



COMPANY/RIG: Noble Energy/Production/VES
WELL/API: Camolo Red D 27-02J/05-123-16624
DECLINATION: 8.05 Degrees
TD AS DRILLED: 7645 Feet
COUNTY/STATE: Weld/Colorado
VS-Azi: 0.000 Degrees
Latitude: 40.20091, Longitude: -104.54103
Grid North = True North -0.62 degs (NAD 27)
Grid Correction Applied = -0.62 degs



DEPTH REFERENCE : RKB = GL Elevation = 4846

DRILLOG GYRO SURVEY CALCULATIONS

Filename: mvgyrosurvey.ut

Minimum Curvature Method

Report Date/Time: 9/7/2017 / 14:15

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

HENDERSON, COLORADO

303-853-4976

Surveyor: JUSTIN WILLIAMS / Camolo Red D 27-02J

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	0.459	36.657	99.999	0.322	0.239	0.322	0.401	36.657	0.459
200.000	0.262	16.161	199.997	0.863	0.542	0.863	1.019	32.145	0.232
300.000	0.317	2.861	299.996	1.359	0.620	1.359	1.493	24.519	0.086
400.000	0.275	40.085	399.994	1.818	0.788	1.818	1.981	23.430	0.193
500.000	0.310	164.251	499.994	1.741	1.016	1.741	2.016	30.258	0.517
600.000	0.560	97.248	599.991	1.419	1.574	1.419	2.119	47.964	0.523
700.000	0.664	107.582	699.986	1.182	2.611	1.182	2.866	65.644	0.152
800.000	0.591	133.584	799.980	0.651	3.537	0.651	3.597	79.566	0.291
900.000	0.796	122.783	899.973	-0.080	4.495	-0.080	4.496	91.026	0.243
1000.000	0.803	110.751	999.963	-0.705	5.735	-0.705	5.779	97.010	0.168
1100.000	0.593	107.987	1099.955	-1.114	6.883	-1.114	6.973	99.189	0.213
1200.000	0.427	84.002	1199.951	-1.234	7.747	-1.234	7.844	99.054	0.267
1300.000	0.555	96.962	1299.948	-1.254	8.598	-1.254	8.689	98.299	0.169
1400.000	0.368	90.052	1399.945	-1.313	9.400	-1.313	9.491	97.953	0.195
1500.000	0.351	86.543	1499.943	-1.295	10.027	-1.295	10.110	97.360	0.028
1600.000	0.412	29.947	1599.941	-0.965	10.512	-0.965	10.556	95.247	0.366

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	0.108	332.054	1699.940	-0.571	10.647	-0.571	10.662	93.067	0.366
1800.000	0.168	11.554	1799.939	-0.343	10.632	-0.343	10.637	91.849	0.109
1900.000	0.404	35.129	1899.938	0.089	10.864	0.089	10.864	89.531	0.258
2000.000	0.351	55.101	1999.936	0.552	11.318	0.552	11.331	87.206	0.141
2100.000	0.275	56.185	2099.934	0.861	11.768	0.861	11.800	85.816	0.077
2200.000	0.059	68.333	2199.934	1.013	12.015	1.013	12.058	85.180	0.217
2300.000	0.269	117.755	2299.934	0.923	12.271	0.923	12.306	85.700	0.235
2400.000	0.223	39.324	2399.933	0.964	12.603	0.964	12.640	85.627	0.313
2500.000	0.475	52.728	2499.931	1.365	13.056	1.365	13.127	84.030	0.263
2600.000	0.663	19.727	2599.926	2.161	13.581	2.161	13.752	80.959	0.370
2700.000	0.865	26.171	2699.917	3.384	14.109	3.384	14.509	76.515	0.219
2800.000	1.082	23.736	2799.903	4.926	14.822	4.926	15.619	71.618	0.220
2900.000	1.020	29.359	2899.886	6.566	15.639	6.566	16.962	67.225	0.120
3000.000	1.198	0.779	2999.868	8.387	16.090	8.387	18.145	62.468	0.574
3100.000	0.945	334.714	3099.851	10.178	15.752	10.178	18.754	57.132	0.542
3200.000	0.667	343.567	3199.841	11.482	15.235	11.482	19.077	52.996	0.304
3300.000	0.517	343.401	3299.836	12.473	14.941	12.473	19.463	50.146	0.150
3400.000	0.676	3.994	3399.830	13.494	14.854	13.494	20.068	47.746	0.265
3500.000	0.385	324.752	3499.826	14.357	14.701	14.357	20.549	45.678	0.450
3600.000	0.458	329.688	3599.824	14.976	14.306	14.976	20.711	43.688	0.081
3700.000	0.431	308.448	3699.821	15.555	13.810	15.555	20.800	41.599	0.166
3800.000	0.562	331.451	3799.817	16.219	13.281	16.219	20.963	39.311	0.236
3900.000	0.600	325.642	3899.812	17.083	12.751	17.083	21.317	36.737	0.070
4000.000	0.630	327.194	3999.806	17.977	12.157	17.977	21.702	34.068	0.034
4100.000	0.595	0.063	4099.801	18.958	11.860	18.958	22.362	32.029	0.348
4200.000	0.833	357.845	4199.793	20.203	11.833	20.203	23.414	30.358	0.239
4300.000	0.568	316.903	4299.786	21.291	11.467	21.291	24.183	28.307	0.549
4350.000	0.933	322.249	4349.781	21.794	11.049	21.794	24.435	26.883	0.743