



Company: PDC Energy
Well: B&C Farms 33-2
API: 05-123-19346
Rig Name: Production/ VES
State/County: Colorado/Weld
Latitude: 40.514, Longitude: -104.628
Directions are relative to True North
VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB= Ground Level

DRILLOG GYRO SURVEY CALCULATIONS

Filename: survey.ut
Minimum Curvature Method
Report Date/Time: 4/7/2014 / 09:55

Vaughn Energy Services
Henderson, CO 80640
303-853-4976
Sean Bratt

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	0.688	246.479	99.998	-0.240	-0.551	-0.240	0.600	246.479	0.688
200.000	0.492	282.955	199.993	-0.383	-1.519	-0.383	1.567	255.850	0.414
300.000	0.084	232.940	299.991	-0.331	-1.996	-0.331	2.023	260.583	0.442
400.000	0.077	221.029	399.991	-0.426	-2.099	-0.426	2.142	258.524	0.018
500.000	0.207	264.021	499.991	-0.496	-2.323	-0.496	2.375	257.952	0.159
600.000	0.112	210.606	599.990	-0.599	-2.552	-0.599	2.621	256.796	0.167
700.000	0.274	266.772	699.990	-0.696	-2.841	-0.696	2.925	256.224	0.231
800.000	0.426	293.069	799.988	-0.564	-3.421	-0.564	3.467	260.633	0.217
900.000	0.598	293.711	899.984	-0.209	-4.241	-0.209	4.246	267.177	0.172
1000.000	0.518	292.395	999.979	0.173	-5.136	0.173	5.139	271.929	0.080
1100.000	0.689	322.268	1099.974	0.821	-5.922	0.821	5.979	277.889	0.352
1200.000	0.672	326.498	1199.967	1.785	-6.614	1.785	6.851	285.104	0.053
1300.000	0.925	300.242	1299.957	2.681	-7.635	2.681	8.092	289.348	0.439
1400.000	1.105	296.074	1399.942	3.512	-9.199	3.512	9.847	290.893	0.194
1500.000	1.031	327.435	1499.925	4.694	-10.550	4.694	11.547	293.986	0.582
1600.000	0.961	291.085	1599.911	5.754	-11.817	5.754	13.143	295.963	0.625
1700.000	0.843	261.419	1699.899	5.946	-13.327	5.946	14.593	294.044	0.476
1800.000	0.914	291.250	1799.888	6.125	-14.798	6.125	16.016	292.485	0.458
1900.000	0.748	286.630	1899.877	6.601	-16.168	6.601	17.463	292.210	0.179
2000.000	0.641	231.170	1999.871	6.438	-17.229	6.438	18.392	290.489	0.653
2100.000	0.345	236.366	2099.867	5.920	-17.915	5.920	18.868	288.287	0.298
2200.000	0.311	195.932	2199.866	5.493	-18.240	5.493	19.049	286.758	0.229
2300.000	0.338	143.482	2299.864	4.995	-18.139	4.995	18.814	285.395	0.288
2400.000	0.625	93.493	2399.861	4.724	-17.419	4.724	18.049	285.174	0.483
2500.000	0.510	70.140	2499.856	4.842	-16.457	4.842	17.155	286.395	0.256
2600.000	0.598	65.557	2599.852	5.209	-15.564	5.209	16.413	288.504	0.099
2700.000	0.671	38.106	2699.846	5.885	-14.728	5.885	15.860	291.781	0.309
2800.000	0.676	30.990	2799.839	6.851	-14.063	6.851	15.643	295.974	0.084
2900.000	0.440	335.817	2899.835	7.707	-13.917	7.707	15.908	298.977	0.557
3000.000	0.846	7.523	2999.828	8.789	-13.977	8.789	16.511	302.162	0.525
3100.000	0.797	8.625	3099.818	10.209	-13.776	10.209	17.147	306.540	0.051
3200.000	1.267	16.090	3199.802	11.959	-13.366	11.959	17.935	311.821	0.487
3300.000	1.237	21.128	3299.778	14.028	-12.670	14.028	18.903	317.912	0.114
3400.000	1.168	353.282	3399.757	16.048	-12.400	16.048	20.281	322.306	0.583
3500.000	1.056	342.678	3499.738	17.940	-12.794	17.940	22.035	324.505	0.234

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	1.110	318.212	3599.721	19.542	-13.714	19.542	23.874	324.940	0.462
3700.000	1.263	359.936	3699.701	21.367	-14.361	21.367	25.744	326.095	0.857
3800.000	1.468	355.887	3799.672	23.746	-14.454	23.746	27.799	328.673	0.226
3900.000	1.094	322.586	3899.649	25.782	-15.126	25.782	29.892	329.601	0.817
4000.000	0.597	342.438	3999.638	27.037	-15.863	27.037	31.347	329.600	0.570
4100.000	0.942	30.885	4099.629	28.239	-15.598	28.239	32.261	331.086	0.705
4200.000	1.040	38.587	4199.615	29.654	-14.610	29.654	33.058	333.771	0.165
4300.000	1.701	40.368	4299.585	31.494	-13.083	31.494	34.104	337.441	0.662
4400.000	2.682	41.294	4399.511	34.383	-10.578	34.383	35.973	342.900	0.982
4500.000	3.396	43.168	4499.370	38.301	-7.007	38.301	38.937	349.632	0.720
4600.000	3.717	54.818	4599.178	42.329	-2.332	42.329	42.393	356.847	0.789
4700.000	3.509	51.283	4698.980	46.111	2.706	46.111	46.190	33.358	0.305
4800.000	3.213	54.164	4798.808	49.666	7.366	49.666	50.209	8.436	0.341
4900.000	2.484	54.572	4898.683	52.563	11.404	52.563	53.786	12.241	0.729
5000.000	2.117	42.304	4998.603	55.185	14.413	55.185	57.036	14.637	0.612
5100.000	1.437	23.241	5098.555	57.703	16.151	57.703	59.921	15.636	0.892
5200.000	1.234	355.022	5198.529	59.928	16.552	59.928	62.172	15.440	0.680
5300.000	1.044	309.770	5298.511	61.584	15.759	61.584	63.568	14.353	0.894
5400.000	1.613	277.531	5398.485	62.351	13.663	62.351	63.830	12.360	0.918
5500.000	2.209	264.200	5498.430	62.340	10.350	62.340	63.194	9.426	0.740
5600.000	2.203	239.941	5598.358	61.183	6.769	61.183	61.556	6.313	0.927
5700.000	0.725	237.257	5698.322	59.878	4.573	59.878	60.053	4.368	1.479
5800.000	0.209	137.820	5798.320	59.401	4.163	59.401	59.547	4.009	0.787
5900.000	0.649	89.304	5898.317	59.273	4.852	59.273	59.471	4.680	0.534
6000.000	0.787	70.502	5998.309	59.509	6.066	59.509	59.818	5.820	0.271
6100.000	0.592	117.737	6098.303	59.498	7.171	59.498	59.929	6.872	0.581
6200.000	0.849	65.665	6198.296	59.563	8.303	59.563	60.139	7.936	0.674
6300.000	0.202	149.808	6298.292	59.716	9.067	59.716	60.401	8.634	0.853
6400.000	0.270	203.120	6398.291	59.347	9.063	59.347	60.036	8.683	0.220
6500.000	0.485	189.001	6498.289	58.713	8.905	58.713	59.384	8.624	0.233
6600.000	0.492	242.517	6598.286	58.097	8.458	58.097	58.709	8.283	0.440
6700.000	0.878	223.287	6698.278	57.341	7.552	57.341	57.837	7.503	0.444
6800.000	0.409	200.077	6798.272	56.449	6.905	56.449	56.870	6.974	0.527
6900.000	0.566	150.111	6898.269	55.686	7.029	55.686	56.127	7.194	0.436
7000.000	0.713	181.724	6998.263	54.635	7.256	54.635	55.115	7.566	0.376
7100.000	1.068	245.103	7098.253	53.621	6.392	53.621	54.000	6.798	0.983

<div> HORIZONTAL DISPLACEMENT IS 54.000 FEET AT 6.798 DEGREES </div>
