

Company: Anadarko Petroleum Corp  
 Well/API: Gurtler 24-10J/05-123-15152  
 Tool Type: North Seeking Rate Gyro  
 Rig Name: Production/Lightning  
 County/State: Weld/Colorado  
 Latitude: 40.209, Longitude: -104.610  
 Directions are relative to True North  
 VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB=GL Elevation=4813 Feet

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: gurtler24-10j-01.ut

Minimum Curvature Method

Report Date/Time: 12/16/2014 / 18:04

Lat/Long & Elevation Obtained On COGCC Website

VES Survey International - Henderson, CO

Troy Stephenson

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	****
200.000	0.377	140.250	199.999	-0.506	0.421	-0.506	0.658	140.250	0.189
300.000	0.500	140.561	299.996	-1.096	0.908	-1.096	1.423	140.345	0.123
400.000	0.134	167.426	399.994	-1.546	1.211	-1.546	1.964	141.942	0.385
500.000	0.254	183.136	499.993	-1.882	1.224	-1.882	2.245	146.958	0.131
600.000	0.054	203.107	599.993	-2.146	1.194	-2.146	2.456	150.923	0.205
700.000	0.523	245.224	699.991	-2.381	0.761	-2.381	2.499	162.284	0.485
800.000	0.431	255.059	799.988	-2.669	-0.018	-2.669	2.669	180.380	0.123
900.000	0.623	251.022	899.984	-2.943	-0.896	-2.943	3.076	196.925	0.196
1000.000	0.641	231.634	999.978	-3.467	-1.849	-3.467	3.929	208.064	0.214
1100.000	0.679	242.734	1099.971	-4.086	-2.813	-4.086	4.961	214.552	0.133
1200.000	0.809	245.614	1199.963	-4.648	-3.983	-4.648	6.121	220.589	0.136
1300.000	0.807	234.662	1299.953	-5.347	-5.200	-5.347	7.459	224.201	0.154
1400.000	0.687	232.613	1399.944	-6.119	-6.251	-6.119	8.747	225.614	0.123
1500.000	0.759	235.771	1499.936	-6.856	-7.276	-6.856	9.997	226.702	0.082
1600.000	0.713	221.992	1599.928	-7.691	-8.240	-7.691	11.271	226.974	0.183
1700.000	0.767	235.237	1699.920	-8.535	-9.206	-8.535	12.553	227.166	0.179
1800.000	0.654	228.587	1799.912	-9.294	-10.184	-9.294	13.787	227.615	0.140
1900.000	0.578	210.517	1899.906	-10.106	-10.868	-10.106	14.840	227.080	0.208
2000.000	0.632	184.993	1999.901	-11.090	-11.172	-11.090	15.742	225.211	0.273
2100.000	0.665	160.986	2099.895	-12.188	-11.031	-12.188	16.439	222.147	0.272
2200.000	0.927	149.016	2199.885	-13.430	-10.426	-13.430	17.002	217.822	0.309
2300.000	0.994	158.587	2299.871	-14.931	-9.693	-14.931	17.801	212.990	0.174
2400.000	1.166	154.499	2399.853	-16.657	-8.938	-16.657	18.903	208.218	0.188
2500.000	0.455	203.309	2499.844	-17.940	-8.657	-17.940	19.919	205.760	0.931
2600.000	0.606	314.553	2599.841	-17.934	-9.191	-17.934	20.152	207.136	0.880
2700.000	0.731	330.676	2699.835	-17.006	-9.881	-17.006	19.668	210.157	0.225
2800.000	0.760	338.292	2799.826	-15.834	-10.438	-15.834	18.965	213.394	0.103
2900.000	0.689	324.455	2899.818	-14.729	-11.033	-14.729	18.403	216.836	0.188
3000.000	0.581	339.303	2999.812	-13.765	-11.562	-13.765	17.977	220.028	0.196
3100.000	0.707	6.860	3099.806	-12.678	-11.668	-12.678	17.230	222.623	0.330
3200.000	0.764	7.482	3199.798	-11.405	-11.507	-11.405	16.202	225.255	0.058
3300.000	0.991	5.836	3299.786	-9.884	-11.332	-9.884	15.037	228.906	0.229

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
3400.000	1.244	6.694	3399.767	-7.945	-11.118	-7.945	13.665	234.450	0.253
3500.000	1.539	27.453	3499.738	-5.675	-10.372	-5.675	11.823	241.315	0.579
3600.000	1.534	28.685	3599.702	-3.309	-9.111	-3.309	9.693	250.038	0.033
3700.000	1.697	39.400	3699.662	-0.991	-7.528	-0.991	7.593	262.502	0.342
3800.000	1.843	41.840	3799.615	1.351	-5.516	1.351	5.679	283.762	0.164
3900.000	1.785	42.375	3899.565	3.699	-3.394	3.699	5.020	317.462	0.061
4000.000	1.889	45.565	3999.513	6.003	-1.168	6.003	6.116	348.991	0.146
4100.000	1.874	48.163	4099.459	8.248	1.227	8.248	8.339	8.462	0.087
4200.000	2.262	48.911	4199.394	10.635	3.933	10.635	11.339	20.293	0.390
4300.000	2.463	51.742	4299.309	13.263	7.108	13.263	15.048	28.186	0.232
4400.000	3.327	59.294	4399.181	16.075	11.290	16.075	19.644	35.080	0.943
4500.000	4.141	60.491	4498.968	19.335	16.926	19.335	25.697	41.199	0.817
4600.000	4.467	59.822	4598.686	23.071	23.435	23.071	32.886	45.448	0.330
4700.000	4.271	65.473	4698.395	26.575	30.190	26.575	40.220	48.644	0.473
4800.000	4.015	67.389	4798.134	29.467	36.809	29.467	47.151	51.322	0.292
4900.000	3.292	81.395	4897.932	31.242	42.880	31.242	53.055	53.923	1.143
5000.000	2.812	84.970	4997.790	31.887	48.163	31.887	57.762	56.493	0.517
5100.000	2.648	88.802	5097.677	32.150	52.915	32.150	61.917	58.718	0.245
5200.000	2.398	91.289	5197.580	32.151	57.316	32.151	65.718	60.710	0.273
5300.000	1.796	98.572	5297.512	31.871	60.957	31.871	68.786	62.398	0.657
5400.000	1.574	95.833	5397.469	31.498	63.873	31.498	71.217	63.751	0.236
5500.000	1.675	94.842	5497.429	31.235	66.695	31.235	73.647	64.905	0.104
5600.000	1.745	85.328	5597.385	31.235	69.669	31.235	76.350	65.851	0.292
5700.000	1.594	83.665	5697.342	31.513	72.569	31.513	79.115	66.527	0.159
5800.000	2.092	99.549	5797.291	31.364	75.751	31.364	81.987	67.509	0.709
5900.000	2.599	99.427	5897.207	30.689	79.787	30.689	85.486	68.961	0.507
6000.000	2.985	97.895	5997.088	29.960	84.602	29.960	89.751	70.499	0.393
6100.000	2.979	97.582	6096.952	29.260	89.757	29.260	94.406	71.944	0.017
6200.000	2.924	94.032	6196.820	28.738	94.877	28.738	99.134	73.149	0.191
6300.000	2.487	92.369	6296.708	28.469	99.589	28.469	103.578	74.047	0.444
6400.000	1.660	82.285	6396.642	28.574	103.192	28.574	107.075	74.523	0.901
6500.000	1.421	93.316	6496.606	28.696	105.864	28.696	109.685	74.834	0.380
6600.000	1.328	96.693	6596.577	28.489	108.253	28.489	111.939	75.255	0.123
6700.000	0.762	139.454	6696.562	27.849	109.836	27.849	113.311	75.772	0.926
6800.000	0.348	261.972	6796.559	27.302	109.966	27.302	113.305	76.057	0.993
6900.000	0.619	327.044	6896.556	27.713	109.371	27.713	112.828	75.781	0.568
7000.000	0.404	340.271	6996.552	28.498	108.958	28.498	112.624	75.343	0.245
7030.000	0.341	295.359	7026.551	28.636	108.842	28.636	112.546	75.260	0.968
HORIZONTAL DISPLACEMENT IS 112.546 FEET AT 75.260 DEGREES									