



Company: Noble Energy
Rig: Production/VES
API # 05-123-26327
Date: 10/28/2013
Surveyor: Randy Holcomb
VS: 0.000

Lat : 40.514261
Long: -104.463153

Well: Foss USX AA05-11
Location: Weld County, Colorado
North Reference: GRID
Convergence: Grid north is -0.67 of True North
Declination: 8.39
Depth Reference: Ground Level

Elevation: 4710 Feet
Total Depth as Drilled: 6987 Feet

Lat & Long obtained by handheld GPS at wellhead

HA Gyro Survey Calculations

Depth	Inc	AzG	N/-S	E/-W	TVD	DL	VS	CD	Cbrg
0.000	0.000	0.000	0.000	0.000	0.000	****	0.000	0.000	0.000
100.000	0.733	60.052	0.319	0.554	99.997	0.733	0.319	0.639	60.052
200.000	0.971	54.912	1.125	1.801	199.986	0.251	1.125	2.124	58.003
300.000	1.100	44.469	2.298	3.167	299.970	0.228	2.298	3.913	54.041
400.000	1.382	36.234	3.955	4.552	399.946	0.333	3.955	6.031	49.016
500.000	1.225	36.481	5.787	5.901	499.921	0.157	5.787	8.265	45.557
600.000	1.075	46.790	7.288	7.219	599.900	0.255	7.288	10.259	44.728
700.000	0.901	47.655	8.460	8.484	699.886	0.174	8.460	11.981	45.081
800.000	0.752	44.592	9.457	9.526	799.875	0.155	9.457	13.423	45.208
900.000	0.720	45.463	10.365	10.435	899.867	0.035	10.365	14.708	45.191
1000.000	0.667	42.763	11.233	11.277	999.860	0.062	11.233	15.917	45.113
1100.000	0.597	38.795	12.066	11.999	1099.853	0.083	12.066	17.017	44.840
1200.000	0.535	47.054	12.790	12.667	1199.849	0.102	12.790	18.001	44.723
1300.000	0.567	35.431	13.511	13.295	1299.844	0.116	13.511	18.955	44.539
1400.000	0.666	29.869	14.418	13.871	1399.838	0.116	14.418	20.007	43.893
1500.000	0.794	42.348	15.434	14.627	1499.830	0.203	15.434	21.264	43.463
1600.000	0.757	20.538	16.564	15.326	1599.821	0.296	16.564	22.567	42.776
1700.000	0.607	18.934	17.684	15.729	1699.814	0.151	17.684	23.667	41.652
1800.000	0.624	45.139	18.570	16.288	1799.809	0.280	18.570	24.701	41.254
1900.000	0.461	82.114	19.009	17.072	1899.804	0.377	19.009	25.550	41.927
2000.000	0.728	105.510	18.895	18.082	1999.799	0.355	18.895	26.153	43.741
2100.000	0.990	134.033	18.124	19.315	2099.788	0.494	18.124	26.487	46.822
2200.000	1.133	135.996	16.812	20.624	2199.771	0.147	16.812	26.608	50.813
2300.000	1.294	129.416	15.384	22.183	2299.749	0.212	15.384	26.995	55.258
2400.000	1.144	137.193	13.935	23.733	2399.726	0.223	13.935	27.522	59.580
2500.000	0.926	128.906	12.696	25.040	2499.710	0.264	12.696	28.074	63.114
2600.000	0.910	143.863	11.547	26.136	2599.697	0.239	11.547	28.574	66.164
2700.000	0.886	168.622	10.148	26.757	2699.685	0.386	10.148	28.617	69.230
2800.000	0.681	186.563	8.799	26.842	2799.676	0.318	8.799	28.247	71.849
2900.000	0.718	161.892	7.613	26.969	2899.669	0.301	7.613	28.023	74.236
3000.000	0.806	170.237	6.324	27.283	2999.660	0.141	6.324	28.006	76.950
3100.000	0.823	167.824	4.928	27.554	3099.650	0.038	4.928	27.991	79.859
3200.000	0.315	160.465	3.967	27.797	3199.644	0.512	3.967	28.079	81.878
3300.000	0.488	269.262	3.702	27.463	3299.643	0.660	3.702	27.712	82.322
3400.000	1.185	273.441	3.759	26.005	3399.632	0.700	3.759	26.276	81.775
3500.000	0.959	278.902	3.951	24.146	3499.614	0.248	3.951	24.467	80.708

3600.000	0.930	261.895	3.966	22.516	3599.601	0.281	3.966	22.862	80.011
3700.000	1.076	251.602	3.555	20.822	3699.585	0.231	3.555	21.123	80.310
3800.000	1.270	239.971	2.704	18.971	3799.565	0.307	2.704	19.163	81.888
3900.000	1.422	225.698	1.283	17.124	3899.537	0.367	1.283	17.172	85.715
4000.000	1.252	222.455	-0.390	15.498	3999.510	0.185	-0.390	15.503	91.441
4100.000	0.785	234.667	-1.592	14.202	4099.494	0.513	-1.592	14.291	96.396
4200.000	0.444	230.871	-2.232	13.343	4199.488	0.343	-2.232	13.529	99.498
4300.000	0.492	278.374	-2.414	12.618	4299.485	0.379	-2.414	12.847	100.831
4400.000	0.334	331.097	-2.096	12.052	4399.483	0.393	-2.096	12.233	99.867
4500.000	0.374	342.844	-1.529	11.815	4499.481	0.083	-1.529	11.914	97.374
4600.000	0.247	327.825	-1.035	11.604	4599.479	0.150	-1.035	11.650	95.095
4700.000	0.146	344.843	-0.729	11.456	4699.479	0.115	-0.729	11.479	93.641
4800.000	0.456	237.682	-0.818	11.086	4799.478	0.518	-0.818	11.117	94.222
4900.000	0.373	196.189	-1.344	10.659	4899.475	0.304	-1.344	10.744	97.184
5000.000	0.270	131.379	-1.811	10.745	4999.474	0.355	-1.811	10.897	99.569
5100.000	0.284	80.644	-1.927	11.166	5099.473	0.237	-1.927	11.331	99.790
5200.000	1.144	31.097	-1.031	11.926	5199.465	0.984	-1.031	11.970	94.943
5300.000	0.881	42.365	0.392	12.960	5299.449	0.329	0.392	12.966	88.267
5400.000	2.099	38.569	2.392	14.620	5399.414	1.221	2.392	14.815	80.707
5500.000	2.204	36.280	5.375	16.900	5499.343	0.136	5.375	17.734	72.358
5600.000	1.597	35.836	8.055	18.854	5599.288	0.607	8.055	20.503	66.866
5700.000	1.478	30.311	10.298	20.321	5699.252	0.190	10.298	22.781	63.125
5800.000	1.380	24.844	12.504	21.478	5799.221	0.168	12.504	24.852	59.793
5900.000	1.489	32.455	14.693	22.681	5899.189	0.219	14.693	27.024	57.064
6000.000	1.709	46.068	16.824	24.452	5999.151	0.437	16.824	29.680	55.471
6100.000	2.096	51.920	18.986	26.965	6099.096	0.432	18.986	32.978	54.851
6200.000	2.376	57.687	21.221	30.156	6199.019	0.359	21.221	36.874	54.865
6300.000	2.534	66.722	23.203	33.938	6298.928	0.418	23.203	41.111	55.640
6400.000	2.844	64.321	25.151	38.204	6398.818	0.330	25.151	45.740	56.641
6500.000	3.058	73.620	26.979	42.999	6498.686	0.524	26.979	50.762	57.895
6600.000	3.400	75.463	28.475	48.428	6598.527	0.358	28.475	56.180	59.545
6700.000	2.924	66.848	30.222	53.644	6698.375	0.671	30.222	61.572	60.604
6750.000	3.127	72.292	31.139	56.116	6748.305	0.703	31.139	64.176	60.974

