

COMPANY/RIG: Noble Energy/Production/CoreTech

WELL: Wells Ranch AF 06-11

DECLINATION: 8.21

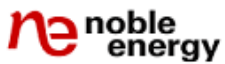
TD AS DRILLED: 6764

COUNTY/STATE: Weld/Colorado

Latitude: 40.427, Longitude: -104.369

GRID North is 0.730 Degrees East of True North

VS-Azi: 0.000 Degrees



DEPTH REFERENCE : RKB = GL Elevation = 4665

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro.ut

Minimum Curvature Method

Report Date/Time: 10/14/2014 / 14:44

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

HENDERSON, COLORADO

303-853-4976

Surveyor: JUSTIN WILLIAMS

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	0.496	295.647	99.999	0.187	-0.390	0.187	0.433	295.647	0.496
200.000	0.753	355.098	199.994	1.029	-0.836	1.029	1.326	320.913	0.658
300.000	0.838	351.921	299.984	2.409	-0.995	2.409	2.606	337.550	0.096
400.000	0.950	17.681	399.972	3.923	-0.846	3.923	4.013	347.825	0.413
500.000	0.633	24.944	499.963	5.213	-0.362	5.213	5.225	356.031	0.332
600.000	0.880	20.382	599.954	6.433	0.139	6.433	6.435	1.234	0.254
700.000	0.633	14.352	699.945	7.688	0.543	7.688	7.707	4.039	0.259
800.000	0.672	2.832	799.939	8.808	0.709	8.808	8.837	4.600	0.137
900.000	0.635	19.008	899.932	9.918	0.918	9.918	9.960	5.289	0.187
1000.000	0.584	352.449	999.927	10.947	1.032	10.947	10.996	5.384	0.284
1100.000	0.646	352.773	1099.921	12.011	0.894	12.011	12.045	4.256	0.062
1200.000	0.811	352.151	1199.913	13.272	0.726	13.272	13.291	3.132	0.165
1300.000	0.326	32.120	1299.908	14.213	0.781	14.213	14.235	3.145	0.599
1400.000	0.248	359.463	1399.907	14.670	0.930	14.670	14.700	3.628	0.178
1500.000	0.302	319.476	1499.906	15.087	0.757	15.087	15.106	2.871	0.195
1600.000	0.645	357.418	1599.902	15.850	0.560	15.850	15.860	2.023	0.447
1700.000	0.190	289.816	1699.900	16.469	0.379	16.469	16.473	1.318	0.599
1800.000	0.487	18.055	1799.898	16.929	0.355	16.929	16.932	1.201	0.517
1900.000	0.441	51.064	1899.895	17.574	0.786	17.574	17.592	2.560	0.267

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
2000.000	0.498	38.730	1999.892	18.155	1.357	18.155	18.206	4.274	0.116
2100.000	0.893	24.267	2099.884	19.204	1.949	19.204	19.303	5.795	0.430
2200.000	1.345	10.553	2199.865	21.069	2.484	21.069	21.215	6.725	0.523
2300.000	1.621	353.650	2299.832	23.629	2.543	23.629	23.766	6.142	0.514
2400.000	1.780	353.414	2399.788	26.578	2.208	26.578	26.669	4.750	0.159
2500.000	1.629	350.472	2499.744	29.521	1.795	29.521	29.576	3.479	0.175
2600.000	1.560	344.290	2599.705	32.233	1.191	32.233	32.255	2.116	0.185
2700.000	1.366	326.958	2699.673	34.543	0.173	34.543	34.543	0.286	0.481
2800.000	1.393	330.645	2799.644	36.602	-1.073	36.602	36.617	358.321	0.093
2900.000	1.168	343.987	2899.619	38.640	-1.950	38.640	38.689	357.111	0.372
3000.000	0.962	321.347	2999.602	40.276	-2.756	40.276	40.370	356.086	0.464
3100.000	0.628	326.879	3099.593	41.390	-3.580	41.390	41.545	355.057	0.343
3200.000	0.466	312.258	3199.588	42.123	-4.180	42.123	42.330	354.333	0.213
3300.000	0.700	344.731	3299.583	42.985	-4.641	42.985	43.235	353.837	0.396
3400.000	0.806	331.081	3399.575	44.189	-5.142	44.189	44.488	353.362	0.208
3500.000	0.753	341.292	3499.565	45.427	-5.693	45.427	45.782	352.857	0.148
3600.000	0.627	2.547	3599.558	46.595	-5.879	46.595	46.965	352.809	0.283
3700.000	0.660	31.736	3699.552	47.631	-5.552	47.631	47.954	353.351	0.326
3800.000	0.390	22.768	3799.548	48.435	-5.118	48.435	48.704	353.968	0.281
3900.000	0.549	48.679	3899.545	49.064	-4.626	49.064	49.282	354.613	0.262
4000.000	0.575	51.736	3999.540	49.692	-3.873	49.692	49.842	355.544	0.040
4100.000	1.397	75.252	4099.525	50.313	-2.299	50.313	50.365	357.383	0.900
4200.000	2.245	82.790	4199.473	50.869	0.823	50.869	50.876	0.927	0.879
4300.000	2.906	86.147	4299.372	51.285	5.296	51.285	51.558	5.896	0.677
4400.000	3.366	81.523	4399.222	51.888	10.728	51.888	52.986	11.682	0.525
4500.000	2.853	89.712	4499.075	52.334	16.120	52.334	54.760	17.120	0.677
4600.000	2.331	88.996	4598.972	52.382	20.642	52.382	56.302	21.508	0.523
4700.000	2.042	90.141	4698.899	52.413	24.456	52.413	57.838	25.014	0.291
4800.000	1.797	82.986	4798.843	52.600	27.794	52.600	59.492	27.852	0.343
4900.000	1.713	78.390	4898.796	53.092	30.815	53.092	61.387	30.131	0.164
5000.000	1.461	92.412	4998.758	53.340	33.553	53.340	63.015	32.172	0.461
5100.000	1.355	79.599	5098.728	53.499	35.990	53.499	64.478	33.929	0.331
5200.000	0.866	90.569	5198.709	53.705	37.909	53.705	65.737	35.217	0.532
5300.000	0.995	94.126	5298.696	53.635	39.531	53.635	66.629	36.391	0.141
5400.000	1.136	76.613	5398.679	53.802	41.361	53.802	67.863	37.551	0.353
5500.000	0.871	115.314	5498.665	53.707	43.012	53.707	68.808	38.690	0.710
5600.000	1.097	105.831	5598.650	53.121	44.621	53.121	69.374	40.030	0.278
5700.000	0.769	107.648	5698.637	52.656	46.181	52.656	70.038	41.252	0.329
5800.000	1.265	135.495	5798.621	51.665	47.595	51.665	70.246	42.652	0.686
5900.000	1.272	128.414	5898.597	50.189	49.238	50.189	70.308	44.452	0.157

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
6000.000	1.094	144.660	5998.576	48.720	50.660	48.720	70.286	46.118	0.378
6100.000	1.285	139.816	6098.554	47.085	51.936	47.085	70.102	47.805	0.216
6200.000	0.936	135.273	6198.535	45.648	53.234	45.648	70.125	49.387	0.360
6300.000	1.130	132.928	6298.519	44.396	54.531	44.396	70.318	50.849	0.198
6400.000	1.382	149.300	6398.495	42.687	55.868	42.687	70.310	52.617	0.436
6500.000	1.284	129.609	6498.468	40.936	57.347	40.936	70.459	54.480	0.466