

Company: ANADARKO PETROLEUM
 Well: HSR-STATE 15-16A
 API: 05-123-20354
 Rig Name: PRODUCTION/VES
 State/County: COLORADO / WELD
 Latitude: 40.219, Longitude: -104.780
 Directions are relative to True North
 VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = GROUND LEVEL

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: run1-de_01.ut
 Minimum Curvature Method
 Report Date/Time: 2/9/2014 / 13:12

VAUGHN ENERGY SERVICES
 HENDERSON, COLORADO
 303-853-4976
 NICK KULA

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	0.679	175.416	99.998	-0.590	0.047	-0.590	0.592	175.416	0.679
200.000	0.201	159.543	199.994	-1.345	0.156	-1.345	1.354	173.383	0.488
300.000	0.179	164.302	299.994	-1.660	0.260	-1.660	1.680	171.110	0.028
400.000	0.228	154.943	399.993	-1.990	0.386	-1.990	2.027	169.023	0.059
500.000	0.091	154.032	499.993	-2.242	0.505	-2.242	2.298	167.304	0.136
600.000	0.247	348.870	599.993	-2.102	0.498	-2.102	2.160	166.663	0.336
700.000	0.250	348.169	699.992	-1.676	0.412	-1.676	1.726	166.196	0.004
800.000	0.272	342.607	799.991	-1.236	0.296	-1.236	1.271	166.526	0.033
900.000	0.244	344.032	899.990	-0.805	0.167	-0.805	0.822	168.301	0.028
1000.000	0.286	312.746	999.989	-0.431	-0.075	-0.431	0.437	189.874	0.148
1100.000	0.181	300.148	1099.988	-0.182	-0.395	-0.182	0.435	245.213	0.116
1200.000	0.290	287.112	1199.987	-0.029	-0.773	-0.029	0.774	267.888	0.120
1300.000	0.357	282.949	1299.985	0.116	-1.318	0.116	1.323	275.015	0.071
1400.000	0.398	267.402	1399.983	0.170	-1.969	0.170	1.976	274.927	0.110
1500.000	0.621	272.601	1499.979	0.179	-2.857	0.179	2.863	273.576	0.228
1600.000	0.783	282.836	1599.972	0.355	-4.065	0.355	4.081	274.991	0.204
1700.000	0.978	275.757	1699.960	0.592	-5.581	0.592	5.612	276.060	0.223
1800.000	1.341	283.572	1799.939	0.953	-7.567	0.953	7.627	277.175	0.395
1900.000	1.769	272.672	1899.902	1.299	-10.246	1.299	10.329	277.226	0.519
2000.000	2.044	274.118	1999.847	1.499	-13.568	1.499	13.650	276.306	0.279
2100.000	2.058	273.414	2099.783	1.734	-17.139	1.734	17.227	275.778	0.029
2200.000	2.054	276.874	2199.719	2.056	-20.710	2.056	20.812	275.668	0.124
2300.000	1.994	286.624	2299.656	2.768	-24.156	2.768	24.314	276.536	0.349
2400.000	2.005	297.852	2399.596	4.083	-27.370	4.083	27.673	278.484	0.391
2500.000	2.021	295.242	2499.534	5.652	-30.512	5.652	31.031	280.495	0.093
2600.000	1.943	295.804	2599.474	7.142	-33.634	7.142	34.384	281.989	0.081
2700.000	1.837	300.357	2699.420	8.690	-36.543	8.690	37.562	283.377	0.184
2800.000	1.825	304.541	2799.369	10.403	-39.237	10.403	40.593	284.849	0.134
2900.000	1.650	310.941	2899.323	12.250	-41.637	12.250	43.402	286.394	0.261

HORIZONTAL DISPLACEMENT IS
55.053 FEET AT 312.303 DEGREES