



Company: Encana Oil and Gas
Well: Sheley 13-4
API: 05-123-20384
Rig Name: Production/VES
State/County: Colorado/Weld
VS-Azi: 0.000 Degrees
Latitude: 40.16625, Longitude: -104.90244
All Azimuths referenced to True North
No Grid Convergence Applied



Depth Reference : RKB=Ground Level

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: hagyar_run01-de_01.ut

Minimum Curvature Method

Report Date/Time: 9/8/2017 / 12:39

Vaughn Energy Services

Henderson, CO

303-853-4976

Surveyor: Levi Sheldon

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	0.320	150.636	99.999	-0.243	0.137	-0.243	0.279	150.636	0.320
200.000	0.407	189.521	199.998	-0.837	0.215	-0.837	0.864	165.594	0.256
300.000	0.350	187.092	299.995	-1.490	0.118	-1.490	1.495	175.455	0.059
400.000	0.364	154.620	399.994	-2.080	0.217	-2.080	2.092	174.050	0.200
500.000	0.414	182.399	499.991	-2.728	0.338	-2.728	2.749	172.943	0.193
600.000	0.692	187.884	599.987	-3.688	0.240	-3.688	3.696	176.280	0.282
700.000	0.593	188.196	699.980	-4.799	0.083	-4.799	4.799	179.007	0.099
800.000	0.772	170.411	799.973	-5.975	0.122	-5.975	5.977	178.834	0.275
900.000	0.676	185.772	899.965	-7.227	0.174	-7.227	7.229	178.617	0.216
1000.000	0.585	201.320	999.959	-8.290	-0.071	-8.290	8.290	180.488	0.193
1100.000	0.475	219.091	1099.955	-9.087	-0.517	-9.087	9.102	183.259	0.197
1200.000	0.556	234.479	1199.951	-9.691	-1.174	-9.691	9.761	186.907	0.160
1300.000	0.364	216.259	1299.948	-10.228	-1.757	-10.228	10.378	189.745	0.240
1400.000	0.553	227.753	1399.945	-10.809	-2.302	-10.809	11.051	192.021	0.210
1500.000	0.446	217.732	1499.941	-11.441	-2.897	-11.441	11.802	194.210	0.138
1600.000	0.238	247.830	1599.939	-11.827	-3.328	-11.827	12.286	195.715	0.268
1700.000	0.487	321.551	1699.937	-11.573	-3.785	-11.573	12.176	198.110	0.478
1800.000	0.935	313.834	1799.930	-10.675	-4.637	-10.675	11.639	203.481	0.457
1900.000	0.592	287.196	1899.921	-9.957	-5.720	-9.957	11.483	209.874	0.485

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
2000.000	0.815	289.619	1999.913	-9.566	-6.883	-9.566	11.785	215.738	0.225
2100.000	0.663	279.858	2099.905	-9.228	-8.123	-9.228	12.294	221.357	0.197
2200.000	0.757	255.121	2199.897	-9.299	-9.332	-9.299	13.173	225.102	0.318
2300.000	1.234	252.573	2299.882	-9.791	-10.998	-9.791	14.725	228.324	0.479
2400.000	0.923	255.951	2399.864	-10.309	-12.807	-10.309	16.441	231.169	0.318
2500.000	1.310	237.407	2499.845	-11.120	-14.552	-11.120	18.314	232.614	0.525
2600.000	1.173	230.620	2599.822	-12.385	-16.306	-12.385	20.476	232.781	0.201
2700.000	1.127	243.993	2699.802	-13.466	-17.981	-13.466	22.464	233.171	0.272
2800.000	1.246	238.029	2799.781	-14.473	-19.788	-14.473	24.516	233.818	0.172
2900.000	1.344	243.501	2899.755	-15.572	-21.760	-15.572	26.758	234.411	0.157
3000.000	1.522	242.677	2999.724	-16.705	-23.989	-16.705	29.233	235.149	0.180
3100.000	1.627	237.930	3099.686	-18.069	-26.373	-18.069	31.969	235.584	0.167
3200.000	1.551	251.136	3199.648	-19.260	-28.856	-19.260	34.693	236.279	0.373
3300.000	1.365	244.794	3299.615	-20.205	-31.214	-20.205	37.183	237.086	0.246
3400.000	0.904	258.213	3399.596	-20.873	-33.064	-20.873	39.101	237.736	0.528
3500.000	0.954	271.704	3499.583	-21.009	-34.669	-21.009	40.538	238.784	0.224
3600.000	1.005	303.254	3599.569	-20.504	-36.234	-20.504	41.633	240.496	0.535
3700.000	0.574	347.514	3699.560	-19.534	-37.076	-19.534	41.907	242.217	0.716
3800.000	0.621	338.974	3799.555	-18.539	-37.379	-18.539	41.724	243.620	0.100
3900.000	0.607	340.894	3899.549	-17.533	-37.746	-17.533	41.620	245.086	0.025
4000.000	0.830	314.386	3999.541	-16.525	-38.437	-16.525	41.839	246.736	0.394
4100.000	0.962	291.454	4099.529	-15.712	-39.736	-15.712	42.730	248.426	0.379
4200.000	1.047	296.442	4199.514	-14.998	-41.336	-14.998	43.973	250.058	0.122
4300.000	1.588	274.999	4299.488	-14.470	-43.535	-14.470	45.877	251.614	0.723
4400.000	1.556	291.479	4399.450	-13.852	-46.179	-13.852	48.212	253.303	0.452
4500.000	1.817	277.013	4499.408	-13.161	-49.016	-13.161	50.752	254.970	0.497
4600.000	1.137	292.904	4599.374	-12.581	-51.503	-12.581	53.018	256.272	0.787
4700.000	1.265	269.619	4699.353	-12.203	-53.522	-12.203	54.895	257.157	0.501
4800.000	1.275	263.200	4799.328	-12.342	-55.730	-12.342	57.080	257.513	0.143
4900.000	1.608	266.693	4899.296	-12.554	-58.236	-12.554	59.574	257.835	0.345
5000.000	1.171	259.890	4999.267	-12.815	-60.642	-12.815	61.982	258.068	0.467
5100.000	1.269	252.982	5099.244	-13.318	-62.707	-13.318	64.106	258.009	0.177
5200.000	0.531	291.863	5199.232	-13.470	-64.196	-13.470	65.594	258.150	0.918
5300.000	0.977	272.306	5299.223	-13.263	-65.478	-13.263	66.808	258.550	0.509
5400.000	0.548	328.250	5399.215	-12.822	-66.582	-12.822	67.805	259.100	0.810
5500.000	0.406	286.842	5499.212	-12.312	-67.173	-12.312	68.292	259.614	0.363
5600.000	0.417	308.300	5599.210	-11.984	-67.797	-11.984	68.848	259.976	0.154
5700.000	0.866	230.267	5699.204	-12.241	-68.665	-12.241	69.747	259.892	0.880
5800.000	0.430	149.218	5799.199	-13.047	-69.054	-13.047	70.276	259.301	0.905
5900.000	0.831	145.809	5899.193	-13.969	-68.455	-13.969	69.865	258.467	0.403

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
6000.000	0.483	55.660	5999.189	-14.330	-67.699	-14.330	69.199	258.048	0.962
6100.000	0.500	61.639	6099.185	-13.885	-66.967	-13.885	68.391	258.286	0.054
6200.000	0.952	0.854	6199.178	-12.847	-66.570	-12.847	67.799	259.077	0.832
6300.000	0.709	20.613	6299.167	-11.437	-66.340	-11.437	67.319	260.219	0.372
6400.000	1.253	71.161	6399.154	-10.505	-65.087	-10.505	65.930	260.832	0.971
6500.000	1.679	39.210	6499.123	-9.016	-63.126	-9.016	63.767	261.872	0.905
6600.000	1.076	62.838	6599.094	-7.452	-61.364	-7.452	61.815	263.076	0.816
6700.000	1.510	33.911	6699.069	-5.929	-59.793	-5.929	60.087	264.337	0.771
6800.000	1.090	57.063	6799.044	-4.319	-58.260	-4.319	58.420	265.761	0.665
6900.000	1.226	93.864	6899.025	-3.874	-56.395	-3.874	56.527	266.071	0.742
7000.000	0.766	80.154	6999.010	-3.831	-54.669	-3.831	54.803	265.991	0.515
7100.000	0.754	85.872	7099.001	-3.670	-53.354	-3.670	53.480	266.065	0.077
7200.000	0.789	12.855	7198.994	-2.951	-52.545	-2.951	52.627	266.785	0.918
7300.000	0.767	15.503	7298.985	-1.635	-52.212	-1.635	52.238	268.206	0.042
7400.000	1.276	4.792	7398.969	0.119	-51.941	0.119	51.941	270.132	0.541
7500.000	0.624	52.094	7498.956	1.564	-51.418	1.564	51.441	271.742	0.968
7600.000	0.893	31.896	7598.947	2.560	-50.576	2.560	50.641	272.897	0.375
7700.000	0.535	4.813	7698.939	3.686	-50.125	3.686	50.261	274.206	0.482
7750.000	0.263	22.157	7748.938	4.025	-50.063	4.025	50.224	274.597	0.589