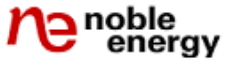


Company: Noble Energy, Inc.

Lease/Well: Watson E / 28-6



Rig Name: Production / VES

Location/County: Coloado / Weld

Latitude: 40.459

GRID North is 0.540 Degrees East of True North

VS-Azi: 0.000 Degrees



Depth Reference : RKB = Ground Level

DRILLOG MV GYRO SURVEY CALCULATIONS

Filename: watson e28-6-de_01hs.ut

Minimum Curvature Method

Report Date/Time: 11/9/2012 / 12:05

Vaughn Energy Services

Henderson, Colorado

303-853-4976

Surveyor: Justin Williams

Watson E 28-6 / API 05-123-16709

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	0.595	286.868	99.998	0.151	-0.497	0.151	0.519	286.868	0.595
200.000	0.249	246.559	199.996	0.215	-1.192	0.215	1.212	280.218	0.436
300.000	0.267	346.512	299.995	0.355	-1.446	0.355	1.489	283.799	0.395
400.000	0.381	302.052	399.993	0.758	-1.782	0.758	1.936	293.043	0.267
500.000	0.540	214.144	499.991	0.544	-2.328	0.544	2.391	283.163	0.649
600.000	0.224	229.612	599.989	0.028	-2.741	0.028	2.741	270.580	0.329
700.000	0.683	214.416	699.985	-0.591	-3.227	-0.591	3.281	259.628	0.470
800.000	0.373	237.110	799.981	-1.259	-3.837	-1.259	4.039	251.834	0.368
900.000	0.825	231.965	899.975	-1.880	-4.678	-1.880	5.041	248.109	0.455
1000.000	0.880	237.777	999.964	-2.733	-5.895	-2.733	6.498	245.127	0.102
1100.000	0.568	230.055	1099.956	-3.461	-6.925	-3.461	7.741	243.446	0.326
1200.000	0.973	236.055	1199.947	-4.253	-8.009	-4.253	9.069	242.030	0.413
1300.000	0.826	238.325	1299.935	-5.106	-9.327	-5.106	10.633	241.303	0.152
1400.000	1.023	232.284	1399.922	-6.030	-10.646	-6.030	12.235	240.472	0.219
1500.000	0.917	239.579	1499.907	-6.981	-12.042	-6.981	13.919	239.898	0.162
1600.000	1.069	241.794	1599.892	-7.827	-13.554	-7.827	15.652	239.994	0.156
1700.000	0.935	262.173	1699.877	-8.379	-15.185	-8.379	17.343	241.109	0.378
1800.000	0.566	279.535	1799.869	-8.409	-16.480	-8.409	18.501	242.968	0.430
1900.000	0.741	298.996	1899.862	-8.013	-17.533	-8.013	19.277	245.437	0.280
2000.000	0.594	324.975	1999.856	-7.275	-18.396	-7.275	19.782	248.421	0.332

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
2100.000	0.423	343.667	2099.852	-6.497	-18.797	-6.497	19.888	250.933	0.236
2200.000	0.500	38.976	2199.849	-5.804	-18.626	-5.804	19.510	252.694	0.434
2300.000	0.455	64.798	2299.846	-5.296	-17.993	-5.296	18.756	253.600	0.218
2400.000	0.522	66.583	2399.842	-4.946	-17.216	-4.946	17.912	253.972	0.069
2500.000	0.567	37.760	2499.838	-4.374	-16.495	-4.374	17.065	255.150	0.274
2600.000	0.653	46.698	2599.832	-3.592	-15.778	-3.592	16.182	257.173	0.128
2700.000	0.937	33.934	2699.822	-2.523	-14.907	-2.523	15.119	260.393	0.334
2800.000	1.276	34.460	2799.804	-0.927	-13.821	-0.927	13.852	266.164	0.338
2900.000	1.226	31.951	2899.780	0.899	-12.625	0.899	12.657	274.072	0.074
3000.000	1.246	36.418	2999.757	2.681	-11.413	2.681	11.724	283.219	0.098
3100.000	1.169	38.396	3099.734	4.355	-10.134	4.355	11.031	293.255	0.087
3200.000	1.338	47.123	3199.711	5.949	-8.645	5.949	10.494	304.534	0.255
3300.000	0.861	52.058	3299.692	7.206	-7.197	7.206	10.184	315.035	0.486
3400.000	0.797	65.825	3399.681	7.952	-5.970	7.952	9.944	323.103	0.209
3500.000	0.884	102.764	3499.671	8.067	-4.583	8.067	9.278	330.395	0.539
3600.000	0.817	137.450	3599.661	7.371	-3.349	7.371	8.096	335.566	0.511
3700.000	1.123	140.519	3699.647	6.089	-2.243	6.089	6.489	339.774	0.311
3800.000	1.276	144.342	3799.625	4.427	-0.971	4.427	4.533	347.631	0.172
3900.000	1.309	141.509	3899.599	2.628	0.389	2.628	2.657	8.428	0.072
4000.000	1.110	129.484	3999.577	1.118	1.848	1.118	2.160	58.822	0.322
4100.000	1.017	111.789	4099.560	0.173	3.419	0.173	3.424	87.102	0.340
4200.000	1.019	104.422	4199.544	-0.378	5.104	-0.378	5.118	94.232	0.131
4300.000	1.084	102.198	4299.527	-0.799	6.890	-0.799	6.936	96.615	0.077
4400.000	0.988	87.854	4399.511	-0.967	8.676	-0.967	8.729	96.357	0.276
4500.000	1.087	90.311	4499.495	-0.939	10.486	-0.939	10.528	95.120	0.108
4600.000	1.142	88.136	4599.476	-0.912	12.430	-0.912	12.463	94.197	0.069
4700.000	1.690	95.650	4699.445	-1.025	14.893	-1.025	14.928	93.937	0.578
4800.000	1.989	97.014	4799.394	-1.382	18.083	-1.382	18.136	94.371	0.303
4900.000	2.096	99.630	4899.330	-1.900	21.609	-1.900	21.692	95.025	0.141
5000.000	1.769	104.991	4999.273	-2.605	24.903	-2.605	25.038	95.972	0.373
5100.000	1.294	122.637	5099.238	-3.613	27.344	-3.613	27.582	97.528	0.664
5200.000	1.052	174.152	5199.219	-5.136	28.389	-5.136	28.850	100.254	1.043
5300.000	1.715	191.401	5299.190	-7.516	28.187	-7.516	29.171	104.930	0.776
5400.000	2.495	209.106	5399.123	-10.884	26.832	-10.884	28.956	112.080	1.006
5500.000	1.486	240.671	5499.064	-13.421	24.643	-13.421	28.061	118.574	1.454
5600.000	1.079	248.334	5599.039	-14.404	22.637	-14.404	26.831	122.468	0.440
5700.000	1.395	246.920	5699.015	-15.229	20.643	-15.229	25.652	126.418	0.317
5800.000	1.397	254.898	5798.986	-16.023	18.346	-16.023	24.358	131.134	0.194
5900.000	2.505	260.188	5898.926	-16.713	15.016	-16.713	22.468	138.063	1.121
6000.000	2.792	269.546	5998.820	-17.105	10.427	-17.105	20.033	148.634	0.518
6100.000	3.467	271.596	6098.670	-17.040	4.969	-17.040	17.750	163.742	0.684
6200.000	4.884	276.432	6198.402	-16.479	-2.283	-16.479	16.637	187.889	1.459

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
6300.000	4.562	279.593	6298.063	-15.340	-10.435	-15.340	18.552	214.225	0.414
6400.000	1.968	277.580	6397.892	-14.450	-16.059	-14.450	21.603	228.019	2.596
6500.000	0.638	232.051	6497.866	-14.566	-18.201	-14.566	23.312	231.330	1.588
6600.000	0.810	167.281	6597.859	-15.598	-18.485	-15.598	24.186	229.841	0.789
6700.000	1.296	134.083	6697.843	-17.074	-17.517	-17.074	24.461	225.733	0.761
6800.000	1.259	132.086	6797.818	-18.597	-15.889	-18.597	24.460	220.509	0.058
6900.000	1.294	122.802	6897.793	-19.945	-14.125	-19.945	24.440	215.305	0.209
7000.000	0.977	127.004	6997.774	-21.070	-12.495	-21.070	24.496	210.668	0.327
21' Ellipse of uncertainty									
7062.000	0.676	134.953	7059.767	-21.654	-11.809	-21.654	24.665	208.605	1.276