



Company/Rig: NOBLE ENERGY/ CORETECH
WELL/API#: PETRIKIN A 34-10/05-123-13517
DECLINATION: 8.29 DEGREES
TD AS DRILLED: 4668 FEET
COUNTY/STATE: WELD/COLORADO
VS-Azi: 0.000 Degrees
Latitude: 40.44102, Longitude: -104.53330
Grid North = True North -0.62 degs (NAD 27)
Grid Convergence Applied = -0.62 degs



DEPTH REFERENCE : RKB=SURFACE ELEVATION= 4641 FEET

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01-de_01.ut

Minimum Curvature Method

Report Date/Time: 7/16/2015 / 10:10

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

HENDERSON, COLORADO

303-853-4976

SURVEYOR: KEVIN MCDOWELL

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	0.960	340.312	99.995	0.789	-0.282	0.789	0.838	340.312	0.960
200.000	0.776	328.821	199.984	2.156	-0.915	2.156	2.342	337.012	0.252
300.000	0.728	354.832	299.976	3.368	-1.322	3.368	3.618	338.561	0.342
400.000	0.552	346.826	399.969	4.469	-1.489	4.469	4.711	341.568	0.197
500.000	0.710	325.624	499.963	5.450	-1.949	5.450	5.788	340.321	0.279
600.000	0.751	328.526	599.955	6.520	-2.641	6.520	7.034	337.949	0.055
700.000	0.748	319.639	699.947	7.576	-3.406	7.576	8.306	335.794	0.116
800.000	0.722	322.334	799.938	8.572	-4.214	8.572	9.552	333.824	0.043
900.000	0.732	302.979	899.931	9.419	-5.135	9.419	10.728	331.403	0.245
1000.000	0.750	319.654	999.922	10.265	-6.094	10.265	11.938	329.304	0.216
1100.000	0.674	303.147	1099.915	11.086	-7.010	11.086	13.116	327.692	0.218
1200.000	0.708	286.970	1199.908	11.588	-8.094	11.588	14.135	325.067	0.197
1300.000	0.899	315.894	1299.898	12.331	-9.231	12.331	15.404	323.183	0.442
1400.000	0.791	286.072	1399.888	13.086	-10.440	13.086	16.740	321.418	0.447
1500.000	0.664	293.456	1499.880	13.507	-11.634	13.507	17.827	319.262	0.158
1600.000	0.961	314.400	1599.870	14.325	-12.764	14.325	19.187	318.297	0.416
1700.000	0.464	312.233	1699.862	15.184	-13.664	15.184	20.427	318.017	0.498
1800.000	0.936	313.434	1799.854	16.018	-14.557	16.018	21.644	317.736	0.472

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
1900.000	0.907	329.974	1899.841	17.265	-15.546	17.265	23.232	317.998	0.267
2000.000	0.229	275.190	1999.836	17.968	-16.141	17.968	24.153	318.066	0.797
2100.000	0.253	298.019	2099.835	18.090	-16.535	18.090	24.508	317.571	0.098
2200.000	0.454	246.468	2199.833	18.035	-17.094	18.035	24.849	316.535	0.357
2300.000	0.541	232.566	2299.830	17.590	-17.832	17.590	25.048	314.609	0.148
2400.000	0.621	219.857	2399.825	16.887	-18.554	16.887	25.088	312.308	0.151
2500.000	0.543	247.590	2499.820	16.291	-19.340	16.291	25.286	310.109	0.289
2600.000	0.664	232.248	2599.814	15.755	-20.236	15.755	25.646	307.904	0.200
2700.000	0.788	250.736	2699.806	15.174	-21.343	15.174	26.187	305.410	0.264
2800.000	0.923	254.531	2799.795	14.732	-22.769	14.732	27.119	302.903	0.146
2900.000	0.902	235.443	2899.783	14.070	-24.194	14.070	27.988	300.181	0.303
3000.000	1.029	249.907	2999.769	13.316	-25.685	13.316	28.932	297.403	0.274
3100.000	0.963	240.807	3099.753	12.597	-27.262	12.597	30.032	294.801	0.171
3200.000	0.301	279.940	3199.747	12.233	-28.254	12.233	30.789	293.411	0.753
3300.000	0.829	34.236	3299.744	12.876	-28.107	12.876	30.916	294.614	0.991
3400.000	1.794	35.261	3399.716	14.752	-26.796	14.752	30.588	298.834	0.966
3500.000	2.682	24.381	3499.640	18.162	-24.927	18.162	30.841	306.077	0.981
3600.000	2.999	16.146	3599.517	22.806	-23.233	22.806	32.556	314.469	0.516
3700.000	3.085	27.720	3699.377	27.701	-21.254	27.701	34.915	322.503	0.619
3800.000	2.836	42.863	3799.245	31.897	-18.319	31.897	36.783	330.130	0.818
3900.000	2.849	26.389	3899.124	35.936	-15.532	35.936	39.149	336.626	0.814
4000.000	2.132	16.670	3999.029	39.944	-13.894	39.944	42.291	340.821	0.830
4100.000	1.758	40.738	4098.973	42.888	-12.359	42.888	44.633	343.925	0.889
4200.000	1.495	62.417	4198.933	44.654	-10.201	44.654	45.805	347.132	0.664
4300.000	1.524	163.995	4298.913	43.980	-8.678	43.980	44.828	348.838	2.339
4400.000	1.411	58.935	4398.893	43.337	-7.257	43.337	43.941	350.494	2.330
4500.000	1.339	69.926	4498.865	44.374	-5.105	44.374	44.666	353.438	0.273
4600.000	1.437	37.517	4598.837	45.769	-3.243	45.769	45.884	355.947	0.780
4700.000	1.554	39.831	4698.803	47.805	-1.611	47.805	47.832	358.070	0.132
4800.000	1.611	31.660	4798.765	50.043	-0.005	50.043	50.043	359.994	0.233
4900.000	1.455	57.546	4898.730	51.921	1.804	51.921	51.952	1.990	0.703
5000.000	1.522	48.164	4998.697	53.488	3.865	53.488	53.627	4.133	0.252
5100.000	1.478	40.005	5098.663	55.361	5.683	55.361	55.652	5.861	0.218
5200.000	0.989	57.906	5198.639	56.808	7.243	56.808	57.267	7.266	0.617
5300.000	1.188	39.833	5298.622	58.062	8.639	58.062	58.701	8.462	0.395
5400.000	1.404	28.169	5398.596	59.938	9.881	59.938	60.747	9.361	0.340
5500.000	0.716	44.279	5498.579	61.466	10.896	61.466	62.424	10.052	0.742
5600.000	0.688	82.532	5598.572	61.992	11.928	61.992	63.129	10.891	0.461
5700.000	0.655	47.418	5698.565	62.456	12.944	62.456	63.784	11.709	0.406
5800.000	0.694	57.313	5798.558	63.170	13.875	63.170	64.676	12.388	0.123

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
5900.000	0.313	166.208	5898.556	63.232	14.450	63.232	64.862	12.872	0.849
6000.000	0.400	17.231	5998.555	63.301	14.618	63.301	64.967	13.004	0.687
6100.000	0.100	178.303	6098.554	63.547	14.724	63.547	65.230	13.046	0.496
6200.000	0.967	191.322	6198.549	62.632	14.561	62.632	64.302	13.088	0.870
6300.000	1.562	195.896	6298.524	60.493	14.022	60.493	62.097	13.050	0.603
6400.000	2.103	216.778	6398.474	57.713	12.550	57.713	59.062	12.269	0.851
6500.000	2.534	219.597	6498.392	54.541	10.043	54.541	55.458	10.434	0.446
6600.000	3.015	231.754	6598.275	51.209	6.569	51.209	51.629	7.310	0.758
6700.000	2.975	230.052	6698.139	47.915	2.514	47.915	47.981	3.003	0.097