



Company: PDC Energy
Well: Skurich Roth 33-6
API: 05-123-19432
Rig Name: Production / VESSI
State/County: Colorado/Weld
Latitude: 40.426, Longitude: -104.477
Directions are relative to True North
VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : Ground Level

DRILLOG GYRO SURVEY CALCULATIONS

Filename: pre-de_01.ut
Minimum Curvature Method
Report Date/Time: 2/2/2015 / 12:30

VES Survey International
Henderson, Colorado
303-853-4976
Kevin McDowell

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	0.503	72.983	99.999	0.128	0.420	0.128	0.439	72.983	0.503
200.000	0.503	79.676	199.995	0.336	1.271	0.336	1.314	75.211	0.059
300.000	0.440	60.521	299.992	0.603	2.037	0.603	2.124	73.505	0.168
400.000	0.478	59.091	399.988	1.006	2.728	1.006	2.908	69.758	0.039
500.000	0.586	76.160	499.984	1.342	3.582	1.342	3.826	69.456	0.191
600.000	0.604	11.009	599.980	1.982	4.179	1.982	4.625	64.626	0.641
700.000	0.473	298.617	699.976	2.697	3.918	2.697	4.756	55.457	0.645
800.000	0.506	237.809	799.973	2.659	3.182	2.659	4.147	50.115	0.496
900.000	0.502	244.365	899.969	2.234	2.413	2.234	3.288	47.205	0.058
1000.000	0.398	226.943	999.966	1.808	1.765	1.808	2.526	44.308	0.171
1100.000	0.500	255.813	1099.963	1.464	1.088	1.464	1.824	36.627	0.244
1200.000	0.496	243.618	1199.960	1.164	0.277	1.164	1.197	13.398	0.106
1300.000	0.429	200.664	1299.957	0.622	-0.243	0.622	0.668	338.680	0.344
1400.000	0.266	265.692	1399.955	0.255	-0.606	0.255	0.657	292.784	0.398
1500.000	0.743	320.105	1499.951	0.734	-1.253	0.734	1.452	300.369	0.626
1600.000	0.794	295.530	1599.943	1.530	-2.294	1.530	2.757	303.703	0.331
1700.000	0.401	269.772	1699.937	1.827	-3.269	1.827	3.745	299.201	0.466
1800.000	0.599	232.956	1799.934	1.511	-4.037	1.511	4.310	290.525	0.367
1900.000	0.436	104.325	1899.932	1.103	-4.085	1.103	4.231	285.104	0.935
2000.000	0.807	150.877	1999.926	0.393	-3.374	0.393	3.397	276.651	0.598
2100.000	0.206	184.625	2099.922	-0.401	-3.046	-0.401	3.072	262.500	0.646
2200.000	0.459	155.755	2199.920	-0.946	-2.896	-0.946	3.047	251.911	0.296
2300.000	0.578	163.890	2299.916	-1.796	-2.591	-1.796	3.153	235.268	0.140
2400.000	0.481	190.676	2399.912	-2.694	-2.529	-2.694	3.695	223.195	0.263
2500.000	0.838	138.859	2499.906	-3.656	-2.125	-3.656	4.229	210.168	0.660
2600.000	0.427	219.690	2599.901	-4.494	-1.882	-4.494	4.872	202.724	0.878
2700.000	0.429	350.156	2699.900	-4.412	-2.184	-4.412	4.923	206.339	0.777
2800.000	0.421	287.191	2799.898	-3.934	-2.599	-3.934	4.715	213.454	0.444
2900.000	0.537	285.573	2899.894	-3.700	-3.402	-3.700	5.026	222.604	0.117
3000.000	0.158	301.208	2999.892	-3.502	-3.972	-3.502	5.296	228.598	0.388
3100.000	0.176	226.368	3099.892	-3.537	-4.202	-3.537	5.492	229.910	0.204
3200.000	0.938	228.902	3199.886	-4.181	-4.930	-4.181	6.464	229.698	0.761
3300.000	0.421	198.859	3299.879	-5.066	-5.665	-5.066	7.600	228.193	0.611
3400.000	0.971	128.510	3399.873	-5.941	-5.121	-5.941	7.843	220.756	0.919
3500.000	1.184	76.447	3499.857	-6.227	-3.453	-6.227	7.120	209.010	0.965

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
3600.000	1.469	67.976	3599.831	-5.504	-1.260	-5.504	5.646	192.897	0.345
3700.000	1.490	85.702	3699.798	-4.926	1.224	-4.926	5.076	166.043	0.456
3800.000	1.017	91.757	3799.774	-4.856	3.408	-4.856	5.932	144.940	0.491
3900.000	1.446	110.003	3899.751	-5.314	5.480	-5.314	7.634	134.122	0.576
4000.000	0.669	81.210	3999.734	-5.657	7.242	-5.657	9.189	127.994	0.918
4100.000	1.025	63.811	4099.723	-5.173	8.621	-5.173	10.054	120.966	0.435
4200.000	0.893	91.546	4199.709	-4.799	10.202	-4.799	11.275	115.193	0.477
4300.000	1.455	93.797	4299.688	-4.905	12.249	-4.905	13.194	111.822	0.564
4400.000	0.585	112.139	4399.671	-5.181	13.989	-5.181	14.918	110.323	0.918
4500.000	0.573	112.280	4499.666	-5.563	14.925	-5.563	15.928	110.443	0.013
4600.000	1.199	115.936	4599.654	-6.210	16.328	-6.210	17.469	110.824	0.629
4700.000	1.564	148.150	4699.626	-7.827	17.989	-7.827	19.618	113.514	0.843
4800.000	0.983	110.089	4799.602	-9.280	19.514	-9.280	21.608	115.434	0.995
4900.000	0.709	98.214	4899.591	-9.663	20.932	-9.663	23.055	114.781	0.324
5000.000	0.437	139.293	4999.587	-10.041	21.793	-10.041	23.994	114.737	0.476
5100.000	1.023	198.620	5099.579	-11.176	21.756	-11.176	24.459	117.188	0.884
5200.000	1.005	236.337	5199.565	-12.508	20.741	-12.508	24.221	121.092	0.656
5300.000	0.162	200.344	5299.559	-13.126	19.962	-13.126	23.891	123.327	0.880
5400.000	1.099	194.616	5399.552	-14.187	19.671	-14.187	24.253	125.799	0.939
5500.000	1.075	196.234	5499.534	-16.016	19.166	-16.016	24.977	129.883	0.039
5600.000	0.654	174.261	5599.522	-17.485	18.961	-17.485	25.793	132.681	0.529
5700.000	0.792	162.151	5699.514	-18.711	19.230	-18.711	26.831	134.217	0.205
5800.000	0.948	113.157	5799.504	-19.695	20.203	-19.695	28.214	134.270	0.735
5900.000	0.775	174.103	5899.495	-20.693	21.033	-20.693	29.505	134.533	0.886
6000.000	0.231	220.282	5999.491	-21.519	20.972	-21.519	30.048	135.738	0.637
6100.000	1.041	243.445	6099.484	-22.079	20.029	-22.079	29.810	137.787	0.834
6200.000	0.967	295.168	6199.470	-22.127	18.453	-22.127	28.811	140.173	0.878
6300.000	0.535	278.829	6299.462	-21.696	17.227	-21.696	27.704	141.549	0.477
6400.000	0.910	277.796	6399.454	-21.517	15.979	-21.517	26.801	143.401	0.375
6500.000	1.464	244.888	6499.433	-21.951	14.036	-21.951	26.055	147.404	0.857
6600.000	2.045	234.098	6599.386	-23.539	11.434	-23.539	26.169	154.092	0.666

HORIZONTAL DISPLACEMENT IS
26.169 FEET AT 154.092 DEGREES