

Company: Anadarko Petroleum Corp.

Well: Carole Red V #1-15

API: 05-123-18588

Rig Name: Production / Canary

State/County: Colorado/Weld

Latitude: 40.161, Longitude: -104.837

Directions are relative to True North

VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = Ground Level

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01-de_01.ut

Minimum Curvature Method

Report Date/Time: 1/24/2014 / 16:02

Vaughn Energy Services

Henderson, CO

303-853-4976

Charles Hines

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	0.160	358.361	100.000	0.140	-0.004	0.140	0.140	358.361	0.160
200.000	0.238	26.128	199.999	0.466	0.083	0.466	0.473	10.144	0.121
300.000	0.268	27.781	299.998	0.859	0.284	0.859	0.905	18.281	0.032
400.000	0.200	29.885	399.997	1.217	0.480	1.217	1.308	21.510	0.069
500.000	0.221	120.632	499.997	1.270	0.733	1.270	1.466	29.988	0.300
600.000	0.400	285.795	599.996	1.267	0.563	1.267	1.386	23.974	0.617
700.000	0.142	229.112	699.995	1.280	0.134	1.280	1.287	5.955	0.343
800.000	0.289	249.494	799.995	1.111	-0.197	1.111	1.128	349.957	0.164
900.000	0.219	355.403	899.994	1.213	-0.449	1.213	1.293	339.704	0.408
1000.000	0.374	285.706	999.993	1.492	-0.778	1.492	1.683	332.454	0.362
1100.000	0.425	254.017	1099.991	1.478	-1.449	1.478	2.070	315.577	0.223
1200.000	0.082	239.832	1199.989	1.340	-1.867	1.340	2.299	305.667	0.346
1300.000	0.344	241.275	1299.989	1.160	-2.193	1.160	2.481	297.877	0.262
1400.000	0.584	273.169	1399.986	1.044	-2.965	1.044	3.143	289.395	0.344
1500.000	0.612	276.189	1499.980	1.130	-4.004	1.130	4.161	285.752	0.042
1600.000	0.858	287.275	1599.972	1.409	-5.250	1.409	5.436	285.026	0.283
1700.000	0.902	276.779	1699.960	1.725	-6.747	1.725	6.964	284.339	0.167
1800.000	0.860	278.142	1799.948	1.924	-8.272	1.924	8.493	283.093	0.047
1900.000	0.675	286.693	1899.939	2.199	-9.579	2.199	9.829	282.931	0.217
2000.000	0.533	288.993	1999.934	2.520	-10.583	2.520	10.879	283.393	0.144
2100.000	0.263	222.016	2099.932	2.500	-11.177	2.500	11.453	282.611	0.493
2200.000	0.360	220.680	2199.930	2.091	-11.535	2.091	11.723	280.276	0.097
2300.000	0.223	193.120	2299.929	1.664	-11.784	1.664	11.901	278.036	0.193
2400.000	0.151	180.396	2399.928	1.343	-11.829	1.343	11.905	276.478	0.083
2500.000	0.349	110.634	2499.927	1.104	-11.545	1.104	11.598	275.465	0.329
2600.000	0.625	101.355	2599.924	0.890	-10.726	0.890	10.763	274.743	0.286
2700.000	0.698	100.547	2699.917	0.671	-9.593	0.671	9.616	274.002	0.074
2800.000	0.471	116.914	2799.912	0.374	-8.628	0.374	8.636	272.480	0.280
2900.000	0.557	131.288	2899.908	-0.133	-7.896	-0.133	7.897	269.032	0.155
3000.000	0.533	188.389	2999.904	-0.915	-7.598	-0.915	7.653	263.136	0.522
3100.000	0.898	222.736	3099.897	-1.950	-8.198	-1.950	8.426	256.618	0.548
3200.000	1.554	252.406	3199.874	-2.936	-10.022	-2.936	10.443	253.674	0.893
3300.000	1.543	250.675	3299.838	-3.791	-12.585	-3.791	13.143	253.236	0.048
3400.000	1.639	256.768	3399.799	-4.564	-15.248	-4.564	15.916	253.337	0.195

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	1.812	263.265	3499.754	-5.077	-18.210	-5.077	18.905	254.422	0.261
3600.000	1.837	260.780	3599.703	-5.519	-21.362	-5.519	22.063	255.514	0.083
3700.000	1.963	262.730	3699.648	-5.992	-24.643	-5.992	25.361	256.333	0.142
3800.000	1.822	267.349	3799.594	-6.283	-27.930	-6.283	28.628	257.323	0.208
3900.000	1.950	269.635	3899.539	-6.367	-31.219	-6.367	31.862	258.473	0.149
4000.000	1.873	262.368	3999.484	-6.595	-34.540	-6.595	35.164	259.190	0.254
4100.000	1.799	259.628	4099.433	-7.094	-37.703	-7.094	38.365	259.344	0.115
4200.000	2.136	232.653	4199.376	-8.507	-40.729	-8.507	41.608	258.202	0.974
4300.000	2.073	227.632	4299.308	-10.856	-43.546	-10.856	44.879	256.001	0.195
4400.000	2.083	224.838	4399.243	-13.364	-46.164	-13.364	48.059	253.855	0.102
4500.000	2.169	231.829	4499.174	-15.822	-48.933	-15.822	51.427	252.082	0.273
4600.000	2.017	240.598	4599.107	-17.855	-51.954	-17.855	54.936	251.033	0.354
4700.000	1.402	248.438	4699.063	-19.169	-54.624	-19.169	57.890	250.663	0.657
4800.000	1.348	257.138	4799.034	-19.880	-56.909	-19.880	60.281	250.744	0.215
4900.000	1.367	280.384	4899.007	-19.927	-59.229	-19.927	62.491	251.405	0.547
5000.000	1.366	270.912	4998.978	-19.693	-61.594	-19.693	64.665	252.269	0.226
5100.000	1.536	286.333	5098.947	-19.297	-64.072	-19.297	66.915	253.239	0.424
5200.000	1.356	278.540	5198.915	-18.745	-66.528	-18.745	69.118	254.264	0.266
5300.000	1.403	280.480	5298.886	-18.346	-68.902	-18.346	71.303	255.090	0.066
5400.000	1.457	283.104	5398.855	-17.836	-71.344	-17.836	73.539	255.964	0.085
5500.000	1.610	280.414	5498.819	-17.294	-73.963	-17.294	75.958	256.840	0.169
5600.000	1.679	285.903	5598.778	-16.638	-76.754	-16.638	78.536	257.769	0.172
5700.000	1.760	279.029	5698.733	-15.996	-79.680	-15.996	81.269	258.649	0.221
5800.000	1.800	286.014	5798.685	-15.321	-82.706	-15.321	84.113	259.505	0.220
5900.000	2.239	285.912	5898.622	-14.353	-86.094	-14.353	87.282	260.535	0.439
6000.000	2.513	295.345	5998.537	-12.879	-89.953	-12.879	90.870	261.852	0.477
6100.000	2.046	296.547	6098.457	-11.143	-93.531	-11.143	94.192	263.206	0.469
6200.000	1.615	298.680	6198.406	-9.669	-96.364	-9.669	96.848	264.270	0.437
6300.000	1.516	301.328	6298.369	-8.305	-98.730	-8.305	99.079	265.192	0.122
6400.000	0.882	301.182	6398.346	-7.218	-100.519	-7.218	100.777	265.893	0.634
6500.000	1.048	290.515	6498.332	-6.499	-102.034	-6.499	102.241	266.355	0.244
6600.000	0.746	307.039	6598.320	-5.786	-103.411	-5.786	103.572	266.797	0.395
6700.000	0.714	285.349	6698.312	-5.229	-104.531	-5.229	104.662	267.136	0.277
6800.000	0.701	303.532	6798.304	-4.726	-105.642	-4.726	105.747	267.438	0.224
6900.000	0.463	218.685	6898.301	-4.704	-106.404	-4.704	106.508	267.469	0.805
7000.000	0.645	189.617	6998.296	-5.575	-106.751	-5.575	106.897	267.010	0.329
7100.000	0.958	164.446	7098.287	-6.936	-106.621	-6.936	106.847	266.278	0.464
7200.000	0.922	178.763	7198.273	-8.545	-106.380	-8.545	106.722	265.407	0.237
7300.000	0.636	212.636	7298.264	-9.817	-106.662	-9.817	107.112	264.741	0.530
HORIZONTAL DISPLACEMENT IS 107.112 FEET AT 264.741 DEGREES									