.000	28.519	58.862	515.252	673.123	3025.360	1.021	515.252	847.691	52.567
3300.000	26.520	59.435	538.952	712.784	3114.041	2.017	538.952	893.605	52.906
3400.000	25.822	60.072	561.170	750.882	3203.789	0.752	561.170	937.410	53.227
3500.000	24.630	60.510	582.295	787.896	3294.251	1.207	582.295	979.718	53.534

3600.000	24.622	61.279	602.563	824.303	3385.156	0.321	602.563	1021.057	53.833
3700.000	22.760	61.417	621.830	859.560	3476.725	1.863	621.830	1060.903	54.117
3800.000	21.172	63.028	639.276	892.642	3569.463	1.698	639.276	1097.946	54.391
3900.000	21.562	63.193	655.754	925.137	3662.590	0.394	655.754	1133.972	54.670
4000.000	24.648	59.250	674.708	959.468	3754.564	3.451	674.708	1172.949	54.885
4100.000	26.390	58.836	696.872	996.408	3844.804	1.752	696.872	1215.919	55.032
4200.000	27.064	58.967	720.101	1034.918	3934.120	0.676	720.101	1260.794	55.170
4300.000	24.832	59.841	742.381	1072.572	4024.034	2.264	742.381	1304.431	55.311
4400.000	23.424	61.946	762.280	1108.272	4115.296	1.650	762.280	1345.116	55.479
4500.000	24.749	65.890	780.180	1144.923	4206.593	2.084	780.180	1385.471	55.728
4600.000	23.945	62.000	798.259	1181.950	4297.705	1.793	798.259	1426.262	55.966
4700.000	24.594	62.651	817.346	1218.351	4388.867	0.702	817.346	1467.117	56.144
4800.000	25.408	60.894	837.342	1255.579	4479.498	1.102	837.342	1509.179	56.301
4900.000	23.466	65.482	856.043	1292.446	4570.543	2.714	856.043	1550.234	56.482
5000.000	23.472	61.222	873.894	1328.019	4662.277	1.696	873.894	1589.756	56.653
5100.000	22.835	59.600	893.301	1362.211	4754.223	0.902	893.301	1628.989	56.744
5200.000	24.049	60.176	913.254	1396.625	4845.968	1.236	913.254	1668.710	56.819
5300.000	24.304	60.976	933.372	1432.297	4937.198	0.415	933.372	1709.578	56.909
5400.000	22.492	59.586	953.042	1466.790	5028.971	1.894	953.042	1749.217	56.986
5500.000	20.594	57.244	972.243	1498.080	5121.983	2.084	972.243	1785.917	57.017
5600.000	17.873	56.475	990.238	1525.669	5216.392	2.733	990.238	1818.856	57.014
5700.000	15.779	58.985	1005.721	1550.118	5312.107	2.216	1005.721	1847.793	57.024
5800.000	13.452	59.855	1018.570	1571.832	5408.864	2.338	1018.570	1873.003	57.056
5900.000	12.203	61.129	1029.514	1591.146	5506.367	1.281	1029.514	1895.164	57.096
6000.000	9.803	62.268	1038.580	1607.939	5604.522	2.409	1038.580	1914.188	57.141
6100.000	8.120	61.404	1045.923	1621.677	5703.297	1.688	1045.923	1929.712	57.179
6200.000	5.166	60.310	1051.534	1631.792	5802.615	2.957	1051.534	1941.254	57.202
6300.000	3.333	56.165	1055.383	1638.118	5902.336	1.858	1055.383	1948.657	57.208
6400.000	2.537	59.180	1058.136	1642.433	6002.204	0.810	1058.136	1953.776	57.208
6500.000	1.722	53.637	1060.161	1645.544	6102.134	0.840	1060.161	1957.487	57.208
6600.000	1.034	51.101	1061.618	1647.456	6202.105	0.690	1061.618	1959.884	57.202
6700.000	0.784	31.436	1062.769	1648.515	6302.092	0.396	1062.769	1961.398	57.191
6800.000	0.512	348.925	1063.791	1648.787	6402.086	0.534	1063.791	1962.180	57.170
6900.000	0.672	352.082	1064.810	1648.620	6502.081	0.163	1064.810	1962.592	57.142
7000.000	0.320	349.244	1065.665	1648.487	6602.077	0.352	1065.665	1962.945	57.119
7100.000	0.562	341.781	1066.406	1648.282	6702.074	0.248	1066.406	1963.174	57.098
7200.000	0.695	278.724	1066.963	1647.529	6802.069	0.667	1066.963	1962.846	57.072
7300.000	0.616	269.447	1067.050	1646.392	6902.063	0.132	1067.050	1961.938	57.052
7400.000	0.279	350.760	1067.285	1645.815	7002.060	0.637	1067.285	1961.582	57.037
7500.000	0.392	330.497	1067.823	1645.607	7102.058	0.162	1067.823	1961.701	57.021

North