



Company: Anadarko Petroleum Corp.
 Well/API: Cannon Red W 15-6/05-123-16513
 Tool Type: North Seeking Rate Gyro
 Rig Name: Ensign 122/CoreTech
 County/State: Weld/Colorado
 VS-Azi: 0.000 Degrees
 Latitude: 40.13985, Longitude: -104.76566
 All Azimuths referenced to True North
 No Grid Correction Applied



Depth Reference : RKB = 13 Feet Elevation = 4998

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyrosurvey.ut

Minimum Curvature Method

Report Date/Time: 1/25/2017 / 14:18

Lat/Long Obtained By Handheld GPS At Wellhead

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

VES Survey International - Henderson CO

Surveyor: Justin Williams / Cannon Red W 15-6

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	0.392	38.531	99.999	0.268	0.213	0.268	0.342	38.531	0.392
200.000	0.253	30.172	199.998	0.726	0.537	0.726	0.903	36.495	0.147
300.000	0.205	206.603	299.997	0.757	0.568	0.757	0.947	36.883	0.458
400.000	0.203	199.103	399.997	0.429	0.430	0.429	0.608	45.030	0.027
500.000	0.402	205.023	499.995	-0.056	0.223	-0.056	0.230	104.149	0.201
600.000	0.452	209.740	599.992	-0.717	-0.121	-0.717	0.727	189.553	0.061
700.000	0.238	214.012	699.991	-1.231	-0.432	-1.231	1.305	199.350	0.215
800.000	0.260	206.621	799.990	-1.606	-0.650	-1.606	1.733	202.040	0.039
900.000	0.416	292.892	899.988	-1.668	-1.086	-1.668	1.991	213.065	0.476
1000.000	0.456	295.567	999.986	-1.356	-1.779	-1.356	2.237	232.694	0.045
1100.000	0.518	293.882	1099.982	-1.001	-2.551	-1.001	2.741	248.579	0.064
1200.000	0.398	283.866	1199.979	-0.735	-3.301	-0.735	3.382	257.453	0.144
1300.000	0.467	281.083	1299.976	-0.573	-4.038	-0.573	4.079	261.921	0.072
1400.000	0.558	307.856	1399.972	-0.196	-4.823	-0.196	4.827	267.674	0.253
1500.000	0.454	295.863	1499.968	0.276	-5.564	0.276	5.571	272.838	0.148
1600.000	0.478	287.630	1599.965	0.575	-6.318	0.575	6.344	275.199	0.071
1700.000	0.472	298.198	1699.961	0.896	-7.079	0.896	7.135	277.214	0.088
1800.000	0.505	308.487	1799.958	1.365	-7.787	1.365	7.906	279.942	0.093

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
1900.000	0.774	299.909	1899.951	1.976	-8.717	1.976	8.938	282.771	0.285
2000.000	0.329	304.319	1999.947	2.474	-9.540	2.474	9.856	284.541	0.447
2100.000	0.471	313.075	2099.944	2.917	-10.077	2.917	10.491	286.145	0.155
2200.000	0.602	338.719	2199.940	3.688	-10.569	3.688	11.194	289.236	0.270
2300.000	0.446	351.388	2299.936	4.562	-10.818	4.562	11.740	292.867	0.194
2400.000	0.428	1.596	2399.933	5.320	-10.865	5.320	12.098	296.089	0.080
2500.000	0.546	23.016	2499.929	6.132	-10.669	6.132	12.306	299.889	0.215
2600.000	0.454	47.014	2599.926	6.841	-10.193	6.841	12.275	303.867	0.226
2700.000	0.477	72.727	2699.922	7.235	-9.505	7.235	11.945	307.276	0.208
2800.000	0.780	77.003	2799.916	7.511	-8.444	7.511	11.301	311.654	0.306
2900.000	0.961	83.695	2899.905	7.756	-6.948	7.756	10.413	318.148	0.207
3000.000	1.039	86.516	2999.889	7.904	-5.209	7.904	9.466	326.612	0.093
3100.000	1.033	82.736	3099.873	8.073	-3.410	8.073	8.763	337.103	0.069
3200.000	0.952	75.027	3199.858	8.401	-1.713	8.401	8.574	348.476	0.156
3300.000	0.743	76.835	3299.847	8.763	-0.280	8.763	8.768	358.172	0.211
3400.000	0.827	84.873	3399.838	8.976	1.070	8.976	9.039	6.801	0.139
3500.000	0.509	78.118	3499.831	9.132	2.224	9.132	9.399	13.689	0.327
3600.000	0.343	72.603	3599.828	9.312	2.944	9.312	9.767	17.545	0.171
3700.000	0.161	70.759	3699.827	9.448	3.362	9.448	10.028	19.589	0.182