



Company: Anadarko Petroleum
 Well: Strear 22-23
 API #: 05-123-15946
 Rig Name: Production/CoreTech
 State/County: Colorado/Weld
 Latitude: 40.126, Longitude: -104.861
 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: survey_7900-de_01.ut
 Minimum Curvature Method
 Report Date/Time: 2/21/2014 / 14:34

Vaughn Energy Services
 Henderson, Colorado
 866-835-8333
 Randy Holcomb

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	0.256	100.093	100.000	-0.039	0.220	-0.039	0.224	100.093	0.256
200.000	0.067	268.606	199.999	-0.080	0.382	-0.080	0.390	101.790	0.322
300.000	0.129	237.317	299.999	-0.142	0.229	-0.142	0.270	121.827	0.080
400.000	0.078	13.183	399.999	-0.137	0.150	-0.137	0.203	132.427	0.193
500.000	0.117	301.086	499.999	-0.018	0.078	-0.018	0.080	102.770	0.119
600.000	0.106	319.975	599.999	0.106	-0.069	0.106	0.126	326.965	0.038
700.000	0.116	24.769	699.999	0.269	-0.086	0.269	0.282	342.316	0.120
800.000	0.220	12.179	799.998	0.549	-0.003	0.549	0.549	359.725	0.110
900.000	0.107	354.209	899.998	0.830	0.028	0.830	0.830	1.965	0.123
1000.000	0.212	286.344	999.998	0.975	-0.158	0.975	0.988	350.788	0.198
1100.000	0.161	284.689	1099.997	1.062	-0.471	1.062	1.162	336.088	0.051
1200.000	0.371	262.639	1199.996	1.056	-0.928	1.056	1.406	318.701	0.230
1300.000	0.526	298.160	1299.993	1.232	-1.654	1.232	2.062	306.671	0.311
1400.000	0.473	265.450	1399.989	1.415	-2.471	1.415	2.847	299.810	0.286
1500.000	0.565	280.802	1499.985	1.475	-3.366	1.475	3.675	293.662	0.166
1600.000	0.680	281.756	1599.979	1.688	-4.432	1.688	4.742	290.856	0.116
1700.000	0.407	293.001	1699.975	1.948	-5.340	1.948	5.684	290.043	0.292
1800.000	0.435	296.288	1799.972	2.255	-6.007	2.255	6.416	290.576	0.037
1900.000	0.572	301.790	1899.968	2.686	-6.771	2.686	7.284	291.636	0.145
2000.000	0.700	279.893	1999.962	3.054	-7.797	3.054	8.374	291.388	0.272
2100.000	0.713	264.515	2099.955	3.099	-9.018	3.099	9.536	288.966	0.189
2200.000	0.520	266.547	2199.949	3.012	-10.090	3.012	10.531	286.622	0.194
2300.000	0.423	245.227	2299.946	2.830	-10.879	2.830	11.241	284.583	0.199
2400.000	0.380	213.310	2399.943	2.398	-11.396	2.398	11.646	281.885	0.225
2500.000	0.316	181.715	2499.941	1.846	-11.587	1.846	11.733	279.053	0.199
2600.000	0.332	182.039	2599.940	1.281	-11.605	1.281	11.676	276.298	0.017
2700.000	0.477	167.888	2699.937	0.584	-11.528	0.584	11.543	272.900	0.174
2800.000	0.428	169.363	2799.934	-0.189	-11.372	-0.189	11.374	269.046	0.050
2900.000	0.459	174.357	2899.931	-0.954	-11.264	-0.954	11.304	265.158	0.050
3000.000	0.308	208.382	2999.929	-1.589	-11.352	-1.589	11.463	262.031	0.266
3100.000	0.396	179.240	3099.927	-2.171	-11.476	-2.171	11.679	259.286	0.196
3200.000	0.755	211.161	3199.922	-3.080	-11.812	-3.080	12.207	255.384	0.468
3300.000	0.751	223.019	3299.914	-4.123	-12.600	-4.123	13.257	251.881	0.156
3400.000	0.705	235.796	3399.906	-4.948	-13.556	-4.948	14.430	249.948	0.168

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	0.791	259.764	3499.897	-5.416	-14.743	-5.416	15.707	249.829	0.322
3600.000	0.847	271.178	3599.887	-5.524	-16.162	-5.524	17.079	251.131	0.172
3700.000	0.811	289.632	3699.877	-5.271	-17.567	-5.271	18.341	253.300	0.268
3800.000	1.071	297.387	3799.863	-4.603	-19.063	-4.603	19.611	256.425	0.289
3900.000	1.393	318.435	3899.841	-3.264	-20.699	-3.264	20.955	261.040	0.550
4000.000	1.542	308.630	3999.808	-1.514	-22.557	-1.514	22.608	266.159	0.291
4100.000	1.667	322.294	4099.769	0.476	-24.497	0.476	24.502	271.114	0.402
4200.000	1.586	340.369	4199.730	2.931	-25.852	2.931	26.018	276.468	0.517
4300.000	1.608	331.156	4299.691	5.464	-26.994	5.464	27.541	281.442	0.257
4400.000	1.947	329.589	4399.643	8.158	-28.531	8.158	29.674	285.957	0.342
4500.000	2.208	344.197	4499.578	11.476	-29.915	11.476	32.041	290.988	0.588
4600.000	1.853	320.676	4599.516	14.581	-31.465	14.581	34.679	294.863	0.897
4700.000	1.764	320.191	4699.466	17.014	-33.475	17.014	37.551	296.943	0.090
4800.000	1.668	307.686	4799.422	19.087	-35.613	19.087	40.405	298.189	0.386
4900.000	1.595	297.738	4899.382	20.624	-37.996	20.624	43.233	298.493	0.292
5000.000	1.673	295.346	4999.341	21.897	-40.547	21.897	46.082	298.371	0.104
5100.000	1.592	290.615	5099.300	23.011	-43.167	23.011	48.917	298.061	0.157
5200.000	1.301	290.034	5199.268	23.889	-45.534	23.889	51.420	297.684	0.292
5300.000	0.832	292.711	5299.251	24.558	-47.270	24.558	53.269	297.453	0.472
5400.000	0.867	288.525	5399.240	25.079	-48.657	25.079	54.740	297.268	0.071
5500.000	0.579	286.681	5499.232	25.464	-49.859	25.464	55.985	297.055	0.289
5600.000	0.389	355.124	5599.229	25.947	-50.371	25.947	56.662	297.254	0.566
5700.000	0.651	22.123	5699.225	26.811	-50.186	26.811	56.899	298.113	0.352
5800.000	0.842	11.729	5799.216	28.057	-49.823	28.057	57.180	299.385	0.233
5900.000	0.829	354.339	5899.206	29.496	-49.745	29.496	57.832	300.666	0.253
6000.000	0.939	346.380	5999.194	31.013	-50.009	31.013	58.845	301.805	0.165
6100.000	1.068	333.150	6099.179	32.641	-50.623	32.641	60.234	302.813	0.264
6200.000	0.857	322.171	6199.165	34.063	-51.503	34.063	61.748	303.480	0.279
6300.000	0.940	339.266	6299.153	35.421	-52.252	35.421	63.126	304.133	0.279
6400.000	0.532	326.138	6399.144	36.574	-52.801	36.574	64.231	304.709	0.438
6500.000	0.128	299.898	6499.142	37.015	-53.157	37.015	64.775	304.851	0.422
6600.000	0.327	24.496	6599.142	37.330	-53.135	37.330	64.938	305.090	0.340
6700.000	0.483	301.883	6699.140	37.813	-53.375	37.813	65.412	305.315	0.548
6800.000	1.061	233.323	6799.132	37.482	-54.476	37.482	66.126	304.530	0.993
6900.000	1.369	239.600	6899.109	36.325	-56.249	36.325	66.959	302.853	0.335
7000.000	1.265	242.685	6999.083	35.214	-58.261	35.214	68.076	301.149	0.126
7100.000	0.456	288.100	7099.072	34.831	-59.620	34.831	69.049	300.294	0.999
7200.000	0.676	10.820	7199.068	35.534	-59.887	35.534	69.636	300.682	0.766
7300.000	0.886	12.356	7299.059	36.868	-59.611	36.868	70.091	301.736	0.211
7400.000	1.019	6.000	7399.045	38.507	-59.353	38.507	70.750	302.975	0.170
7500.000	0.857	30.386	7499.032	40.037	-58.882	40.037	71.204	304.214	0.427
7600.000	0.857	23.432	7599.021	41.368	-58.206	41.368	71.409	305.402	0.104
7700.000	0.423	29.413	7699.014	42.375	-57.728	42.375	71.611	306.281	0.439
7800.000	0.362	31.265	7799.012	42.967	-57.383	42.967	71.686	306.825	0.062
7900.000	0.333	61.313	7899.010	43.376	-56.963	43.376	71.598	307.288	0.182

HORIZONTAL DISPLACEMENT IS
71.598 FEET AT 307.288 DEGREES