



COMPANY/RIG: Noble Energy/Production/CoreTech
WELL/API: Pioneer Y 08-08/05-123-31012
DECLINATION: 8.08 Degrees
TD AS DRILLED: 7770 Feet
COUNTY/STATE: Weld/Colorado
VS-Azi: 0.000 Degrees
Latitude: 40.15437, Longitude: -104.56832
Grid North = True North -0.60 degs (NAD 27)
Grid Correction Applied = -0.60 degs



DEPTH REFERENCE : RKB = GL Elevation = 4912

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyrosurvey.ut

Minimum Curvature Method

Report Date/Time: 6/15/2017 / 14:15

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

HENDERSON, COLORADO

303-853-4976

Surveyor: JUSTIN WILLIAMS / Pioneer Y 08-08

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	****
100.000	0.511	356.049	99.999	0.445	-0.031	0.445	0.446	356.049	0.511
200.000	0.308	317.257	199.996	1.088	-0.244	1.088	1.115	347.371	0.333
300.000	0.529	295.254	299.994	1.482	-0.844	1.482	1.705	330.349	0.270
400.000	0.545	293.280	399.989	1.867	-1.698	1.867	2.523	317.713	0.024
500.000	0.522	291.838	499.985	2.224	-2.557	2.224	3.389	311.014	0.026
600.000	0.475	287.985	599.981	2.522	-3.375	2.522	4.213	306.768	0.057
700.000	0.404	300.256	699.978	2.827	-4.074	2.827	4.959	304.763	0.118
800.000	0.194	306.098	799.977	3.105	-4.515	3.105	5.480	304.514	0.212
900.000	0.319	266.225	899.976	3.186	-4.929	3.186	5.870	302.878	0.210
1000.000	0.294	300.353	999.974	3.298	-5.429	3.298	6.352	301.279	0.181
1100.000	0.468	304.481	1099.972	3.659	-5.987	3.659	7.017	301.432	0.176
1200.000	0.543	293.839	1199.968	4.082	-6.757	4.082	7.894	301.135	0.120
1300.000	0.558	291.750	1299.964	4.453	-7.642	4.453	8.845	300.231	0.025
1400.000	0.401	301.495	1399.960	4.816	-8.392	4.816	9.676	299.852	0.176
1500.000	0.496	312.309	1499.957	5.290	-9.010	5.290	10.449	300.419	0.127
1600.000	0.623	317.149	1599.952	5.980	-9.700	5.980	11.395	301.654	0.136

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1700.000	0.728	312.629	1699.945	6.809	-10.537	6.809	12.546	302.870	0.118
1800.000	0.755	308.891	1799.937	7.653	-11.518	7.653	13.828	303.602	0.055
1900.000	0.674	318.892	1899.929	8.509	-12.417	8.509	15.053	304.423	0.148
2000.000	0.830	303.728	1999.921	9.354	-13.406	9.354	16.347	304.907	0.252
2100.000	0.705	315.309	2099.912	10.194	-14.441	10.194	17.677	305.219	0.198
2200.000	0.703	314.200	2199.904	11.059	-15.314	11.059	18.890	305.837	0.014
2300.000	0.580	302.158	2299.898	11.756	-16.182	11.756	20.001	305.999	0.182
2400.000	0.476	304.224	2399.894	12.259	-16.954	12.259	20.922	305.871	0.106
2500.000	0.647	288.790	2499.889	12.675	-17.831	12.675	21.877	305.405	0.227
2600.000	0.479	308.000	2599.884	13.114	-18.696	13.114	22.836	305.048	0.251
2700.000	0.531	316.104	2699.880	13.706	-19.347	13.706	23.709	305.315	0.088
2800.000	0.765	337.190	2799.874	14.655	-19.927	14.655	24.735	306.332	0.330
2900.000	1.045	339.105	2899.861	16.122	-20.511	16.122	26.088	308.168	0.282
3000.000	0.844	347.443	2999.848	17.692	-20.996	17.692	27.456	310.119	0.243
3100.000	0.844	349.418	3099.837	19.135	-21.291	19.135	28.626	311.947	0.029
3200.000	0.901	328.189	3199.826	20.527	-21.841	20.527	29.973	313.224	0.326
3300.000	0.577	314.707	3299.817	21.550	-22.614	21.550	31.237	313.620	0.366
3400.000	0.097	176.170	3399.816	21.820	-22.966	21.820	31.679	313.535	0.653
3500.000	0.621	171.628	3499.813	21.200	-22.881	21.200	31.193	312.815	0.525
3600.000	0.786	160.846	3599.806	20.015	-22.577	20.015	30.172	311.558	0.211
3700.000	1.070	163.312	3699.793	18.474	-22.084	18.474	28.792	309.913	0.287
3800.000	1.098	162.312	3799.775	16.667	-21.525	16.667	27.223	307.750	0.034
3900.000	1.122	137.720	3899.757	15.029	-20.575	15.029	25.480	306.146	0.473
4000.000	0.956	134.533	3999.740	13.720	-19.322	13.720	23.698	305.377	0.175
4100.000	0.747	139.410	4099.729	12.640	-18.303	12.640	22.244	304.628	0.222
4200.000	0.802	139.635	4199.720	11.612	-17.426	11.612	20.940	303.677	0.056
4300.000	0.547	108.625	4299.713	10.926	-16.520	10.926	19.806	303.479	0.437
4400.000	0.844	121.658	4399.706	10.387	-15.441	10.387	18.609	303.928	0.335
4500.000	1.107	123.607	4499.691	9.466	-14.009	9.466	16.907	304.045	0.265
4600.000	1.334	116.211	4599.669	8.417	-12.161	8.417	14.790	304.688	0.276
4700.000	1.002	99.392	4699.648	7.760	-10.254	7.760	12.859	307.118	0.474
4800.000	0.734	81.777	4799.637	7.709	-8.757	7.709	11.667	311.359	0.375
4900.000	0.507	100.450	4899.631	7.720	-7.688	7.720	10.895	315.121	0.302
5000.000	0.231	159.631	4999.629	7.451	-7.183	7.451	10.350	316.051	0.436
5100.000	0.361	191.418	5099.628	6.953	-7.175	6.953	9.991	314.100	0.205
5200.000	0.483	183.057	5199.625	6.223	-7.260	6.223	9.562	310.601	0.136
5300.000	0.398	167.556	5299.622	5.463	-7.208	5.463	9.044	307.158	0.146
5400.000	0.336	140.563	5399.620	4.897	-6.947	4.897	8.500	305.184	0.181
5500.000	0.429	113.199	5499.618	4.524	-6.417	4.524	7.851	305.184	0.202

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5600.000	0.332	62.854	5599.616	4.508	-5.815	4.508	7.358	307.787	0.335
5700.000	0.477	32.248	5699.613	4.992	-5.335	4.992	7.307	313.098	0.255
5800.000	0.514	30.129	5799.610	5.732	-4.888	5.732	7.534	319.546	0.042
5900.000	0.615	18.770	5899.605	6.628	-4.490	6.628	8.006	325.886	0.150
6000.000	0.561	15.125	5999.600	7.609	-4.190	7.609	8.686	331.162	0.065
6100.000	0.564	22.364	6099.595	8.537	-3.875	8.537	9.376	335.590	0.071
6200.000	0.383	20.736	6199.591	9.306	-3.569	9.306	9.967	339.018	0.181
6300.000	0.440	39.898	6299.589	9.913	-3.204	9.913	10.418	342.088	0.148
6400.000	0.636	32.523	6399.584	10.676	-2.660	10.676	11.002	346.011	0.207
6500.000	0.427	36.459	6499.580	11.443	-2.140	11.443	11.641	349.408	0.212
6600.000	0.230	356.425	6599.578	11.942	-1.931	11.942	12.098	350.815	0.291
6700.000	0.113	71.089	6699.578	12.174	-1.850	12.174	12.314	351.358	0.227
6800.000	0.293	347.962	6799.577	12.456	-1.810	12.456	12.587	351.731	0.301
6900.000	0.100	238.791	6899.577	12.660	-1.938	12.660	12.808	351.295	0.339
7000.000	0.136	319.055	6999.577	12.705	-2.091	12.705	12.876	350.653	0.155
7100.000	0.187	238.113	7099.577	12.709	-2.308	12.709	12.916	349.708	0.213
7200.000	0.415	245.383	7199.575	12.472	-2.775	12.472	12.777	347.454	0.231
7300.000	0.448	211.693	7299.572	11.988	-3.310	11.988	12.436	344.563	0.252
7400.000	0.291	227.559	7399.570	11.483	-3.704	11.483	12.066	342.124	0.186
7450.000	0.539	240.687	7449.569	11.282	-4.002	11.282	11.971	340.468	0.527