



Company: Anadarko Petroleum
 Well: Kuipers V 12-7 JI
 API: 05-123-20576
 Rig Name: Production/ Canary
 State/County: Colorado/Weld
 Latitude: 40.154, 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: 2/11/2014 / 17:37

VAUGHN ENERGY SERVICES

HENDERSON, COLORADO

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	0.707	118.082	99.997	-0.290	0.544	-0.290	0.617	118.082	0.707
200.000	0.557	147.732	199.992	-0.992	1.348	-0.992	1.674	126.341	0.354
300.000	0.366	108.839	299.989	-1.506	1.910	-1.506	2.433	128.252	0.356
400.000	0.477	107.989	399.986	-1.738	2.609	-1.738	3.134	123.670	0.110
500.000	0.666	131.009	499.981	-2.248	3.443	-2.248	4.112	123.138	0.294
600.000	0.981	169.979	599.971	-3.472	4.031	-3.472	5.320	130.744	0.624
700.000	1.062	174.291	699.955	-5.237	4.272	-5.237	6.758	140.798	0.112
800.000	1.003	179.012	799.939	-7.034	4.379	-7.034	8.286	148.098	0.103
900.000	0.786	195.370	899.927	-8.571	4.212	-8.571	9.550	153.826	0.333
1000.000	1.017	189.232	999.915	-10.107	3.888	-10.107	10.829	158.958	0.250
1100.000	0.983	195.529	1099.899	-11.810	3.516	-11.810	12.322	163.420	0.115
1200.000	0.864	212.941	1199.887	-13.269	2.877	-13.269	13.577	167.768	0.303
1300.000	0.912	198.275	1299.875	-14.658	2.217	-14.658	14.825	171.400	0.232
1400.000	1.090	213.318	1399.860	-16.208	1.445	-16.208	16.273	174.906	0.316
1500.000	0.998	226.926	1499.843	-17.597	0.287	-17.597	17.600	179.066	0.264
1600.000	1.094	231.873	1599.826	-18.781	-1.100	-18.781	18.814	183.352	0.132
1700.000	0.791	227.355	1699.813	-19.838	-2.359	-19.838	19.978	186.781	0.312
1800.000	1.024	237.067	1799.800	-20.792	-3.616	-20.792	21.104	189.867	0.279
1900.000	1.216	225.627	1899.781	-22.019	-5.125	-22.019	22.608	193.102	0.294
2000.000	1.172	221.339	1999.760	-23.529	-6.558	-23.529	24.426	195.575	0.099
2100.000	0.655	234.190	2099.747	-24.631	-7.697	-24.631	25.806	197.354	0.553
2200.000	0.816	236.579	2199.738	-25.357	-8.754	-25.357	26.826	199.047	0.164
2300.000	0.919	283.519	2299.728	-25.562	-10.128	-25.562	27.495	201.614	0.697
2400.000	1.228	295.553	2399.711	-24.912	-11.874	-24.912	27.597	205.484	0.381
2500.000	0.904	295.442	2499.693	-24.111	-13.553	-24.111	27.659	209.340	0.324
2600.000	0.456	289.421	2599.686	-23.640	-14.641	-23.640	27.807	211.770	0.453
2700.000	0.328	273.021	2699.684	-23.493	-15.302	-23.493	28.037	213.078	0.169
2800.000	0.076	51.547	2799.683	-23.436	-15.536	-23.436	28.118	213.541	0.389
2900.000	0.103	48.077	2899.683	-23.335	-15.417	-23.335	27.968	213.453	0.027
3000.000	0.132	90.074	2999.683	-23.275	-15.235	-23.275	27.818	213.207	0.089
3100.000	0.217	58.845	3099.682	-23.177	-14.957	-23.177	27.585	212.836	0.124
3200.000	0.297	186.438	3199.682	-23.337	-14.825	-23.337	27.648	212.426	0.462
3300.000	0.202	256.082	3299.681	-23.637	-15.025	-23.637	28.009	212.443	0.296
3400.000	0.394	224.201	3399.680	-23.926	-15.437	-23.926	28.474	212.829	0.247
3500.000	0.420	246.335	3499.677	-24.320	-16.012	-24.320	29.118	213.360	0.158

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	0.567	237.326	3599.674	-24.734	-16.764	-24.734	29.880	214.128	0.166
3700.000	0.633	244.044	3699.668	-25.243	-17.676	-25.243	30.816	215.002	0.096
3800.000	0.663	201.802	3799.662	-26.022	-18.388	-26.022	31.863	215.246	0.468
3900.000	0.828	181.700	3899.654	-27.281	-18.624	-27.281	33.032	214.320	0.306
4000.000	1.079	201.353	3999.640	-28.879	-18.988	-28.879	34.562	213.325	0.409
4100.000	1.105	227.170	4099.623	-30.411	-20.038	-30.411	36.419	213.381	0.488
4200.000	1.018	275.711	4199.607	-30.979	-21.629	-30.979	37.782	214.923	0.876
4300.000	1.195	262.163	4299.589	-31.032	-23.546	-31.032	38.954	217.190	0.315
4400.000	1.004	279.633	4399.571	-31.028	-25.443	-31.028	40.126	219.352	0.384
4500.000	0.859	260.367	4499.558	-31.007	-27.046	-31.007	41.145	221.097	0.343
4600.000	0.861	261.433	4599.546	-31.244	-28.528	-31.244	42.309	222.398	0.016
4700.000	0.807	250.656	4699.536	-31.589	-29.935	-31.589	43.520	223.460	0.166
4800.000	0.415	248.246	4799.530	-31.957	-30.936	-31.957	44.477	224.070	0.393
4900.000	0.677	211.666	4899.526	-32.593	-31.582	-32.593	45.384	224.097	0.423
5000.000	0.503	227.666	4999.520	-33.391	-32.216	-33.391	46.399	223.974	0.238
5100.000	0.511	242.718	5099.517	-33.891	-32.937	-33.891	47.259	224.182	0.133
5200.000	0.595	257.280	5199.512	-34.210	-33.839	-34.210	48.119	224.688	0.163
5300.000	0.621	238.990	5299.506	-34.603	-34.810	-34.603	49.083	225.171	0.195
5400.000	0.722	231.615	5399.500	-35.274	-35.768	-35.274	50.235	225.399	0.133
5500.000	0.560	262.214	5499.494	-35.731	-36.747	-35.731	51.255	225.803	0.373
5600.000	0.714	229.228	5599.488	-36.204	-37.703	-36.204	52.271	226.162	0.390
5700.000	0.751	284.103	5699.481	-36.451	-38.810	-36.451	53.244	226.795	0.676
5800.000	0.713	292.624	5799.473	-36.052	-40.020	-36.052	53.865	227.986	0.115
5900.000	1.008	313.281	5899.461	-35.210	-41.235	-35.210	54.222	229.506	0.423
6000.000	0.744	312.608	5999.450	-34.168	-42.353	-34.168	54.417	231.105	0.264
6100.000	1.041	322.664	6099.437	-33.006	-43.381	-33.006	54.510	232.735	0.334
6200.000	1.207	326.519	6199.418	-31.406	-44.513	-31.406	54.477	234.795	0.183
6300.000	0.909	347.507	6299.401	-29.753	-45.266	-29.753	54.168	236.683	0.484
6400.000	1.061	332.521	6399.387	-28.157	-45.864	-28.157	53.818	238.453	0.297
6500.000	0.603	281.395	6499.377	-27.232	-46.807	-27.232	54.152	239.809	0.828
6600.000	1.157	230.706	6599.366	-27.768	-48.104	-27.768	55.543	240.005	0.905
6700.000	1.466	222.917	6699.340	-29.344	-49.756	-29.344	57.765	239.470	0.355
6800.000	2.001	198.349	6799.295	-31.937	-51.177	-31.937	60.325	238.033	0.904
6900.000	1.492	210.362	6899.249	-34.718	-52.384	-34.718	62.844	236.466	0.624
7000.000	1.381	204.088	6999.217	-36.941	-53.534	-36.941	65.043	235.393	0.192
7100.000	1.166	199.280	7099.193	-39.002	-54.362	-39.002	66.906	234.343	0.240
7200.000	0.860	217.481	7199.177	-40.558	-55.155	-40.558	68.462	233.671	0.441
7300.000	0.263	149.496	7299.173	-41.352	-55.495	-41.352	69.207	233.309	0.799
7400.000	0.336	269.937	7399.172	-41.550	-55.671	-41.550	69.467	233.264	0.521
7500.000	0.111	40.497	7499.171	-41.476	-55.901	-41.476	69.607	233.426	0.417
7600.000	0.243	152.090	7599.171	-41.589	-55.739	-41.589	69.545	233.272	0.302
7700.000	0.484	190.127	7699.169	-42.192	-55.714	-42.192	69.887	232.863	0.329
HORIZONTAL DISPLACEMENT IS 69.887 FEET AT 232.863 DEGREES									