



COMPANY/RIG: Noble Energy/Production/VES
WELL/API: Camolo Red D 27-06/05-123-17008
DECLINATION: 8.05 Degrees
TD AS DRILLED: 7195 Feet
COUNTY/STATE: Weld/Colorado
VS-Azi: 0.000 Degrees
Latitude: 40.19841, Longitude: 0.00000
Grid North = True North -0.62 degs (NAD 27)
Grid Correction Applied = -0.62 degs



DEPTH REFERENCE : RKB = GL Elevation = 4854

DRILLOG GYRO SURVEY CALCULATIONS

Filename: gyrosurvey.ut

Minimum Curvature Method

Report Date/Time: 9/5/2017 / 11:11

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

HENDERSON, COLORADO

303-853-4976

Surveyor: JUSTIN WILLIAMS / Camolo Red D 27-06

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	0.391	259.505	99.999	-0.062	-0.335	-0.062	0.341	259.505	0.391
200.000	0.308	250.595	199.997	-0.213	-0.924	-0.213	0.948	256.991	0.099
300.000	0.159	193.358	299.997	-0.437	-1.209	-0.437	1.285	250.115	0.259
400.000	0.206	212.139	399.996	-0.724	-1.337	-0.724	1.520	241.545	0.076
500.000	0.221	108.502	499.996	-0.938	-1.250	-0.938	1.562	233.110	0.336
600.000	0.516	310.722	599.995	-0.705	-1.408	-0.705	1.575	243.403	0.725
700.000	0.298	103.344	699.994	-0.471	-1.497	-0.471	1.569	252.521	0.793
800.000	0.407	329.810	799.993	-0.224	-1.422	-0.224	1.440	261.038	0.649
900.000	0.351	79.429	899.991	0.139	-1.300	0.139	1.307	276.100	0.620
1000.000	0.228	168.583	999.991	0.000	-0.959	0.000	0.959	269.979	0.416
1100.000	0.188	237.663	1099.990	-0.283	-1.058	-0.283	1.095	255.009	0.238
1200.000	0.561	98.858	1199.989	-0.446	-0.713	-0.446	0.841	237.949	0.713
1300.000	0.738	110.747	1299.982	-0.750	0.373	-0.750	0.837	153.548	0.222
1400.000	0.868	109.756	1399.972	-1.234	1.688	-1.234	2.091	126.161	0.131
1500.000	0.987	140.713	1499.960	-2.156	2.947	-2.156	3.652	126.197	0.508
1600.000	1.132	147.211	1599.943	-3.653	4.027	-3.653	5.437	132.215	0.188

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	0.685	133.832	1699.930	-4.898	4.993	-4.898	6.994	134.447	0.492
1800.000	1.160	149.827	1799.917	-6.187	5.933	-6.187	8.572	136.199	0.536
1900.000	0.586	159.595	1899.905	-7.541	6.620	-7.541	10.034	138.720	0.591
2000.000	0.258	284.524	1999.903	-7.963	6.581	-7.963	10.331	140.431	0.763
2100.000	0.562	14.171	2099.901	-7.432	6.483	-7.432	9.862	138.899	0.617
2200.000	1.324	13.907	2199.887	-5.835	6.881	-5.835	9.022	130.298	0.762
2300.000	1.374	30.500	2299.860	-3.681	7.767	-3.681	8.595	115.359	0.392
2400.000	1.837	40.052	2399.821	-1.421	9.407	-1.421	9.513	98.591	0.534
2500.000	1.936	55.871	2499.767	0.754	11.837	0.754	11.861	86.356	0.528
2600.000	1.835	65.842	2599.713	2.357	14.696	2.357	14.884	80.889	0.343
2700.000	2.069	64.422	2699.655	3.792	17.785	3.792	18.185	77.965	0.239
2800.000	1.987	88.392	2799.594	4.620	21.147	4.620	21.646	77.677	0.846
2900.000	1.861	100.989	2899.538	4.359	24.474	4.359	24.859	79.901	0.440
3000.000	1.427	132.785	2999.499	3.204	26.982	3.204	27.171	83.229	0.993
3100.000	0.708	162.032	3099.481	1.770	28.086	1.770	28.142	86.394	0.880
3200.000	0.908	228.278	3199.473	0.655	27.685	0.655	27.693	88.645	0.899
3300.000	1.349	268.671	3299.455	0.100	25.917	0.100	25.917	89.779	0.882
3400.000	1.161	309.468	3399.433	0.716	23.959	0.716	23.969	88.287	0.892
3500.000	0.388	339.703	3499.424	1.678	23.059	1.678	23.120	85.839	0.848
3600.000	0.644	67.122	3599.421	2.213	23.459	2.213	23.564	84.610	0.736
3700.000	0.558	89.595	3699.415	2.435	24.463	2.435	24.584	84.315	0.249
3800.000	0.620	83.322	3799.410	2.501	25.487	2.501	25.610	84.395	0.089
3900.000	0.731	80.578	3899.403	2.669	26.653	2.669	26.787	84.282	0.116
4000.000	0.689	89.905	3999.395	2.774	27.884	2.774	28.022	84.318	0.123
4100.000	0.232	125.591	4099.392	2.657	28.650	2.657	28.773	84.701	0.519
4200.000	0.641	337.894	4199.390	3.058	28.604	3.058	28.767	83.899	0.846
4300.000	0.764	355.945	4299.383	4.241	28.347	4.241	28.662	81.492	0.252
4400.000	0.817	4.950	4399.373	5.616	28.361	5.616	28.912	78.799	0.135
4500.000	0.600	345.617	4499.366	6.833	28.293	6.833	29.106	76.422	0.320
4600.000	0.809	321.869	4599.358	7.896	27.727	7.896	28.829	74.105	0.355
4700.000	0.769	19.361	4699.350	9.084	27.514	9.084	28.974	71.728	0.760
4800.000	0.633	103.086	4799.345	9.592	28.275	9.592	29.857	71.260	0.942
4900.000	1.316	135.064	4899.331	8.654	29.624	8.654	30.863	73.716	0.848
5000.000	1.329	148.905	4999.304	6.848	31.035	6.848	31.781	77.557	0.319
5100.000	1.051	191.394	5099.284	4.956	31.452	4.956	31.840	81.046	0.900
5200.000	1.189	241.602	5199.268	3.563	30.358	3.563	30.567	83.306	0.959
5300.000	1.906	266.222	5299.232	2.960	27.786	2.960	27.943	83.919	0.962
5400.000	2.553	315.199	5399.164	4.431	24.558	4.431	24.954	79.772	1.939
5500.000	2.528	335.900	5499.068	8.025	22.088	8.025	23.500	70.034	0.913

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	2.611	350.990	5598.968	12.287	20.831	12.287	24.184	59.465	0.679
5700.000	2.080	4.531	5698.885	16.346	20.617	16.346	26.311	51.591	0.763
5800.000	1.247	2.142	5798.842	19.243	20.801	19.243	28.337	47.228	0.836
5900.000	1.172	356.859	5898.820	21.352	20.786	21.352	29.798	44.231	0.134
6000.000	1.871	334.450	5998.785	23.846	20.026	23.846	31.139	40.024	0.906
6100.000	1.983	317.065	6098.729	26.586	18.143	26.586	32.186	34.311	0.593
6200.000	1.840	338.420	6198.674	29.345	16.374	29.345	33.604	29.160	0.722
6300.000	2.392	33.238	6298.615	32.584	16.927	32.584	36.719	27.452	2.009
6400.000	3.017	80.191	6398.515	34.778	20.665	34.778	40.455	30.718	2.229
6500.000	3.956	90.450	6498.330	35.200	26.708	35.200	44.185	37.189	1.124
6600.000	4.388	99.282	6598.066	34.556	33.932	34.556	48.430	44.479	0.773
6700.000	4.846	90.379	6697.742	33.911	41.932	33.911	53.928	51.037	0.850
6800.000	2.845	89.847	6797.512	33.889	48.638	33.889	59.280	55.133	2.002
6900.000	1.820	94.430	6897.428	33.773	52.702	33.773	62.595	57.347	1.041
6950.000	1.423	93.407	6947.408	33.675	54.114	33.675	63.736	58.106	0.795