



Company: Noble Energy
Rig: Production/Coretech
API # 05-123-30486
Date: 12/23/13
Surveyor: Levi Sheldon
VS: 0.000
Lat : 40.471
Long: -104.358

Well: Wells Ranch USX AE 19-09P
Location: Weld County, Colorado
North Reference: GRID
Convergence: GRID North is 0.740 Degrees East
Declination: 8.31
Depth Reference: Ground Level
Elevation: 4,788 Feet
Total Depth as Drilled: 6,895 Feet

Lat & Long obtained by handheld GPS at wellhead

MS 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	0.610	358.511	0.532	-0.014	99.998	0.610	0.532	0.532	358.511
200.000	0.318	332.902	1.312	-0.154	199.995	0.351	1.312	1.321	353.299
300.000	0.300	289.566	1.646	-0.527	299.993	0.229	1.646	1.729	342.238
400.000	0.520	276.431	1.785	-1.225	399.991	0.237	1.785	2.165	325.540
500.000	0.538	271.246	1.846	-2.145	499.987	0.051	1.846	2.830	310.712
600.000	0.662	260.859	1.764	-3.186	599.981	0.165	1.764	3.642	298.980
700.000	0.592	266.192	1.638	-4.272	699.975	0.091	1.638	4.575	290.983
800.000	0.535	260.723	1.529	-5.247	799.970	0.078	1.529	5.466	286.242
900.000	0.512	251.001	1.308	-6.130	899.966	0.092	1.308	6.268	282.046
1000.000	0.575	257.611	1.055	-7.042	999.962	0.089	1.055	7.121	278.521
1100.000	0.518	238.163	0.709	-7.916	1099.957	0.193	0.709	7.948	275.119
1200.000	0.535	251.162	0.320	-8.742	1199.953	0.120	0.320	8.748	272.097
1300.000	0.396	250.578	0.054	-9.510	1299.950	0.139	0.054	9.510	270.328
1400.000	0.309	253.090	-0.139	-10.093	1399.948	0.089	-0.139	10.094	269.212
1500.000	0.313	264.706	-0.242	-10.623	1499.946	0.063	-0.242	10.626	268.693
1600.000	0.179	259.897	-0.295	-11.049	1599.945	0.136	-0.295	11.053	268.471
1700.000	0.047	147.159	-0.357	-11.180	1699.945	0.202	-0.357	11.186	268.171
1800.000	0.193	73.802	-0.345	-10.996	1799.945	0.185	-0.345	11.002	268.204
1900.000	0.080	212.129	-0.357	-10.872	1899.945	0.258	-0.357	10.878	268.120
2000.000	0.433	224.670	-0.685	-11.174	1999.944	0.356	-0.685	11.195	266.494
2100.000	0.632	214.761	-1.407	-11.755	2099.939	0.219	-1.407	11.839	263.176
2200.000	0.759	222.791	-2.346	-12.519	2199.932	0.160	-2.346	12.737	259.386
2300.000	0.859	243.050	-3.172	-13.638	2299.922	0.301	-3.172	14.002	256.906
2400.000	0.824	244.333	-3.823	-14.954	2399.911	0.040	-3.823	15.435	255.659
2500.000	0.805	231.649	-4.571	-16.154	2499.901	0.181	-4.571	16.788	254.200
2600.000	0.652	238.617	-5.303	-17.191	2599.893	0.177	-5.303	17.990	252.855
2700.000	0.417	246.438	-5.745	-18.010	2699.889	0.246	-5.745	18.904	252.307
2800.000	0.307	252.949	-5.969	-18.600	2799.887	0.117	-5.969	19.534	252.207
2900.000	0.105	280.614	-6.031	-18.946	2899.886	0.220	-6.031	19.882	252.342
3000.000	0.075	177.670	-6.080	-19.033	2999.886	0.142	-6.080	19.980	252.284
3100.000	0.196	187.632	-6.315	-19.053	3099.886	0.123	-6.315	20.072	251.661
3200.000	0.767	215.267	-7.032	-19.462	3199.882	0.600	-7.032	20.693	250.134
3300.000	1.476	232.066	-8.370	-20.864	3299.862	0.774	-8.370	22.480	248.141
3400.000	0.889	238.653	-9.565	-22.542	3399.841	0.601	-9.565	24.488	247.007
3500.000	0.443	233.440	-10.199	-23.516	3499.834	0.450	-10.199	25.632	246.552

3600.000	0.292	230.754	-10.591	-24.024	3599.832	0.152	-10.591	26.255	246.210
3700.000	0.106	271.470	-10.750	-24.314	3699.831	0.223	-10.750	26.584	246.148
3800.000	0.055	86.320	-10.744	-24.359	3799.831	0.161	-10.744	26.623	246.198
3900.000	0.149	283.940	-10.710	-24.437	3899.831	0.202	-10.710	26.681	246.334
4000.000	0.107	270.594	-10.678	-24.657	3999.831	0.051	-10.678	26.869	246.585
4100.000	0.072	257.750	-10.690	-24.811	4099.831	0.040	-10.690	27.016	246.691
4200.000	0.213	282.354	-10.664	-25.054	4199.830	0.150	-10.664	27.229	246.944
4300.000	0.507	347.489	-10.192	-25.331	4299.828	0.460	-10.192	27.305	248.082
4400.000	0.469	277.955	-9.704	-25.832	4399.826	0.557	-9.704	27.595	249.411
4500.000	0.423	122.380	-9.845	-25.926	4499.825	0.872	-9.845	27.732	249.207
4600.000	0.243	101.909	-10.086	-25.407	4599.823	0.213	-10.086	27.336	248.348
4700.000	0.234	310.909	-9.996	-25.354	4699.822	0.462	-9.996	27.254	248.483
4800.000	0.596	241.397	-10.111	-25.966	4799.820	0.559	-10.111	27.865	248.723
4900.000	0.708	231.763	-10.743	-26.908	4899.814	0.156	-10.743	28.974	248.236
5000.000	0.494	172.931	-11.554	-27.341	4999.809	0.619	-11.554	29.682	247.092
5100.000	0.457	146.028	-12.313	-27.065	5099.806	0.224	-12.313	29.734	245.537
5200.000	1.098	148.468	-13.460	-26.341	5199.796	0.642	-13.460	29.581	242.933
5300.000	1.270	137.888	-15.099	-25.097	5299.775	0.277	-15.099	29.288	238.968
5400.000	1.360	142.766	-16.865	-23.636	5399.748	0.144	-16.865	29.036	234.490
5500.000	1.245	123.077	-18.403	-22.007	5499.723	0.459	-18.403	28.688	230.096
5600.000	1.185	101.705	-19.206	-20.084	5599.701	0.454	-19.206	27.789	226.281
5700.000	1.249	141.455	-20.268	-18.393	5699.680	0.830	-20.268	27.370	222.223
5800.000	1.307	177.888	-22.260	-17.672	5799.657	0.801	-22.260	28.422	218.445
5900.000	0.965	131.514	-23.958	-16.999	5899.639	0.948	-23.958	29.376	215.357
6000.000	0.692	137.986	-24.965	-15.965	5999.629	0.288	-24.965	29.633	212.598
6100.000	0.716	133.274	-25.842	-15.106	6099.621	0.063	-25.842	29.933	210.309
6200.000	0.854	129.058	-26.739	-14.072	6199.612	0.149	-26.739	30.216	207.757
6300.000	0.776	147.363	-27.779	-13.129	6299.602	0.270	-27.779	30.725	205.296
6400.000	0.370	108.479	-28.451	-12.457	6399.597	0.540	-28.451	31.059	203.646
6500.000	0.465	93.228	-28.577	-11.746	6499.594	0.145	-28.577	30.896	202.344
6600.000	0.366	37.556	-28.346	-11.146	6599.592	0.398	-28.346	30.459	201.466

of True North