

Company: Anadarko Petroleum Corp.  
 Well/API: Cannon Land 7-33/05-123-22587  
 Tool Type: North Seeking Rate Gyro  
 Rig Name: Production/CoreTech  
 County/State: Weld/Colorado  
 Latitude: 40.184, Longitude: -104.667  
 Directions are relative to True North  
 VS-Azi: 0.000 Degrees



**FIELD COPY ONLY (NOT DEFINITIVE)**

Depth Reference : RKB=GL Elevation= 4850 Feet

**DRILLOG MS GYRO SURVEY CALCULATIONS**

Filename: msgyro.ut

Minimum Curvature Method

Report Date/Time: 12/19/2014 / 16:42

Lat/Long Obtained By Handheld GPS At Wellhead

Handheld GPS Reference: NAD83/Device Error: ±9 Feet

VES Survey International - Henderson CO

Brian Budd

303-853-4976

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	0.481	214.977	99.999	-0.344	-0.241	-0.344	0.420	214.977	0.481
200.000	0.327	190.199	199.996	-0.968	-0.531	-0.968	1.104	208.768	0.230
300.000	0.109	234.291	299.996	-1.304	-0.659	-1.304	1.461	206.810	0.260
400.000	0.153	189.431	399.995	-1.491	-0.758	-1.491	1.672	206.944	0.108
500.000	0.207	282.124	499.995	-1.584	-0.956	-1.584	1.850	211.114	0.263
600.000	0.474	271.169	599.993	-1.538	-1.546	-1.538	2.181	225.152	0.273
700.000	0.572	276.932	699.989	-1.469	-2.454	-1.469	2.860	239.096	0.111
800.000	0.384	295.623	799.986	-1.264	-3.252	-1.264	3.489	248.756	0.242
900.000	0.471	294.501	899.983	-0.949	-3.928	-0.949	4.041	256.419	0.088
1000.000	0.294	267.234	999.981	-0.791	-4.558	-0.791	4.626	260.159	0.249
1100.000	0.443	291.647	1099.979	-0.661	-5.174	-0.661	5.216	262.724	0.213
1200.000	0.223	328.534	1199.977	-0.352	-5.635	-0.352	5.646	266.428	0.296
1300.000	0.382	311.785	1299.976	0.037	-5.985	0.037	5.985	270.352	0.180
1400.000	0.405	311.571	1399.973	0.494	-6.498	0.494	6.517	274.344	0.023
1500.000	0.406	337.499	1499.971	1.056	-6.898	1.056	6.979	278.702	0.182
1600.000	0.554	325.268	1599.967	1.781	-7.310	1.781	7.524	283.694	0.179
1700.000	0.339	352.324	1699.964	2.472	-7.625	2.472	8.016	287.961	0.296
1800.000	0.220	17.443	1799.963	2.948	-7.607	2.948	8.158	291.186	0.168
1900.000	0.266	87.204	1899.962	3.143	-7.318	3.143	7.964	293.246	0.280
2000.000	0.428	107.288	1999.961	3.043	-6.729	3.043	7.385	294.337	0.201
2100.000	0.173	103.701	2099.959	2.896	-6.225	2.896	6.866	294.953	0.256
2200.000	0.449	323.017	2199.958	3.174	-6.314	3.174	7.066	296.688	0.594
2300.000	0.857	303.833	2299.952	3.904	-7.171	3.904	8.165	298.561	0.458
2400.000	1.667	303.503	2399.926	5.123	-9.006	5.123	10.361	299.635	0.810
2500.000	2.111	296.274	2499.872	6.741	-11.870	6.741	13.651	299.593	0.503
2600.000	2.401	293.661	2599.794	8.398	-15.441	8.398	17.577	298.540	0.307
2700.000	2.708	290.518	2699.695	10.066	-19.572	10.066	22.009	297.218	0.337
2800.000	3.050	291.066	2799.569	11.851	-24.267	11.851	27.006	296.028	0.344
2900.000	3.351	291.059	2899.412	13.857	-29.478	13.857	32.572	295.178	0.301
3000.000	3.719	287.578	2999.222	15.887	-35.297	15.887	38.708	294.232	0.426
3100.000	3.725	290.123	3099.011	17.984	-41.439	17.984	45.173	293.460	0.165
3200.000	2.972	286.571	3198.840	19.841	-46.974	19.841	50.993	292.898	0.780
3300.000	2.575	288.374	3298.723	21.289	-51.591	21.289	55.811	292.423	0.406
3400.000	2.054	289.466	3398.641	22.594	-55.412	22.594	59.841	292.183	0.523

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
3500.000	1.695	294.319	3498.587	23.800	-58.449	23.800	63.109	292.156	0.392
3600.000	1.038	290.503	3598.558	24.726	-60.645	24.726	65.491	292.182	0.663
3700.000	0.960	280.763	3698.543	25.199	-62.316	25.199	67.218	292.018	0.186
3800.000	0.929	274.320	3798.529	25.417	-63.947	25.417	68.813	291.676	0.111
3900.000	1.225	262.680	3898.512	25.342	-65.816	25.342	70.526	291.059	0.367
4000.000	1.498	263.522	3998.483	25.058	-68.175	25.058	72.634	290.181	0.273
4100.000	1.440	259.345	4098.451	24.678	-70.708	24.678	74.891	289.240	0.122
4200.000	1.728	247.921	4198.413	23.879	-73.340	23.879	77.130	288.035	0.426
4300.000	1.798	236.504	4298.366	22.447	-76.045	22.447	79.289	286.445	0.358
4400.000	1.513	237.816	4398.324	20.878	-78.471	20.878	81.201	284.899	0.287
4500.000	1.272	248.678	4498.294	19.771	-80.623	19.771	83.012	283.778	0.356
4600.000	1.440	257.738	4598.266	19.100	-82.885	19.100	85.057	282.977	0.271
4700.000	1.173	243.953	4698.240	18.384	-85.032	18.384	86.997	282.199	0.410
4800.000	0.763	195.051	4798.228	17.292	-86.125	17.292	87.844	281.352	0.884
4900.000	1.084	179.495	4898.215	15.703	-86.290	15.703	87.707	280.314	0.404
5000.000	1.210	209.922	4998.195	13.843	-86.808	13.843	87.905	279.060	0.614
5100.000	1.268	222.025	5098.172	12.106	-88.075	12.106	88.903	277.826	0.268
5200.000	1.096	225.398	5198.151	10.612	-89.497	10.612	90.124	276.762	0.186
5300.000	1.030	232.074	5298.134	9.388	-90.887	9.388	91.371	275.897	0.140
5400.000	0.536	235.460	5398.124	8.570	-91.982	8.570	92.380	275.323	0.496
5500.000	0.437	252.104	5498.121	8.188	-92.730	8.188	93.091	275.046	0.172
5600.000	0.271	307.445	5598.119	8.214	-93.280	8.214	93.641	275.032	0.360
5700.000	0.812	327.742	5698.114	8.957	-93.846	8.957	94.273	275.452	0.566
5800.000	1.287	283.792	5798.099	9.823	-95.314	9.823	95.819	275.884	0.900
5900.000	1.782	279.880	5898.062	10.358	-97.936	10.358	98.483	276.037	0.506
6000.000	1.128	287.871	5998.030	10.926	-100.405	10.926	100.997	276.211	0.683
6100.000	0.591	298.145	6098.018	11.472	-101.796	11.472	102.441	276.430	0.556
6200.000	0.176	112.813	6198.017	11.656	-102.110	11.656	102.773	276.512	0.767
6300.000	0.586	104.938	6298.014	11.464	-101.474	11.464	102.119	276.446	0.412
6400.000	0.674	81.065	6398.008	11.424	-100.399	11.424	101.046	276.491	0.275
6500.000	0.613	73.734	6498.002	11.665	-99.304	11.665	99.987	276.700	0.102
6600.000	0.902	88.074	6597.993	11.841	-98.004	11.841	98.716	276.889	0.344
6700.000	0.776	87.827	6697.983	11.894	-96.540	11.894	97.270	277.023	0.126
6800.000	0.672	77.018	6797.975	12.051	-95.291	12.051	96.050	277.208	0.171
6900.000	0.272	77.170	6897.971	12.236	-94.488	12.236	95.277	277.378	0.400
7000.000	0.738	284.247	6997.969	12.447	-94.880	12.447	95.693	277.474	0.988
7100.000	0.893	152.651	7097.964	11.913	-95.147	11.913	95.889	277.137	1.489
HORIZONTAL DISPLACEMENT IS 95.889 FEET AT 277.137 DEGREES									