

COMPANY/RIG: Noble Energy/Production/VES

WELL/API: Hambert G 32-4X/05-123-25293

DECLINATION: 8.08

TD AS DRILLED: 7586

COUNTY/STATE: Weld/Colorado

Latitude: 40.274, Longitude: -104.694

GRID North is 0.520 Degrees East of True North

VS-Azi: 0.000 Degrees



DEPTH REFERENCE : RKB = GL Elevation = 4894

DRILLOG GYRO SURVEY CALCULATIONS

Filename: gyrosurvey.ut

Minimum Curvature Method

Report Date/Time: 3/23/2018 / 10:01

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

HENDERSON, COLORADO

303-853-4976

JUSTIN WILLIAMS / Hambert G 32-4X

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	0.762	227.675	99.997	-0.448	-0.492	-0.448	0.665	227.675	0.762
200.000	0.587	287.267	199.991	-0.743	-1.472	-0.743	1.649	243.202	0.687
300.000	0.432	330.248	299.988	-0.264	-2.148	-0.264	2.164	262.981	0.400
400.000	0.314	260.388	399.986	0.017	-2.605	0.017	2.605	270.372	0.438
500.000	0.256	92.756	499.985	-0.040	-2.652	-0.040	2.652	269.145	0.567
600.000	0.430	39.550	599.984	0.239	-2.189	0.239	2.202	276.238	0.345
700.000	0.436	322.935	699.982	0.832	-2.179	0.832	2.333	290.903	0.537
800.000	0.597	16.257	799.978	1.636	-2.263	1.636	2.792	305.865	0.485
900.000	0.690	2.582	899.972	2.737	-2.090	2.737	3.444	322.638	0.179
1000.000	1.068	16.236	999.960	4.233	-1.802	4.233	4.601	336.941	0.430
1100.000	1.326	359.654	1099.938	6.285	-1.548	6.285	6.473	346.160	0.429
1200.000	1.163	343.622	1199.915	8.415	-1.841	8.415	8.614	347.656	0.383
1300.000	1.220	339.946	1299.894	10.388	-2.493	10.388	10.683	346.508	0.096

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
1400.000	1.406	344.026	1399.867	12.568	-3.195	12.568	12.968	345.735	0.208
1500.000	1.446	339.352	1499.836	14.928	-3.978	14.928	15.449	345.079	0.123
1600.000	1.249	346.132	1599.809	17.167	-4.684	17.167	17.795	344.738	0.253
1700.000	1.428	344.988	1699.781	19.429	-5.268	19.429	20.131	344.829	0.181
1800.000	1.120	353.875	1799.757	21.604	-5.695	21.604	22.342	345.232	0.365
1900.000	1.079	319.257	1899.739	23.289	-6.414	23.289	24.156	344.602	0.655
2000.000	0.276	292.805	1999.732	24.096	-7.251	24.096	25.164	343.252	0.841
2100.000	0.362	41.520	2099.731	24.427	-7.264	24.427	25.484	343.439	0.521
2200.000	0.534	141.346	2199.729	24.299	-6.763	24.299	25.223	344.447	0.694
2300.000	0.406	156.714	2299.725	23.610	-6.332	23.610	24.445	344.987	0.179
2400.000	0.653	138.384	2399.721	22.859	-5.814	22.859	23.587	345.730	0.297
2500.000	1.425	115.029	2499.704	21.907	-4.309	21.907	22.327	348.873	0.865
2600.000	2.090	113.308	2599.657	20.659	-1.508	20.659	20.714	355.826	0.667
2700.000	2.686	129.060	2699.571	18.461	1.987	18.461	18.568	6.143	0.882
2800.000	2.404	140.470	2799.472	15.367	5.141	15.367	16.204	18.499	0.579
2900.000	2.078	131.265	2899.396	12.554	7.839	12.554	14.800	31.981	0.484
3000.000	1.400	124.823	2999.350	10.660	10.205	10.660	14.757	43.750	0.704
3100.000	1.057	112.149	3099.327	9.615	12.062	9.615	15.425	51.442	0.436
3200.000	0.927	114.567	3199.312	8.931	13.652	8.931	16.313	56.808	0.137
3300.000	1.066	90.875	3299.297	8.580	15.317	8.580	17.556	60.743	0.431
3400.000	0.181	118.576	3399.290	8.491	16.385	8.491	18.454	62.607	0.909
3500.000	0.733	201.574	3499.287	7.820	16.289	7.820	18.069	64.353	0.733
3600.000	0.119	231.276	3599.284	7.161	15.972	7.161	17.504	65.852	0.632
3700.000	0.337	164.927	3699.283	6.812	15.968	6.812	17.360	66.896	0.309
3800.000	0.215	256.156	3799.282	6.484	15.862	6.484	17.136	67.768	0.403
3900.000	0.106	270.748	3899.282	6.440	15.587	6.440	16.865	67.551	0.115
4000.000	0.132	187.383	3999.282	6.327	15.479	6.327	16.722	67.768	0.160
4100.000	0.271	192.674	4099.281	5.982	15.413	5.982	16.533	68.788	0.140
4200.000	0.514	214.539	4199.279	5.382	15.106	5.382	16.036	70.392	0.281
4300.000	0.524	182.685	4299.275	4.555	14.831	4.555	15.514	72.925	0.285
4400.000	1.359	180.885	4399.261	2.913	14.791	2.913	15.075	78.859	0.835
4500.000	1.554	167.025	4499.229	0.406	15.077	0.406	15.082	88.456	0.401
4600.000	1.348	148.661	4599.197	-1.919	15.993	-1.919	16.107	96.842	0.506
4700.000	1.010	148.439	4699.176	-3.675	17.066	-3.675	17.457	102.152	0.337
4800.000	0.684	79.557	4799.167	-4.318	18.114	-4.318	18.622	103.407	0.995

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
4900.000	1.108	60.443	4899.155	-3.733	19.543	-3.733	19.896	100.813	0.513
5000.000	0.803	76.424	4999.141	-3.091	21.065	-3.091	21.291	98.348	0.402
5100.000	0.706	60.175	5099.132	-2.620	22.281	-2.620	22.434	96.707	0.234
5200.000	1.078	47.465	5199.120	-1.678	23.509	-1.678	23.568	94.082	0.419
5300.000	0.742	50.014	5299.107	-0.626	24.697	-0.626	24.705	91.452	0.339
5400.000	0.894	36.678	5399.097	0.415	25.659	0.415	25.663	89.072	0.243
5500.000	0.986	98.654	5499.086	0.912	26.976	0.912	26.991	88.065	0.971
5600.000	0.912	75.681	5599.073	0.979	28.598	0.979	28.614	88.040	0.385
5700.000	0.871	42.530	5699.061	1.736	29.882	1.736	29.933	86.676	0.510
5800.000	0.911	30.794	5799.049	2.978	30.803	2.978	30.946	84.478	0.186
5900.000	0.970	0.594	5899.036	4.507	31.218	4.507	31.542	81.785	0.493
6000.000	0.911	38.920	5999.024	5.972	31.726	5.972	32.283	79.340	0.620
6100.000	0.863	98.990	6099.014	6.473	32.969	6.473	33.598	78.893	0.889
6200.000	1.555	108.674	6198.991	5.920	34.998	5.920	35.496	80.399	0.720
6300.000	2.133	93.914	6298.939	5.359	38.141	5.359	38.516	82.002	0.744
6400.000	2.179	110.448	6398.870	4.567	41.780	4.567	42.029	83.761	0.622
6500.000	2.291	121.937	6498.794	2.846	45.258	2.846	45.347	86.402	0.461
6600.000	2.152	107.882	6598.720	1.212	48.741	1.212	48.756	88.576	0.561
6700.000	2.290	107.581	6698.644	0.032	52.432	0.032	52.433	89.965	0.139
6800.000	2.824	114.389	6798.545	-1.589	56.581	-1.589	56.603	91.609	0.613
6900.000	3.000	110.949	6898.416	-3.542	61.269	-3.542	61.371	93.309	0.248
7000.000	2.994	100.983	6998.279	-4.975	66.276	-4.975	66.463	94.293	0.520

HORIZONTAL DISPLACEMENT IS  
66.463 FEET AT 94.293 DEGREES